

Matthias Lüderitz & Tanja Böhning:
**A new macrofungal hotspot on island Fehmarn – interesting
species, mapping, conservation and management aspects**



Zitiervorgabe:

Lüderitz, M. & Böhning, T. (2016): **A new macrofungal hotspot on island Fehmarn – interesting species, mapping, conservation and management aspects – Lecture on the annual meeting of the Danish Mycological Society, 59 p. - Kopenhagen**

Zusammenfassung

Matthias Lüderitz & Tanja Böhning: A new macrofungal Hotspot on island Fehmarn – interesting species, mapping, conservation and management aspects. Im Rahmen des “Hotspots-Kartierprojektes für Pilze” erfassen und kartieren Matthias Lüderitz & Tanja Böhning die Verbreitung der Arten in Schleswig-Holstein. Auf der Insel Fehmarn entdeckten sie einen ganz besonderen alten Deich mit Weide- und Grasland, auf dem sie während nur 3 Exkursionstagen mehr als 70 CHEG-Wiesenpilzarten (Keulenpilze, Saftlinge, Rötlinge und Erdzungen-Arten) fanden. Ein Teil dieser Arten wurden seit den Funden von M.P.Christiansen, Dänemarks großem Rindenpilz-Spezialisten der 40iger Jahre, in der Region nicht mehr gefunden.

Sammenfatte

Matthias Lüderitz & Tanja Böhning: A new macrofungal Hotspot on island Fehmarn – interesting species, mapping, conservation and management aspects. Lige syd for Østersøen har Matthias Lüderitz & Tanja Böhning kortlagt og registreret svampenes udbredelse i Slesvig-Holstens ”Hotspot-mapping project for fungi”. På Fehmarn fandt de et fantastisk landskab med overdrev og græsland, der på 3 uger afslørede mere end 70 arter CHEG-svampe (køllesvamp-, vokshat-, rødblad- og jordtungearter). En del var ikke set siden M.P.Christiansen, Danmarks store barksvampe-specialist var der i 1940’erne. – Se hvad en svampetur syd for grænsen kan fylde i kurven...

The project

Project-title:

Determination, mapping, species recording and rating of „macrofungal hotspots“ in Schleswig-Holstein; advice of the federal state and regional nature-conservation authorities

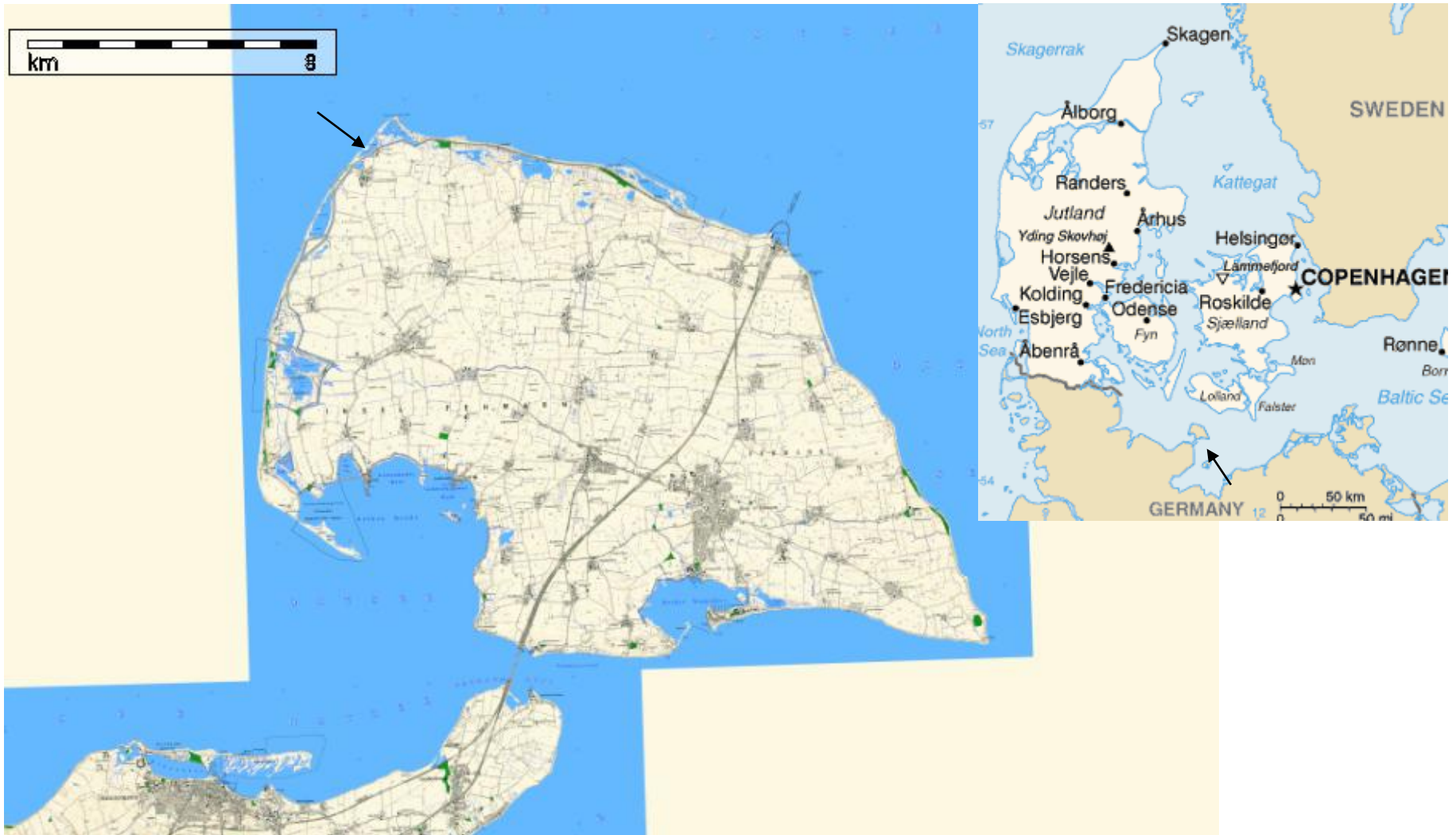
***Orderer:* Ministry for agriculture, environment and rural areas of the federal state Schleswig-Holstein**

***Contractor:* Mycological Working Group Schleswig-Holstein within AG Geobotany Schleswig-Holstein**

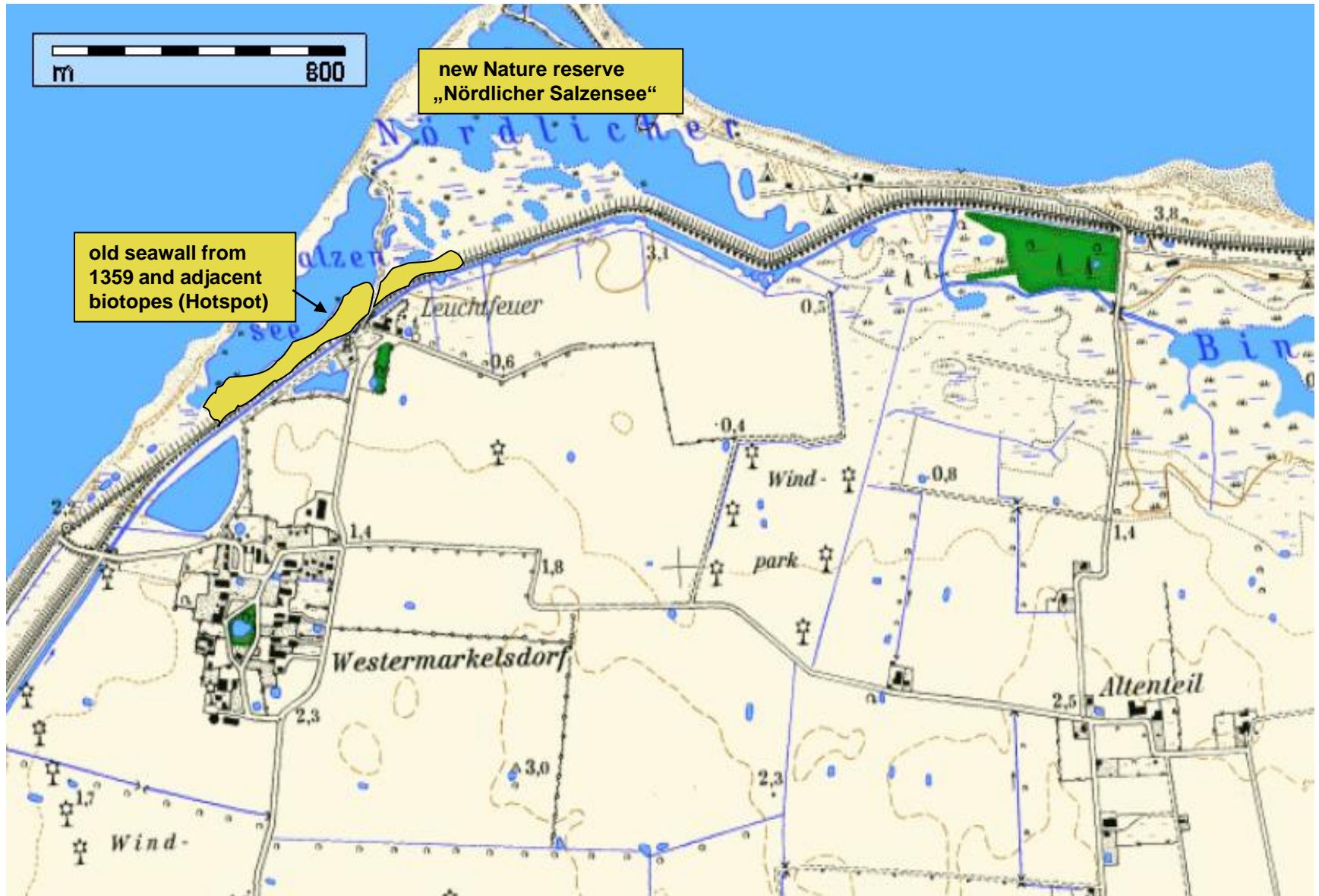
***Duration:* long-term project 2011-2012, 2013-2016, ?**

***Database:* Mycological Information System Schleswig-Holstein MYKIS**

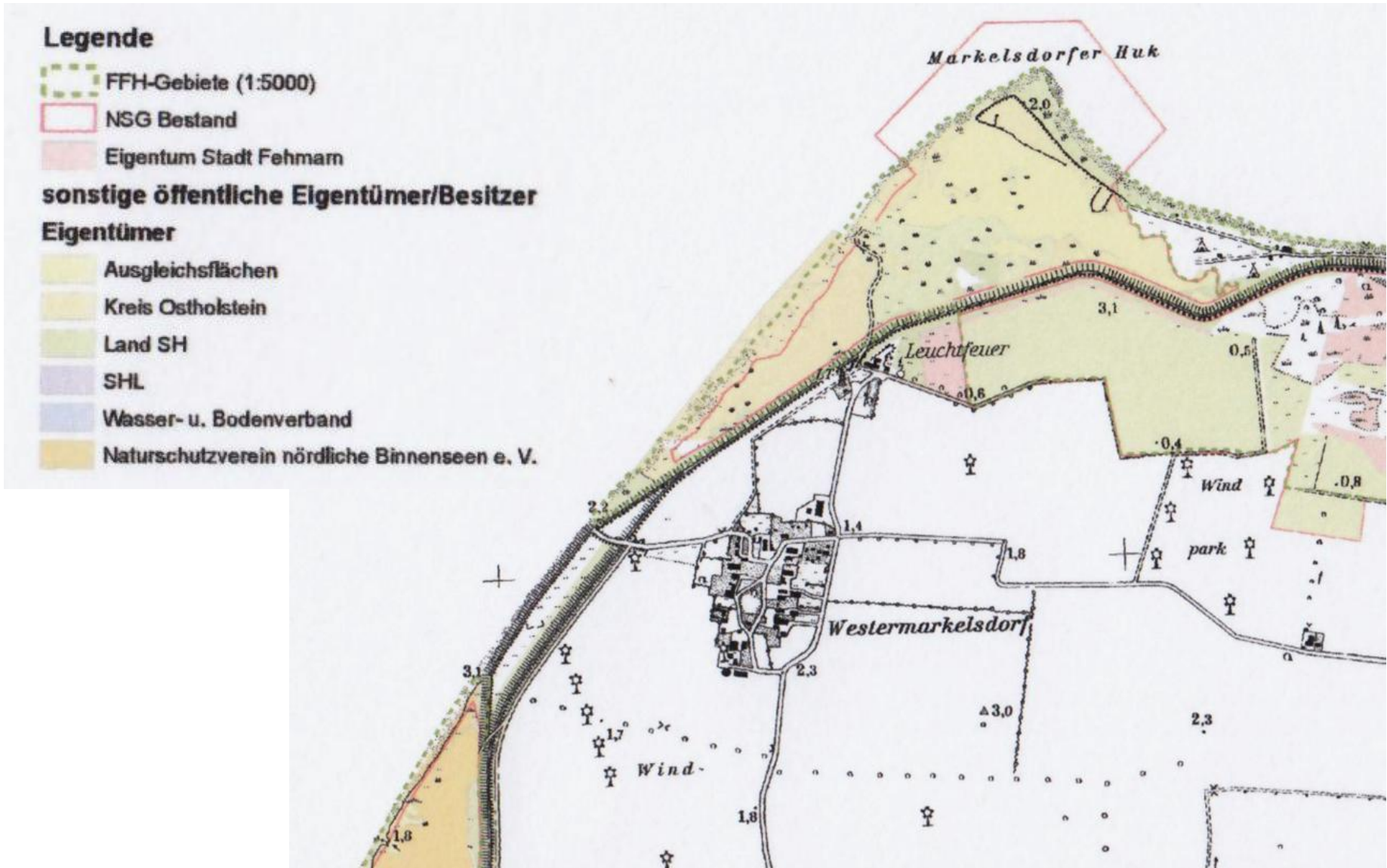
Island Fehmarn, Schleswig-Holstein



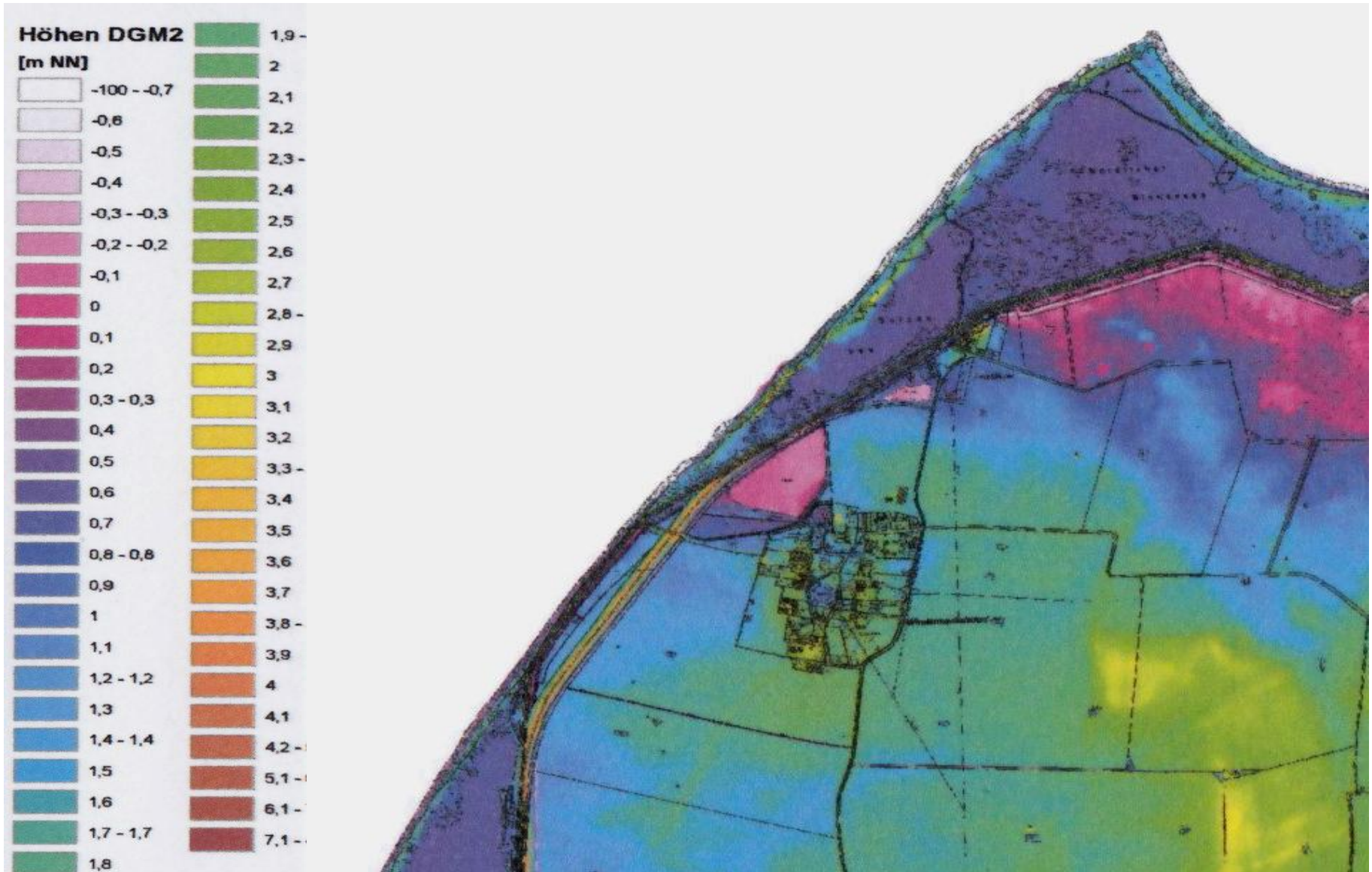
Northwest-Fehmarn, Westermarkelsdorf-Lighthouse



Northwest-Fehmarn: distribution of ownership



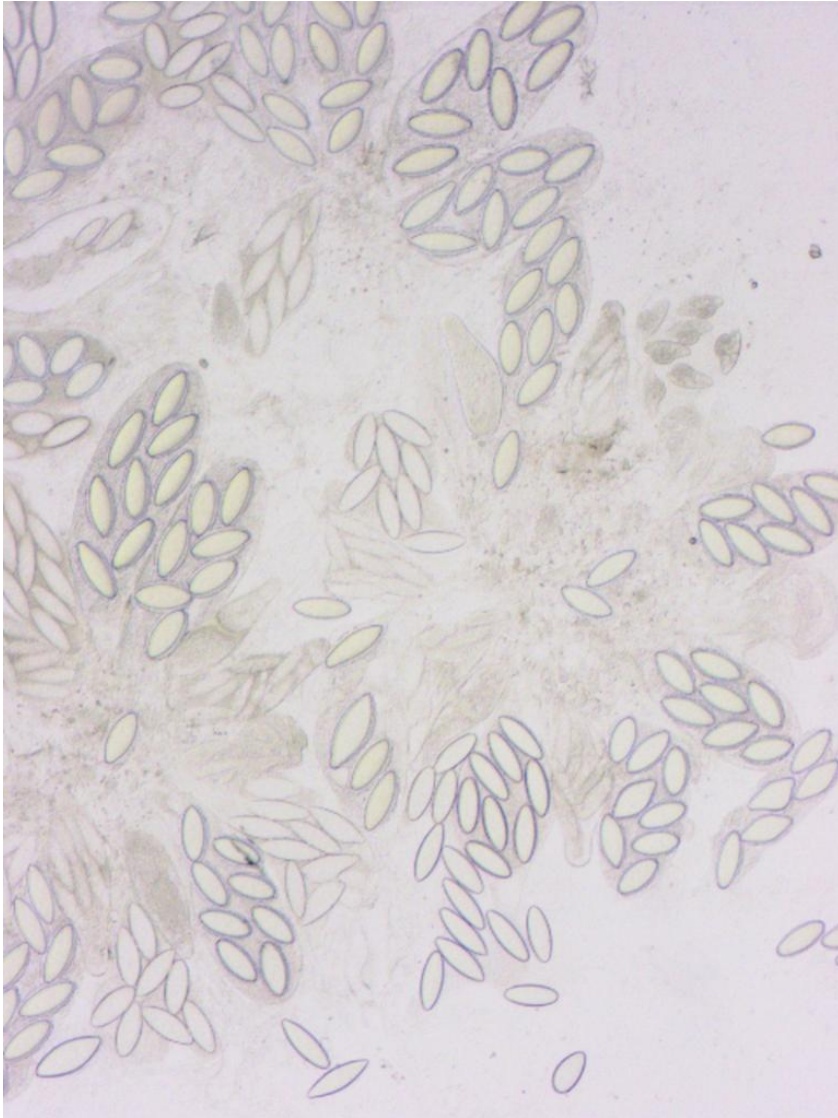
Altitude above sea level (precision levelling)



Selinia pulchra

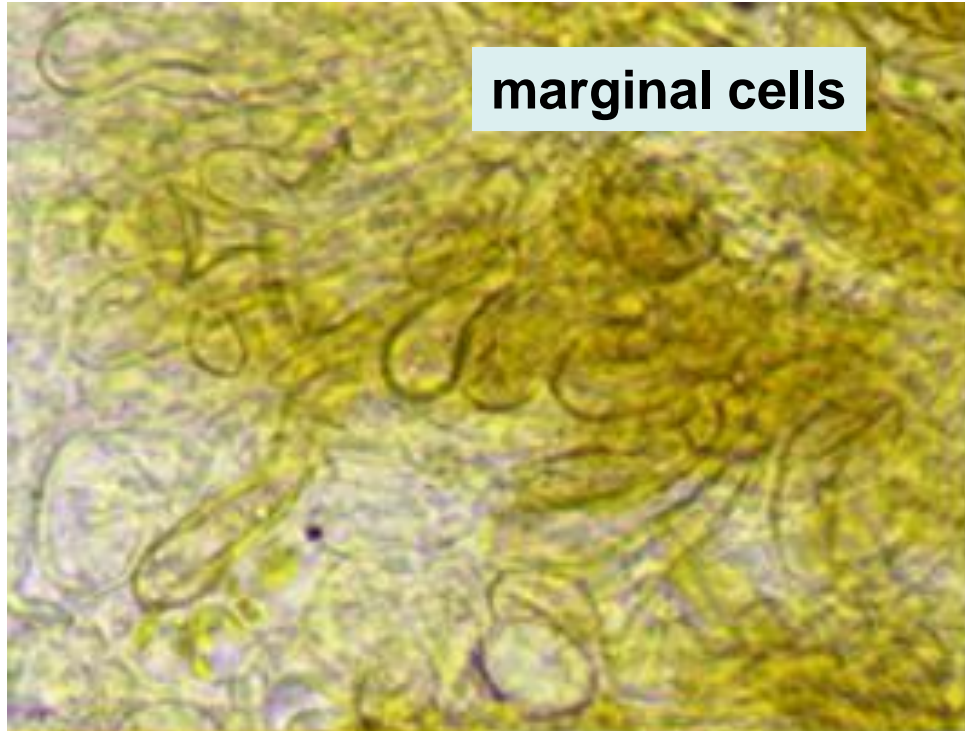


macrospores of *Selinia pulchra*

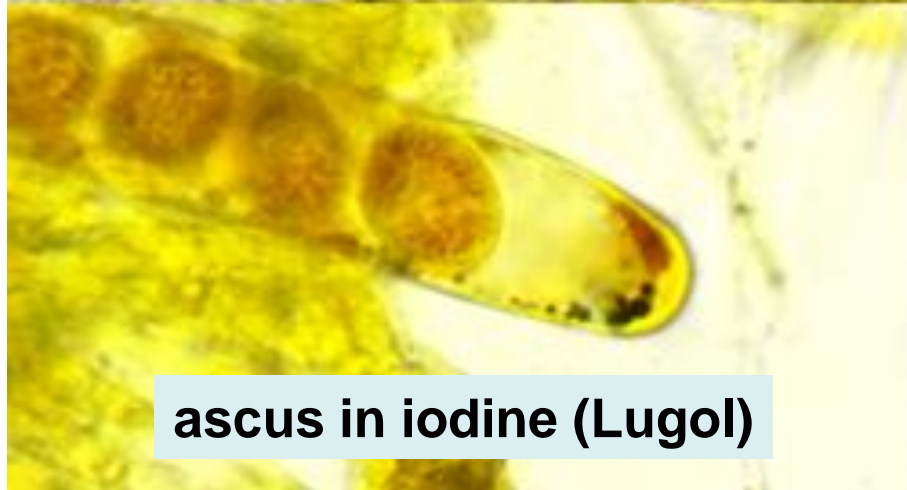
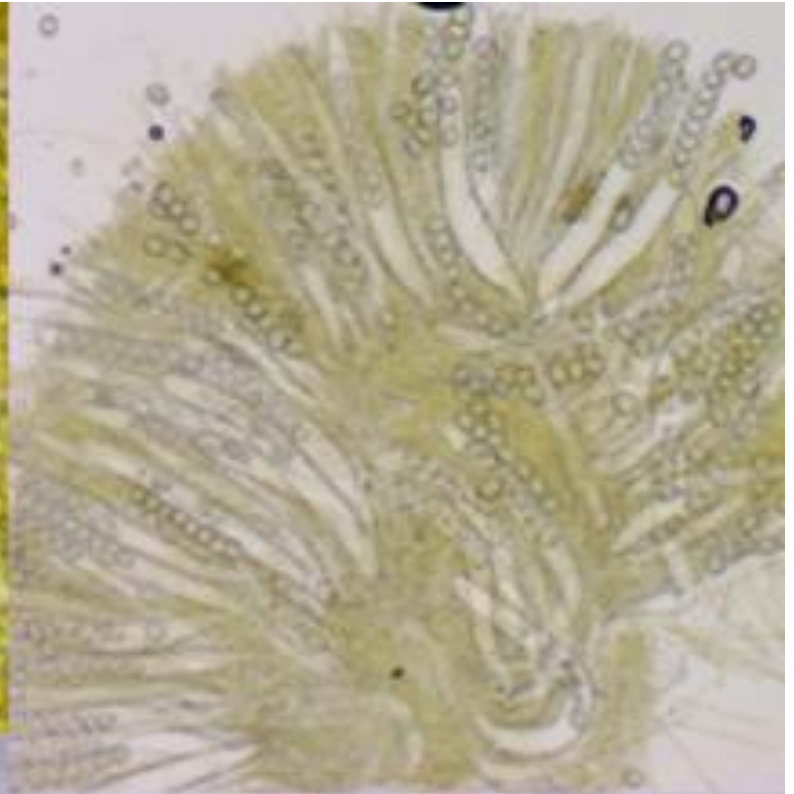




some microscopical features (overview)



marginal cells



ascus in iodine (Lugol)



sp. 20-22x16-18 um

**hitherto unknown discomycete (cf. „Tricharina spec.“),
growing on a cover of thread-like green algae**



breakoff edge of seawall forland on clayey-silty marine sediments with cover of green algae, ephemeric mosses





lagoon

coastal reed-swamp

wet foreland with rushes

seawall outside with Cirsium-patches

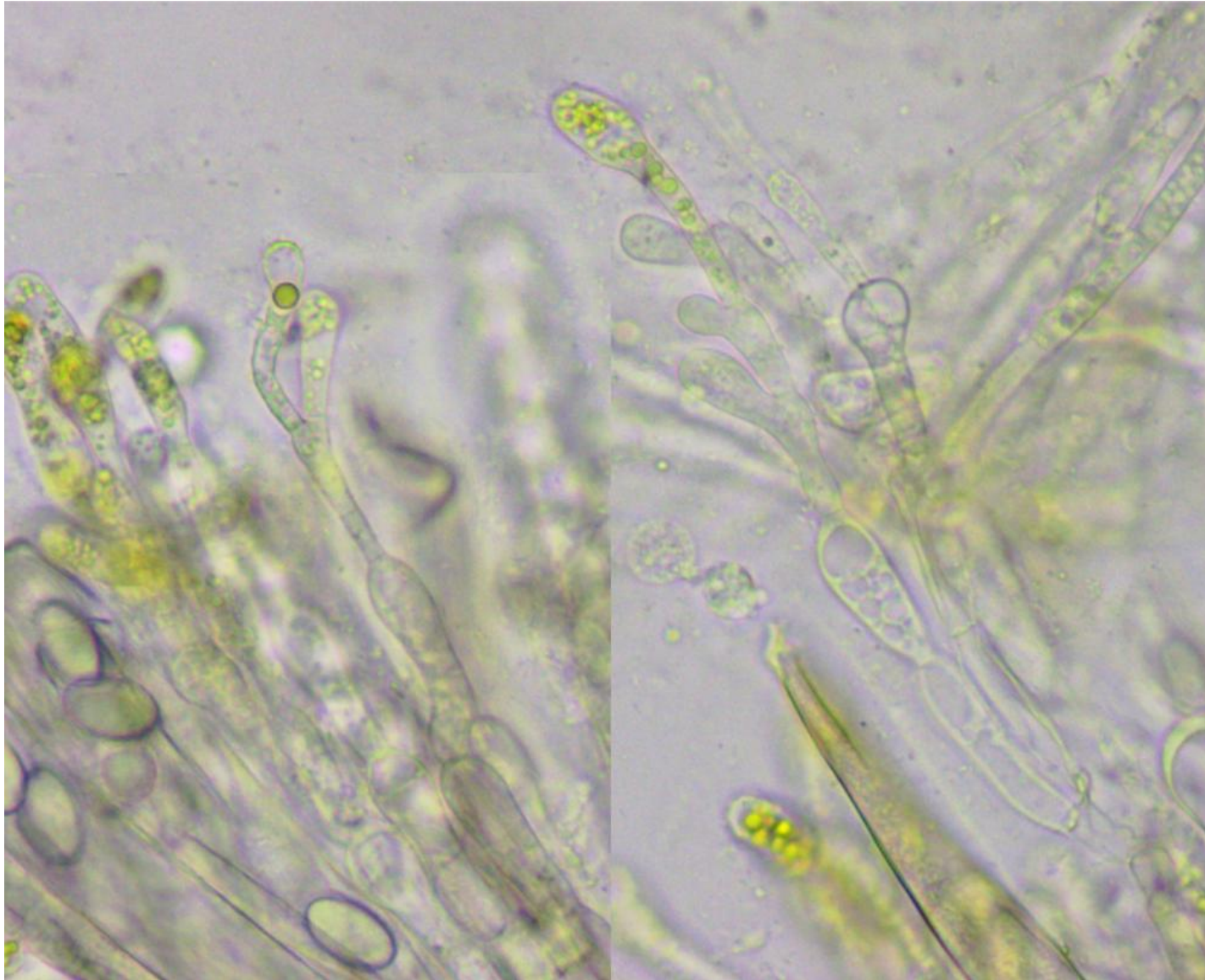
seawall-culmination

**Peziza sterigmatizans
on remnants of Cirsium**



**biotope: seawall outside
with Cirsium-patches**

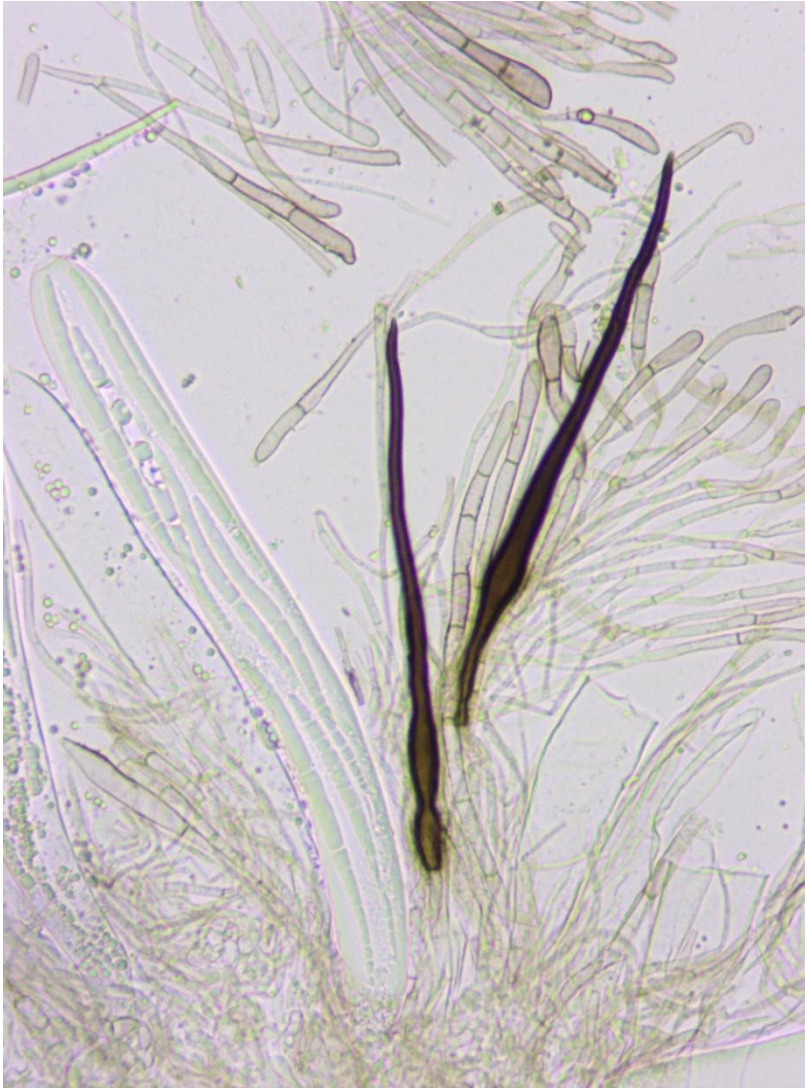
**some microscopical features
moliniiform and forked paraphyses**



Trichoglossum spec. III
biotope: seawall-culmination



**Trichoglossum sp III.: some microscopical features
spores very variable septated (2-10 septa, often with
appendages, setae mostly constricted-moliniform**





**Trichoglossum hirsutum var. capitatum
(Trichoglossum capitatum)**

26.11.2015



26.11.2015

Geoglossum vleugelianum

- * spores 5-7-septate,
50-60 um**
- * spores strongly
unsimultaneously
septate & coloured**
- * paraphyses embed-
ded in brown matter,
apex pyriform**
- fruitbodies rather
firm and compact**

biotope: seawall-culmination

Geoglossum starbaeckii

- fruitbodies dusty brown, very slender
- paraphyses +/- constricted at the septa, apex incrassate
- spores 7-9-septate, 70-90 μm





**seawall-
culmination**

**backland,
partly wet**

**seawall-
inside**

boondocks

outfall



Gliophorus psittacinus
(yellow form)
biotope: backland with higher grass

species-rich microbiotope: very old, hummocky seawall-outside hummocks: subrecent activity of moles, ants



17. 11. 2015

Camarophyllopsis phaeophylla
(several mycelial fields)

biotope: hummocky seawall-outside



26.11.2015

Mycena pseudopicta ss. lat. biotope: seawall-culmination





26.11.2015

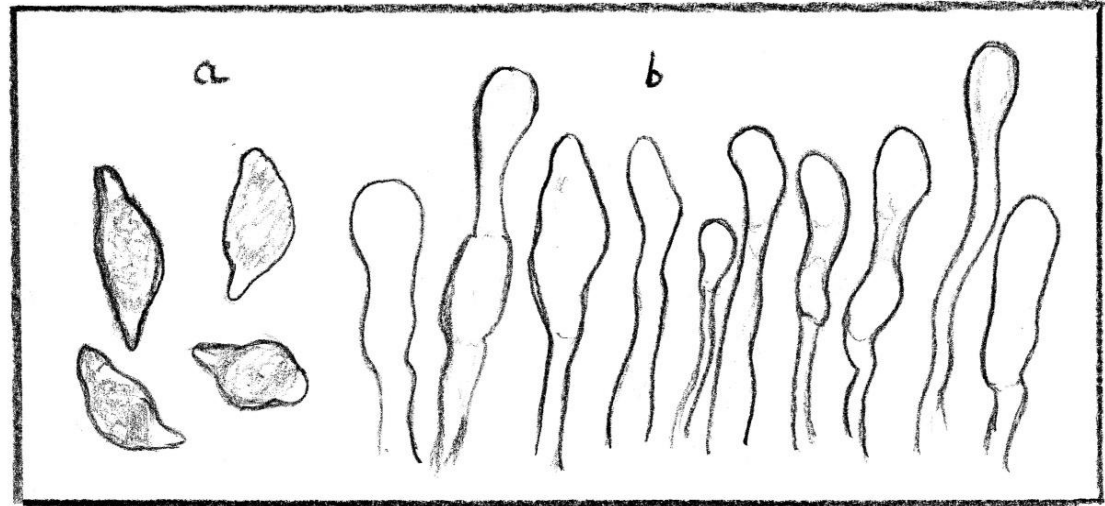
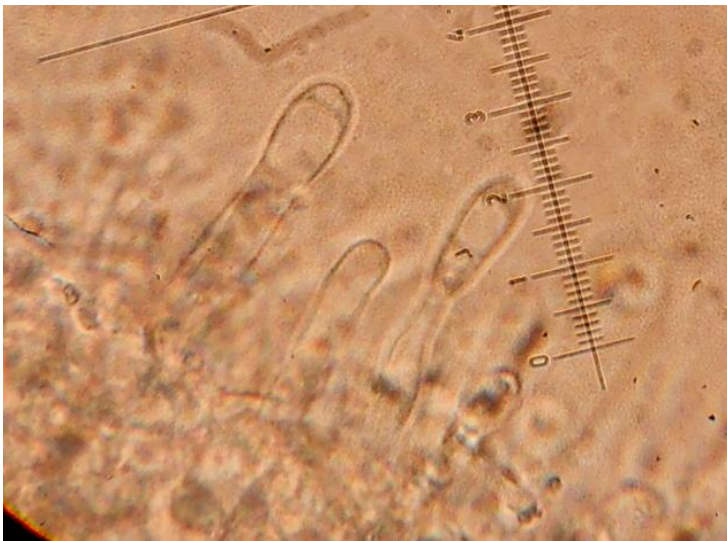


Hemimycena ochrogaleata var. „paucicystidiata“ ad int.

- in the vicinity of *Cirsium* sp. (on roots?) between herbs and mosses

biotope: seawall-outside with *Cirsium*-patches

Hemimycena ochrogaleata var. „paucicystidiata“



Drawing: H. Lehmann

spores: 7-12 x 4-6 ; Basidia only two-spored, cystidia up to 60µm long, submoniliform, subclavate or subcapitate, very diverse shaped found once in Norway 1982 by Gulden & Jensen, provisional named „var. paucicystidiata“ (Antonin & Noord.)

wet and marshy backlands



26.11.2015

Dermoloma spp.
collections

several undefined, amyloid-spored
biotopes: all parts of the seawall-area

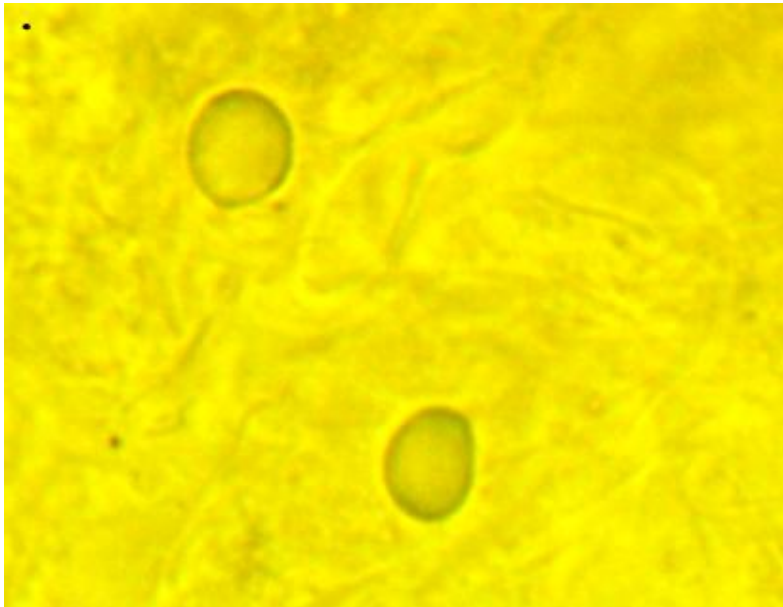


Dermoloma spp.

rare species -> no consistent conception of the key features

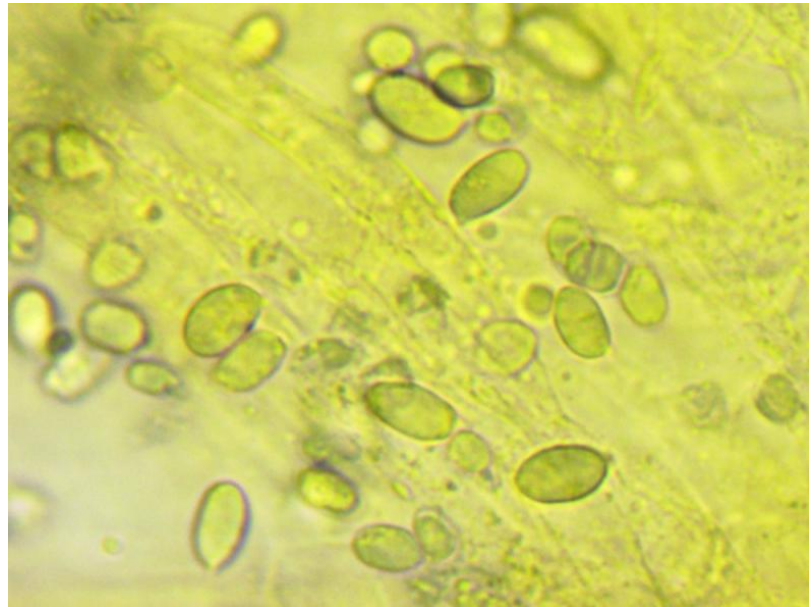
mostly 2-3 species are mentioned , which are seperated by differences in colour and spore quotient

D. „josserandii“



spores: stout, Q 1,2-1,4
fruitbody light grey to ochraceous,
not hygrophanus

D. „pseudocuneifolium“



spores: Q 1,4-1,8
fruitb. darker brown (- light yellowish brown),
hygrophanus

D. josserandii var. phaeopodium: light to dark brown, hygrophanus



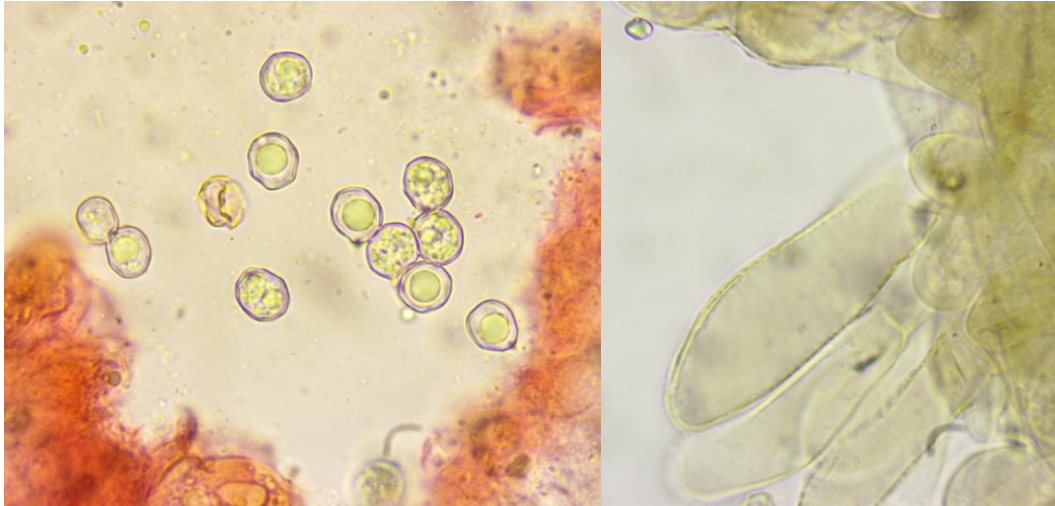
Dermoloma murinellum
biotope: backlands near outfall

Entoloma flocculosum

biotope: seawall-inside (grassy)



Entoloma flocculosum



main features:

- basidia 2- and 4-spored
- no clamps
- Spores 8-11x8-9(-10)
- no cheilocystidia
- pigment incrusting and intracellular
- clavate terminal cells in pileipellis (squamose pileus)

E. phaeocyathus: - cheilocystidia present
- pileus not squamose



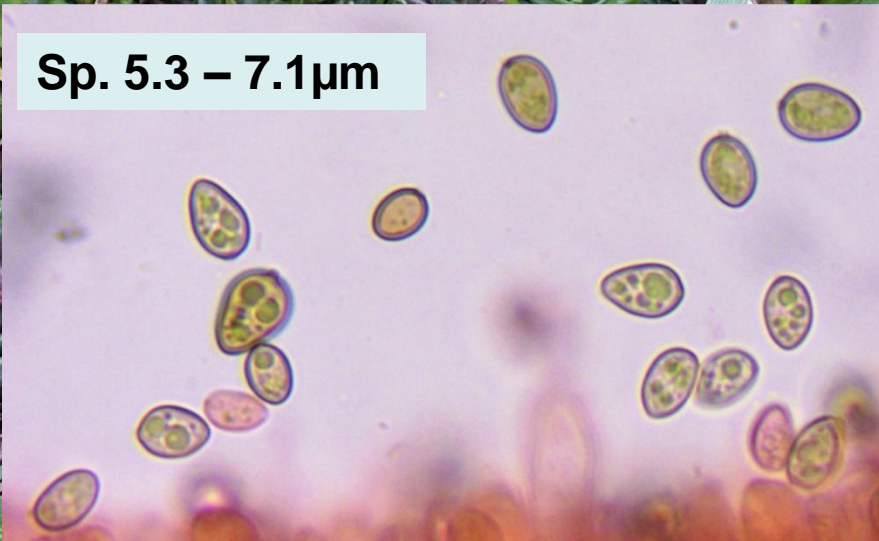
A photograph showing three brown mushrooms growing in a patch of green grass. One mushroom is in the upper left, another is in the center, and a third is on the right, shown from a side view revealing its gills and stem. The mushrooms have a smooth, slightly wrinkled (rimulose) surface.

Entoloma aff. rimulosum
biotope: backland with higher grass

- with „rimulose“ (crenulated) cutis
- fruitbodies firm (+/- as in *E. kerocarpus*)

17. 11. 2015

Psilocybe microspora
biotope: wet foreland near breakoff-edge



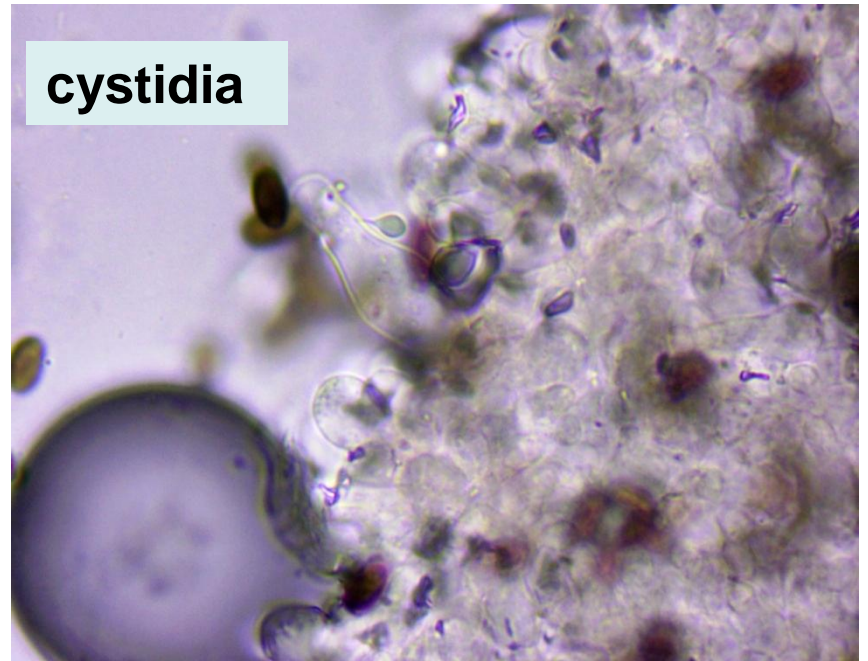
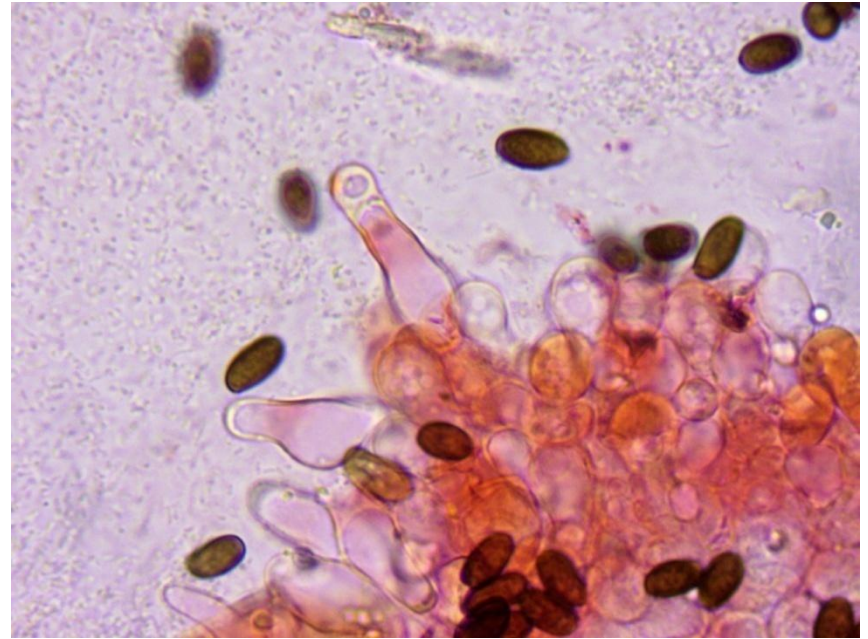
1.2015

Psathyrella spec.
on remnants of *Cirsium*





26. 11. 2015



cystidia

coastal reed-swamp



Typhula capitata ss. str.
on remnants of *Phragmites australis*
biotope: reed-swamp





Typhula incarnata

on dead leaves und culms of grasses
biotope: seawall-culmination; path



26.11.2015

Clavaria argillacea ss. lat.

- on +/- calcareous soil among herbs & mosses
- deeply furrowed fruit-bodies with markedly separated stem
- spores pip-shaped, without guttules, mostly >10 um

seems to be a special form or variety of. *C. argillacea* macroscopically more near *C. salentina*

biotope: hummocky seawall-
outside, quite humid



Clavaria gibbsiae

biotope: very frequent in all parts of the seawall-area



Clavaria gibbsiae

- with pseudoparenchymateous subhymenial tissues
- some subhymenial hyphae forming submoniliform rows (+/- compact)
- mostly growing (densly) fasciculate

found three times
1942-1943 by M. P.
Christiansen on
Zealand (Køge) as
var. megaspora
and var. tenuis *

*) Friesia No. 8(2): 124-125 – Kopenhagen 1967



Clavaria (Alloclavaria) nebulosoides

- with abundant, long stalked, lanceolate cystidia (60-80 μm long) in the hymenium
- spores 4.8-6 x 2.5 μm (5.5-9 μm in *A. purpurea*)
- fruitbody 4-7.5 cm, with +/- short and slender stalk
- near *A. purpurea*, but wood-brown, not caespitose and with smaller spores

**biotope: hummocky seawall-
outside, quite humid and
mossy**

Ramariopsis rufipes

biotope: seawall-culmination, mossy



**synonyms: *Ramariopsis clavuligera*,
*Clavaria clavuligera***

**spores with minute conical, spaced
warts, 5.2-6.7 x 3.0-3.5 μm**

**with numerous clavate basidiols/
cystidia in the hymenium**

spiralis = like a screw



17.11.2015



20.11.2015

Clavulinopsis aff. spiralis

- fruitbodies 6-13 cm x 3.5-6 mm, long-cylindric, sulcate-rugulose, flexuose, whitish or pale cream, often fasciculate
- spores subglobose, one large gutta, (ellipsoid-pip-shaped in *C. vermicularis*)
- basidia with basal clamp (no clamps in *C. vermicularis*), 2-(3)-spored



**Clavaria rosea var. sub-
globosa Corner**
**(C. rosea ss. Bres, Rea,
Ricken, Pers.)**

- * spores subglobose or broadly ellipsoid; 5.3-7.1 x 4.8-5.5 um)**
 - fruitbodies 2.5-4.3 cm high, in small groups, sometimes longitudinally compressed or folded**
 - in all other features like the type**
 - also found by M. P. Christiansen at Jaegersborg Dyrehave 1943 (in: Friesia No. 8(2): 125 - Copenhagen 1967)**
- biotope: culmination, open path**



Clavaria messapica

13.11.2015



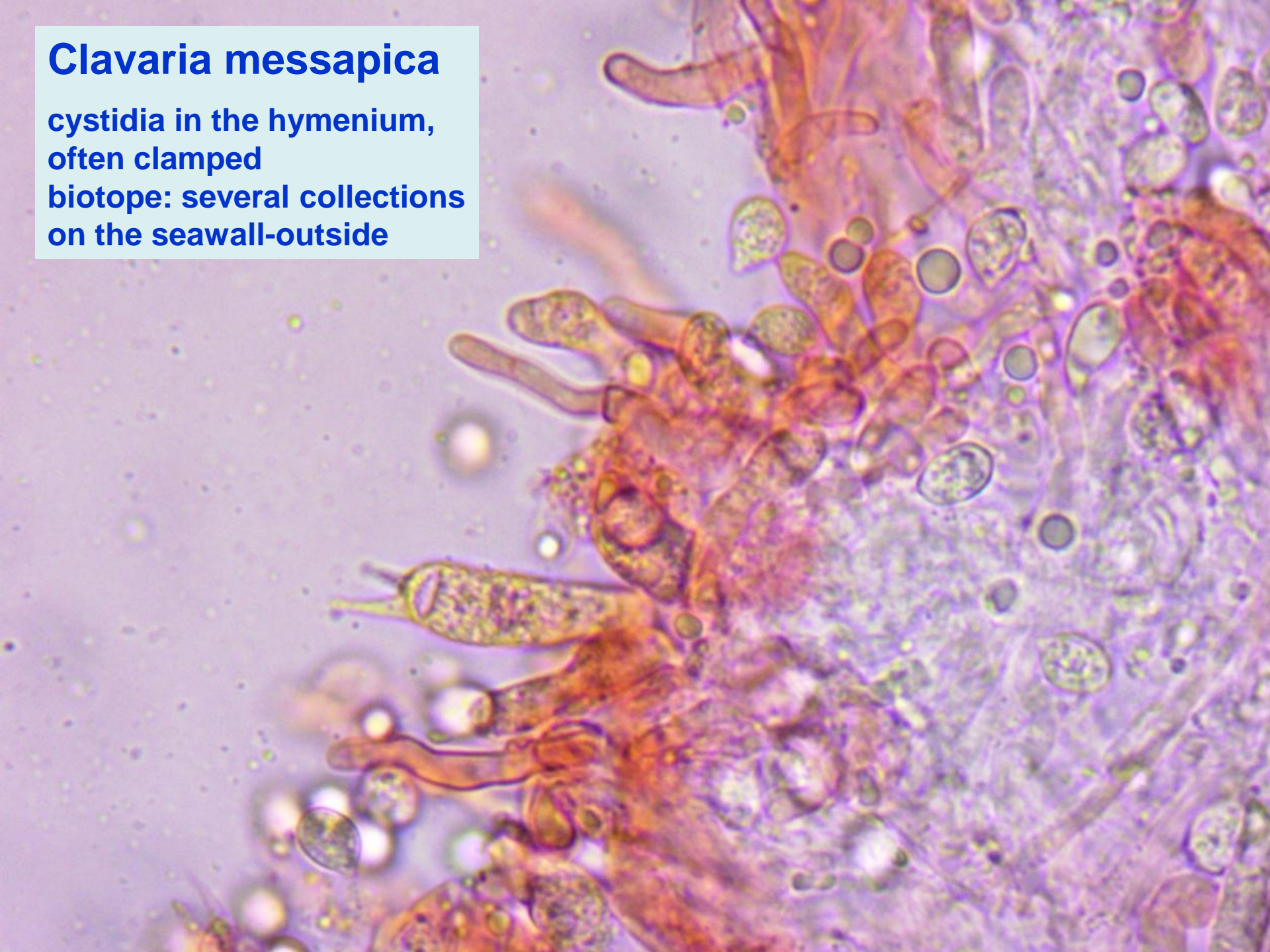
Clavaria messapica Agnello, Kautmanova & Carbone

- a species near *C. incarnata*
- fruitbodies 3-10.5 cm high, often fasciculate, rose-pink with yellowish or bluish-greenish apices
- many cylindrical-flexuose cystidia (leptocystidia) in the hymenium

Clavaria messapica

**cystidia in the hymenium,
often clamped**

**biotope: several collections
on the seawall-outside**



Heinrich and Matthias





**Tanja and
Sigrid (right)**



Rating systems for grasslands I:

Rald's guidelines (1985) for assessing the quality of grasslands. Numbers in brackets refer to a single visit

Conservation value	Total no. of <i>Hygrocybe</i> species
Nationally important (Land)	17 – 32 (11 – 20)
Regionally important (Bundesland)	9 – 16 (6 – 10)
Locally important (Kreis, Amt)	4 – 8 (3 – 5)
Of no importance	1 – 3 (1 – 2)

Rating systems for grasslands II:

JNNC-guidelines (<http://www.jncc.gov.uk/page-2303>) of the british government (2009) for conservation of national important grasslands

genus or species-group	species-number(single visit)
<i>Hygrocybe</i> (Saftlinge) (H)	12 species
<i>Hygrocybe</i> (Saftlinge) (H)	18 species (multiple visit)
<i>Clavariaceae</i> (Keulen, Wiesenkorallen) (C)	5 species
<i>Entoloma</i> (Rötlinge) (E)	12 species
<i>Geoglossaceae</i> (Erdzungen i.w.S.) (G)	3 species
<i>Dermoloma</i> (Samtritterlinge) belongs to (H)	2 species

Rating systems for grasslands III:

The combination of Rald's or Nitare's guidelines with the CHEG-Profile-System (Rotheroe & al. 1996) is helpful.

For example: The CHEG-profile of a visited location (single visit) is:

C4-H12-E3-G3

code	number of species	after Nitare	after Rald	after JNCC
C4	4 <i>Clavariaceae</i>	regional	no rating	< national
H12	12 <i>Hygrocybe</i>	national	national	national
E3	3 <i>Entoloma</i>	lokal	no rating	< national
G3	3 <i>Geoglossaceae</i>	national	no rating	national

Rating of the Hotspot „Westermarkelsdorf Lighthouse“

code	number of species	after Nitare	after Rald	after JNCC
C25	25 <i>Clavariaceae</i> (incl. <i>C. fumosa</i> , <i>C. affinis</i> cf., <i>C. zollingeri</i> , <i>C. amoena</i> ...)	national	no rating	national
H17	17 <i>Hygrocybe</i> (incl. <i>H. streptopus</i>)	national	national	national
E10	10 <i>Entoloma</i> (incl. <i>E. sphaerocystis</i> , <i>E. tibiicystidiatum</i> , <i>E. farinasprellum</i> ...)	national	no rating	national
G14	14 <i>Geoglossaceae</i> (incl. <i>T. variabile</i> , <i>T. tetrasporum</i> , <i>T. leucosporum</i> , <i>G. lineare</i> , <i>G. vleugelianum</i>)	national	no rating	national

Totally about 70 CHEG-Taxa after 4 visits (incl. 4 Taxa of *Dermoloma*)

Conclusions

- **the old seawall (1359) at Westermarkelsdorf lighthouse is a macrofungal hotspot of national and international importance**
- **it should be conserved as a nature reserve (NSG) as soon as possible. It should be open for people as hitherto (paths and tracklines are an important biotope component)**
- **it should be managed in the same way as hitherto (periodical grazing with sheeps, cutting of the large Cirsium-patches)**
- **some new management aspects should be introduced: removing of the Cirsium remnants (partly), removing of large reed-remnants (wind-accumulated), mowing (manual) high grass- and eutrophic spots once a year**
- **the use of the seawall-area as toilet for dogs must be strictly forbidden (many eutrophication spots are visible)**

tak for din opmærksomhed

