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Key to *Psathyrella* and related species

Latest update: 03.03.2018

13.05.15 (key changed in large parts), 14.05.15 (many changes in the part D), 15.05.15 (*P. sphagnicola* and *P. basii* transferred from part H to E, *P. fennoscandia* added, other frequency of numbers in part H and E), 16.05.15 (*P. sublatispora* added, many changes and other frequency of numbers in part G, *P. scanica* added, many changes and other frequency of numbers in part E), 17.05.15 (*P. sabuletorum* added, changes and other frequency of numbers from D23, *P. madida* and *P. lilliputana* added, changes and other frequency of numbers from E5, *P. ichnusae* and *P. carminei* added, changes and other frequency of numbers from F14*), 18.05.15 (*P. rybergii* and *P. arenosa* added, changes and other frequency of numbers from E10), 19.05.15 (*P. hololanigera* added, changes and other frequency of numbers from F13*, *P. boreifasciculata* added, changes and other frequency of numbers from B12), 13.07.15 (*P. phaseolispora* and *P. fatua* removed from part C and transferred to part F, other frequency of numbers from C13, drawings of *P. fatua* and *P. spadiceogrisea* changed, *P. praecox* totally removed, *P. groegeri* added, many changes in part F), 01.09.15 (*P. tephrophylla* once more because of other characteristics in the dried state added in C11*, other frequency of numbers from C10), 26.09.15 (main part C* changed), 19.11.15 (drawing of *P. arenosa* changed, *P. merdicola* one more integrated in key E, other frequency of numbers from E10), 02.12.15 (drawing of *P. merdicola* changed), 08.03.16 (data of *P. casca*, *niveobadia* changed), Additions in main part 2/2*, D8/8*, D9/9*), 19.05.16 (colored guidance), 23.05.16 (*P. senex* one more added in H12*, other frequency of numbers from H11), 18.11.16 (*P. pseudogordonii* rejected, other frequency of numbers from A15), 28.12.16 (*P. complutensis* added, other frequency of numbers from A15), 30.03.17 (*P. impexa* one more added in H14*, other frequency of numbers from H13), 08.04.17 (*Cystoagaricus lepidotoides* added in C10, other frequency of numbers from C8, *Cystoagaricus silvestris* replaced by *Cystoagaricus populina*, *Psathyrella hellebosensis* added in F16, other frequency of numbers from F13, *P. langei* added in D11*, other frequency of numbers from D8), 16.05.17 (data of *P. vinosofulva* changed), 31.07.17 (*Coprinopsis pseudomarciscibilis* added in A11*, other frequency of numbers from A10), 30.09.17 (*P. littoralis* as synonym of *P. halophila*), 25.10.17 (changes at *P. jacobssonii*, *supernula*), 09.11.17 (changes at *P. opaca*), 27.11.17 (changes at *P. sublatispora*), 03.03.18 (changes at *P. casca* and *spadiceogrisea*, *P. cascoides* and *marquana* added in part F, other frequency of numbers in part F).

Introduction:

The key includes most of the previously described *Psathyrella* species from Europe, in addition, some of which have since been transferred to other genera (*Coprinopsis*, *Cystoagaricus*, *Homophron*, *Kauffmania*, *Parasola*, *Typhrasa*). Not included is currently *P. paecilosperma*.

The dichotomous pairs are based predominantly on microscopic characteristics, to edit material also can be present for which no field notes. Only as an exception habitual or ecological characteristics of differentiation are used. However, it is certain that the difference between these clearly (e. g. tiny vs. large species; growing on sandy soil vs. dung). Measurements are rounded in the key part or for the benefit of the characteristic compared with the species descriptions slightly weighted differently.

It is essential to key out some species more than once, because they show a considerable variability (e. g. *P. senex*) or may represent collective species (e. g. *P. corrugis*). However, it is not possible to consider each extreme (e. g. very large fruitbodies, unusual shape of cystidia, abnormal spores). Should also be noted that various features are developmentally variable, e. g. thickened cell walls, colored underlining of the lamellae edge. The latter simplifies hereinafter called pinkish, but can also be red or reddish brown. Under the microscope, this backing is a yellowish, ocher or brownish line.

To verify the determination must be used a detailed description. Also, it's often to try alternative routes.

The colored bars (left) are to facilitate aid in finding the subkeys:

Main part – **A** – **B** – **C** – **D** – **E** – **F** – **G** – **H**

Notes on the features:

When the **spores measure** waives the average values, since even the absolute would be relevant. It should be noted that both minimum and maximum may be exceeded occasionally (e. g. with interspersed 2-spored basidia). Done in this case, an orientation to the majority. The same applies to the determination of the **spore shape and colour**.

A missing or existing **germ pore** is a useful feature, though not without problems. Are indispensable, fully mature spores under examination in potassium hydroxide (KOH) due to the better contrast is recommended.

To assess the frequency and distribution of **cheilocystidia** often several preparations from different sections of lamellae are required. Close to the cap often dominate sphaeropedunculate or clavate marginal cells, may occur near the stipe spread to the lamellae caulocystidia. The latter are not intended relevant characteristic.


















The decision whether **pleurocystidia** happen is to cut down only after a thorough search. Often pleurocystidia are very rare and only found close to the lamellae edge.

The details of **cap diameter** and **velum** to give an idea of the habit of the fruitbody. Also, the **habitat** occasionally valuable or even allow clear conclusions. Other supplementary information is provided only when deemed appropriate (e. g. distinct pink colour of the hat during drying, presence of a pseudorhiza).

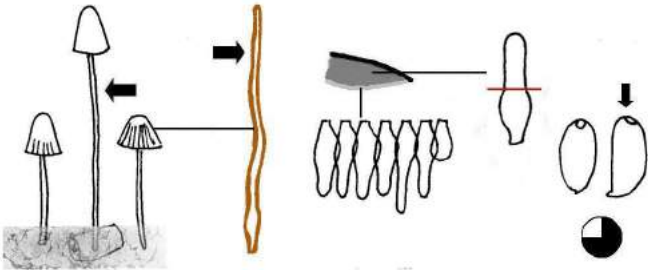
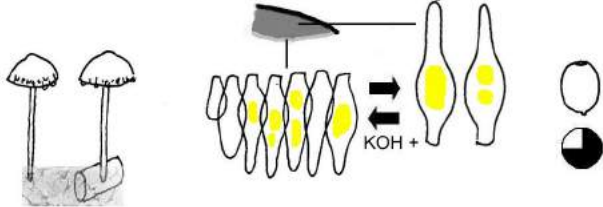
Used abbreviations:

C. = cap, Ch.= cheilocystidia, L. = lamellae, Pl. = pleurocystidia, P. = *Psathyrella*., Sp. = spores, St. = stipe, Syn. = synonym(s), V. = veil

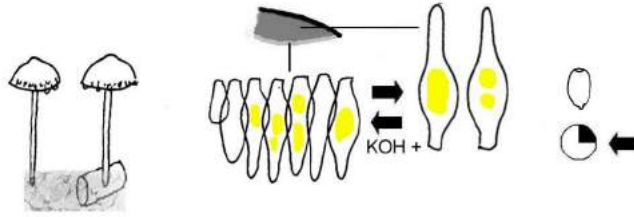
Used symbols:

							
Sp. hyaline	Sp. very bright	Sp. moderately bright	Sp. dark (subopaque)	Sp. black (opaque)	L.edge white	L.edge coloured	L.edge white, coloured underlined
							
soil, litter	sandy soil	open habitat	indoor	in a short time	after a long time	clamps absent	Pl. absent
	CaCO ₃ +	H ₂ O +	C +	N ₂ +	- H ₂ O	+ KOH	n +++ n ---
nerve expanding	calcareous	wet	burned ground	dung, fertilized	drying	in KOH	very numerous very rare

Main part

- 1 Cap with long brownish hairs.**
C. up to 55(65) mm broad. V. absent. Stipe often very long. Sp. 12-18(20) x 6,5-9,5(10) µm, germ pore eccentric. Ch. 20-80 x 7-20 µm. Soil, leaf litter, pieces of wood.
- 
- Parasola conopileus* (FR.) ÖRSTADIUS & E. LARSS.
(Syn.: *P. conopilus* (FR.: FR.) A. PERS. & DENNIS, *P. arata* (BERK.) W. G. SMITH, *P. atrospora* A. H. SM., *P. circellatipes* BENOIST, *P. graciloides* (PECK) SACC., *P. circellatipes* var. *microspora* A. H. SM., *P. conopilus* var. *subatrata* (BATSCH) CITERIN & BON)
- 1* Cap without hairs. 2**
- 2 (1) Veil absent or, if present, consisting of +/- cylindrical elements. 3**
- 2* Veil always present, consisting of globose elements, cap mealy-grained dusted. 12**
(see also *P. bivelata*)
- 3 (2) Cystidia with large oil drops (often yellowish in KOH). 4**
- 3* Cystidia otherwise. 5**
- 4 (3) Spores 7-9,5 x 4,5-5,5 µm, dark brown.**
C. up to 75(90) mm broad. V. sparse to distinct. Pl. (22)35-85 x 9,5-22 µm. Ch. 27-65 x 9,5-17,5 µm, crowded. Soil, pieces of wood, tree stumps.
- 
- Typhrasa gossypina* (BULL.) ÖRSTADIUS & E. LARSS.
(Syn.: *P. gossypina* (BUL.: FR.) A. PEARS. & DENNIS, *P. delineata* A. H. SM., *P. xanthocystis* P. D. ORTON)

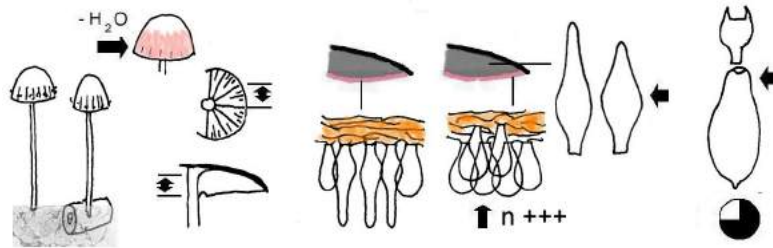
- 4* **Spores 5-6 x 3-4 μm , pale.**
 C. up to 55 mm broad. V. distinct. Pl. 40-75 x 12-18 μm . Ch 35-70 x 10-17 μm , crowded. Soil, dead wood.



Typhrasia nanispora ÖSTADIUS, HAUSKN. & E. LARSS.

- 5 (3) **Pleurocystidia present.** 6
 5* **Pleurocystidia absent or very rare.** A
 6 (5) **Cystidia strikingly with crystals and/or at least partly distinctly thickwalled.** B
 6* **Cystidia without or only rarely with crystals and predominatingly thinwalled.** 7
 7 (6) **Basidia predominantingly 2-spored.** 8
 (See also *P. corrugis*, *P. orbitarum*, *P. pseudogracilis*)
 7* **Basidia predominantingly 4-spored.** 11
 8 (7) **Spores up to 17(20) μm long.**

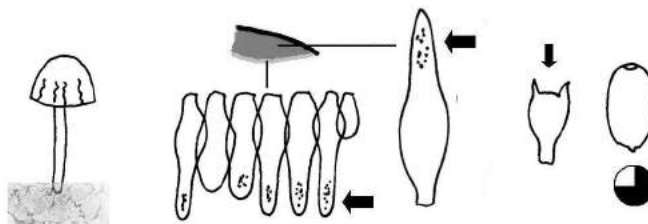
C. up to 25 mm broad, during drying often pinkish. V. scanty. L. edge mostly pigmented. Spores 12-17(20) x 6-9 μm , often apically prolonged. Pl. 35-65(80) x 10-17,5(20) μm . Ch. (25)35-65(70) x 7,5-17,5 μm , clavate marginal cells near the margin of c. very numerous. Soil.



P. prona (FR.) GILLET ss. ÖRSTADIUS

(Syn.: *P. megaspora* A. H. SM., *P. subrubella* A. H. SM.)

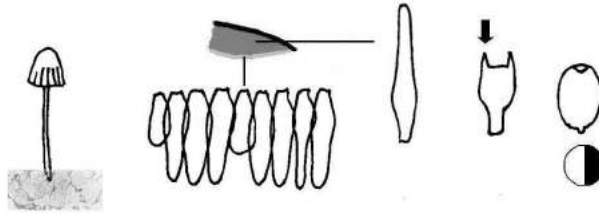
- 8* **Spores distinctly shorter.** 9
 9 (8) **Spores 13-15 μm long.**
 C. 20-40 mm broad. V. scanty. Sp. 13-15 x 7-8. Pl. 63-75 x 13-21 μm . Ch. 37-63 x 13-20(23) μm , densely packed. Cystidia often with granules. Soil, *Fagus* forest. 2-spored form of *P. bipellis*.



P. bipellis (QUEL.) A. H. SM.

(Syn.: *P. barlae* (BRES.) A. H. SM., *P. brooksi* A. H. SM., *P. macrocystidiata* ARNOLDS, *P. odorata* (PECK) SACC.)

- 9* **Spores shorter.** 10
 10 (9) **Pleurocystidia mostly slender fusiform, never subcapitate.**
 C. up to 11 mm broad. V. scanty. Sp. 8-9(10) x (5)5,5-6,5 μm . Pl. 32,5-50(60) x 7,5-12,5 μm . Ch. 20-35(45) x 7,5-10(12,5) μm , often closely packed. Soil, leaf litter.

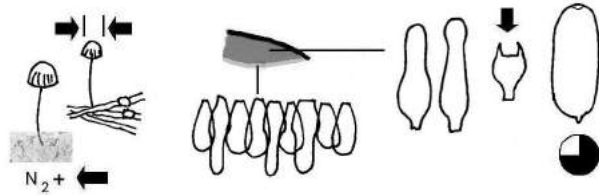


P. perpusilla KITS V. WAV.

10*

Pleurocystidia mostly utriform, often subcapitate.

C. 3-10 mm broad. V. scanty. Sp. (10)11-11,5(12,5) x 5,5-6,5 μm. Pl. 30-40 x 10-17,5 μm. Ch. 27,5-40 x 7,5-15 μm. Dead grass, hay, straw, dung. 2-spored form of *P. romagnesii*.



P. romagnesii KITS V. WAV.
(Syn.: *P. waverenii* ARNOLDS)

11 (7) **Germ pore always or predominatingly distinctly visible.**

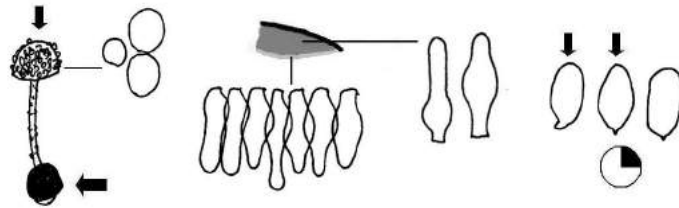
C

11* **Germ pore absent or not distinctly visible.**

D

12 (2) **On different basidiomycetes.**

C. up to 16(25) mm broad. V. strongly developed. Sp. 7-8,5(10) x 4-4,5 μm. Pl. 25-60 x 12,5-14,8 μm. Ch. 20-45 x 9-15 μm.



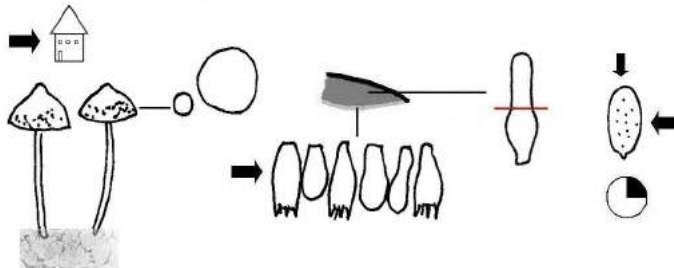
P. globosivelata GRÖGER
(Syn.: *P. friburgensis* GRÖGER)

12* **Habitat otherwise.**

13

13 (12) **Spores punctate, pleurocystidia absent.**

C. 20-30 mm broad. V. distinct, grey to greyish brown. Sp. 4,5-6,15(6,8) x 2,5-3,2(3,4) μm. Ch. not differentiated or shape like basidioles. On soil in a subtropical greenhouse, Spain.



P. ornatispora M. VILLARREAL & ESTEVE-RAVENTÓS
[not a *Psathyrella*-species, probaly *Mythicomyces*]

13* **Spores smooth, pleurocystidia present.**

14

14 (13) **Pileocystidia present.**

15

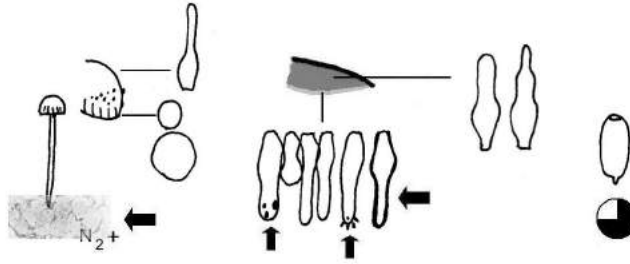
14* **Pileocystidia absent.**

16

15 (14) **Cheilocystidia partly with deposits and weakly thickened walls.**

C. 1,5-9 mm broad. V. scanty. Sp. (7)7,5-9(9,5) x 3,5-4,5 μm. Pl. 28-68 x 8-22 μm.

Ch. 24-32 x 6-10 µm. Dung.

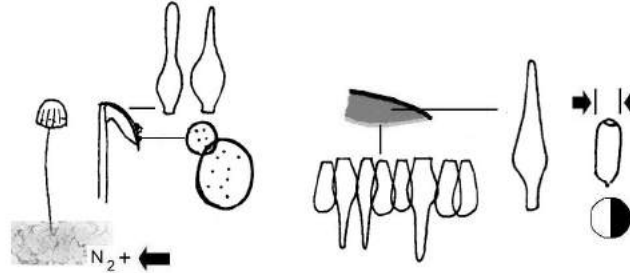


P. coprinoides A. DELANNOY, CHIAFFI, CORTECOUISSE & EYSSARTIER
(= *P. tenuicula* (P. KARST.) ÖRSTADIUS & HUHTINEN?)

15*

Cheilocystidia without deposits and thin-walled.

C. up to 20 mm broad. Sp. 5,8-7,4 x 3-3,7 µm. Pl. 20-30 x 4-9,5 µm. Pileocystidia 50 x 11 µm. Dung, especially wild boar.



P. tenuicula (P. KARST.) ÖRSTADIUS & HUHTINEN

(Syn.: *P. berlinensis* E. GERHARDT, *P. minima* PECK, *P. granulosa* ARNOLDS?, *Psathyrella coprinoides* A. DELANNOY, CHIAFFI, CORTECOUISSE & EYSSARTIER?, *Coprinus parvulus* ULJÉ & KEIZER)

16 (14) **Pleurocystidia mostly lageniform.**

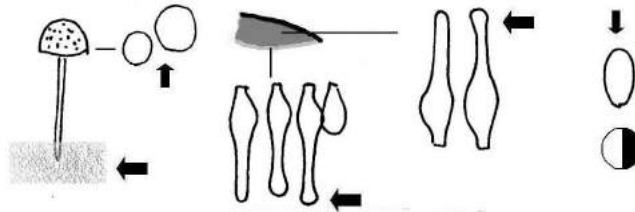
17

16* **Pleurocystidia mostly utriform.**

18

17 (16) **Pleurocystidia often capitate.**

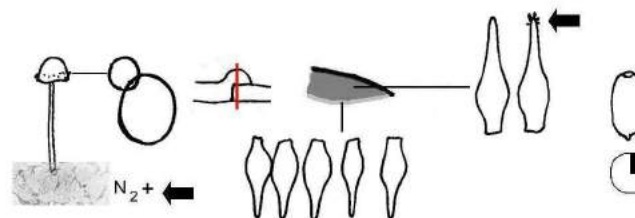
C. up to 12 mm broad. Vel. scanty. Sp. 8-9,2 x 4-4,6 µm, without germ pore. Pl. 55-80 x 12-22 µm. Ch. 30-75 x 9-22 µm. Cow pasture, sandy soil.



P. lyckeboensis ÖRSTADIUS & E. LARSS.

17* **Pleurocystidia never capitate.**

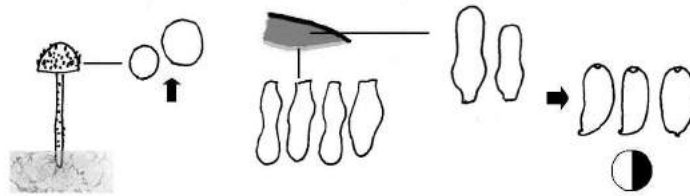
C. up to 8 mm broad, V. scanty. Sp. 7,8-8,5(9) x 3,5-4,5 µm. Pl. 26-28 x 7,5-8,5 µm. Ch. 18-27 x 7,5-9,5 µm. Cow dung.



P. granulosa ARNOLDS
(= *P. tenuicula* (P. KARST.) ÖRSTADIUS & HUHTINEN?)

18 (16) **Spores up to 11 µm long.**

C. 5-23 mm broad. V. distinct. Sp. 8,5-11 x 4,5-6 µm. Pl. 28-54 x 13-18 µm. Ch. 21-54 x 10-14 µm. Manured lawn.

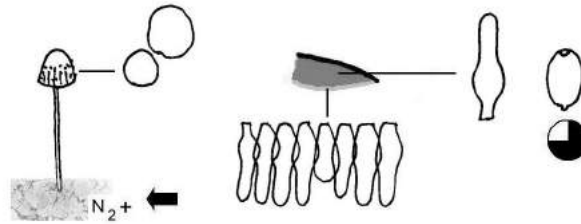


P. albifloccosa ARENAL, VILLARREAL & ESTEVE-RAVENTÓS

18*

Spores up to 9,5 µm long.

C. up to 14 mm broad. V. distinct. Sp. 7,5-9(9,5) x 4-5,5 µm. Pl. 20-37,5 x 7,5-12 µm. Ch. 18-36 x 6-12 µm. Dung.



P. sphaerocystis P. D. ORTON

Part A

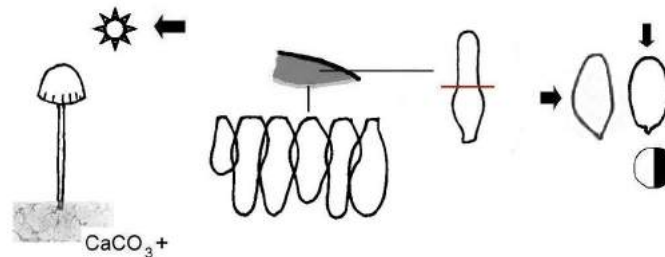
(Main part)

1 Germ pore absent or only very indistinctly visible. 2

1* Germ pore always distinctly visible. 5

2 (1) Spores often limoniform.

C. 5-15 mm broad. V. scanty. Sp. 6.5-9 x 4,5-6 µm. Ch. 30-46 x 12-15 µm, closely packed. Calcareous soil.



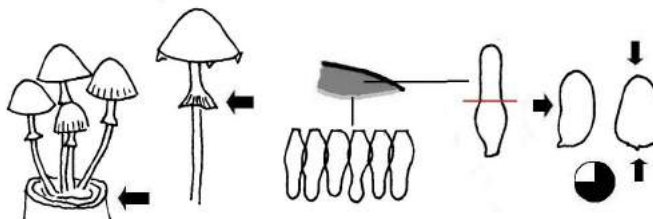
Coprinopsis submicrospora (HEYKOOP & G. MORENO) ÖRSTADIUS & E. LARSS.

(Syn.: *P. submicrospora* HEYKOOP & G. MORENO)

2* Spores never limoniform. 3

3 (2) Spores in water not strikingly pale.

C. up to 80(100) mm broad. V. scanty. Stipe with annulus. Sp. (7)8-10 x 4,5-6,5 µm. Ch. 25-40 x 7,5-12,5 µm, closely packed. Caespitose on or around stumps.



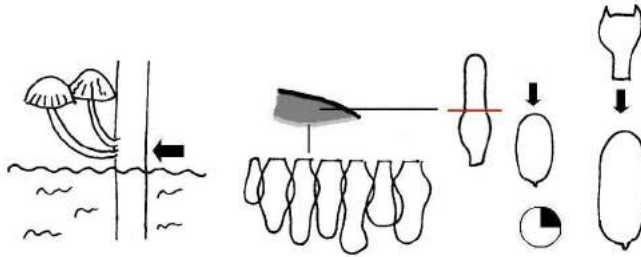
P. leucotephra (BERK. & BROOME) P. D. ORTON

3* Spores in water strikingly pale. 4

4 (3) Spores in water very pale brownish.

C. 5-15 mm broad. V. scanty. Sp. 9-12,5(13) x (5)5,5-8(8,5) µm, larger if 2-spored

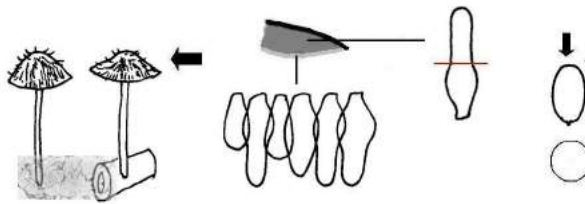
basidia present. Ch. 25-40(50) x 7,5-15(17,5) μm . On aquatic plant (especially *Typha* and *Phragmites*) just above the water.



P. typhae (KALCHBR.) A. PEARSON & DENNIS
(Syn.: *P. subaustralis* A. H. SM.)

4* **Spores in water very pale yellowish.**

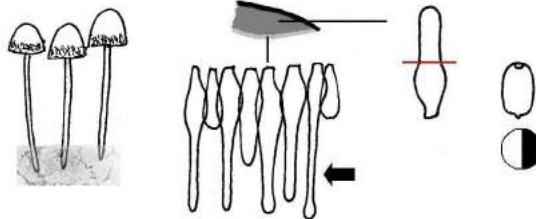
C. 25-53 mm broad. V. distinct. Sp. 8-12,5(13,5) x 5,5-7 μm . Ch. 30-45 x 12,5-17,5 μm . Stumps, dead wood.



Coprinopsis melanthina (FR.) ÖRSTADIUS & E. LARSS.
(Syn.: *P. melanthina* (FR.) ROMAGN., *P. agaves* (MAIRE) KONR. & MAUBL.)

5 (1) **Cheilocystidia up to 100 μm long.**

C. 10-30 mm broad. V. distinct. Sp. 7-9 x 4,5-5,8 μm . Ch. (40)45-100 μm , often subcapitat. Soil, between grass.

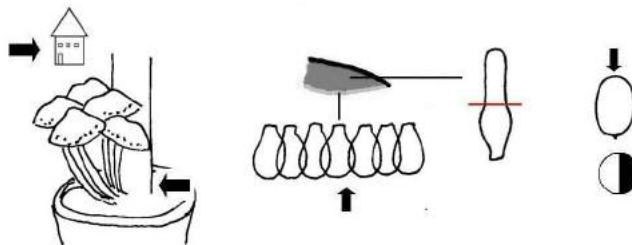


P. longicystidiata HEYKOOP & G. MORENO

5* **Cheilocystidia shorter.**

6 (5) **Spores in KOH pale.**

C. up to 20 mm broad. V. scanty. Sp. 6,3-8 x 4-5(5,5) μm . Ch. very rare, utriform; clavate marginal cells dominating. Only in buildings, caespitose on wood, especially *Yucca* palm.



P. lacuum HUIJSMAN

6* **Spores in KOH dark (brown).**

7 (6) **Clamps absent.**

7* **Clamps present.**

8 (7) **Habit like *Galerina*.**

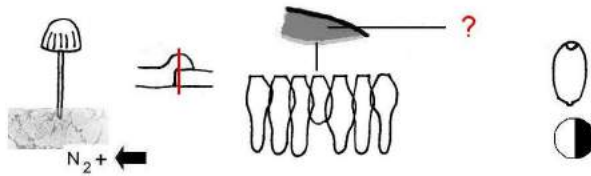
C. (1)4-12 mm breit. V. scanty. Sp. 9-10,5 x 5,5-6 μm . Pl. absent or extremely rare. Ch. 24-31 x 9-12 μm . Nitrogen-rich soil.

6

7

8

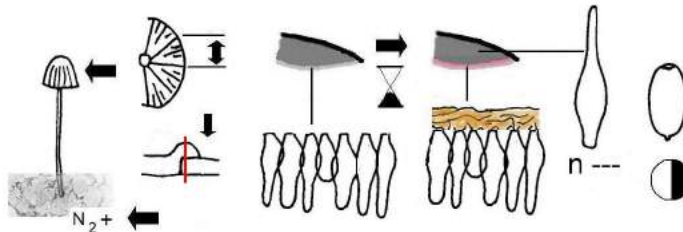
10



P. citerinii ESSARTIER

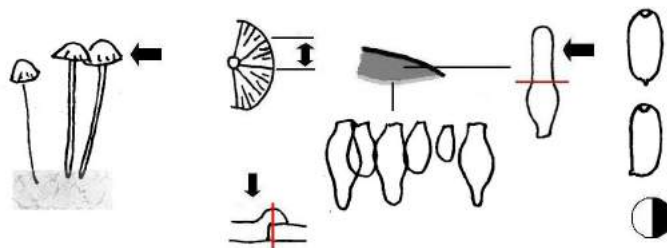
8* **Habit like *Mycena*.** 9

9 (8) **Cap up to 20 mm broad, brown to grey brown, striated highly upward.**
 V. scanty. L. distant, edge old sometimes reddish. Sp. 8-11,5(12,5) x 4,4-5,5 μm.
 Pl. extremely rare, overløkkabla. Ch. 15-45(55) x 6-16(20) μm. Nitrogen-rich soil.



P. effibulata ÖRSTADIUS & E. LUDWIG

9* **Cap up to 13 mm broad, red brown, striated on the margin.**
 V. scanty. L. distant, edge white. Sp. 9-12,5(14,5) x 5-6,5(8) μm. Pl. absent. Ch. 25-35 x 7-15 μm. Soil.

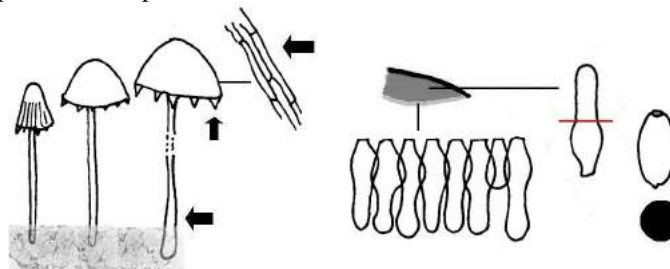


P. complutensis HEYKOOP & G. MORENO

10 (7) **Spores in KOH dark blackish brown.** 11

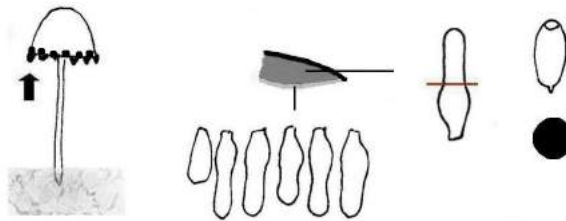
10* **Spores in KOH brown.** 12

11 (10) **Veil only appendiculate on the margin of the cap, spores up to 15 x 7,5 μm.**
 C. up to 40(60) mm broad. V. young distinct, a longer time as denticles on the edge of the cap. Sp. (10-) 11,2-15 x 5,5-7,5 μm. Ch. 25-47,5(60) x 7,5-17,5 μm, closely packed. Soil, pieces of wood.



Coprinopsis marcescibilis (BRITZELM.) ÖRSTADIUS & E. LARSS.
 (Syn.: *P. marcescibilis* (BRITZELM.) SING., *P. delicatella* A. H. SM.,
P. elwhaensis A. H. SM., *P. involuta* (ROMAGN.) M. M. MOSER)

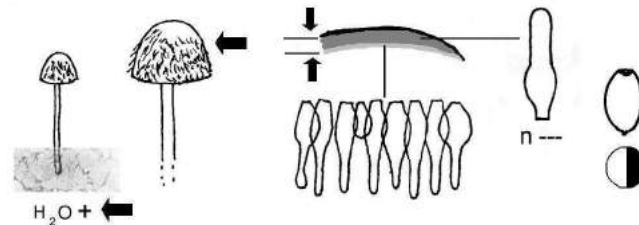
11* **Veil also above the margin of the cap, spores up to 17 x 8 μm.**
 C. up to 50 mm broad. Sp. 11-17 x 6-8 μm. Ch. 25-40 x 11-15 μm. Calcareous loamy soil.



Coprinopsis pseudomarcrescibilis HEYKOOP, G. MORENO & P. ALVARADO

12 (10) **Cheilocystidia lageniform, top small.**

C. up to 35 mm broad. V. strongly developed. L. narrow. Sp. 8-10(12) x 4,5-5,5(6) μm . Ch. 25-40(55) x 10-15 μm , partly with crystals. Pl. absent or extremely rare. Wet soil, pieces of wood.



Coprinopsis caniceps (KAUFFMAN) ÖRSTADIUS & E. LARSS.
(Syn.: *P. caniceps* (KAUFFM.) A. H. SM., *P. lanuginosa* A. H. SM.)

12* **Cheilocystidia utriform, clavate or cylindrical, top broadly obtuse.**

13

13 (12) **Spores predominantly up to 8(9) μm long.**

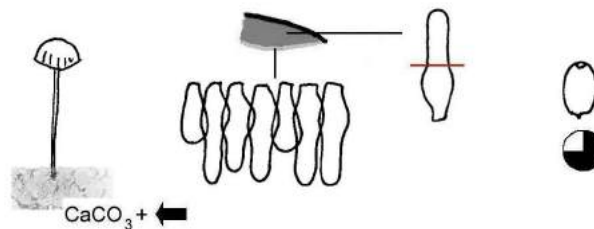
14

13* **Spores predominantly longer.**

16

14 (13) **Cheilocystidia up to 45 μm long.**

C. up to 30 mm broad. V. scanty. Sp. 6,5-8 x 3,5-5 μm . Ch. 15-45 x 8-20 μm . Soil, pieces of wood.



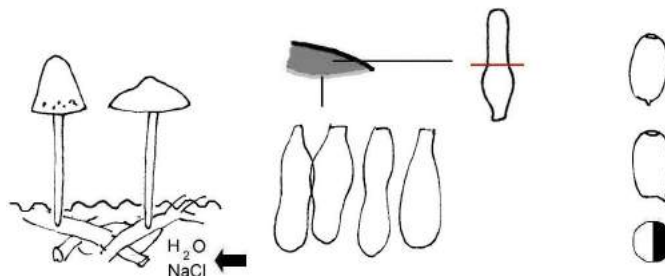
P. microsporoides HEYKOOP & G. MORENO
(Syn.: *P. badiophylla* var. *microspora* Kits v. Wav.)

14* **Cheilocystidia longer.**

15

15 (14) **On plant debris in the brackish water.**

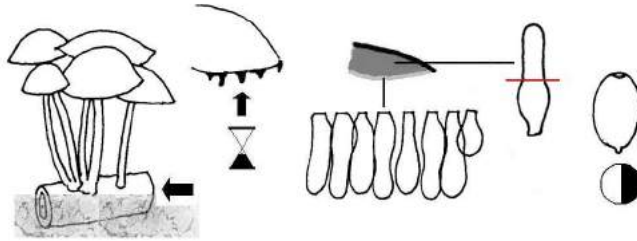
C. up to 50 mm broad. V. scanty. Sp. 6,3-10,7 x 4,5-5,9 μm . Ch. 30-65 x 10-15 μm .



P. halophila ESTEVE-RAVENTÓS & ENDERLE
(Syn.: *P. littoralis* G. G. CORRIOL)

15* **Habitat otherwise.**

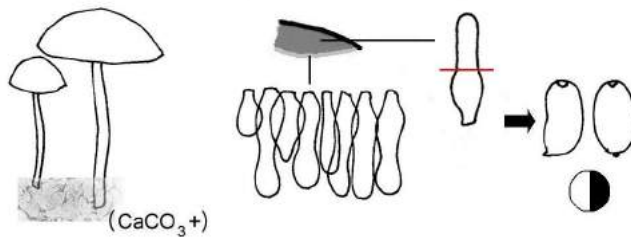
C. up to 70(90) mm broad. V. young distinct. Sp. 6,5-9 x (3,5)4-5(5,5) μm . Ch. (25)30-70(90) x 10-20 μm , closely packed. (Mostly) caespitose on or near wood. Collective species, morphological not separable.



***P. candolleana* (FR.: FR.) MAIRE apud MAIRE & WERNER**

(Syn.: *P. appendiculata* (BULL.) MAIRE, *P. coronata* (FR.) M. M. MOSER, *P. egenula* (BERK. & BROOME) M. M. MOSER, *P. elegans* ROMAGN., *P. hymenoccephala* (PECK) A. H. SM., *P. jalapalensis* A. H. SM., *P. membranacea* A. H. SM., *P. microlepidota* P. D. ORTON, *P. proxima* ROMAGN., *P. pseudocandolleana* A. H. SM., *P. rugoproxima* (PARKER) A. H. SM., *P. rupchandii* A. H. SM., *P. scotospora* ROMAGN., *P. spintrigera* (FR.) KONR. & MAUBL., *P. thiersii* A. H. SM., *P. candolleana* var. *solitaria* A. H. SM.)

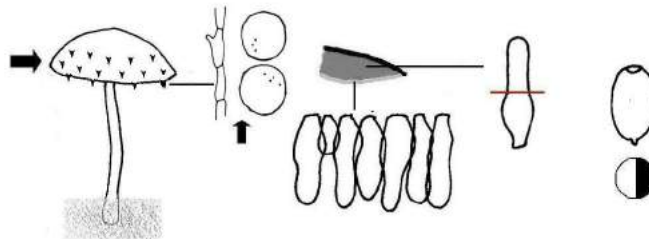
- 16 (13) **Spores 11,5-15,5 x (5,8) 6,5-7 μm.**
C. up to 25 mm broad. V. scanty. Ch. 25-55 x 10-18 μm. Soil.



***P. badiophylla* (ROMAGN.) BON**

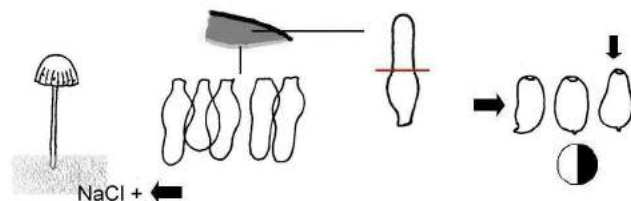
(Syn.: *P. badiophylla* var. *neglecta* (ROMAGN.) G. HIRSCH)

- 16* **Spores shorter.** 17
17 (16) **Spores mostly phaseoliform, veil cells cylindrical.** 18
17* **Spores not phaseoliform, veil cells partly globose.**
C. up to 45 mm broad. Vel. distinct, dimorphic. Sp. 7,5-10,5(11,2) x 4,5-6,7 μm.
Ch 24,5-90 x 8-24,5 μm, closely packed. Soil, mediterranean species.



***P. bivelata* CONTU**

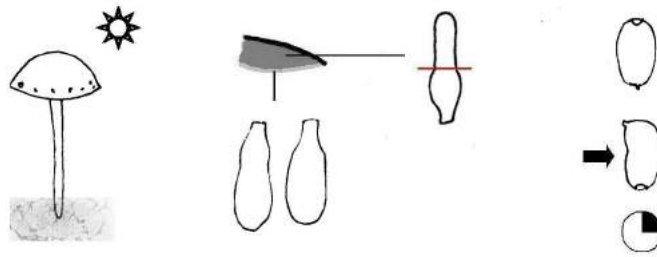
- 18 (17) **On salty moist soil.**
C. up to 20 mm broad. V. scanty. Sp. 7-11,5 x 5-6,5 μm. Ch. 30-45 x 10-18 μm.
Salty, moist soil, near *Cladium mariscus*, Spain.



***P. halophila* ESTEVE-RAVENTÓS & ENDERLE**

(Syn.: *P. littoralis* G. G. CORRIOL)

- 18* **Habitat otherwise.** 19
19 (18) **In open land, spores up to 5,5 μm broad.**
C. up to 60 mm broad. L. brownish. V. scanty. Sp. 7-11 x 4,5-5,5 μm. Ch. approximately 40 x 13 μm. Grasslands, Uzbekistan.

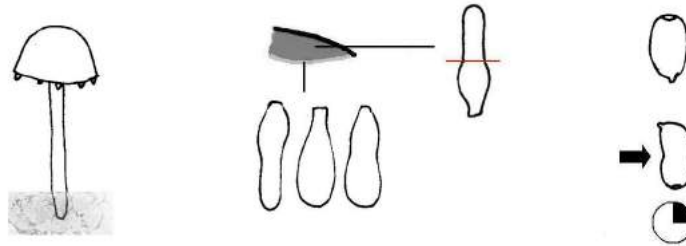


P. gramina KALAMEES

19*

In forests, spores up to 7 µm broad.

C. up to 60 mm broad. L. brown with a purple tinge. V. scanty. Sp. 8,5-12 x 5-7 µm. Ch. 35-50 x 8,5-15 µm. Terrestrial in woods, Turkmenistan.



P. badhyzensis KALAMEES

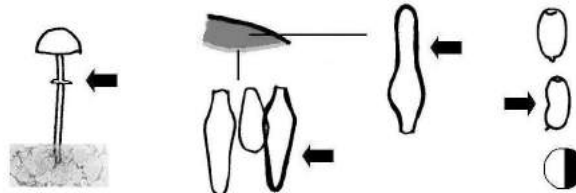
Part B

(Main part)

1

Stipe with a membranous annulus.

C. up to 25 mm broad. V. sparse. Sp. 9-11 x 5-6 µm. Pl. 45-85 x 9-22 µm. Ch. 30-60 x 10-18 µm. Soil, coniferous forest, northern species.



P. versterholtii ÖRSTADIUS & E. LARSS.

1*

Stipe without an membranous annulus.

(If the annulus is fibrous see also *P. langei* and *P. fibrillosa*)

2

2

(1) **Spores often without distinctly visible germ pore.**

3

2*

Spores with always distinctly visible germ pore.

8

3

(2) **Cystidia with strongly thickened neckwalls.**

4

3*

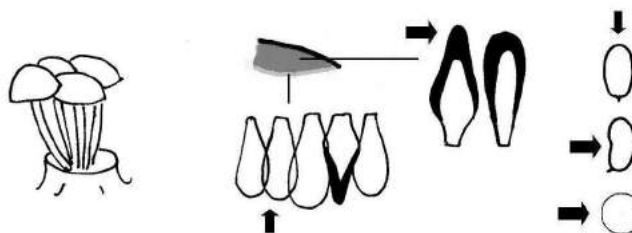
Cystidia otherwise.

5

4

(3) **Lamellae edge dominated by clavate cells.**

C. up to 30 mm broad. V. absent. Sp. 5-6 x 3-4 µm. Pl. 32-44 y 8-14 µm. Dead wood, Russia, USA.

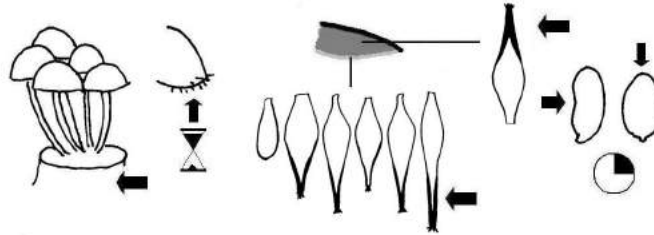


Homophron camptopodum (SACC.) ÖRSTADIUS & E. LARSS.

4*

Lamellae edge with many true cystidia.

C. 20-100 mm broad. V. absent. Sp. 6,5-11(12) x 3,5-5,5(6,5) μm . Pl. (30)55-70(80) x 10-20(30) μm . Ch. 30-85 x 10-25 μm , closely packed. Margin of cap with Hairs, 60-130 x 7,5-10 μm (only at young caps distinct). Soil, wood, mostly caespitose.

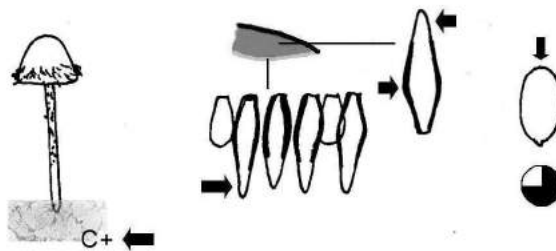


***Homophron sarcocephalus* (FR.) A. MELZER**

(Syn.: *P. sarcocephala* (FR.) SING., *P. spadicea* (SCHAEFF.) SING., *Homophron spadiceum* (P. KUMM.) ÖRSTADIUS & E. LARSS., *P. variata* A. H. SM.), *P. imleriana* VOLDERS, *P. littenii* A. H. SM.?, *P. populorum* TRUEBLOOD & A. H. SM.?, *P. rhodospora* WIEAVER & A. H. SM.?)

5 (3) **Pleurocystidia fusiform.**

C. up to 50 mm broad. V. distinct. Sp. 6,5-9 x 3,5-4,5 μm . Pl. (32,5)35-55 x 10-15 μm . Ch. 22,5-55 x 7,5-12,5(15) μm , without crystals. Fire places.



***P. pennata* (FR.) A. PEARSON & DENNIS**

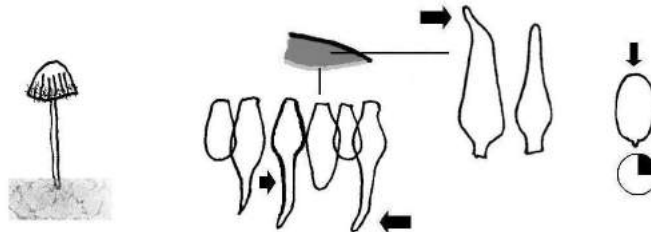
(Syn.: *P. carbonicola* A. H. SM.)

5* **Pleurocystidia utriform to lageniform.**

6

6 (5) **Pleurocystidia mucronat, extension often bent.**

C. up to 35 mm broad. V. distinct. Sp. (6,5)7-8 x 4,5-5(5,5) μm . Pl. 25-65 x 9-15 μm . Ch. 25-45 x 7,5-14 μm , often with bent extension. Soil, moss.



***P. umbrina* KITS V. WAV.**

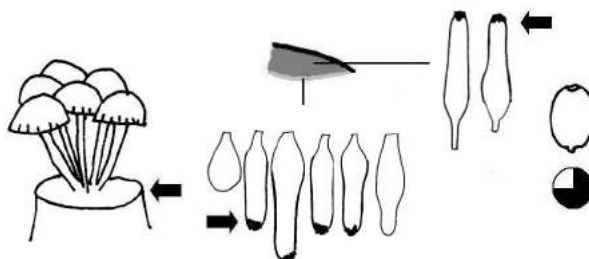
(Syn.: *P. galerooides* ROMAGN., *P. subumbrina* KITS V. WAV. & ÖRSTADIUS)

6* **Pleurocystidia otherwise.**

7

7 (6) **Pleuro- and cheilocystidia often with apically crystals.**

C. 12-45 mm broad. V. absent. Sp. (6)6,5-8(9) x 3,5-5,5 μm . Pl. 30-55(70) x 7,5-15(20) μm , often with deposits. Ch. 20-70 x 10-20 μm , often with deposits, closely packed. Caespitose on stumps.



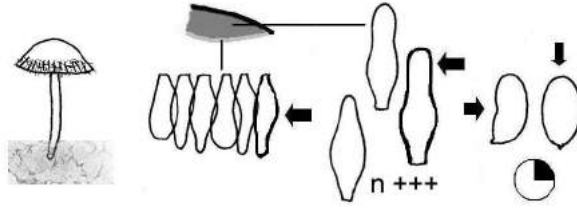
***Homophron cernuum* (VAHL: FR.) ÖRSTADIUS & E. LARSS.**

(Syn.: *P. cernua* (VAHL: FR.) M. M. MOSER ex M. LANGE, *P. ivoensis* ÖRSTADIUS, *P. papyracea* (PERS.: FR.) VASUTOVÁ, *P. polycephala* (FR.) A. H. SM. ss. A. H. SM., *P. sarcocephala* (FR.) SING. ss. KRIEGLSTEINER)

7*

Pleuro- and cheilocystidia without apically crystals.

C. up to 40(55) mm broad. V. distinct. Sp. 6,5-8,5(9) x 3,5-5 µm. Pl. 40-70 x 10-16 µm, very numerous. Ch. (15)22-55(60) x 7,5-17,5 µm. Soil, pieces of wood.



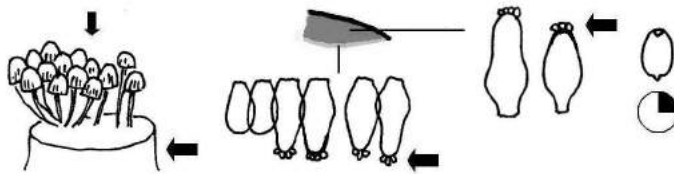
***P. cortinarioides* P. D. ORTON**

(Syn.: *P. frustulenta* (FR.) A. H. SM. ss. KITS V. WAV. non ss. A. H. SM., *P. multicystidiata* KITS V. WAV.)

8 (2) **Walls of cystidia indistinctly thickened.** 9

8* **Walls of cystidia at least partly distinctly thickened.** 15

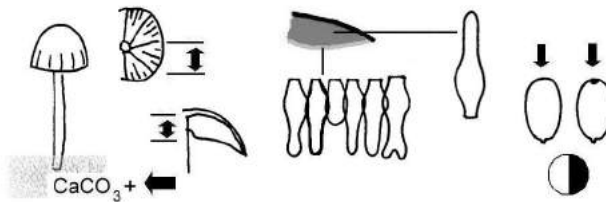
9 (8) **Cystidia with many crystals.**
 C. 5-20 mm broad. V. scanty. Sp. 5,5-7 x 3,5-4,5 µm. Pl. 27,5-40 x 12,5-15(17,5) µm. Ch. 20-40 x 10-15(17,5) µm. Dead wood, stumps.



***P. pygmaea* (BULL.: FR.) SING.**

9* **Cystidia without or only with very indistinct crystals.** 10

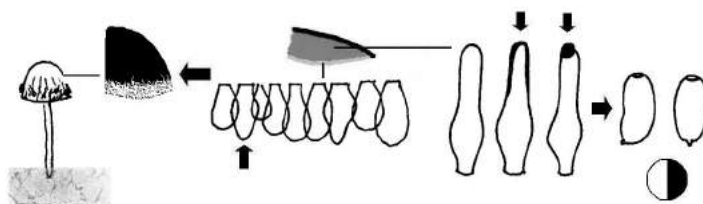
10 (9) **Spores up to 12,5 µm long.**
 C. up to 30 mm broad. V. scanty. L. broadly adnate, distant. Sp. 9,5-12,5 x 5,5-7,5 µm. Pl. 23-55 x 8-17 µm. Ch. 20,5-47 x 6,8-17 µm. Dry, calcareous soil.



***P. magnispora* HEYKOOP & G. MORENO**
 (Syn.: *P. mesobromionis* ARNOLDS)

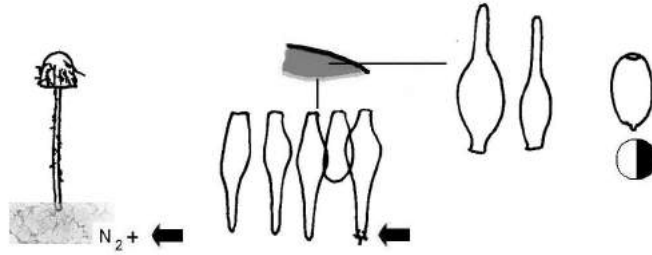
10* **Spores shorter.** 11

11 (10) **Lamellae edge dominated by clavate marginal cells.**
 C. up to 60 mm broad. V. distinct, in stark contrast to the fresh cap. Sp. 7-9,5 x 4-5 µm. Pl. 30-65(75) x 10-20 µm, often with slightly thickened walls or mucoid drops. Ch. 20-45 x 9,5-17,7 µm, +/- "rhomboid", hardly protruding. Soil, pieces of wood.



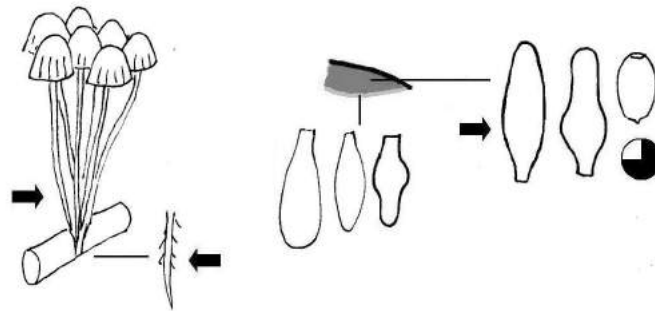
***P. niveobadia* (ROMAGN.) M. M. MOSER**

- 11* Lamellae edge with many true cheilocystidia. 12
 12 (11) Pleurocystidia not forked. 13
 12* Pleurocystidia often forked. 14
 12 (11) On dung, pleurocystidia lageniform.
 C. 5-20 mm broad. V. distinct. Sp. 8,5-11 x 4-5,5 µm. Pl. 30-60 x 7-16 µm. Ch. 20-45 x 7-16 µm, sometimes with crystals. Dung, fertilized places.



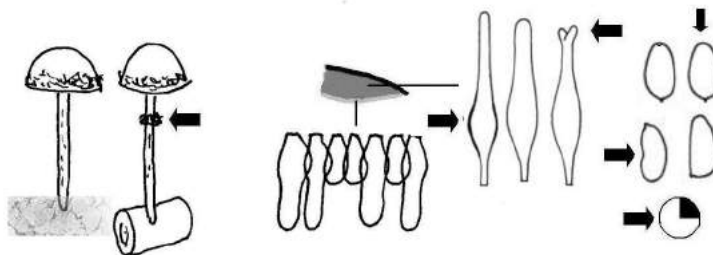
P. scatophila ÖRSTADIUS & E. LARSSON

- 13* Habitat otherwise, pleurocystidia fusiform.
 C. up to 30 mm broad. V. absent or very volatile. St. rooting. Sp. (7,3-)8,2-9,8(-12) x 4,5-5,7 µm. Pl. 30-52 x 9,5-17 µm. Ch. 20-40 x 7,5-14 µm. Caespitose on dead wood.



P. boreifasciculata KYTÖV & LIIMAT.

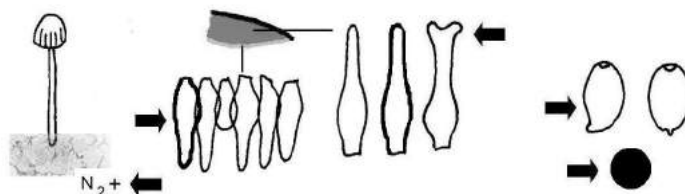
- 14 (12) Pleurocystidia up to 80 µm long.
 C. up to 70 mm broad. V. distinct. Stipe sometimes with annulus. Sp. 7,5-10 x 4,5-5,5 µm. Pl. 55-80 x 13-19 µm, sometimes with thickened walls. Ch. 30-50 x 14-18(20) µm. Soil, wood.



P. langei (MALENCON) CONTU

(Syn: *P. longistriata* var. *langei* (MALENCON) NEVILLE & FOUCHIER, *P. malenconii* FOUCHIER, *P. rostellata* ÖRSTADIUS,)

- 14* Pleurocystidia up to 60 µm long.
 C. 3-6 mm broad. V. scanty to distinct. Sp. 8-9 x 4,5-5,5 µm. Pl. 25-45(60) x 8-14 µm. Ch. 25-40 x 8-14 µm, clavate marginal cells small, scattered. Cow dung.

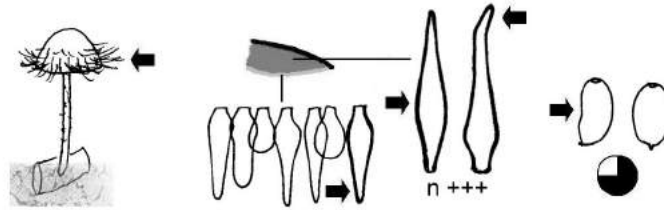


P. fimiseda ÖRSTADIUS & E. LARSSON

- 15 (8) Cystidia without or with indistinct crystals. 16

16 (15) **Pleurocystidia with thick-walled apex.**

C. up to 60 mm broad. V. distinct. St. often with annulus. Sp. 7-8(9) x (3,5)4-5 μm . Pl. 60-80 x 7,5-14 μm , top often bent, very numerous. Ch. 45-60(70) x 10-16 μm , closely packed. Soil, dead wood (*Fagus*).

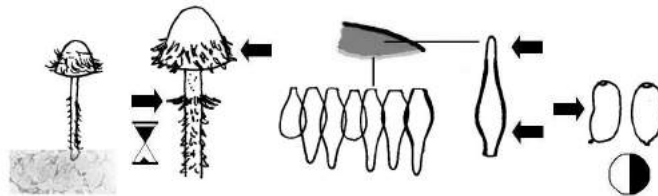
***P. spintrigeroides* P. D. ORTON**

(Syn.: *P. indecorosa* A. H. SM., *P. avellaneifolia* var. *perplexa* A. H. SM.)

16*

Pleurocystidia with thinn-walled apex.

C. up to 35(45) mm broad. V. strongly developed, cells up to 100(150) μm long. St. often with a fibrous annular zone. Sp. (7)8-10 x 4,5-5,5 μm . Pl. 40-80 x 8-17,5 μm . Ch. 30-65 x (7,5)10-17,5 μm , often closely packed. Soil, dead wood.

***P. fibrillosa* (PERS.: FR.) MAIRE**

(Syn.: *P. artemisiae* (PASS.) KONR. & MAUBL. ss. auct. rec., *P. lanatipes* A. H. SM., *P. squamosa* (P. KARST.) M. M. MOSER ss. M. M. MOSER ex A. H. SM. non P. KARST.)

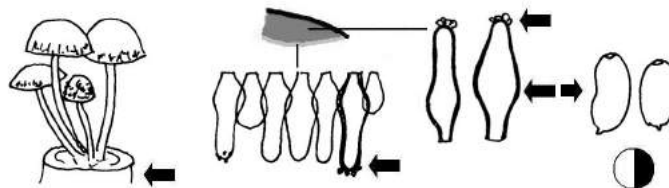
17 (15) **Walls of pleurocystidia only thickened predominantly in the neck.*****Homophron cernuum* (VAHL: FR.) ÖRSTADIUS & E. LARSS.**

(see B 7)

17*

Walls of pleurocystidia completely thickened, not predominantly in the neck.

C. 10-45(60) mm broad. V. scanty. Sp. (7,5)8-11 x 4,5-6,5 μm . Pl. 40-60 x 12,5-20 μm . Ch. 32,5-55(60) x 10-20 μm , closely packed. Solitary or caespitose on stumps.

***P. olympiana* A. H. SM.**

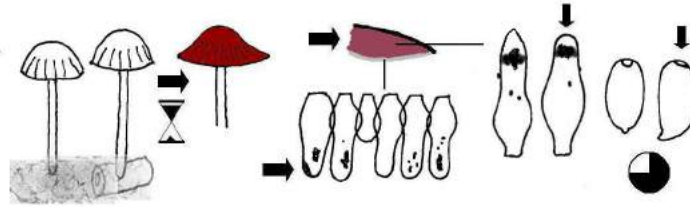
(Syn.: *P. amstelodamensis* KITS V. WAV., *P. cloverae* A. H. SM., *P. ferrugipes* A. H. SM., *P. solitaria* A. H. SM.?, *P. olympiana* f. *amstelodamensis* KITS V. WAV., *P. olympiana* f. *caespitosa* KITS. V. WAV.)

Part C

(Main part)

- | | | |
|----|--|---|
| 1 | Germ pore weakly to distinctly eccentric. | 2 |
| 1* | Germ pore central. | 3 |
| 2 | (1) Cystidia often with refractive inclusions.
C. up to 60 mm broad, distinctly wrinkled, strikingly reddish tinted. V. mostly distinct. Sp. (10)11-15(18,5) x 6-9(10,5) μm , germ pore weakly eccentric. Pl. 52,5- | |

100 x 12-30 µm. Ch. 35-80 x 10-25 µm, closely packed. Soil, pieces of wood.

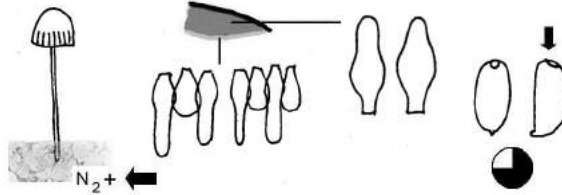


***P. bipellis* (QUÉL.) A. H. SM.**

(Syn.: *P. barlae* (BRES.) A. H. SM., *P. brooksi* A. H. SM., *P. macrocystidiata* ARNOLDS, *P. odorata* (PECK) SACC.)

2* Cystidia without refractive inclusions.

C. up to 25 mm broad. V. scanty. Sp. 10-14,5(16) x 6,5-8(8,5) µm, germ pore mostly eccentric. Pl. 25-60 x 10-16,5 µm. Ch. 20-55 x 7,5-16,5 µm. Dung.

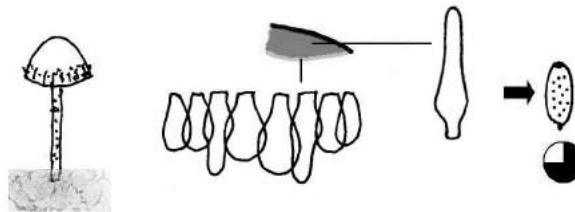


***P. saponacea* F. C. MOLLER**

(Syn.: *P. coprophila* WATLING, *P. equina* A. H. SM., *P. fimetaria* WATLING)

3 (1) Spores rough.

C. up to 70 mm broad. V. distinct. Sp. 6,5-9 x (3-) 3,5-5 µm. Pl. 20-60 x 8-15 µm. Ch. 22,5-45 x 8-12,5 µm, very rare, often absent. Leaf litter in deciduous forest.



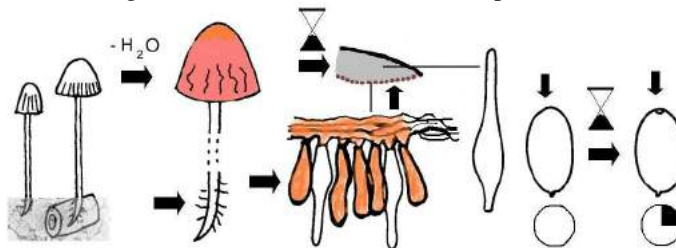
***P. pseudocasca* (ROMAGN.) ROMAGN. ex KITS V. WAV.**

3* Spores smooth.

4

4 (3) Spores for a long time hyalin.

C. 7-30 mm broad, during drying strikingly pink. L. pale. V. absent. Sp. 12-14,5 x 6-7 µm. Pl. 38-67 x 11-17 µm. Ch. 32-61 x 7,5-14 µm, frequently, lamellae edge with dots, consisting of thickwalled clavate cells. Soil, pieces of wood.



***P. corrugis* (PERS.: FR.) KONR. & MAUBL.**

(Syn.: *P. amarescens* ARNOLDS)

4* Spores otherwise.

5

5 (4) Spores up to 6,5 µm long.

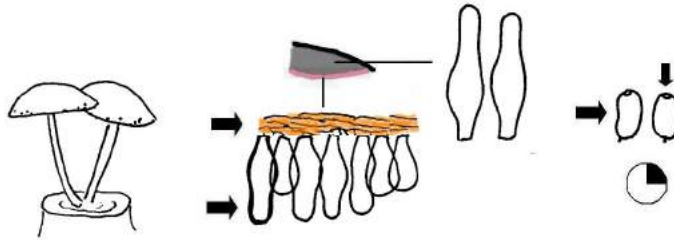
6

5* Spores longer.

8

6 (5) Lamellae edge reddish underlined.

C. 25-40 mm broad. V. scanty. Sp. 5-6 x 3-3,7 µm. Pl. 30-45 x 8-13,7 µm. Ch. 17-37 x 8-12 µm, partly with slightly thickened walls. Stumps of *Picea*.



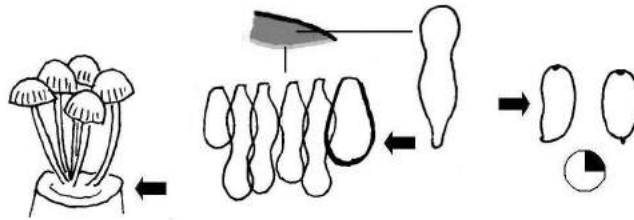
P. carinthiaca P. VOTO

6* Lamellae edge not reddish underlined.

7

7 (6) *Pleurocystidia utriform.*

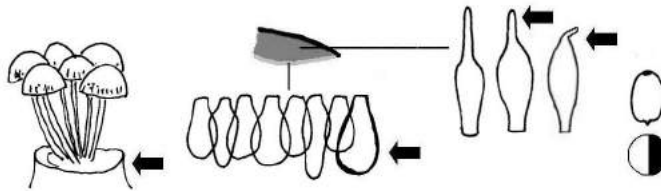
C. up to 45 mm broad. V. scanty. Fresh mushroom with sweetish odour. Sp. 5,5-6,5 x 3-3,5 µm. Pl. 40-52 x 10-17,5 µm. Ch. 30-40 x 10-15 µm, closely packed. Caespitose on wood of conifers.



P. fragrans A. H. SM.

7* *Pleurocystidia lageniform.*

C. up to 45(50) mm broad. V. scanty. Sp. 5-6,5(7) x 3-3,8 µm. Pl. 20,5-45 x 10-15(17,5) µm. Ch. (15)20-35(40) x 7,5-15 µm, very scattered. Around stumps.



P. laevissima (ROMAGN.) SING.

8 (5) Spores in front view partly triangular, irregular or strikingly round.

9

8* Spores in front view elliptical or ovoid.

13

9 (8) Cystidia often with deposits, blueish green in NH₄OH; on wood.

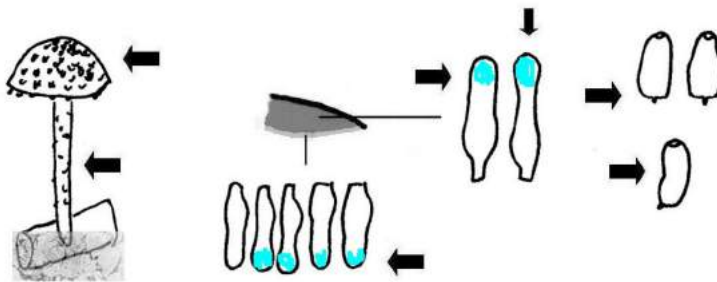
10

9* Cystidia without such deposits; on soil.

11

10 (9) Spores mostly long ovoid, clavate marginal cells very rare or absent.

C. up to 40 mm broad. V. strongly developed, fibrils ochraceous to brown. Sp. 8-10 x 4-5 µm, ovoid to irregular, phaseoliform. Pl. 38-60 x 10-15 µm. Ch. similar. Dead wood of *Populus* and *Quercus*.

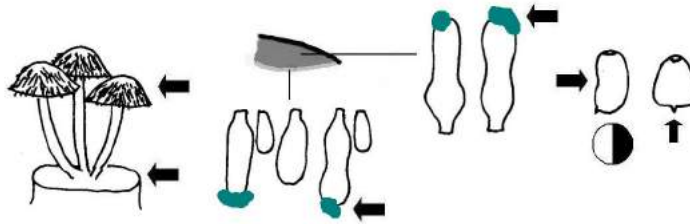


Cystoagaricus lepidotoides (A. H. SM.) MUÑOZ
(Syn.: *Psathyrella lepidotoides* A. H. SM.)

10* Spores mostly short ovoid, clavate marginal cells numerous.

C. up to 50(70) mm broad. V. strongly developed, fibrils ochraceous to brown. Sp.

6,5-8,5(10) x 4,5-6 µm, ovoid to triangular and strongly phaseoliform. Pl. (35)47,5-70 x 9-22,5 µm. Ch. 30-55 x 8-20 µm. Dead wood of *Populus* (and *Fagus*).

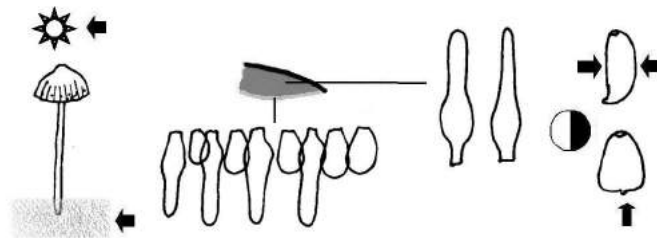


Cystoagaricus populina (BRITZELM.) MUÑOZ

(Syn.: *P. populina* (BRITZELM.) KITS V. WAV., *P. sylvestris* (GILLET) KONR. & MAUBL, *Cystoagaricus sylvestris* (GILLET) ÖRSTADIUS & E. LARSS., *P. hispida* HEINEM.?)

11 (9) **Cheilocystidia mostly lageniform.**

C. up to 20 mm broad. V. scanty. Sp. 7-9 x 4,5-5,5 µm. Pl. 35-60 x 9-15 µm. Ch. 30-45 x 7,5-15 µm. Sandy soil, dunes.



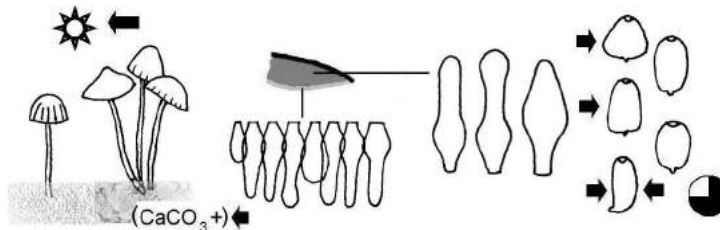
P. seymourensis A. H. SM.

11* **Cheilocystidia mostly lageniform.**

12

12 (11) **In open lands.**

C. up to 30(45) mm broad. V. scanty. Sp. 7-10(11) x 4,5-7,5 x 4,5-6,5(7) µm, triangular (sometimes only few) or roundly. Pl. 30-50(60) x 10-15(17,5) µm, without or with always colourless deposits. Ch. (20)25-45 x 7,5-15 µm, closely packed. Calcereous soil, meadows.

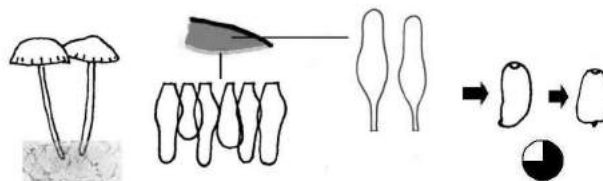


P. panaeoloides (MAIRE) SVRCEK ex ARNOLDS

(Syn.: *P. ovatispora* A. H. SM.)

12* **Not in open lands.**

C. up to 50(75) mm broad. V. scanty. Sp. 9-11,5(12,5) x (4,5)5-7 µm, mostly ovoid, often triangular, also lentiform. Pl. (35)47,5-65(80) x 12,5-17,5(20) µm. Ch. 30-70 x (7,5)10-17,5 µm, closely packed. Soil, pieces of wood.



P. tephrophylla (ROMAGN.) M. M. MOSER ex BON

(Syn.: *P. fusca* (SCHUMACH.) A. PEARSON, *P. abieticola* A. H. SM.)

13 (8) **Spores at least partially very strikingly phaseoliform.**

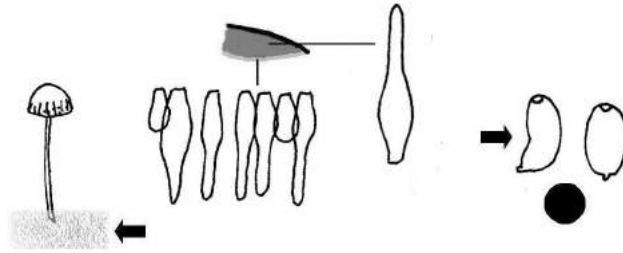
(see also *P. cotonea*).

13

13* **Spores at most slightly phaseoliform.**

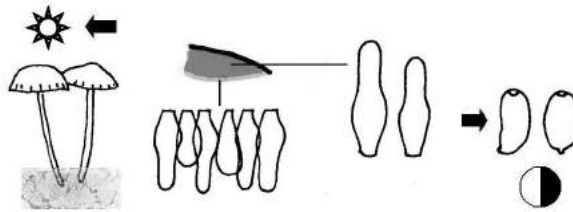
14

- 14 (13) **Pleurocystidia lageniform.**
 C. 10-25 mm broad. V. scanty. Sp. (8,5)9-11(12,5) x 4,5-6(7) μm . Pl. 35-65 x 8-13(15) μm . Ch. 25-40(50) x 8-20 μm , closely packed. Dunes, sandy soil.



P. flexispora T. J. WALLACE & P. D. ORTON

- 14* **Pleurocystidia utriform.**
 C. up to 28(35) mm broad. V. scanty. Sp. 9,7-11,5(12,5) x 5,2-6(6,5) μm , mostly phaseoliform. Pl. 35-65 x (10)12-20 μm . Ch. 25-54 x 10-18 μm . Observed on a cornfield.



P. agraria ENDERLE (ad. int.)

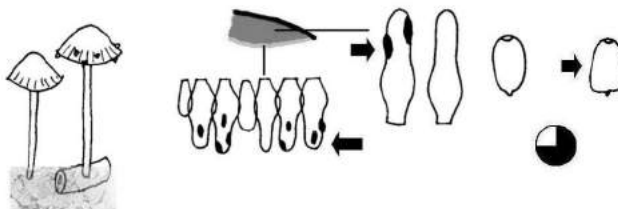
- 15 (13) **Cystidia with conspicuous deposits.** 16

- 15* **Cystidia without conspicuous deposits.** 23

- 16 (15) **Deposits in NH_4OH without greenish colour.** 17

- 16* **Deposits in NH_4OH greenish.** 19

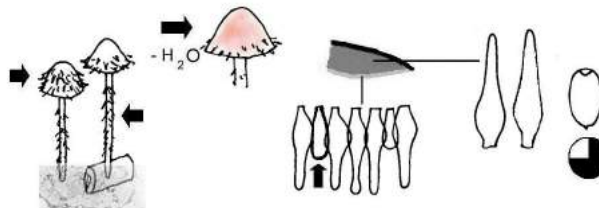
- 17 (16) **Spores up to 11,5(12,5) x 6,5 μm .**
 C. up to 50(75) mm broad. V. scanty. Sp. 9-11,5(12,5) x (4,5)5-7 μm , mostly ovoid, often triangular, also lentiform. Pl. (35)47,5-65(80) x 12,5-17,5(20) μm . Ch. 30-70 x (7,5)10-17,5 μm , closely packed. Deposits visible only in fresh material. Soil, pieces of wood.



P. tephrophylla (ROMAGN.) M. M. MOSER ex BON
 (see C 11)

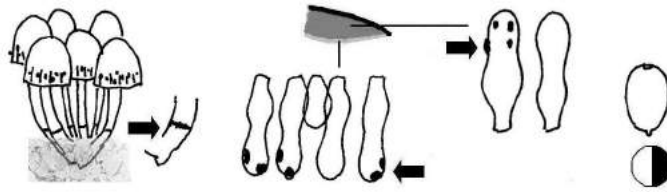
- 17* **Spores up to 9(10,5) x 5,5(6) μm .** 18

- 18 (17) **Pleurocystidia lageniform.**
 C. up to 45 mm broad, during the drying mostly pinkish. V. distinct. Sp. 8-10(10,5) x (4)4,5-5,5(6) μm . Pl. 35-55(65) x 10-17,5 μm . Ch. 20-55 x 7,5-15 μm . Cystidia often with many deposits in fresh material. Soil, buried wood.



P. impexa (ROMAGN.) BON

- 18* **Pleurocystidia utriform.**
 C. 5-30 mm breit. V. distinct. St. base with annular zone. Sp. (7,5)8-9(10) x (4,5)4,75-5,5(6) μm . Pl. 53-60 x 12-16 μm . Ch. 32-61 x 10-15 μm . Soil.



P. conferta EYSSART. & CHIAFFI

19 (16) Spores up to 15(18,5) μm long.

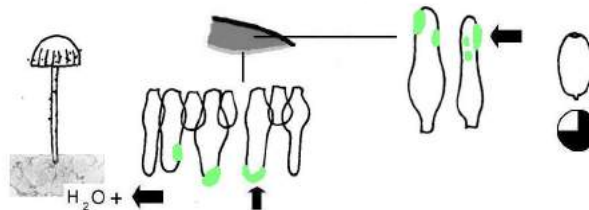
P. bipellis (QUÉL.) A. H. SM.
(see C 4)

19* Spores shorter.

20

20 (19) Pleurocystidia +/- utriform (versiform).

C. up to 50 mm broad. V. distinct. Sp. (8)9-10(11) x 4,5-6 μm . Pl. (30)45-70(80) x 10-20(25) μm . Ch. 25-50(65) x 7,5-17,5(20) μm . Deposits distinct, in NH_4OH blueish green, exceptionally absent. Wet soil.



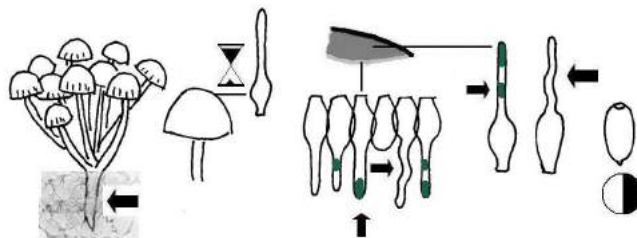
P. lutensis (ROMAGN.) M. M. MOSER ex BON
(Syn.: *P. vialis* A. H. SM.?)

20* Pleurocystidia lageniform.

21

21 (20) Spores up to 8(9) μm long.

C. up to 40 mm broad. Young with pileocystidia. V. practically absent. Sp. (6,5)7-8(9) x 3,5-5 μm . Pl. 32,5-60(80) x 8-12 μm . Ch. 30-70(80) x 7,5-12,5 μm , closely packed. Numerous specimen with a common pseudorhiza. Soil.



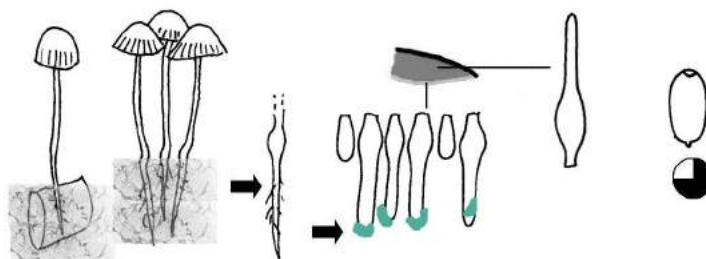
P. multipedata (PECK) A. H. SM.
(Syn.: *P. columbiana* K. A. HARRISON & A. H. SM.)

21* Spores longer.

22

22 (21) Smell unpleasant, Spores 8,5-12,5 x 4,5-7 μm .

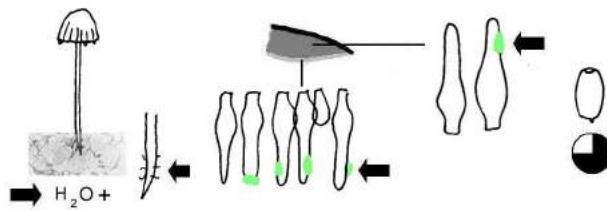
C. up to 40 mm broad. V. practically absent. St. rooting. Pl. 30-65 x 10-15 μm . Ch. 27,5-50(65) x 7-15 μm . Smell like asphalt, bugs. Soil.



P. supernula (BRITZELM.) ÖRSTADIUS & ENDERLE
(Syn.: *P. narcotica* KITS V. WAV.)

22* Smell insignificant, Spores 9,8-13,5 x 5,5-7 μm .

C. 15-33 mm broad. V. scanty. St. somewhat rooting. 35-70 x 11-22 μm . Ch. 25-65 x 7-17 μm . Soil.



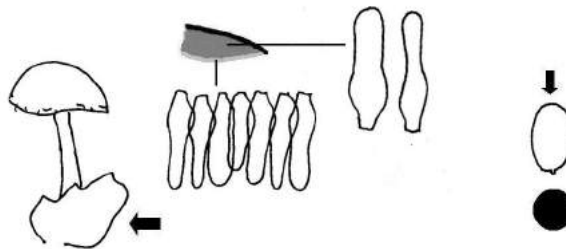
P. jacobssonii ÖRSTADIUS

- | | | |
|-----|--|----------|
| 23 | (15) Cheilocystidia (very) numerous, often closely packed.
Clavate and sphaeropedunculate marginal cells not dominating.
Because of unequal distribution of the marginal elements try alternatively Part F! | E |
| 23* | Cheilocystidia scattered to absent.
Clavate and sphaeropedunculate marginal cells dominating.
Because of unequal distribution of the marginal elements try alternatively Part E! | F |

Part D

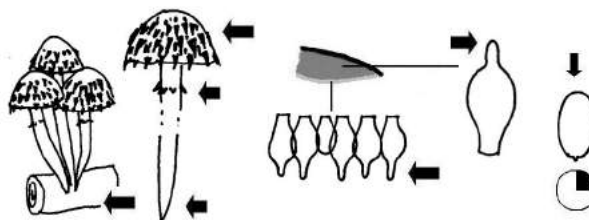
(Main part)

- 1 Parasitic on deformed basidiomycetes.**
C. 20-60 mm broad. V. scanty. Sp. 6,5-12,5 x 5-10 μm . Pl. 40-70 x 9-15 μm . Ch. 30-65 x 6-15 μm . On large *Coprinus*- and *Coprinopsis*-species.



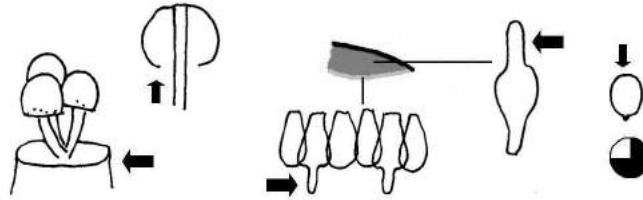
P. epimyces (PECK) A. H. SM.

- | | | |
|----|---|---|
| 1* | Other locations. | 2 |
| 2 | (1) Spores up to 6 μm long. | 3 |
| 2* | Spores longer. | 4 |
| 3 | (2) Spores pale.
C. up to 80 mm broad. V. strongly developed, dark scaly. St. often with annular zone. Sp. 4,5-6 x 2,3-4 μm . Pl. 22,5-50 x 10-15 μm . Ch. 10-40 x 5-16(22) μm . Stumps (also conifers). | |



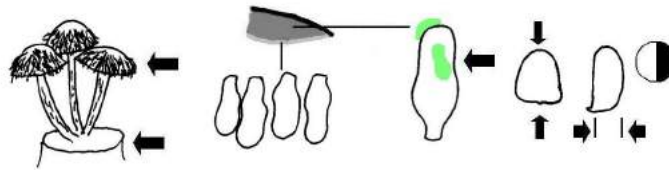
P. maculata (PARKER) A. H. SM.
(Syn.: *P. scobinacea* (FR.) SING. ss. SING.)

- 3* Spores dark.**
C. up to 25 mm broad, margin incurved. V. scanty. Sp. 4,6-5,6(6) x 3,6-4,1 μm . Pl. on average 40 x 10 μm . Ch. 10-30 x 5-15 μm . Fresh mushroom with sweetish odour. Stumps of *Quercus*.



P. obscuroides ENDERLE & M. WILHELM

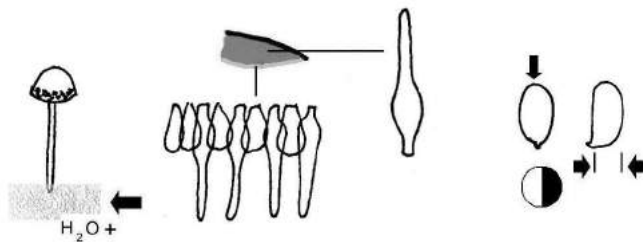
- 4 (2) Spores lentiform. 5
 4* Spores not lentiform. 6
 5 (4) Spores in front view triangular.
 C. 15-30 mm broad. V. scaly, persistent. Sp. 6-7,5(8) x 4,5-5,5(6) x 4-5 μm. Pl. 25-45 x 10-18 μm. Ch. 20-50 x 10-18 μm. Dead wood (especially *Fraxinus*).



Cystoagaricus gunneri (FR.) A. MELZER comb. prov.

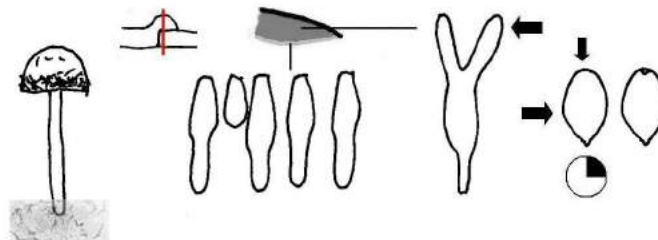
(Syn.: *P. gunneri* (FR.) A. MELZER, *P. hirtosquamulosa* (PECK) A. H. SM., *Cystoagaricus hirtosquamulosus* (PECK) ÖRSTADIUS & E. LARSS., *Psathyrella scobinacea* (FR.) KONRAD & MAUBL.)

- 5* Spores in front view ellipsoid.
 C. 9-15 mm broad. V. scanty. Sp. 6-8 x 4-5 μm. Pl. 25-60 x 7-14 μm. Ch. 25-50 x 7-12 μm. Sandy soil, dunes.



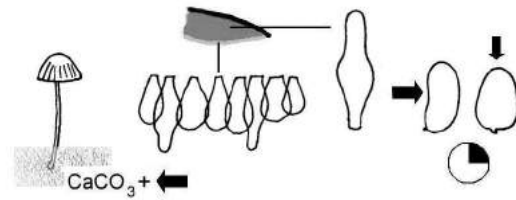
P. parva A. H. SM.

- 6 (4) Spores strikingly ovoid or fusiform. 7
 6* Spores not strikingly ovoid or fusiform. 8
 7 (6) Spores fusiform.
 C. 8-25 mm broad. V. distinct. Sp. 8,5-10,5 x 5-6 μm, often fusiform. Pl. 40-70 x 10-16 μm. Ch. 30-60 x 8-18 μm. Clamps absent. Dead wood.



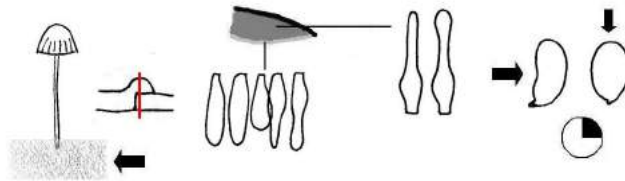
P. romellii ÖRSTADIUS

- 7* Spores ovoid.
 C. up to 30 mm broad. V. scanty. Sp. 8-10(12) x 5-6,5 μm. Pl. 37,5-60(75) x 10-17,5 μm. Ch. 30-60 x 9-20 μm. Calcareous soil.



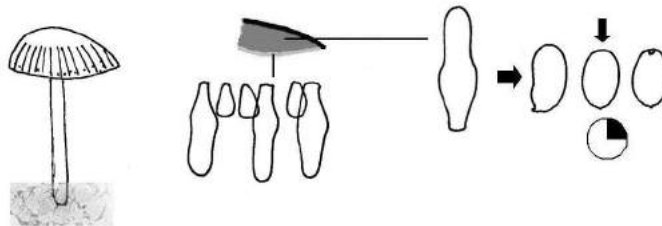
P. clivensis (BERK. & BROOME) P. D. ORTON

- 8 (6) Spores in KOH strikingly pale. 9
 8* Spores in KOH not strikingly pale. 17
 9 (8) Spores partly $\geq 10 \mu\text{m}$ long. 10
 9* Spores always distinctly shorter. 12
 10 (9) Small species, clamps absent. 11
 C. 3-12 mm broad. V. scanty. Sp. 4,4-10 x 3,8-6 μm . Pl. 30-45 x 7,5-9 μm . Ch. 30-42 x 7-9 μm . Costal dunes.



P. liciosae CONTU & PACIONI

- 10* Larger species, clamps present. 11
 11 (10) Stipe without an annulus, spores up to 6,5 μm broad. 11
 C. 30-90 mm broad. V. scanty. Sp. 7,5-10 x 4,5-6,5 μm . Pl. 40-90 x 10-24 μm . Ch. 35-90 x 10-22 μm . Soil.



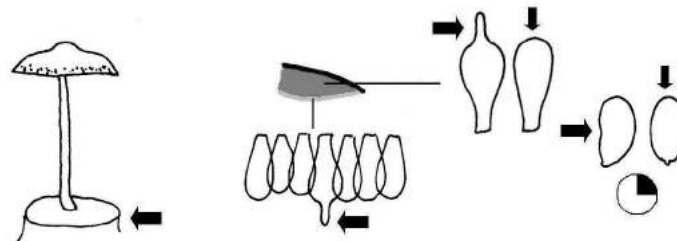
Kauffmania larga (KAUFFMAN) ÖRSTADIUS & E. LARSS.
 (Syn.: *P. larga* (KAUFFM.) A. H. SM.)

- 11* Stipe often with an annulus, spores up to 5,5 μm broad. 11
P. langei (MALENCON) CONTU
 (see B 14)

- 12 (9) Pleurocystidia often mucronat. 13
 12* Pleurocystidia otherwise. 14

- 13 (12) Pleurocystidia often with a curved extention. 13
P. umbrina KITS V. WAV.
 (see B 6)

- 13* Pleurocystidia often with a straight extention. 13
 C. up to 70(90) mm broad. V. scanty. Sp. 7-8 x 4-4,5 μm . Pl. 20-27,5(37) x 7,5-11(12,5) μm . Ch. 25-35 x 7,5-13 μm , mucronat, infrequently. Clavate marginal cells dominating. Solitary and caespitose on tree stumps (also conifers).



P. mucrocystis A. H. SM.

(Syn.: *P. chondrodermoides* ROMAGN.)

14 (12) Spores 6,5-8,5(9) x 3,5-5 µm.

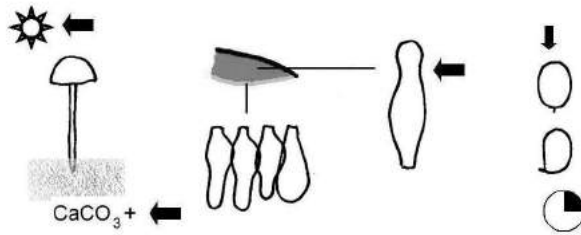
P. cortinarioides P. D. ORTON
(see B 7*)

14* Spores shorter.

15

15 (14) Spores strikingly broadly ellipsoid.

C. up to 14 mm broad. V. sparse. Sp. 5,5-7 x 4,5-5 µm. Pl. 35-65 x 9-18 µm. Ch. 25-40 x 8-14 µm. Dry grasslands, sandy, calcareous soil.



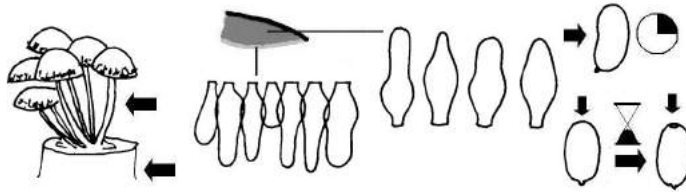
P. siccophila ÖRSTADIUS & E. LARSSON.

15* Spores not strikingly broadly ellipsoid.

16

16 (15) Lignophil.

C. up to 80 mm broad. V. sparse. Sp. 5-6,5(7,5) x 3-3,5(5) µm, germ pore sometimes visible but always tiny. Pl. 37,5-70 x 7,5-17,5 µm, versiform, sometimes mucronat. Ch. 22,5-57,5 x 7,5-22,5 µm. Dead wood.

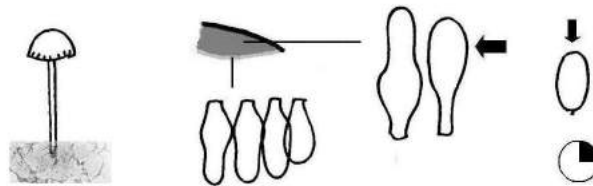


P. piluliformis (BULL.: FR.) P. D. ORTON

(Syn.: *P. alaskaensis* A. H. SM., *P. deceptiva* A. H. SM., *P. hydrophila* (BULL. ex MERAT) MAIRE, *P. hydrophiloides* KITS V. WAV., *P. ogemawensis* A. H. SM. *P. subpapillata* (P. KARST.) ROMAGN.)

16* Terrestrial.

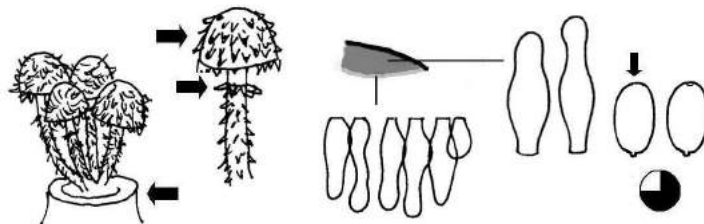
C. up to 30 mm broad. V. sparse. Sp. 5,5-7 x 3,5-4,5 µm. Pl. 25-50 x 10-16 µm. Ch. 25-40 x 8-14 µm. Soil.



P. stridvallii ÖRSTADIUS & E. LARSSON

17 (8) Veil very strongly developed.

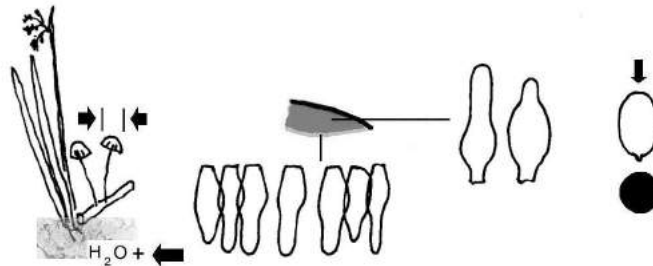
C. up to 75 mm broad. St. often with annular zone. Sp. 9-12,5(13) x (4,5)6-7,5 µm, germ pore absent or tiny. Pl. 40-70(75) x (12,5)15-20(25) µm. Ch. 35-75(95) x 7,5-20 µm. Caespitose on stumps of conifers.



P. caput-medusae (FR.) KONR. & MAUBL.

(Syn.: *P. gruberi* A. H. SM.?, *P. pseudocotonea* A. H. SM., *P. annulata* A. H.

- 17* Veil not very strongly developed or absent. 18
- 18 (17) Cheilocystidia mostly closely packed. 19
- 18* Cheilocystidia distracted, only partly closely packed. 22
- 19 (18) Tiny species.
C. up to 4 mm broad. V. scanty. Sp. 6-7,5 x 3,5-4 µm. Pl. 23-51 x 7,5-16 µm. Ch. 20-45 x 5,5-15 µm. Between *Juncus effusus*.

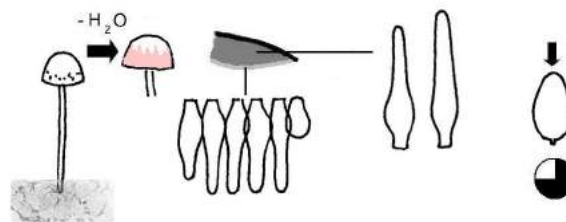
*P. scheppingensis* ARNOLDS

- 19* Larger species. 20
- 20 (19) Spores up to 12,5 x 7,5 µm.

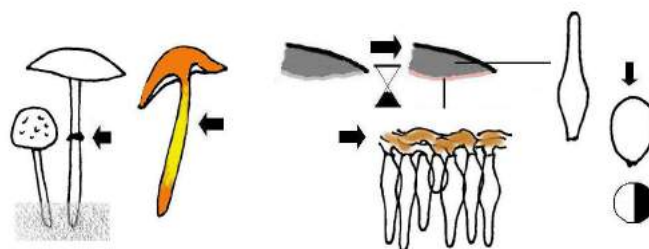
P. magnispora HEYKOOP & G. MORENO
(see B 10)

- 20* Spores up to 8 x 4,5 µm. 21
- 21 (20) Spores up to 4,5 µm broad.

C. up to 45 mm broad, during drying often pinkish. V. distinct. Sp. 6,5-8 x 3,6-4,5 µm, often limoniform. Pl. (30)35-55(60) x 8-14 µm. Ch. (25)27,5- 45(50) x 7,5-10(12,5) µm. Soil (coniferous forest).

*P. atomatoides* (PECK) A. H. SM.
(Syn.: *P. caespitosa* WEHOLT, *P. rannochii* KITS. v. WAV.)

- 21* Spores up to 3,6 µm broad.
C. up to 50 mm broad, during drying often pinkish. V. sparse. L. edge reddish underlined. Flesh reddening. St. with annular zone. Sp. 6,3-7,2 x 3,6 µm. Pl. 40-52,5 x 7,5-12,5 µm. Ch. 30-50 x 7,5-12,3 µm. Sandy soil.

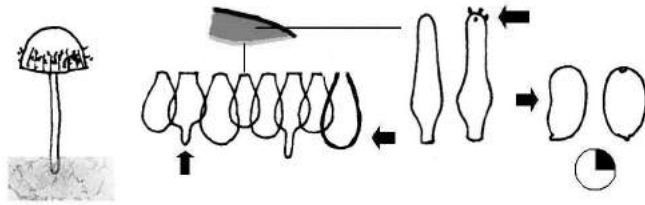
*P. wavereniana* M. MARCHETTI

- 22 (18) Pleurocystidia with deposits.
Homophron cernuum (VAHL: FR.) ÖRSTADIUS & E. LARSS.
(see B 7)

- 22* Pleurocystidia without deposits. 23

- 23 (22) Cheilocystidia mucronat.
C. up to 30 mm broad. V. scanty. Sp. 7-10 x 4,5-5,5(6) µm, germ pore absent or tiny. Pl. 25-75 x 9-16 µm, mostly utriform, rarely lageniform, sometimes with

granules. Ch. 30-50 x 7,5-17 μm , scattered, mucronat. Soil.



***P. obtusata* (PERS.: FR.) A. H. SM.**

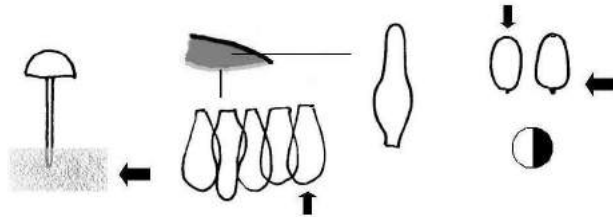
(Syn.: *P. tubarioides* A. H. SM.?, *P. virmwyensis* KITS V. WAV.)

23* **Cheilocystidia not mucronat.** 24

24 (23) **Spores up to 5,5 (6) μm broad.** 25

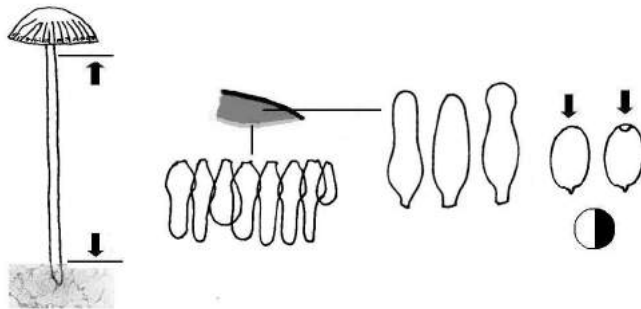
24* **Spores up to 4,5 μm broad.** 26

25 (24) **Small species, cheilocystidia up to 40 μm long.**
 C. up to 15 mm broad. V. scanty. Sp. 8-11,5 x 4,5-6 μm , ovoid, ellipsoid, germ pore indistinct to absent. Pl. 35-55 x 8-16 μm . Ch 25-40 x 9-14 μm . Sandy soil, dunes.



***P. sabuletorum* ÖRSTADIUS & E. LARSS.**

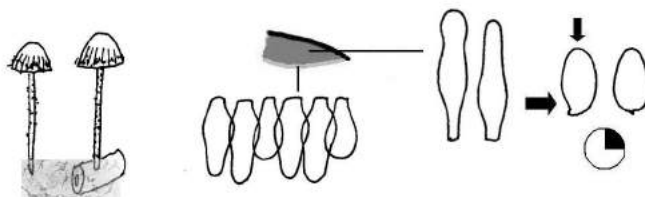
25* **Larger species, cheilocystidia up to 60(70) long.**
 C. up to 40(50) mm broad. V. scanty to distinct. St. often disproportionately long. Sp. 7-9,5(10) x (4)4,5-5,5(6) μm , germ pore absent to distinct. Pl. (25)30-60(70) x 10-17,5(20) μm . Ch. 20-60(70) x (6)10-17,5(20) μm . Soil, pieces of wood.



***P. senex* (PECK) A. H. SM.**

(Syn.: *P. badia* KITS. V. WAV., *P. capitatocystis* KITS V. WAV., *P. communis* A. H. SM., *P. distans* A. H. SM., *P. fallax* A. H. SM., *P. friesii* KITS V. WAV., *P. fusca* (SCHUM.) A. PEARS. ss. KITS V. WAV., *P. fuscospora* A. H. SM., *P. ocellata* (ROMAGN.) M. M. MOSER, *P. ploddensis* KITS V. WAV., *P. pseudotrepida* A. H. SM., *P. twickelensis* KITS V. WAV., *P. fulvescens* var. *brevicystis* KITS V. WAV.)

26 (24) **Spores very bright.**
 C. 10-18 mm broad. V. strongly developed. Sp. 7-8(9) x 3,5-4,5 μm . Pl. 35-50 x 12,5-17,5 μm . Ch. 30-40 x 7,5-15 μm . Soil.



***P. kitsiana* ÖRSTADIUS**

(Syn.: *P. obtusata* var. *abberans* KITS V. WAV., *P. umbrina* var. *utriformis* KITS. V. WAV., *P. rhombispora* KEIZER & ARNOLDS?)

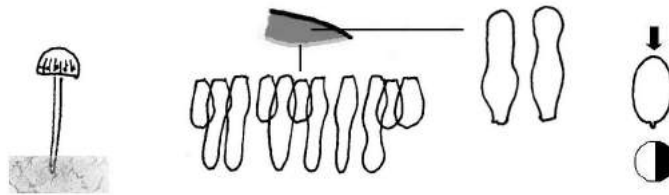
26*

Spores somewhat darker.

27

27 (26) Spores in water reddish brown.

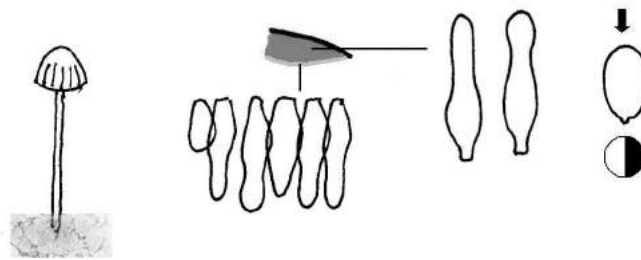
C. up to 19 mm broad. V. distinct. Sp. 7-8 x 4-4,5 μm. Pl. 30-50(55) x 12,5-15(17,5) μm. Ch. 27,5-45 x 7,5-15 μm. Soil.

*P. denniensis* KITS. v. WAV.

27*

Spores in water orange brown.

C. up to 32 mm broad. V. scanty. Sp. 7-8,5 x 4-4,5 μm. Pl. (30)35-45(50) x (7,5)9-13 μm. Ch. 25-45 x 7,5-12,5 μm. Soil.

*P. romseyensis* KITS. v. WAV.

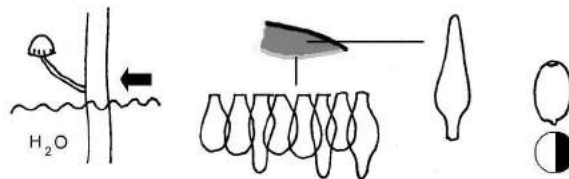
Part E

(Part C)

1

On *Phragmites* and *Scirpus* just above the water.

C. up to 10 mm broad. V. scanty. Sp. 8-10 x 5,5-6 μm. Pl. 37,5-52,5 x 10-15 μm. Ch. 35-50 x 11-15 μm.

*P. basii* KITS v. WAV.

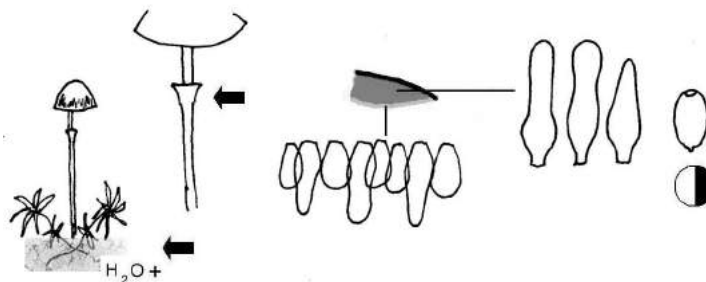
1*

Other habitat.

2

2 (1) Stipe with an annulus.

C. up to 30 mm broad. V. scanty. Sp. 8-10 x 4,5-5,5(6) μm. Pl. 45-67,5 x 12,5-17,5 μm. Ch. 27,5-50 x 10-17,5 μm. Between *Sphagnum* (and other moss).

*P. sphagnicola* (MAIRE) J. FAVRE

2*

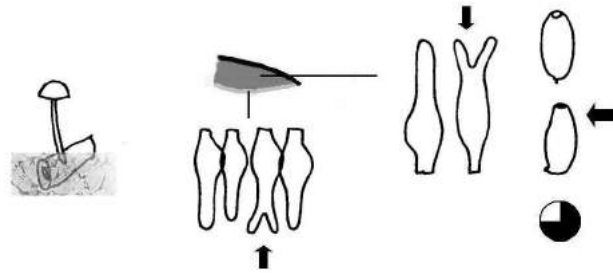
Stipe without an annulus.

3

- 3 (2) Spores predominatingly up to 10,5 µm long. 4
 3* Spores predominatingly longer. **G**
 4 (3) Pleurocystidia often forked. 5
 (see also *P. minutissima*)
 4* Pleurocystidia not or very rarely forked. 7
 5 (4) On dung. 7

P. fimiseda ÖRSTADIUS & E. LARSSON
 (siehe B 14*)

- 5* Not on dung. 6
 6 (5) Tiny species.
 C. up to 4 mm broad. V. sparse. Sp. 9,5-11 x 5-6 µm (av. 10,1 x 5,3 µm), apex
 sometimes prolonged. Pl. 25-42 x 6-12 µm. Ch. 25-38 x 5-11 µm. Soil, pieces
 of wood.

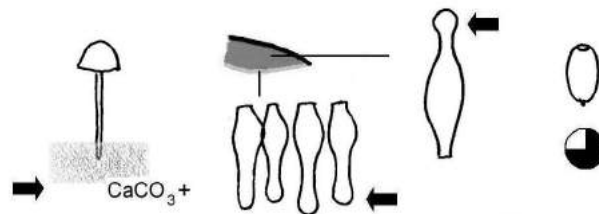


P. lilliputana ÖRSTADIUS & E. LARSS.

- 6* Larger species. 6
P. langei (MALENCON) CONTU
 (see B 14)

- 7 (4) Cheilocystidia often (sub-) capitate. 8
 7* Cheilocystidia mostly not (sub-) capitate. 9

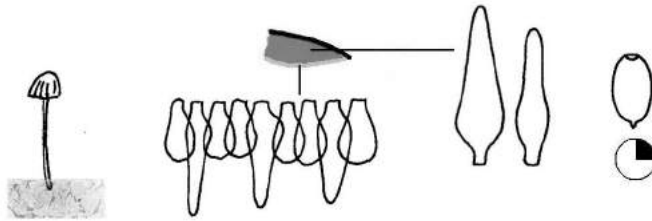
- 8 (7) Tiny species.
 C. up to 6 mm broad. V. absent or very volatile. Sp. 8,5-9,5 x 4,5-5,5 µm. Pl.
 30-60 x 10-16 µm. Ch. 25-50 x 8-16 µm. Calcareous sandy soil.



P. scanica ÖRSTADIUS & E. LARSS.

- 8* Larger species. 8
P. senex (PECK) A. H. SM.
 (see D 25*)

- 9 (7) Cheilocystidia numerous, but not closely packed. 10
 9* Cheilocystidia mostly closely packed. **H**
 10 (9) Lamellae edge never pigmented. 11
 10* Lamellae edge at least partly pigmented. 16
 11 (10) Pleuro- and cheilocystidia mostly lageniform to subutriform. 12
 11* Pleuro- and cheilocystidia mostly utriform. 14
 12 (11) Neck of the cystidia mostly tapering.
 C. up to 9 mm broad. V. scanty. Sp. 9-10 x 4,5-5,5 µm. Pl. 45-70 x 12,5 -
 17,5(20), apically sometimes forked or bent. Ch. 35-50(55) x 10-16 µm. Soil.



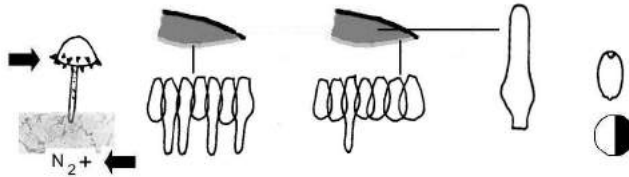
P. minutissima KITS V. WAV.

12* Neck of the cystidia mostly not tapering.

13

13 (12) On dung, spores up to 8 μm long.

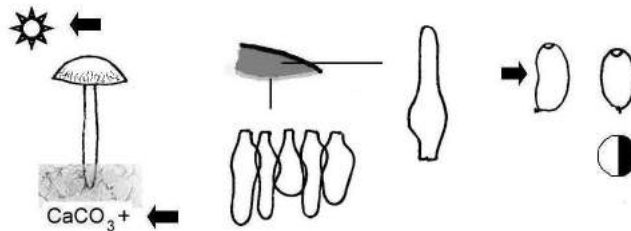
C. 5-20 mm broad. V. scanty. Sp. 6,5-8 x 3,5-4,5 μm. Pl. 25-50 x 8-15 μm, lageniform and subutriform. Ch. 20-40 x 6-13 μm, near margin of cap very rare. Cow dung.



P. merdicola ÖRSTADIUS & E. LARSSON

13* On calcareous sandy soil, spores up to 9 μm long.

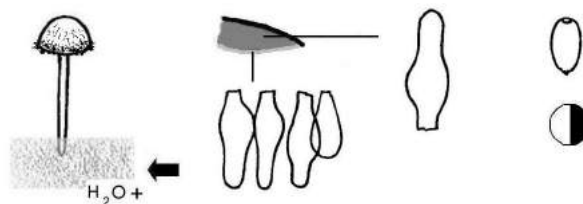
C. up to 15 mm broad. V. young distinct. Sp. 7-9 x 4-5 μm. Pl. 25-55 x 7-13 μm. Ch. 20-40 x 7-13 μm.



P. arenosa ÖRSTADIUS & E. LARSS.

14 (11) Pleurocystidia utriform and clavate.

C. up to 33 mm broad. V. young distinct. Sp- 7-9,5 x 4-5 μm. Pl. 35-50 x 12-26 μm. Ch. 25-55 x 8-35 μm. Wet sandy soil, near remnants of *Phragmites*.



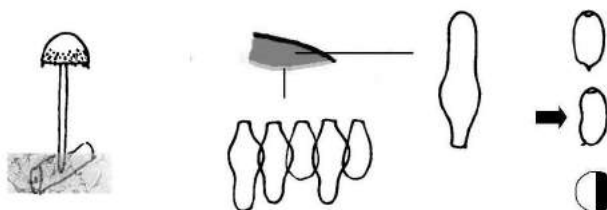
P. madida ÖRSTADIUS & E. LARSS.

14* Pleurocystidia only utriform.

15

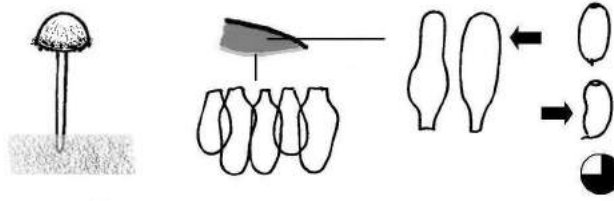
15 (14) Spores mostly phaseoliform.

C. up to 30 mm broad. V. young very distinct. Sp. 7-9,5 x 3,5-5 μm. Pl. 35-60 x 11-20 μm. Ch. 25-40 x 8-11 μm. Pieces of wood, in forests.



P. hololanigera (G. F. ATK.) A. H. SM.

- 15* **Spores not phaseoliform.**
C. up to 11 mm broad. V. sparse. Sp. 8,5-9,5 x 5-5,5 µm. Pl. 35-60 x 10-22 µm.
Ch. 30-45 x 10-16 µm. Soil.



P. rybergii ÖRSTADIUS UND E. LARSS.

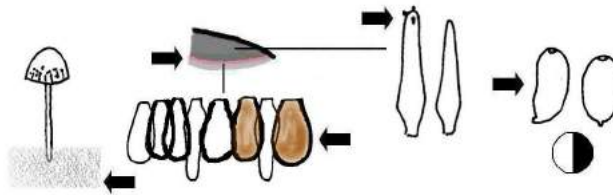
- 16 (10) **On dung.**

P. scatophila ÖRSTADIUS & E. LARSSON
(see B 13)

- 16* **Not on dung.**

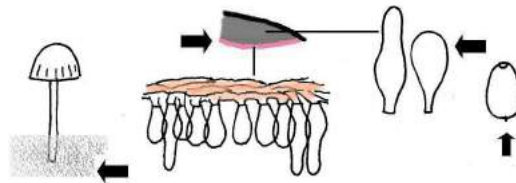
17

- 17 (16) **Clavate marginal cells often thickwalled and brownish.**
C. up to 20 mm broad. V. scanty. Spores 7-9 x 4,5-5,5 µm. Pl. 47,5-65 x 18-21 µm, utriform or sublageniform, at top often with deposits. Ch. 30-45 x 9-12,5 µm, not frequently. Dunes, sandy soil.



P. dunensis KITS V. WAV.

- 17* **Clavate marginal cells not or only very rarely so.**
C. up to 25 mm broad. V. scanty. Sp. 8-10,5 x 4,5-6,5(7) µm. Pl. 35,5-52,5 x 10-16,5 µm, utriform, fusiform or lageniform, spheropedunculate cells also present. Ch. 24,5-50 x 9,5-15 µm, scattered. On sandy soil, dunes.



P. dunarum KITS V. WAV.

Part F

(Part C)

- | | | |
|----|--|---|
| 1 | Spores up to 10 µm long. | 2 |
| 1* | Spores more than 10 µm long. | 22 |
| 2 | (1) Pleurocystidia mostly narrow at the top. | 3 |
| 2* | Pleurocystidia mostly broadly obtuse at the top. | 6 |
| 3 | (2) Lamellae edge at least partly pinkish underlined. | |
| | | <i>P. dunensis</i> KITS V. WAV.
(see E 17) |
| 3* | Lamellae edge never pigmented. | 4 |
| 4 | On dung, spores up to 8 µm long.
C. 5-20 mm broad. V. scanty. Sp. 6,5-8 x 3,5-4,5 µm. Pl. 25-50 x 8-15 µm, | |

lageniform and subutriform. Ch. 20-40 x 6-13 µm, near margin of cap very rare.
Cow dung.

P. merdicola ÖRSTADIUS & E. LARSSON
(see E 13)

4* Not on dung, spores up to 10 µm long. 5

5 (4) *Cheilocystidia mucronat.*

P. obtusata (PERS.: FR.) A. H. SM.
(see D 23)

5* *Cheilocystidia not mucronat.*

P. minutissima KITS V. WAV.
(see E 12)

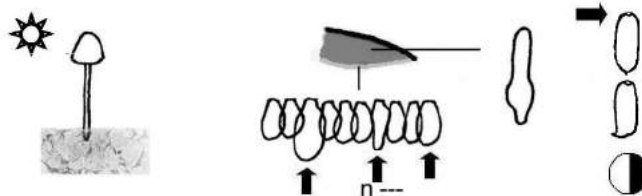
6 (2) Lamellae edge almost exclusively with clavate marginal cells.
(see also *P. spadiceogrisea*) 7

6* Lamellae edge with +/- many true cystidia. 11

7 (6) Spores not predominantly phaseoliform (< 50%). 8

7* Spores predominantly phaseoliform (> 50%). 10

8 (7) Spores slender ellipsoid, germ pore strikingly small.
C. up to 30 mm broad. V. minimal. Sp. 8-10,5 x 4,5-5 µm, never phaseoliform. Ch. 22-27 x 11-12,3 µm, extremely rare. Pl. 30-55(63) x 10-16 µm. Dead wood, calcareous soil.

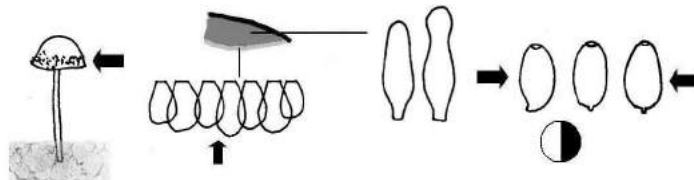


P. marquana A. MELZER, KELLNER & WÄCHTER

8* Spores otherwise. 9

9 (8) Spores predominantly ovoid.

C. up to 40 mm broad. V. distinct. Sp. 7,5-8,8 x 4,5-5 µm, hardly phaseoliform, partly with suprahilar depression. Pl. 29-45 x 12,3-16,5 µm. Ch. 24,5-41 x 9,5-19 µm, extremely rare. Soil.

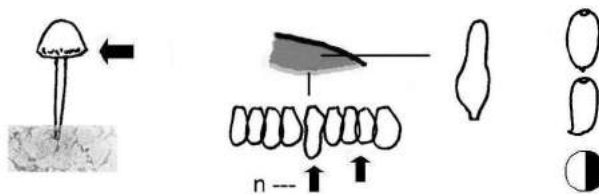


P. groegeri G. HIRSCH

(Syn.: *P. obtusata* var. *vernalis* (J. E. LANGE) M. M. MOSER)

9* Spores predominantly ellipsoid.

C. up to 50 mm broad. V. distinct. Sp. 7,5-9,5 (-10) x 4,5-5,5 µm, sometimes phaseoliform. Ch. 19-40 x 7-13,7 µm, extremely rare. Pl. 27-70 x 11-22 µm. Soil, dead wood.



P. cascoides A. MELZER, KARICH & WÄCHTER

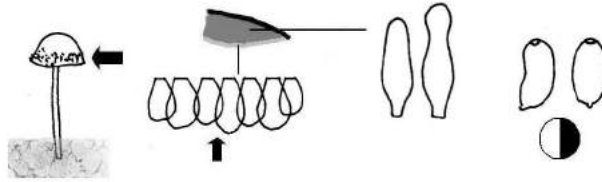
10 (7) Pleurocystidia often with slightly thickened walls and deposits.

P. niveobadia (ROMAGN.) M. M. MOSER
(see B 11)

10* Pleurocystidia otherwise.

C. up to 90 mm broad. V. distinct. Sp. 8,8-11,3 x 4,5-5,5 µm. Pl. 44-70 x 11-17,5

μm . Ch. 22-33 x 8-11 μm , extremely rare. Soil.

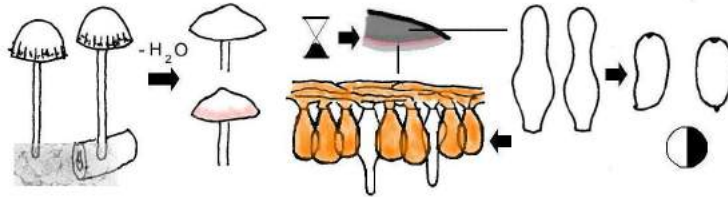


P. casca KONR. & MAUBL.

11 (6) Lamellae edge at least partly pinkish underlined. 12

11* Lamellae edge not pinkish underlined. 14

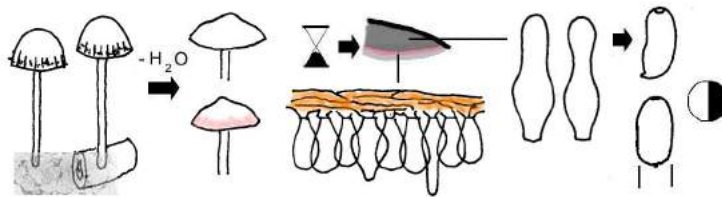
12 (11) Spores 6,5-7 (8) x (4) 4,5 (5) μm .
C. up to 60 mm broad, during drying often slightly pinkish. V. scanty. Pl. 37-60 x 12,5-17 μm , utriform, sometimes subcapitat. Ch. 30-48 x 12-17 μm . Soil, pieces of wood.



P. pseudocorrugis (ROMAGN.) BON
(Syn.: *P. borgensis* KITS v. WAV.)

12* Spores larger. 13

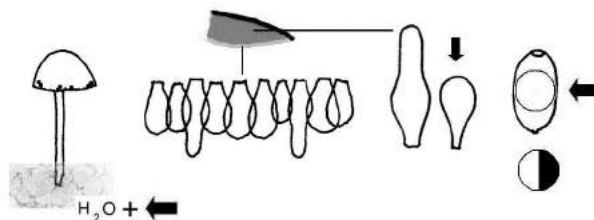
13 (12) Spores laterally often phaseoliform, in front view with subparallel walls.
C. up to 50 mm broad. V. scanty. Sp. 7-9,5(10) x 4-5,5 μm . Pl. 32-50 x 10-12,5(16) μm . Ch. 25-37,5(45) x 10-18 μm . Soil, pieces of wood.



P. pseudocorrugis (ROMAGN.) BON ss. K.v.WAV., ARNOLDS, ENDERLE

13* Spores laterally not phaseoliform, in front view ovoid.
P. dunarum KITS v. WAV.
(see E 17*)

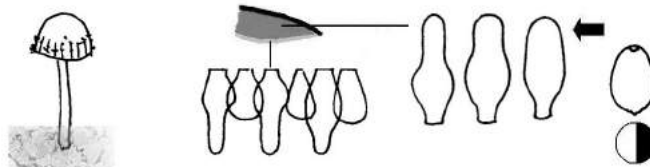
14 (11) Spores with a large, circular oil drop.
C. 5-20 mm broad. V. scanty. Sp. 8-10,5 x 5-6,2 μm . Pl. (30)36-52 x 6,8-19 μm , utriform, beside many sphaeropedunculate cells. Ch. 22-40(50) x 6,8-19 μm , scattered, clavate marginal cells up to 30(40) x 13,5(20) μm , frequently. Muddy or wet soil.



P. ephemera A. H. SM.

14* Spores not so, oil drop absent, smaller or not circular. 15

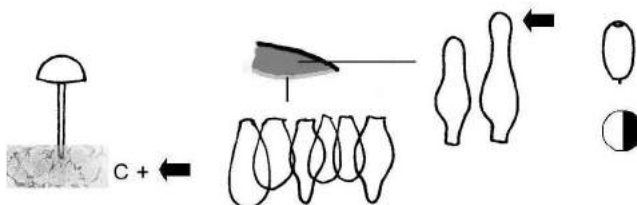
15 (14) Pleurocystidia often +/- (sub-) cylindrical.
C. up to 60 mm broad. V. scanty. Sp. (7)7,5-9 x 4,5-5,5 μm . Pl. 30-45(70) x 10-17(20) μm . Ch. 32,5-47,5 x 10-20 μm . Soil.



P. phegophila ROMAGN.

15* **Pleurocyttidia never (sub-) cylindrical.** 16

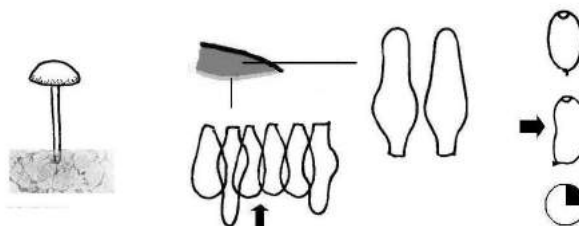
16 (15) **Sporen in side view not phaseoliform.**
 C. up to 18 mm broad. V. sparse. Sp. 7,8-9 x 4,4-5 µm. Pl. 32-48 x 10-18 µm. Ch. 25-35 x 10-16 µm. Burnt place.



P. ichnusae ÖRSTADIUS, CONTU, E. LARSS.

16* **Spores at least partially phaseoliform.** 17

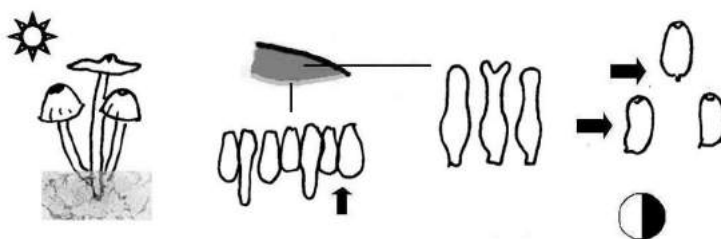
17 (16) **Flesh with a smell of fish, spores relatively pale.**
 C. up to 35 mm broad. V. sparse. Sp. 9-11 x 5-5,5 µm. Pl. 40-55 x 11-18 µm. Ch. 30-45 x 10-16 µm. Soil, coniferous wood.



P. carminei ÖRSTADIUS & E. LARSS.

17* **Flesh without a smell of fish, spores darker.** 18

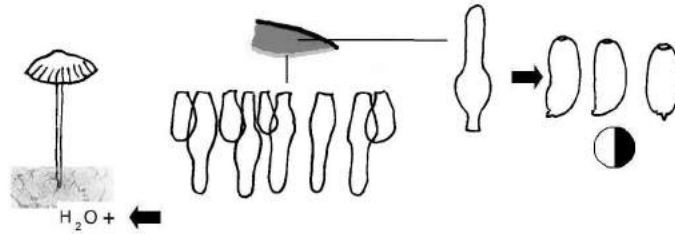
18 (17) **Spores predominantly ovoid.**
 C. up to 35 mm broad. V. scanty. Sp. 6,9-8,8 (-10) x 4,4-5 µm. Pl. 32-60 x 9,5-17 µm. Ch. 22-55 x 9-15 µm. Soil.



Psathyrella hellebosensis DESCHUYTENEER & A. MELZER

18* **Spores not predominantly ovoid.** 19

19 (18) **On very wet places.**
 C. up to 40 mm broad. V. scanty to distinct. Sp. 8-11,5 x 4,5-6,5 µm. Pl. 40-65 x 10-20 µm. Ch. 37,5-50 x 9-15 µm. Muddy soil, shores.

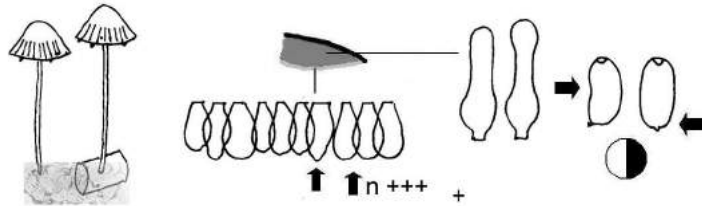


P. thujina A. H. SM.

(Syn.: *P. almerensis* KITS V. WAV., *P. lutulenta* ESTEVE-RAV. & M. VILLAREAL)

19* Not on very wet places. 20

20 (19) Spores basally often truncate, cheilocystidia mostly with a short neck.
C. up to 60(75) mm broad. V. only young visible. Sp. 7-10, 5(12) x 3,7-5,5 μm. Pl. 27,5-67,5 x 10-22 μm. Ch. 20-50 x 9,5-16,5 μm. Soil, pieces of wood.

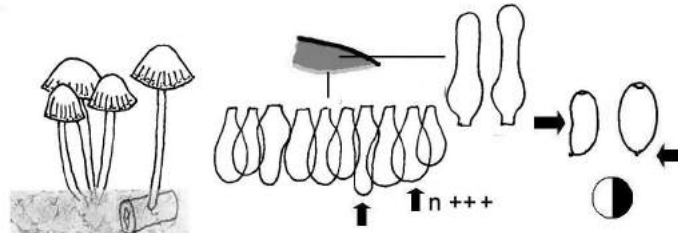


P. spadiceogrisea (SCHAEFF.: FR.) MAIRE

(Syn.: *P. spadiceogrisea* f. *mammifera* (ROMAGN.) KITS V. WAV., *P. spadiceogrisea* f. *vernalis* (J. E. LANGE) KITS V. WAV.)

20* Spores basally often conical, cheilocystidia mostly with a long neck. 21

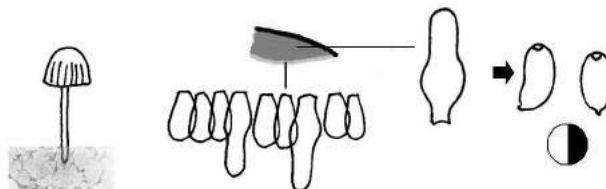
21 (20) Spores often slightly phaseoliform.
C. up to 50 mm broad. V. young distinct. Sp. 8-11,2 x 4,5-6,2 μm. Pl. 33-75 x 10-25 μm. Ch. 20-54,5 x 7-13,5 μm, rare. Soil, pieces of wood.



P. fatua (FR.) KONR. & MAUBL.

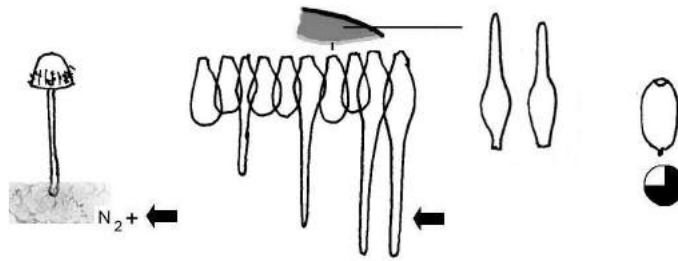
(Syn.: *P. exalbicans* (ROMAGN.) M. M. MOSER ex BON, *P. spadiceogrisea* f. *exalbicans* (ROMAGN.) KITS. V. WAV.)

21* Spores in part strongly phaseoliform.
C. up to 18 mm broad. V. sparse or absent. Sp. 8-10 x 5-6 μm. Pl. 30-50 x 10-12,5(20) μm. Ch. 27-35 x 7,5-10(12) μm, rare. Soil.



P. phaseolispora ARNOLDS

22 (1) Cheilocystidia in part longer than pleurocystidia.
C. 4-13 mm broad. V. scanty. Sp. 11-14,5 x 6-7 μm. Pl. 32,5-65 x 8-18 μm. Ch. 20-80 x 6-28 μm. Dung.



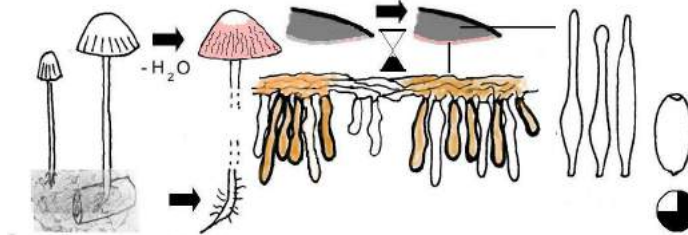
P. stercoraria ÖRSTADIUS & E. LARSSON

22* Not so. 23

23 (22) Pleurocystidia predominantly lageniform. 24

23* Pleurocystidia predominantly utriform. 29

24 (22) Cheilocystidia mixed with slender clavate and irregular cells.
 C. up to 40 mm broad, during drying often pinkish. V. practically absent. St. rooting. Lamellae edge pinkish underlined, interrupted by colourless parts. Sp. (11,5)12,5-15,5 x 6,5-7 µm, sometimes giant spores. Pl. 50-67,5(75) x 10-13,2 µm. Ch. 30-45 x 7-10 µm. Soil, pieces of wood.



P. corrugis (PERS.: FR.) KONR. & MAUBL.

(Syn.: *P. atrolaminata* K. v. WAV., *P. corrugis* f. *corrugis* ENDERLE, *P. corrugis* f. *gracilis* ENDERLE, *P. gracilis* (FR.) QUEL., *P. gracilis* f. *atrolimbata* K. v. WAV., *P. gracilis* f. *clavigera* K. v. WAV., *P. gracilis* f. *corrugis* K. v. WAV., *P. gracilis* var. *corrugis* (PERS.: FR.) A. PERS. & DENNIS, *P. gracilis* var. *fulva* A. H. SM., *P. melanophylla* K. v. WAV., *P. melanophylloides* K. v. WAV., *P. ochracea* K. v. WAV., *P. pallens* P. KARST., *P. polycystis* (ROMAGN.) K. v. WAV., *P. caudata* (FR.) QUEL. non ss. RICKEN)

24* Cheilocystidia mixed with broad clavate or sphaeropedunculate cells. 25

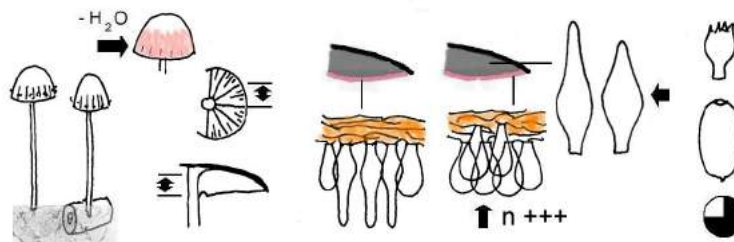
25 (24) Lamellae edge at least partly pinkish underlined. 26

25* Lamellae edge not pinkish underlined. 27

26 (25) Lamellae edge small pinkish underlined.
 C. up to 17 mm broad. V. scanty. Spores 11,5-12,5 x 6,5-7 µm. Pl. 47,5-70 x 12,5-15 µm. Ch. practically absent. Soil.

P. infida QUÉL.
 (= *P. prona* (FR.) GILLET?)

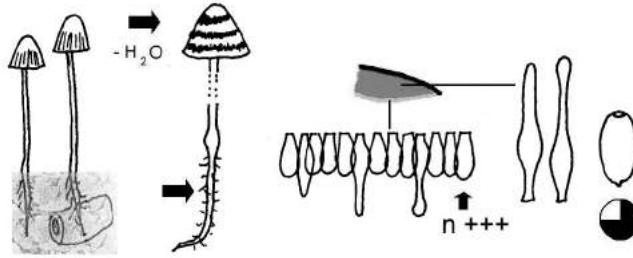
26* Lamellae edge broad pinkish underlined, especially near margin of cap.
 C. up to 30 mm broad, during drying often pinkish. V. scanty. Spores (10,5)12,5-15,5(16) x 5,5-7,5(8,5) µm, sometimes giant spores, often with a different shape. Pl. (30)45-65(70) x 10-16,5 µm. Ch. 25-50(70) x 4-16,5 µm. Clavate marginal cells very densely packed near the margin of cap. Soil.



P. prona (FR.) GILLET

(Syn.: *P. picta* (ROMAGN.) BON, *P. prona* var. *prona* f. *picta* (ROMAGN.) KITS V. WAV., *P. prona* var. *prona* f. *prona* (ROMAGN.) KITS V. WAV., *P. sublanata* A. H. SM., *P. tenera* Peck)

- 27 (25) **Pleurocystidia with evenly tapering neck, partly (sub-) capitate.**
 C. up to 50 mm broad. V. scanty. St. with a long pseudorhiza. Sp. 10,5-15(16) x 5-8(8,5) μm . Pl. 42,5-80 x 7,5-15(17,5) μm , partly slightly capitate. Ch. 22,5-40 x 7,5-10(12,5) μm , clavate marginal cells very frequently. Soil.



***P. longicauda* P. KARST.**

(Syn.: *P. caudata* (FR.) QUÉL. ss. RICKEN)

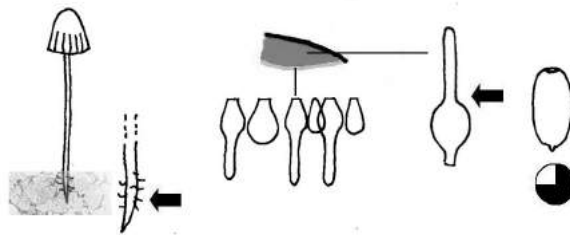
- 27* **Pleurocystidia with +/- cylindrical neck, not (sub-) capitate.** 28

- 28 (27) **Cheilocystidia mixed with many slender clavate and irregular marginal cells.**
 C. up to 40 mm broad. V. practically absent. Sp. 11-14,5 x 6,5-7,5 μm , sometimes giant spores. Pl. 35-82 x 9-17 μm . Ch. 22,5-55 x 6-15 μm . Soil, pieces of wood.

***P. corrugis* (PERS.: FR.) KONR. & MAUBL.**

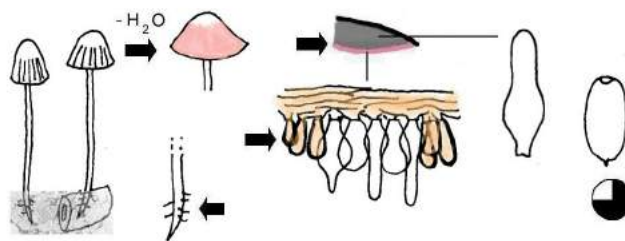
(see also F 21)

- 28* **Cheilocystidia mixed with few clavate marginal cells.**
 C. up to 13 mm broad. V. scanty. St. rooting. Sp. 11,5-13,5 x 6,5-7 μm . Pl. 40-75 x 10-12 μm . Ch. 35-47,5 x 8-12,5 μm . Soil.



***P. pellucidipes* (ROMAGN.) GALLANT ex M. M. MOSER**

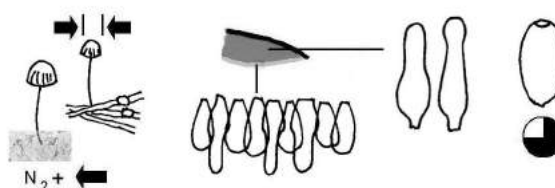
- 29 (23) **Clavate marginal cells with often thickened walls.**
 C. up to 40 mm broad, during the drying out almost always pinkish. V. scanty. St. rooting. Sp. 10-13,5(15) x 6-7(7,5) μm , sometimes giant spores. Pl. 35-80(100) x 10-20 μm , broadly fusiform or utriform. Ch. 20-60(75) x 7,5-17,5(20) μm . Soil, pieces of wood.



***P. pseudogracilis* (ROMAGN.) M. M. MOSER**

(Syn.: *P. opaca* (ROMAGN.) KITS V. WAV. ss. ROMAGN. (1952), *P. prona* var. *utriformis* KITS V. WAV.)

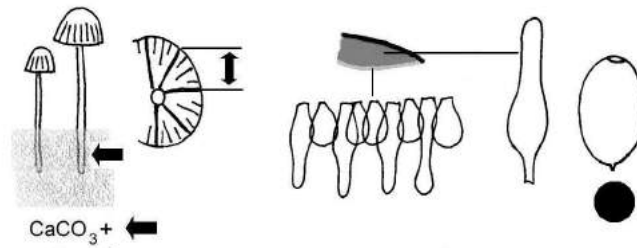
- 29* **Clavate marginal cells thinwalled.**
 C. up to 8(15) mm broad. V. scanty. Sp. (9,5)10-12,5(15) x (5,5)6-7(7,5) μm . Pl. 25-60 x 8-17,5 μm . Ch. 13,5-50 x 6-20 μm . Dead grass, hay, straw, dung.



Part G

(Part E)

- 1** **Spores up to 19 µm long.**
Hut 5-20 mm broad. V. scanty. L. distant. Sp. 12-19 x 7-10 µm. Pl. 45-70(80) x 9,5-13,5 µm. Ch. (24,5)27-50 x 8-20 µm, moderately frequently, also many clavate marginal cells present. Calcareous, dry soil.

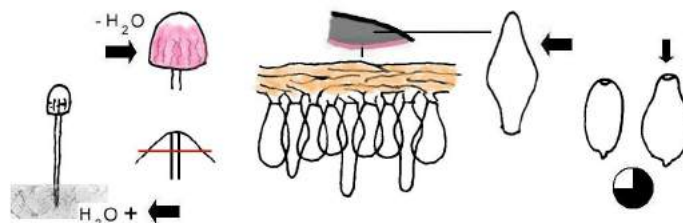


P. calcarea (ROMAGN.) M. M. MOSER

- 1*** **Spores shorter.** **2**
- 2** **(1) Spores up to more than 12,5 µm long.** **3**
- 2*** **Spores maximum of 12,5 µm long.** **14**
- 3** **(2) Lamellae edge pinkish underlined.** **4**
- 3*** **Lamellae edge not pinkish underlined.** **8**
- 4** **(3) Lamellae edge pinkish underlined with colourless gaps.**
C. up to 40 mm broad. V. practically absent. Sp. 11-14,5 x 6,6-7 µm. Pl. (40)55-85(90) x 7,5-15,5(17,5) µm. Ch. 25-57,5(70) x 7,5-15 µm, mixed with slender clavate and irregular cells, these sometimes with thickened walls. Soil, pieces of wood.

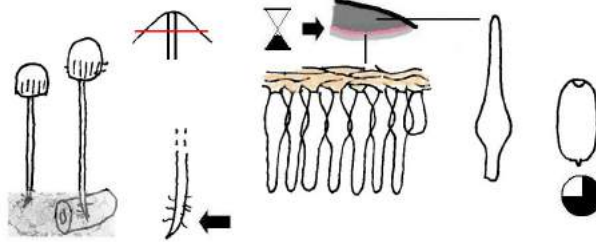
P. corrugis (PERS.: FR.) KONR. & MAUBL.
(see also F 21)

- 4*** **Lamellae edge continuously pinkish underlined.** **5**
- 5** **(4) Pleurocystidia utriform, top broadly obtuse.**
P. pseudogracilis (ROMAGN.) M. M. MOSER
(see F 26)
- 5*** **Pleurocystidia lageniform or fusiform.** **6**
- 6** **(5) Pleurocystidia fusiform, with a short neck.**
C. mostly 2-5 mm broad, never expanding, during the drying out almost always pinkish or reddish. V. scanty or absent. Sp. 9-14 x 5-6,5(7,5) µm (larger if 2-sporiged basidia present). Pl. 35-60(70) x 10-15 µm. Ch. 40-60 x 10-15 µm. Wet soil.



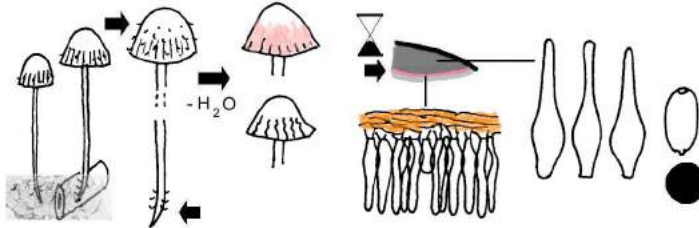
P. orbitarum (ROMAGN.) M. M. MOSER
(Syn.: *P. prona* f. *orbitarum* (ROMAGN.) KITS v. WAV.)

- 6*** **Pleurocystidia lageniform, with a long neck.** **7**
- 7** **(6) Cap 2-20 mm broad.**
C. never expanding. V. scanty. St. rooting. Sp. (9,5)10-13,5 x 5,5-7 µm. Pl. (35)40-70(80) x 10-15(17,5) µm. Ch. 25-50 x 7,5-12,5 µm. Soil, pieces of wood.



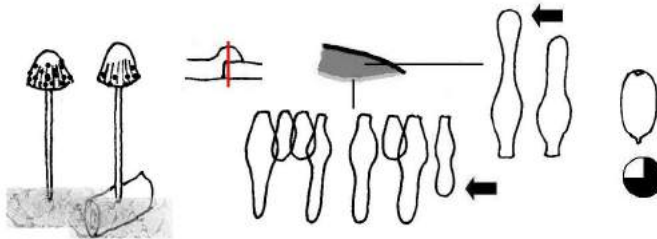
P. orbicularis (ROMAGN.) KITS. v. WAV.
(Syn.: *P. bernhardii* Kits v. Wav.)

- 7* **Cap up to 50 mm broad.**
C. during drying often pinkish. V. scanty. St. rooting. Sp. 10-13,5(14,5) x (5,5)6-7(8) µm. Pl. 40-70(85) x 8-15 µm. Ch. 20-55 x 5-16,5 µm. Soil, pieces of wood.



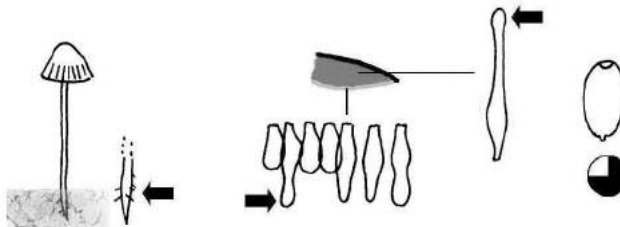
P. microrhiza (LASCH: FR.) KONR. & MAUBL.
(Syn.: *P. badiovestita* P. D. ORTON, *P. bifrons* (BERKELEY) A. H. SM. ss. KITS v. WAV., *P. squamifera* P. KARST., *P. subrosea* P. KARST., *P. stellata* (ROMAGN.) M. M. MOSER ex BON)

- 8 (3) **Clamps absent.**
C. up to 30 mm broad, fresh purplish brown. V. young distinct, volatile. Sp. (9)10-14,5(15,5) x 5,5-8 µm. Pl. (35)40-65(80) x 11-20 µm. Ch. 20-55(60) x 10-15(20) µm. Soil, pieces of wood.



P. vinosofulva P. D. ORTON
(Syn.: *P. riparia* A. H. Sm.?)

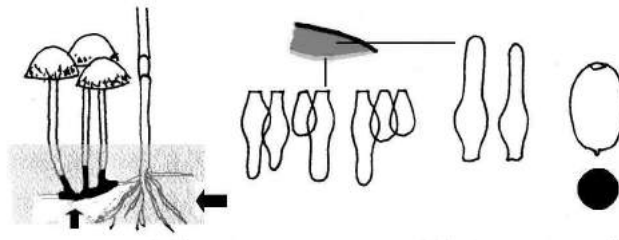
- 8* **Clamps present.** 9
9 (8) **Pleurocystidia mostly (sub-) capitate.**
C. up to 20 mm broad. V. scanty. St. rooting. Sp. 11,5-13,5 x 6,5-7 µm. Pl. 40-60 x 7,5-14(17,5) µm. Ch. 30-45 x 6-10 µm. Around a stump of *Fagus* on a costal dune.



P. ridicula KITS v. WAV.

- 9* **Pleurocystidia not or only rarely (sub-) capitate.** 10
10 (9) **Pleurocystiden utriform.** 11
10* **Pleurocystidia lageniform.** 12
11 (10) **In dunes, on sandy soil.**

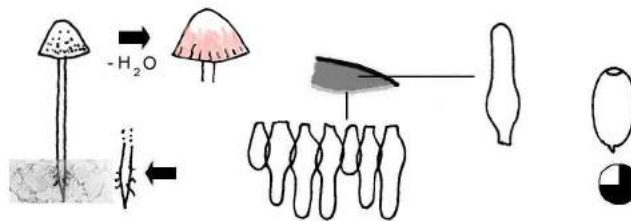
C. up to 50 mm broad. V. scanty to distinct. Sp. 9-15 x 5,5-8(8,5) μm . Pl. 30-75 x 10-27,5 μm . Ch. 25-55(70) x 10-17,5(20) μm . Plant roots enclosing.



P. ammophila (DURIEU & LEV.) P. D. ORTON
(Syn.: *P. arenulina* (PECK) A. H. SM.)

11* **Habitat otherwise.**

C. 10-35 mm broad. St. rooting. Sp. 8-14 x 4,5-6,3 μm . Pl. (40)46,5-70 x 11-23 μm . Ch. 24,5-63 x 8-22(24,5) μm . Soil, pieces of wood.



P. bifrons (BERKELEY) A. H. SM. ss. A. H. SM.

12 (10) **Pleurocystidia with a long neck.**

C. up to 15 mm broad, often with an umbo. V. scanty. St. rooting. Sp. 10,5-13,2 x 5,2-7 μm . Pl. 32-63 x 8,5-14,5 μm . Ch. 30-35 x 7,5-10 μm . Soil.



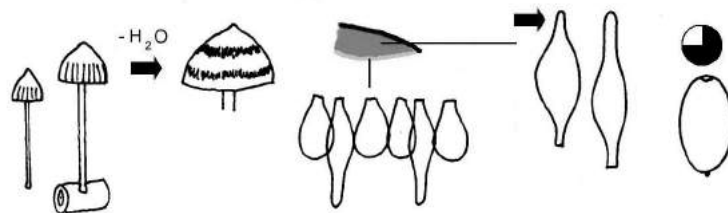
P. opaca (ROMAGN.) M. M. MOSER ex KITS V. WAV. ss. KITS V. WAV.

12* **Pleurocystidia mostly with a short neck.**

13

13 (12) **Cap fresh striated, colour predominately brown, spores up to 7 μm broad.**

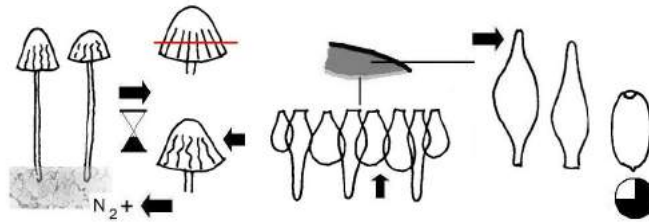
C. 6-25 mm broad. V. scanty. Sp. 10-14 x (4,5)5-7 μm . Pl. 35,5-60 x 9,5-16,5 μm . Ch. 24,5-60 x 8-16,5 μm . Soil, pieces of wood.



P. albidula (ROMAGN.) M. M. MOSER
(Syn.: *P. prona* var. *prona* f. *albidula* (M. M. MOSER) KITS V. WAV.)

13* **Cap fresh not striated, colour predominately grey, spores up to 8,5 (9) μm broad.**

C. 5-30 mm broad. V. scanty. Sp. (11)12,5-16(18) x (5)6-8,5(9) μm . Pl. 35-80 x 10-20 μm . Ch. 22-65(85) x 5,5-16,5 μm . Soil, dung.



P. potteri A. H. SM.

(Syn.: *P. argentata* A. H. SM., *P. atomata* ss. J. E. LANGE, *P. prona* f. *cana* KITS V. WAV.)

14 (2) Lamellae edge pinkish underlined. 15

14* Lamellae edge not pinkish underlined. 18

15 (14) Lamellae edge continuously pinkish underlined.
P. microrhiza (LASCH: FR.) KONR. & MAUBL.
(see G 7*)

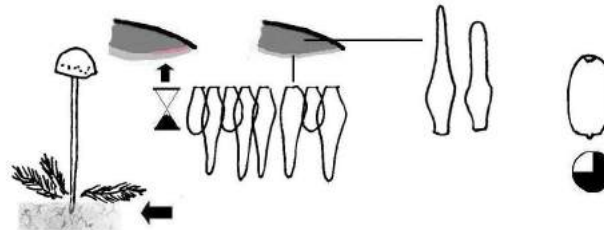
15* Lamellae edge indistinctly or not continuously pinkish underlined. 16

16 (15) Cheilocystidia mixed with slender clavate and irregular cells.
C. 10-25 mm broad. V. practically absent. Sp. 10-12,5 x 5-7(7,5) μm . Pl. (40)46,5-70(80) x 8-13,5(16,5) μm . Ch. 24,5-55 x 7-13,5 μm . Clavate and irregular marginal cells often with thickend. Soil, pieces of wood.

P. corrugis (PERS.: FR.) KONR. & MAUBL.
(see also F 20)

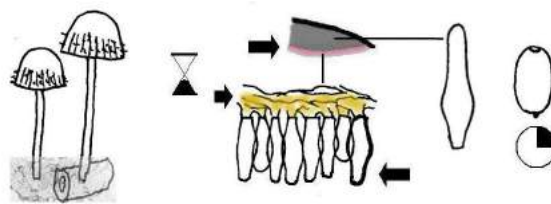
16* Without irregular cells. 17

17 (16) Cheilocystidia mostly with a long neck.
C. up to 30(50) mm broad. V. scanty. Lamellae edge sometimes pigmented near the margin of cap. Sp. (9)10-12(12,5) x 5,5-6,5 μm . Pl. 47,5-72,5 x 10-17,5(19) μm . Ch. (27,5)32,5-50(60) x 7,5-12,5 μm . Mossy, poor soil.



P. dicrani (A. E. JANSEN) KITS V. WAV.

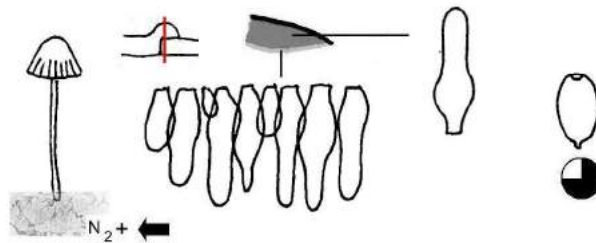
17* Cheilocystidia mostly with a short neck.
C. up to 70 mm broad. V. scanty. Sp.(8,5) 9-11,5 x (5)5,5-6,5(7) μm . Pl. 40-80 x 10-16(17,5) μm . Ch. 30-60 x 12,5-15 μm , sometimes with slightly thickened walls. Lamellae edge in aging often pigmented. Soil, pieces of wood, under *Fagus* (and *Castanea sativa*).



P. fagetophila ÖRSTADIUS & ENDERLE

(Syn.: *P. murcida* (FR.) KITS V. WAV. ss. auct. rec.)

18 (16) Clamps absent.
C. 10-20 mm broad, strikingly purplish. V. scanty. Sp. 9,5-11,5(12) x 5-6 μm . Pl. 39-48 x 9-12 μm . Ch. 30-58 x 9-14 μm . Fertilized soil, dung.



P. purpureobadia ARNOLDS

18* Clamps present. 19

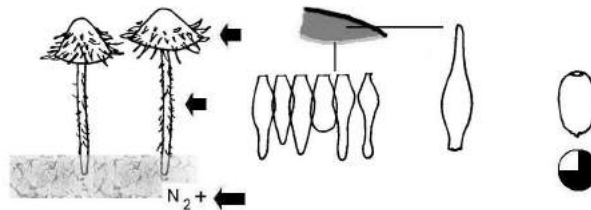
19 (18) Germ pore indistinct, small.

P. magnispora HEYKOOP & G. MORENO
(see B 10)

19* Germ pore distinct. 20

20 (19) On dung.

C. up to 25 mm broad. V. distinct. Sp. (9)10-12,5(13,5) x (4,5)5-7 μ m. Pl. (20)30-55(60) x 10-17,5 μ m. Ch. 25-50 x 7,5-15 μ m. Dung, fertilized soil.



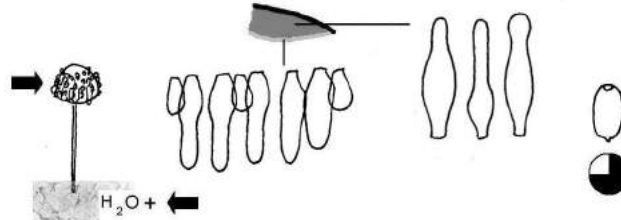
P. hirta PECK

(Syn.: *P. coprobia* (J. E. LANGE) A. H. SM.)

20* Not on dung. 21

21 (20) Veil strongly developed, scaly.

C. 16-40 mm broad. Sp. 8-11(11,5) x 4,5-6(7) μ m. Pl. (35)50-80 x 8-20 μ m. Ch. 32,5-57,5 x 8-12,5 μ m. Wet soil.



P. gordonii (BERK. & BROOME) A. PEARS. & DENNIS

(Syn.: *P. abortiva* A. H. SM., *P. candidissima* A. H. SM., *P. pervelata* KITS V. WAV., *P. pseudogordonii* KITS V. WAV., *P. variabilissima* A. H. SM., *P. vestita* (PECK) A. H. SM.)

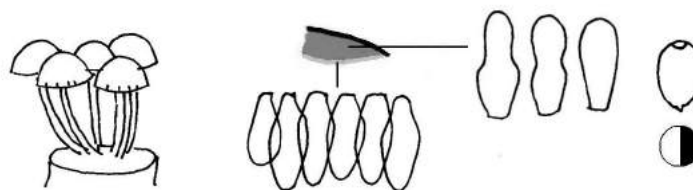
21* Veil more sparse, not scaly. 22

22 (21) Pleurocystidia up to 50 μ m long. 23

22* Pleurocystidia up to 75(90) μ m long. 26

23 (22) Caespitose on dead wood (*Salix*).

C. up to 40 mm broad. V. scanty. Sp. 9-11 x 5,5-6,5 μ m. Pl. 35-50 x 12,5-22,5 μ m. Ch. 35-50 x 12,5-22,5 μ m.

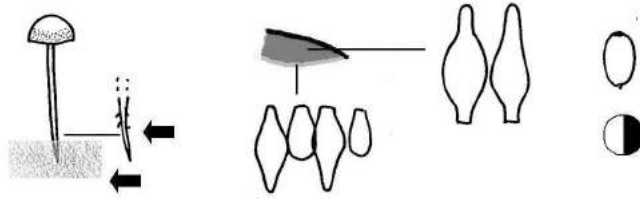


P. storea (FR.) M. M. MOSER ex BON

23* Terrestrial

24

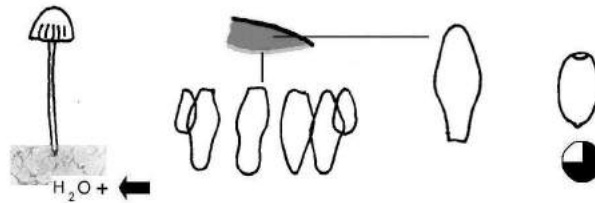
- 24 (23) **On sandy soil.**
 C. up to 25 mm broad. V. young distinct, volatile. St. rooting. Sp. 9,5-12 (-13) x 5,5-7 µm. Pl. 40-50 x 10-16 µm. Ch. 25-50 x 8-13 µm.



P. sublatispora ÖRSTADIUS, S.- Å. HANSON & E. LARSS

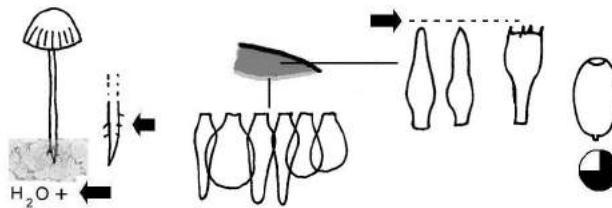
- 24* **On muddy soil.** 25

- 25 (24) **Cap 3,5-10 mm broad.**
 V. scanty. Sp. 9,5-14 x 5-7 µm. Pl. 40-50 x 10-15 µm. Ch. 30-45 x 10-18 µm.



P. palustris (ROMAGN.) M. M. MOSER

- 25* **Cap 12-30 mm broad.**
 V. scanty. St. rooting. Sp. 10-12 x 5,5-6,5 µm. Pl. 35-50 x 10-16 µm. Ch. 30-38 x 9-15 µm.

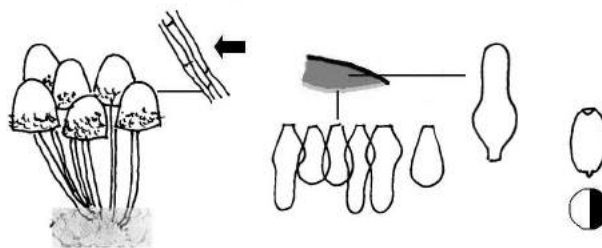


P. trepida (FR.) GILLET

- 26 (22) **Cheilocystidia predominantinglly utriform.** 27

- 26* **Cheilocystidia predominantinglly lageniform.** 28

- 27 (26) **Pileipellis as cutis.**
 C. up to 35(50) mm broad. V. scanty to distinct. Sp. (8)9-11(12) x 5-6,5 µm. Pl. (35)47,5-70(90) x 15-25 µm. Ch. (30)35-60(65) x 10-25 µm. Caespitose on hardwood stumps.



Coprinopsis pannucoides (J. E. LANGE) ÖRSTADIUS & E. LARSSON
 (Syn.: *P. cuspitata* A. H. SM., *P. pannucoides* (J. E. Lange) M. M. Moser)

- 27* **Pileipellis as hymeniderm.** *P. fagetophila* ÖRSTADIUS & ENDERLE
 (see G 17*)

- 28 (26) **Stipe with a short pseudorhiza.** *P. pellucidipes* (ROMAGN.) GALLANT ex M. M. MOSER

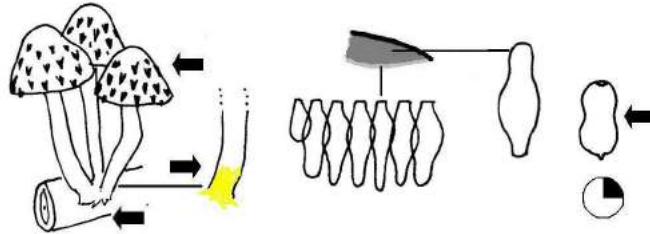
Part H

(Part E)

1

Spores median often constricted.

C. up to 75(100) mm broad. V. distinct, scaly. Stipe at the base usually yellowish. Sp. (6)6,5-8(9) x 3,5-4,5 µm. Pl. (32,5)35-50(75) x 10-17,5 µm. Ch. 30-65 x (7,5)10-15, polymorph. Solitary and caespitose, soil.



***P. cotonea* (QUÉL.) KONR. & MAUBL.**

(Syn.: *P. alboalutacea* A. H. SM., *P. duchesnayensis* A. H. SM., *P. insignis* A. H. SM., *P. lacrymabunda* (FR.) M. M. MOSER ss. A. H. SM., *P. olivaceopallida* A. H. SM., *P. subvolvata* A. H. SM.)

1*

Spores otherwise.

2

2

(1) Spores often up to 6 µm broad.

3

2*

Spores predominantly only up to 5 µm broad.

5

3*

(2) Pleurocystidia lageniform.

***P. impexa* (ROMAGN.) BON**
(see C 17)

3*

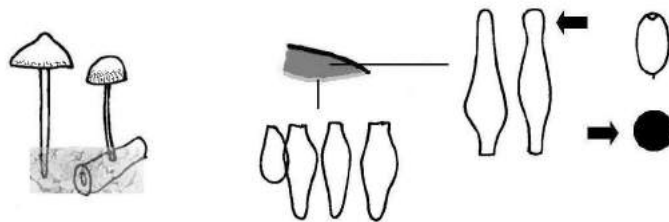
Pleurocystidia utriform.

4

4

(3) Pleurocystidia often (sub-)capitate.

C. up to 40 mm broad. V. young up to the middle of the cap, volatile. Sp. 8-10,5 x 5-6 µm. Pl. 35-80 x 10-16 µm. Ch. 20-45 x 6-12 µm. Soil, dead wood.

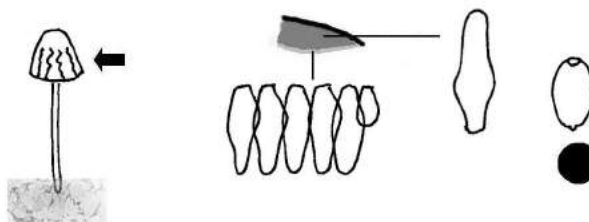


***P. fennoscandia* ÖRSTADIUS & E. LARSS.**

4*

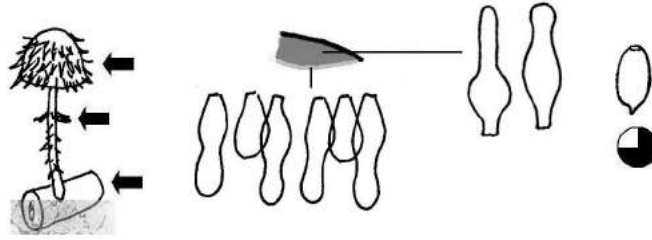
Pleurocystidia not (sub-)capitate.

C. up to 20(30) mm broad, wrinkled. V. scanty. Sp. (7,5)8,5-9(10) x 5-6 µm. Pl. (28)38-65 x 12-19 µm. Ch. 15-43 x 8-15 µm. Soil.



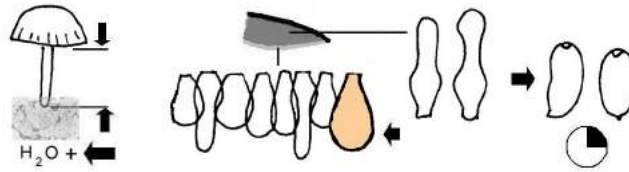
***P. reticulata* (ROMAGN.) M. M. MOSER**
(Syn.: *P. romagnesiana* BON)

- 5 (3) **Pleurocystidia often (sub-)capitate.** 6
 5* **Pleurocystidia not or very rarely (sub-)capitate.** 8
 6 (5) **Spores in water dark red brown.**
 C. 10-50 mm broad. V. strongly developed. St. often with annulus. Sp. (6)6,5-9(10) x 4-4,5(5) μm . Pl. 40-50 x 15-18 μm . Ch. 30-55 x 12-15 μm . Fresh mushroom with sweetish odour. Dead wood, bark chips, soil.



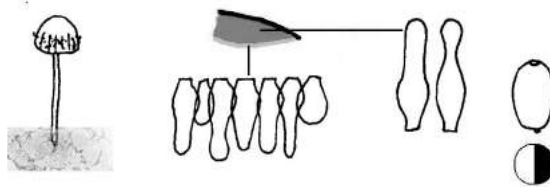
P. suavisissima AYER
 (Syn.: *P. sacchariolens* ENDERLE)

- 6* **Spores in water reddish to medium brown.** 7
 7 (6) **Spores up to 8(9) x 5 μm .**
 C. 10-50 mm broad. V. scanty to distinct. Stipe usually strikingly short. Sp. (6,5)7-8(9) x 4-5 μm . Pl. (37,5)40-70 x 10-20 μm . Ch. (22,5)27,5-60 x (7,5)10-17,5(20) μm . Larger clavate marginal cells often brownish. Muddy or wet soil.



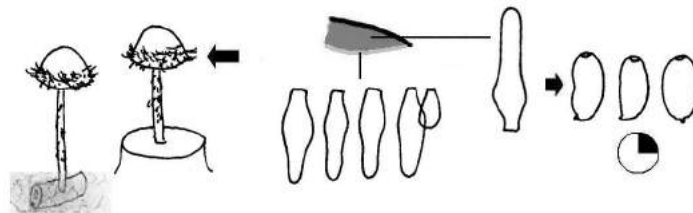
P. noli-tangere (FR.) A. PEARSON & DENNIS

- 7* **Spores up to 7,5 μm .**
 C. up to 16 mm broad. V. scanty. Sp. 6,2-7,5 x 3,7-4,5 μm . Pl. 33-57,5 x 9,5-17,5 μm . Ch. 22-40(50) x 8-15 μm . Soil.



P. mookensis KITS V. WAV.

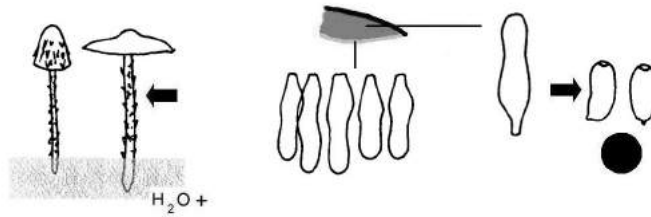
- 8 (5) **Spores up to 8(9) μm long.** 9
 8* **Spores up to 10(10,5) μm long.** 13
 9 (8) **Spores pale reddish yellow.**
 C. up to 35 mm broad. V. strongly developed, cells up to 300 μm long. Sp. 6-8 x 3,5-5 μm . Pl. 30-80 x 6-14 μm . Ch. 25-60 x 6-15 μm . Dead wood, stumps (*Fagus*).



P. squamosa (P. KARST) M. M. MOSER ex A. H. SM.
 (Syn.: *P. artemisiae* var. *microspora* KITS V. WAV.)

- 9* **Spores distinctly darker.** 10

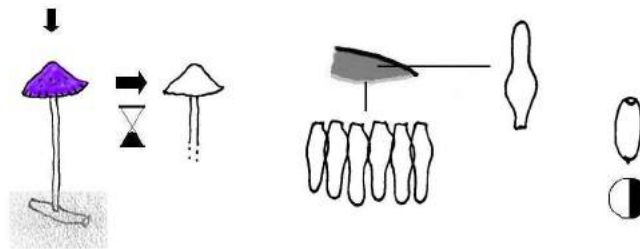
- 10 (9) **Spores in KOH black, opaque.**
 C. up to 50 mm broad, V. strongly developed. Stipe with scales. Sp. 7-8,5 x 3-3,5(4) μm . Pl. 30-50 x 7-14 μm . Ch. 30-50 x 7-14 μm . Sandy soil, floodplain forest with *Alnus*; Switzerland.



P. immaculata HORAK & GRIESSER

- 10* **Spores in KOH brown or grey brown, not opaque.** 11

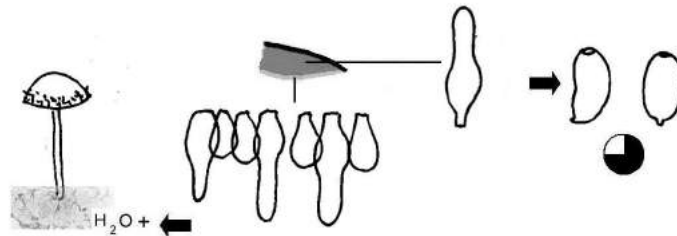
- 11 (10) **Cap fresh violet.**
 C. up to 12 mm broad. V. absent. Sp. 7-8,2 x 3,7-4,2 μm . Pl. and Ch. 24-45 x 9-15 μm . Dead wood (*Juniperus macrocarpa*).



P. violaceopallens CONTU

- 11* **Cap not violet.** 12

- 12 (11) **On wet soil.**
 C. up to 20 mm broad. V. scanty. Sp. 6,5-9 x 3,5-5 μm . Pl. 25-48 x 7-14 μm . Ch. 15-40 x 6-14 μm .



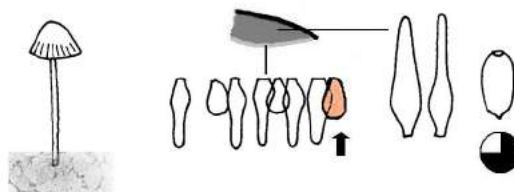
P. rubiginosa A. H. SM.

- 12* **Habitat otherwise.**
P. senex (PECK) A. H. SM.
 (see D 25*)

- 13 (8) **Sphaeropedunculate marginal cells partly thickwalled and brownish.** 14

- 13* **Sphaeropedunculate marginal cells always thinwalled and colourless.** 15

- 14 (14) **L.edge often pinkish pigmented., veil scanty.**
 C. up to 50 mm broad. Sp. 8-11,2 x 3,7-5(6) μm . Pl. 44-73(82) x 8-15 μm , fusiform. Ch. 25-55 x 8-16,5 μm . Soil, stumps.

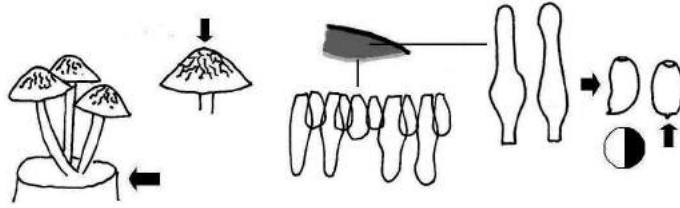


P. fulvescens (ROMAGN.) M. M. MOSER

- 14* **L.edge colourless, veil strongly developed.**

15 (13) Spores at base mostly truncated.

C. up to 50(75) mm broad, distinctly wrinkled. V. scanty to distinct. Sp. 6,5-8(9) x 3,5-4,5(5) µm. Pl. 40-90 x 12,5-17,5 µm, fusiform to utriform. Ch. 30-60 x (9)10-13(15) µm. Cystidia some times subcapitat. Stumps of conifers.



P. pertinax (FR.) ÖRSTADIUS

(Syn.: *Psathyrella chondroderma* (BERK. & BROOME) A. H. SM.)

15* Spores not so.

P. senex (PECK) A. H. SM.
(see D 25*)

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