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**Key to *Psathyrella* and related species**

**Latest update: 03.03.2019**

14.04.18 (*P. salina* added in part E14\*, other frequency of numbers in part E), 16.12.18 (some corrections of data), 18.01.19 (other frequency of numbers in part A, some small corrections), 20.02.19 (*P. paecilosperma* added in A13, other frequency of numbers in part A), 03.03.19 (*P. dondlii* added in B17\*).

**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*).

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:**

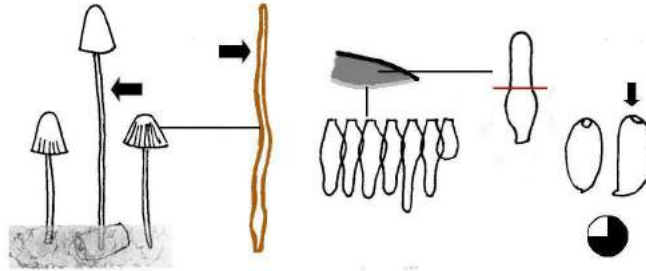
C. = cap, Ch.= cheilocystidia, L. = lamellae, Pl. = pleurocystidia, P. = *Psathyrella*., Sp. = spores, St. = stipe, Syn. = synonym(s), V. = veil

**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
	<b>CaCO<sub>3</sub> +</b>	<b>H<sub>2</sub>O +</b>	<b>C +</b>	<b>N<sub>2</sub> +</b>	<b>- H<sub>2</sub>O</b>	<b>+ KOH</b>	<b>n +++</b> <b>n - - -</b>
nerve expanding	calcareous	wet	burned ground	dung, fertilized	drying	in KOH	very numerous very rare

## Main part

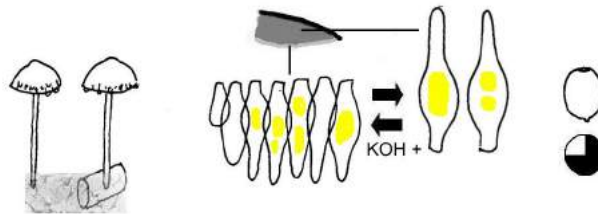
- 1**      **Cap with long brownish hairs.**  
 C. up to 55(65) mm broad. V. absent. Stipe often very long. Sp. 12-18(20) x 6,5-9,5(10) µm, germ pore eccentric. Ch. 20-80 x 7-20 µm. Soil, leaf litter, pieces of wood.



***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)

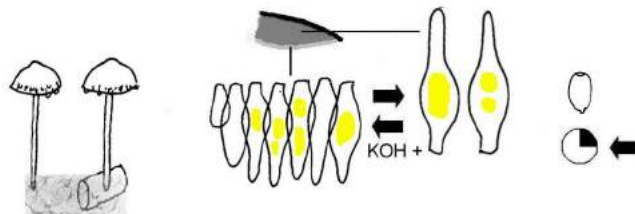
- |           |   |           |
|-----------|---|-----------|
| <b>1*</b> | <b>Cap without hairs.</b>   | <b>2</b>  |
| <b>2</b>  | <b>(1) Veil consisting predominantly of +/- cylindrical elements or absent.</b>   | <b>3</b>  |
| <b>2*</b> | <b>Veil consisting exclusively of globose elements, cap mealy-grained dusted.</b>   | <b>12</b> |
| <b>3</b>  | <b>(2) Cystidia with large oil drops (often yellowish in KOH).</b>  | <b>4</b>  |
| <b>3*</b> | <b>Cystidia otherwise.</b>  | <b>5</b>  |
| <b>4</b>  | <b>(3) Spores 7-9,5 x 4,5-5,5 µm, dark brown.</b><br>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.



***Typhrasa nanispora* ÖSTADIUS, HAUSKN. & E. LARSS.**

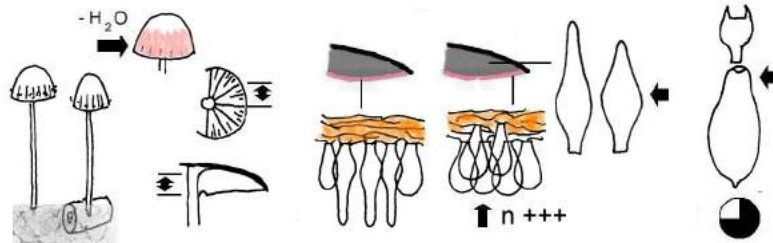
- |           |  |          |
|-----------|--|----------|
| <b>5</b>  | <b>(3) Pleurocystidia present.</b>   | <b>6</b> |
| <b>5*</b> | <b>Pleurocystidia absent or very rare.</b>   | <b>A</b> |
| <b>6</b>  | <b>(5) Cystidia strikingly with crystals and/or at least partly distinctly thickwalled.</b>                                      | <b>B</b> |
| <b>6*</b> | <b>Cystidia without or only rarely with crystals and predominatingly thinwalled.</b>   | <b>7</b> |
| <b>7</b>  | <b>(6) Basidia predominantingly 2-spored.</b><br>(See also <i>P. corrugis</i> , <i>P. orbitarum</i> , <i>P. pseudogracilis</i> ) | <b>8</b> |

7\* Basidia predominantly 4-spored.

11

8 (7) Spores up to 17(20)  $\mu\text{m}$  long.

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



*P. prona* (FR.) GILLET ss. ÖRSTADIUS

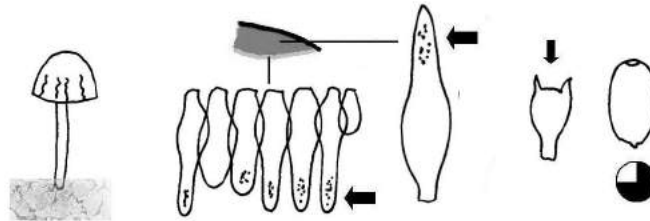
(Syn.: *P. megaspora* A. H. SM., *P. subrubella* A. H. SM.)

8\* Spores distinctly shorter.

9

9 (8) Spores 13-15  $\mu\text{m}$  long.

C. 20-40 mm broad. V. scanty. Sp. 13-15 x 7-8. Pl. 63-75 x 13-21  $\mu\text{m}$ . Ch. 37-63 x 13-20(23)  $\mu\text{m}$ , densely packed. Cystidia often with granules. Soil, *Fagus* forest. 2-spored form of *P. bipellis*.



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

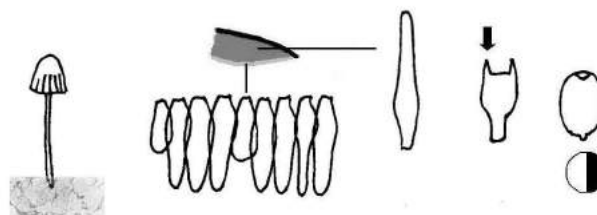
(Syn.: *P. barlae* (BRES.) A. H. SM., *P. brooksi* A. H. SM., *P. macrocystidiata* ARNOLDS, *P. odorata* (PECK) SACC.)

9\* Spores shorter.

10

10 (9) Spores up to 10  $\mu\text{m}$  long.

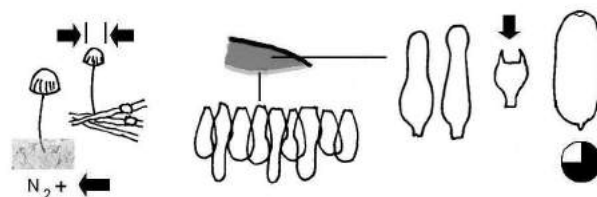
C. up to 11 mm broad. V. scanty. Sp. 8-9(10) x (5)5,5-6,5  $\mu\text{m}$ . Pl. 32,5-50(60) x 7,5-12,5  $\mu\text{m}$ . Ch. 20-35(45) x 7,5-10(12,5)  $\mu\text{m}$ , often closely packed. Soil, leaf litter.



*P. perpusilla* KITS V. WAV.

10\* Spores longer.

C. 3-10 mm broad. V. scanty. Sp. 8,8-12,5(15) x (4,5)5,5-7(7,5)  $\mu\text{m}$ . Pl. 25-60 x 8-17,5  $\mu\text{m}$ . Ch. 13,5-60 x 6-20  $\mu\text{m}$ . Dead grass, hay, straw, dung. 2-spored form.



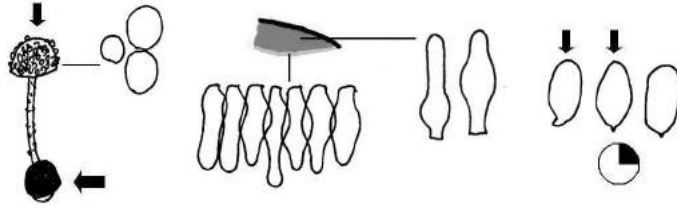
*P. romagnesii* KITS V. WAV.

(Syn.: *P. waverenii* ARNOLDS)

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

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

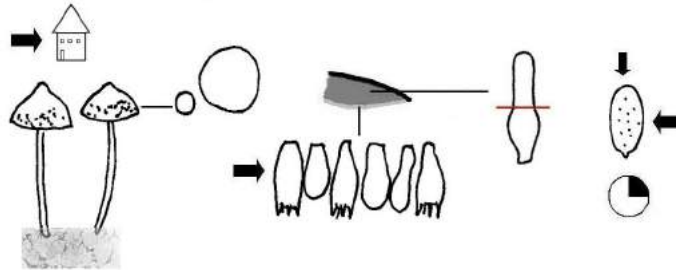
12 (2) On different basidiomycetes.  
C. up to 16(25) mm broad. V. strongly developed. Sp. 7-8,5(10) x 4-4,5 µm. Pl. 25-60 x 12,5-14,8 µm. Ch. 20-45 x 9-15 µm.



*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.



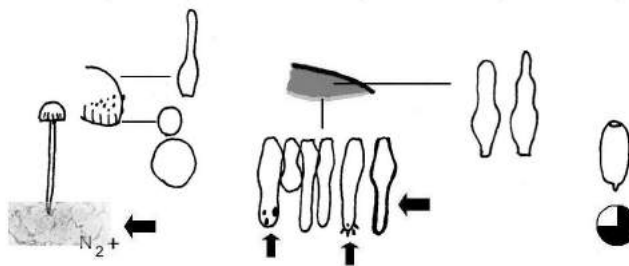
*P. ornatispora* M. VILLARREAL & ESTEVE-RAVENTÓS  
[not a *Psathyrella*-species, probably *Mythicomyces*]

13\* Spores smooth, pleurocystidia present. 14

14 (13) Pileocystidia present. 15

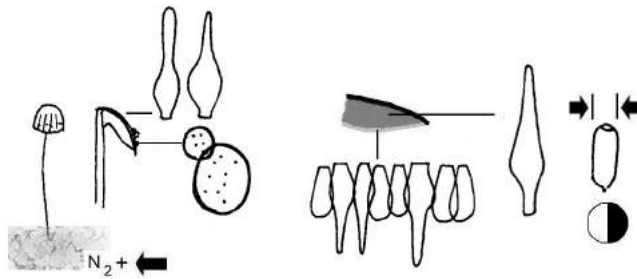
14\* Pileocystidia absent. 16

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**

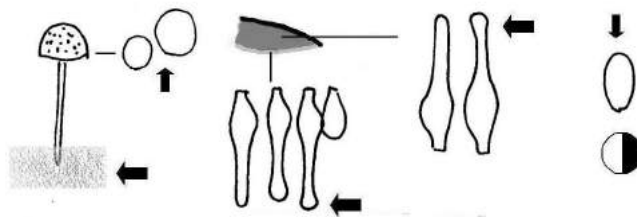
(Syn.: *P. berlinensis* E. GERHARDT, *P. minima* PECK, *P. granulosa* ARNOLDS?, *Psathyrella coprinoides* A. DELANNOY, CHIAFFI, CORTECOUISSE & EYSSARTIER?, *Coprinus parvulus* ULJÉ & KEIZER)

16 (14) **Pleurocystidia mostly lageniform.** 17

16\* **Pleurocystidia mostly utriform.** 18

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

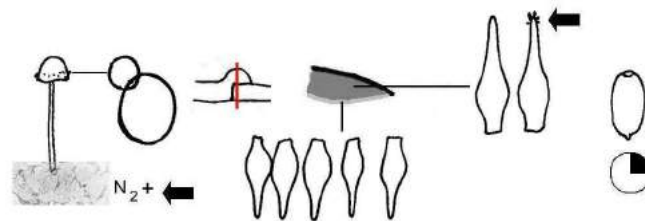
C. up to 12 mm broad. Vel. scanty. Sp. 8-9,2 x 4-4,6 µm, without germ pore. Pl. 55-80 x 12-22 µm. Ch. 30-75 x 9-22 µm. Cow pasture, sandy soil.



***P. lyckebodensis* 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.

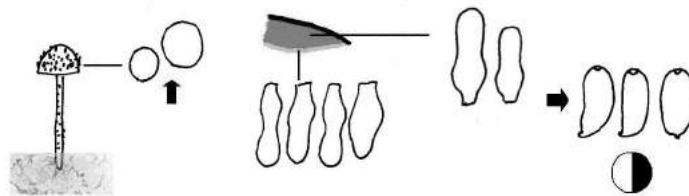


***P. granulosa* ARNOLDS**

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

18 (16) **Spores up to 11 µm long.**

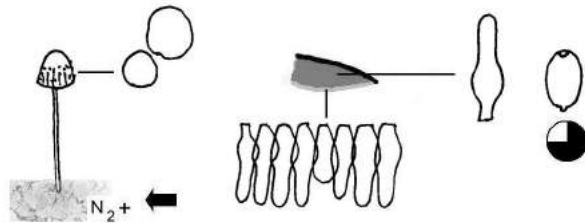
C. 5-23 mm broad. V. distinct. Sp. 8,5-11 x 4,5-6 µm. Pl. 28-54 x 13-18 µm. Ch. 21-54 x 10-14 µm. Manured lawn.



***P. albobloccosa* 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.

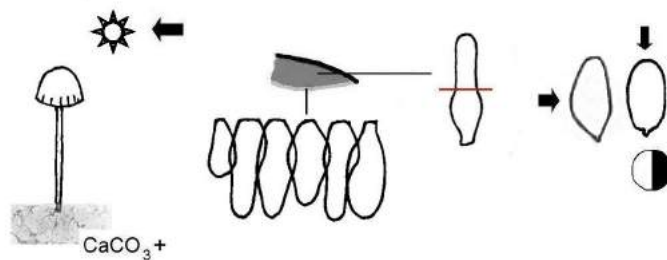


*P. sphaerocystis* P. D. ORTON

**Part A**

**(Main part)**

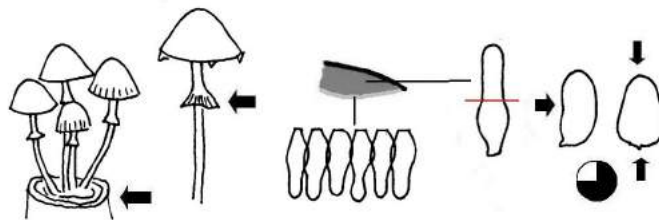
- 1 **Germ pore absent or only very indistinctly visible.** 2
- 1\* **Germ pore always distinctly visible.** 5
- 2 (1) **Spores often limoniform.**  
C. 5-15 mm broad. V. scanty. Sp. 6.5-9 x 4,5-6 μm. Ch. 30-46 x 12-15 μm, closely packed. Calcareous soil.



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

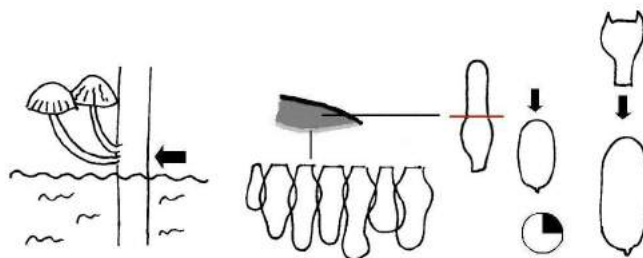
(Syn.: *P. submicrospora* HEYKOOP & G. MORENO)

- 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

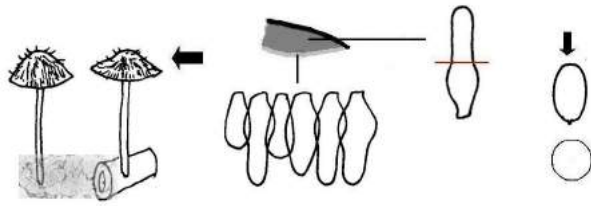


(Syn.: *P. subaustralis* A. H. SM.)

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.



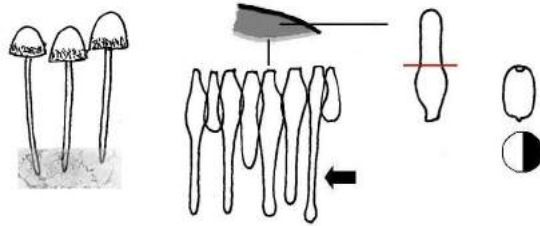
***Coprinopsis melanthina* (FR.) ÖRSTADIUS & E. LARSS.**

(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\*

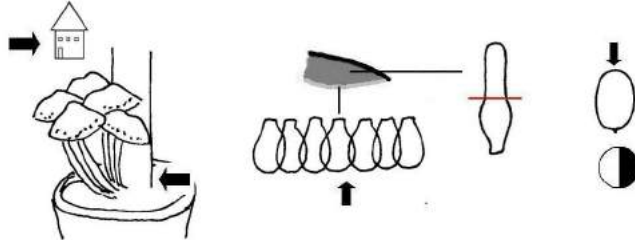
**Cheilocystidia shorter.**

6

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

7

(6) **Clamps absent.**

8

7\*

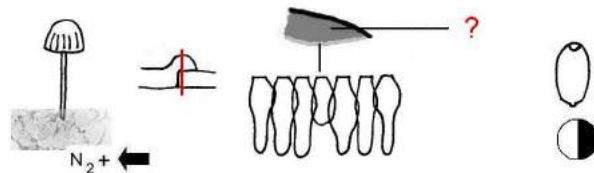
**Clamps present.**

10

8

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

C. (1)4-12 mm broad. 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.



***P. citerinii* ESSARTIER**

8\*

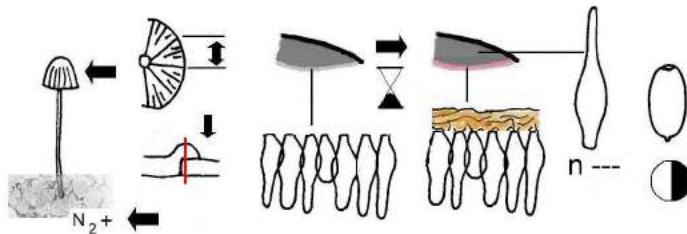
**Habit like *Mycena*.**

9

9

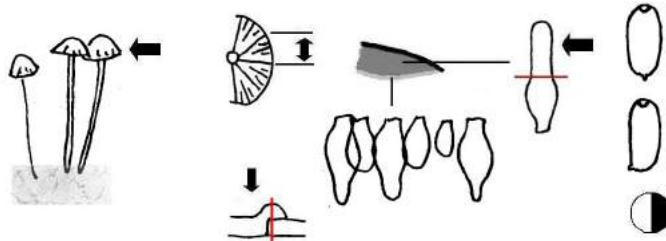
(8) **Cap up to 20 mm broad, brown to grey brown, striated highly upward.**

V. scanty. L. distant, edge old sometimes reddish. Sp. 8-11,5(12,5) x 4,4-5,5 µm. Pl. extremely rare, overlokkabla. Ch. 15-45(55) x 6-16(20) µm. Nitrogen-rich soil.



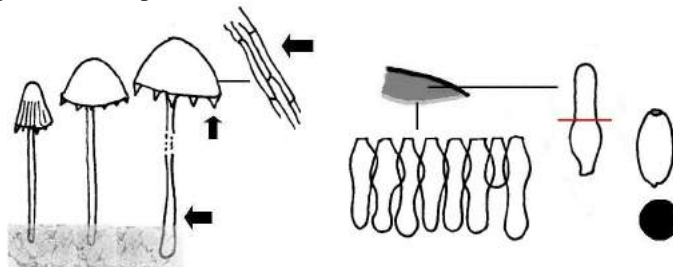
*P. effibulata* ÖRSTADIUS & E. LUDWIG

- 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)  $\mu\text{m}$ . Pl. absent or extremely rare. Ch. 25-35 x 7-15  $\mu\text{m}$ . Soil.



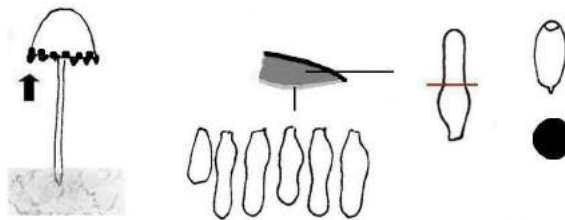
*P. complutensis* HEYKOOP & G. MORENO

- 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  $\mu\text{m}$ .**  
 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  $\mu\text{m}$ . Ch. 25-47,5(60) x 7,5-17,5  $\mu\text{m}$ , 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)

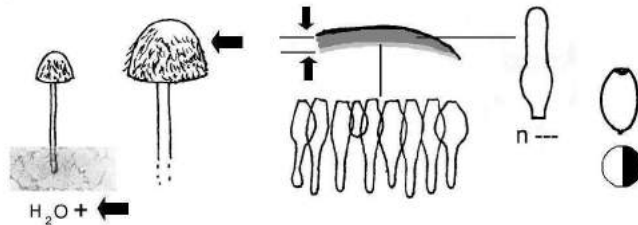
- 11\* **Veil also above the margin of the cap, spores up to 17 x 8  $\mu\text{m}$ .**  
 C. up to 50 mm broad. Sp. 11-17 x 6-8  $\mu\text{m}$ . Ch. 25-40 x 11-15  $\mu\text{m}$ . Calcareous loamy soil.



*Coprinopsis pseudomarcscibilis* 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)  $\mu\text{m}$ . Ch. 25-40(55) x 10-15  $\mu\text{m}$ , partly with crystals. Pl. absent or extremely rare. Wet soil, pieces of wood.

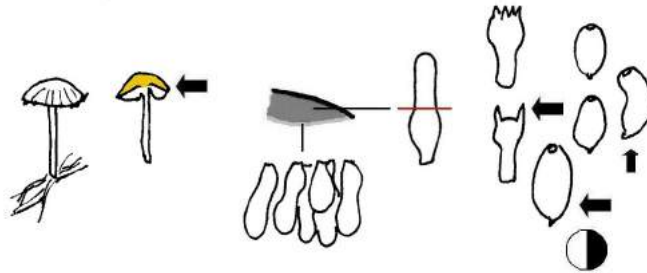




*Coprinopsis caniceps* (KAUFFMAN) ÖRSTADIUS & E. LARSS.  
(Syn.: *P. caniceps* (KAUFFM.) A. H. SM., *P. lanuginosa* A. H. SM.)

12\* **Cheilocystidia utriform, clavate or cylindrical, top broadly obtuse.** 13

13 (12) **Spores often with an irregular outline.**  
C. up to 40 mm broad, flesh yellowish. V. distinct. Sp. 6,0-13,0 x 3,8-6,3 µm. Ch. 37-50 x 12-14 µm. On fibers of *Phoenix canariensis*, Italy.



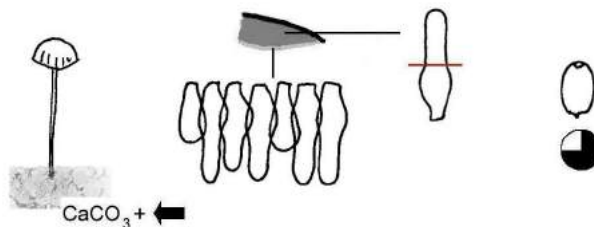
*P. paecilosperma* PACIONI

13\* **Spores ellipsoid to ovoid.** 14

14 (13) **Spores predominantly up to 8(9) µm long.** 15

14\* **Spores predominantly longer.** 17

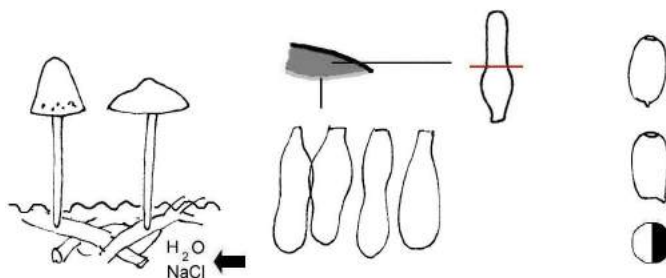
15 (14) **Cheilocystidia up to 45 µm long.**  
C. up to 30 mm broad. V. scanty. Sp. 6,5-8 x 3,5-5 µm, Ch. 15-45 x 8-20 µm.  
Soil, pieces of wood.



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

15\* **Cheilocystidia longer.** 16

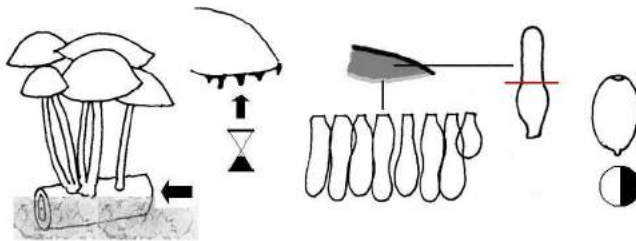
16 (15) **On plant debris in the brackish water.**  
C. up to 50 mm broad. V. young distinct, volatile. Sp. 6,3-11,5 x (3,8)4,5-6,5 µm.  
Ch. 30-65(80) x 10-18 µm. France (Corsica), Portugal, Spain (Mallorca).



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

16\* **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.

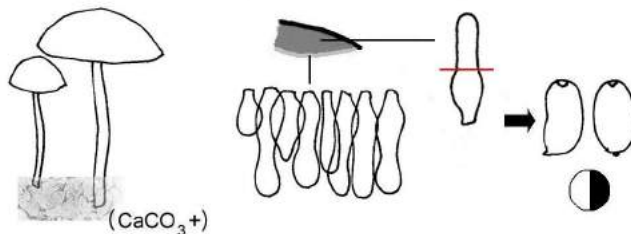


***P. candolleana* (FR.: FR.) MAIRE apud MAIRE & WERNER**

(Syn.: *P. appendiculata* (BULL.) MAIRE, *P. coronata* (FR.) M. M. MOSER, *P. egenula* (BERK. & BROOME) M. M. MOSER, *P. elegans* ROMAGN., *P. hymenocephala* (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.)

17 (14) 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**

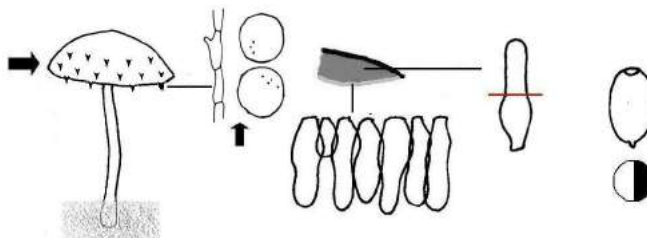
(Syn.: *P. badiophylla* var. *neglecta* (ROMAGN.) G. HIRSCH)

17\* Spores shorter.

18

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.



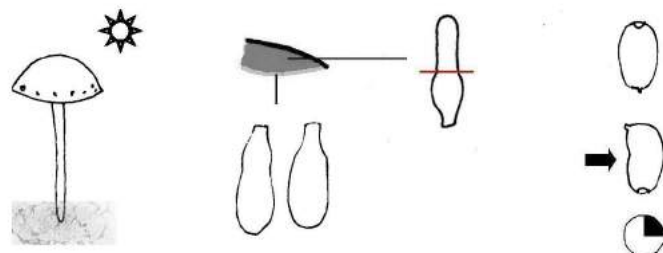
***P. bivelata* CONTU**

18\* Spores mostly phaseoliform, veil cells cylindrical.

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.

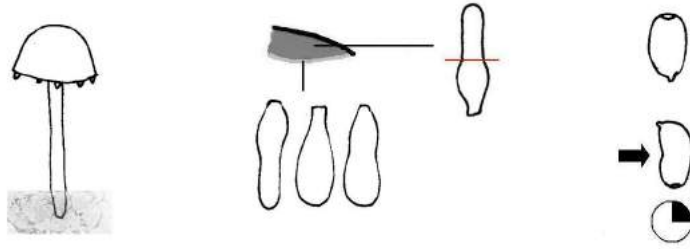


***P. gramina* KALAMEES**

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

$\mu\text{m}$ . Ch. 35-50 x 8,5-15  $\mu\text{m}$ . Terrestrial in woods, Turkmenistan.



*P. badhyzensis* KALAMEES

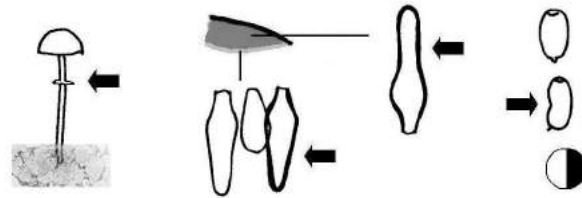
## Part B

### (Main part)

1

#### Stipe with a membranous annulus.

C. up to 25 mm broad. V. sparse. Sp. 9-11 x 5-6  $\mu\text{m}$ . Pl. 45-85 x 9-22  $\mu\text{m}$ . Ch. 30-60 x 10-18  $\mu\text{m}$ . 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\*

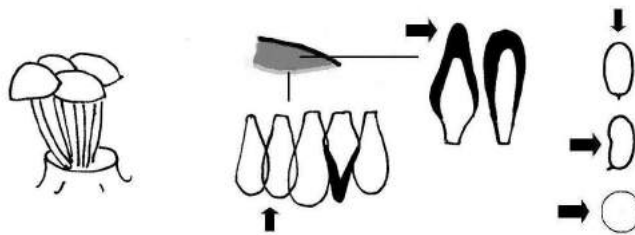
#### Cystidia otherwise.

5

4

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

C. up to 30 mm broad. V. absent. Sp. 5-6 x 3-4  $\mu\text{m}$ . Pl. 32-44 y 8-14  $\mu\text{m}$ . Dead wood, Russia, USA.

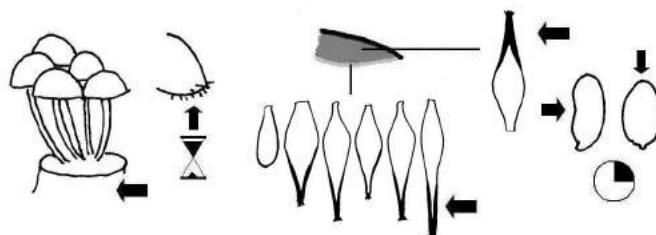


*Homophron camptopodum* (SACC.) ÖRSTADIUS & E. LARSS.

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)  $\mu\text{m}$ . Pl. (30)55-70(80) x 10-20(30)  $\mu\text{m}$ . Ch. 30-85 x 10-25  $\mu\text{m}$ , closely packed. Margin of cap with Hairs, 60-130 x 7,5-10  $\mu\text{m}$  (only at young caps distinct). Soil, wood, mostly caespitose.

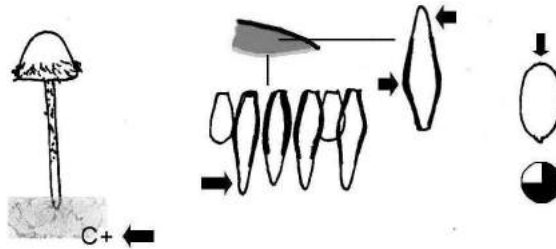


***Homophron sarcocephalus* (FR.) A. MELZER**

(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.



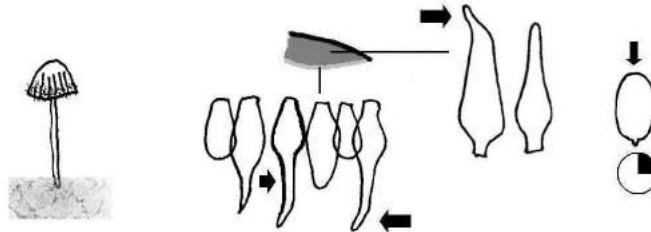
***P. pennata* (FR.) A. PEARSON & DENNIS**  
(Syn.: *P. carbonicola* A. H. SM.)

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.**

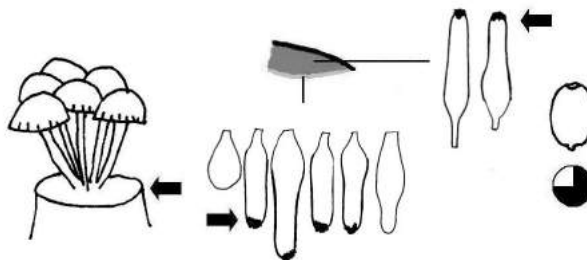
(Syn.: *P. galeroides* ROMAGN., *P. subumbrina* KITS V. WAV. & ÖRSTADIUS)

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.

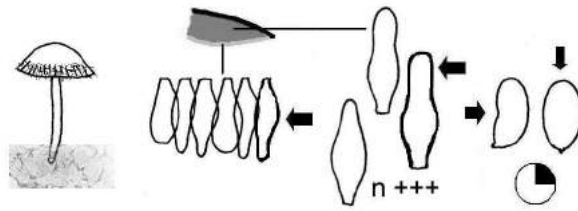


***Homophron cernuum* (VAHL: FR.) ÖRSTADIUS & E. LARSS.**

(Syn.: *P. cernua* (VAHL: FR.) M. M. MOSER ex M. LANGE, *P. ivoeensis* 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.**

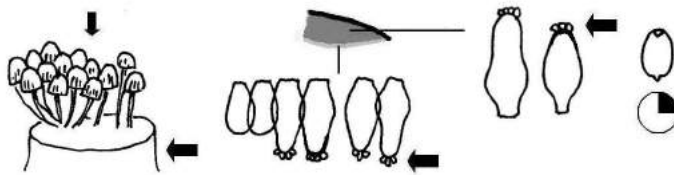
C. up to 40(55) mm broad. V. distinct. Sp. 6,5-8,5(9) x 3,5-5 µm. Pl. 40-70 x 10-16 µm, very numerous. Ch. (15)22-55(60) x 7,5-17,5 µm. Soil, pieces of wood.



*P. cortinarioides* P. D. ORTON

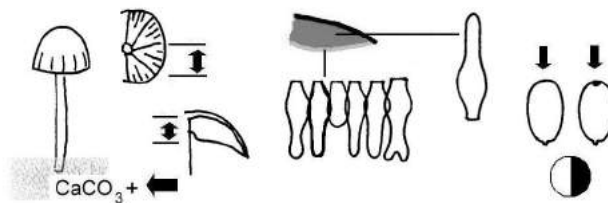
(Syn.: *P. frustulenta* (FR.) A. H. SM. ss. KITS v. WAV. non ss. A. H. SM., *P. multicystidiata* KITS v. WAV.)

- 8 (2) Walls of cystidia indistinctly thickened. 9
  - 8\* Walls of cystidia at least partly distinctly thickened. 15
  - 9 (8) Cystidia with many crystals. 9
- C. 5-20 mm broad. V. scanty. Sp. 5,5-7 x 3,5-4,5  $\mu$ m. Pl. 27,5-40 x 12,5-15(17,5)  $\mu$ m. Ch. 20-40 x 10-15(17,5)  $\mu$ m. Dead wood, stumps.



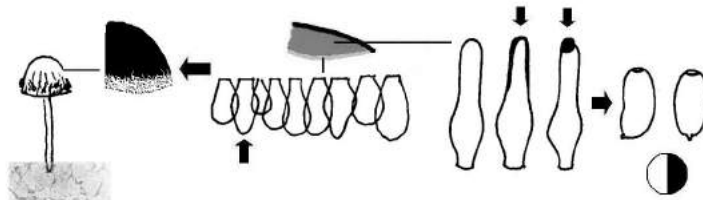
*P. pygmaea* (BULL.: FR.) SING.

- 9\* Cystidia without or only with very indistinct crystals. 10
  - 10 (9) Spores up to 12,5  $\mu$ m long. 10
- C. up to 30 mm broad. V. scanty. L. broadly adnate, distant. Sp. 9,5-12,5 x 5,5-7,5  $\mu$ m. Pl. 23-55 x 8-17  $\mu$ m. Ch. 20,5-47 x 6,8-17  $\mu$ m. Dry, calcareous soil.



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

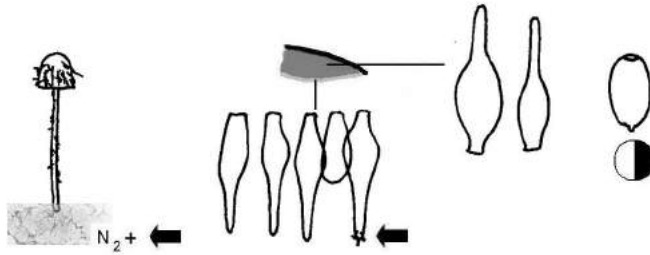
- 10\* Spores shorter. 11
  - 11 (10) Lamellae edge dominated by clavate marginal cells. 11
- C. up to 60 mm broad. V. distinct, in stark contrast to the fresh cap. Sp. 7-9,5 x 4-5  $\mu$ m. Pl. 30-65(75) x 10-20  $\mu$ m, often with slightly thickened walls or mucoid drops. Ch. 20-45 x 9,5-17,7  $\mu$ m, +/- "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. 12
- C. 5-20 mm broad. V. distinct. Sp. 8,5-11 x 4-5,5  $\mu$ m. Pl. 30-60 x 7-16  $\mu$ m. Ch.

20-45 x 7-16  $\mu\text{m}$ , sometimes with crystals. Dung, fertilized places.

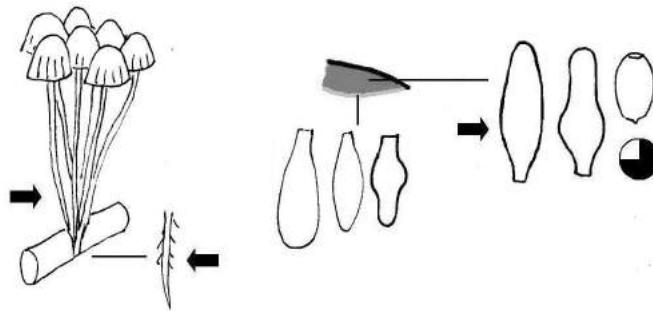


*P. scatophila* ÖRSTADIUS & E. LARSSON

13\*

**Habitat otherwise, pleurocystidia fusiform.**

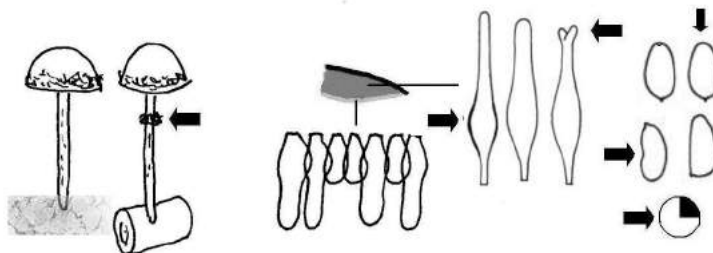
C. up to 30 mm broad. V. absent or very volatile. St. rooting. Sp. (7,3-)8,2-9,8(-12) x 4,5-5,7  $\mu\text{m}$ . Pl. 30-52 x 9,5-17  $\mu\text{m}$ . Ch. 20-40 x 7,5-14  $\mu\text{m}$ . Caespitose on dead wood.



*P. boreifasciculata* KYTÖV & LIIMAT.

14 (12) **Pleurocystidia up to 80  $\mu\text{m}$  long.**

C. up to 70 mm broad. V. distinct. Stipe sometimes with annulus. Sp. 7,5-10 x 4,5-5,5  $\mu\text{m}$ . Pl. 55-80 x 13-19  $\mu\text{m}$ , sometimes with thickened walls. Ch. 30-50 x 14-18(20)  $\mu\text{m}$ . Soil, wood.

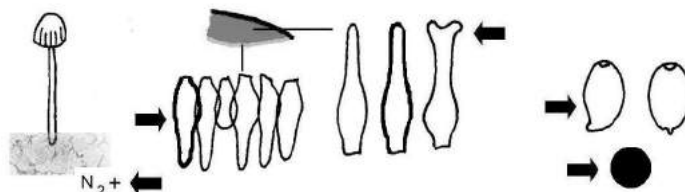


*P. langei* (MALENCON) CONTU

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

14\* **Pleurocystidia up to 60  $\mu\text{m}$  long.**

C. 3-6 mm broad. V. scanty to distinct. Sp. 8-9 x 4,5-5,5  $\mu\text{m}$ . Pl. 25-45(60) x 8-14  $\mu\text{m}$ . Ch. 25-40 x 8-14  $\mu\text{m}$ , clavate marginal cells small, scattered. Cow dung.



*P. fimiseda* ÖRSTADIUS & E. LARSSON

15 (8) **Cystidia without or with indistinct crystals.**

16

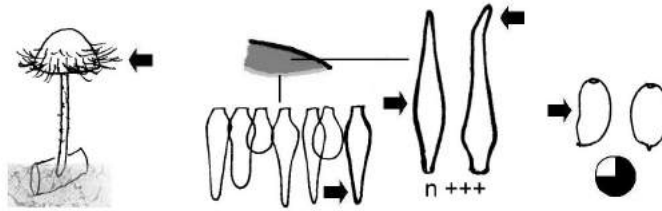
15\* **Cystidia with distinct crystals.**

18

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  $\mu\text{m}$ . Pl. 60-80 x 7,5-14  $\mu\text{m}$ , top often bent, very numerous. Ch. 45-60(70) x 10-16  $\mu\text{m}$ , closely packed. Soil, dead wood (*Fagus*).





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

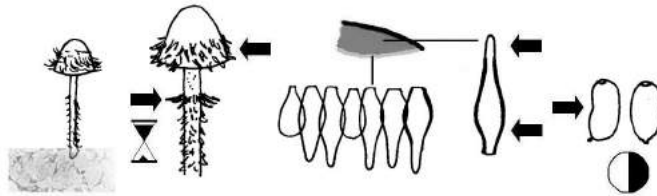
(Syn.: *P. indecorosa* A. H. SM., *P. avelleneifolia* var. *perplexa* A. H. SM.)

16\* **Pleurocystidia with a thinn-walled apex.**

17

17 (16) **Pleurocystidia predominantingly lageniform, predominantingly acute.**

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

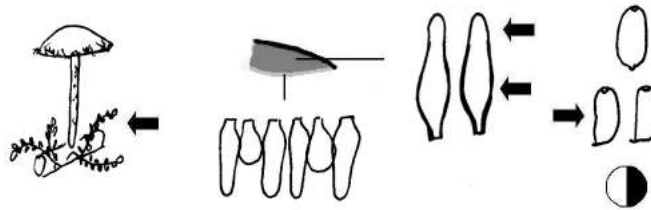


***P. fibrillosa* (PERS.: FR.) MAIRE**

(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\* **Pleurocystidia predominantingly sublageniform, predominantingly obtuse.**

C. up to 30 mm broad. V. distinct. Sp. 7,7-10 x 4,5-5,5  $\mu$ m. Pl. 43-77 x 11-24,5  $\mu$ m. Ch. 24,5-50 x 8-15  $\mu$ m, often closely packed. Moss-rich soil, dead wood.



***P. dondlii* A. MELZER**

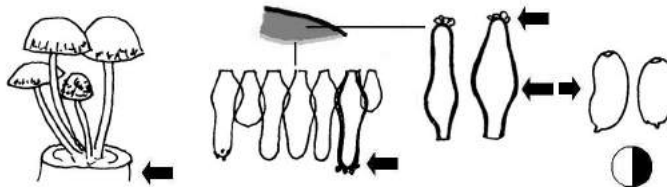
18 (15) **Walls of pleurocystidia only thickened predominantingly in the neck.**

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

(see B 7)

18\* **Walls of pleurocystidia completely thickened, not predominantingly in the neck.**

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



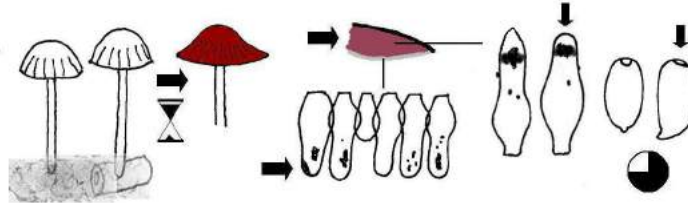
***P. olympiana* A. H. SM.**

(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)

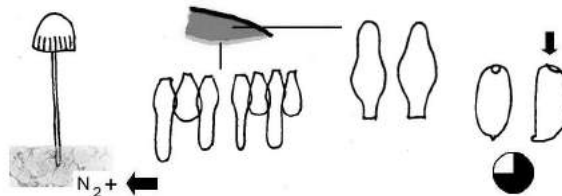
- 1      **Germ pore weakly to distinctly eccentric.** 2
- 1\*     **Germ pore central.** 3
- 2      (1) **Cystidia often with refractive inclusions.**  
 C. up to 60 mm broad, distinctly wrinkled, strikingly reddish tinted. V. mostly distinct. Sp. (10)11-15(18,5) x 6-9(10,5)  $\mu\text{m}$ , germ pore weakly eccentric. Pl. 52,5-100 x 12-30  $\mu\text{m}$ . Ch. 35-80 x 10-25  $\mu\text{m}$ , 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.)

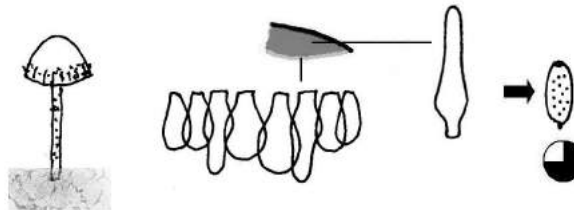
- 2\*     **Cystidia without refractive inclusions.**  
 C. up to 25 mm broad. V. scanty. Sp. 10-14,5(16) x 6,5-8(8,5)  $\mu\text{m}$ , germ pore mostly eccentric. Pl. 25-60 x 10-16,5  $\mu\text{m}$ . Ch. 20-55 x 7,5-16,5  $\mu\text{m}$ . Dung.



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

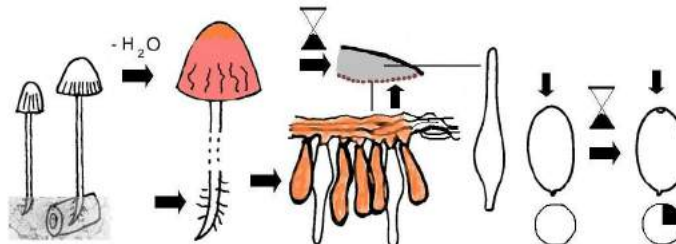
(Syn.: *P. coprophila* WATLING, *P. equina* A. H. SM., *P. fimetaria* WATLING)

- 3      (1) **Spores rough.**  
 C. up to 70 mm broad. V. distinct. Sp. 6,5-9 x (3-) 3,5-5  $\mu\text{m}$ . Pl. 20-60 x 8-15  $\mu\text{m}$ . Ch. 22,5-45 x 8-12,5  $\mu\text{m}$ , 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  $\mu\text{m}$ . Pl. 38-67 x 11-17  $\mu\text{m}$ . Ch. 32-61 x 7,5-14  $\mu\text{m}$ , frequently, lamellae edge with dots, consisting of thickwalled clavate cells. Soil, pieces of wood.

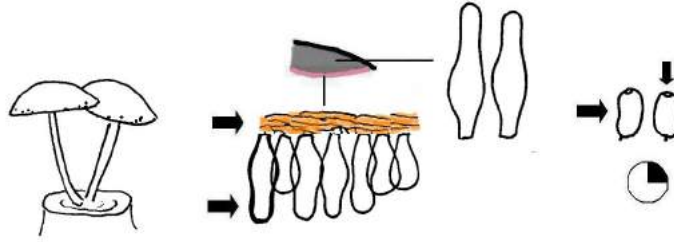


***P. amarescens* ARNOLDS**

(Probably a form of *P. corrugis* (PERS.: FR.) KONR. & MAUBL.)

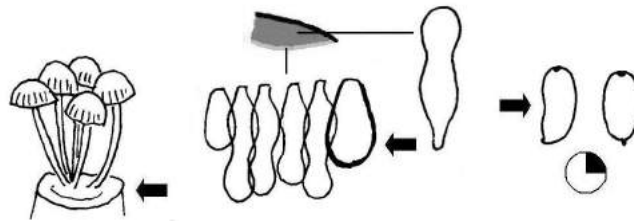
- 4\*     **Spores otherwise.** 5

- 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*.



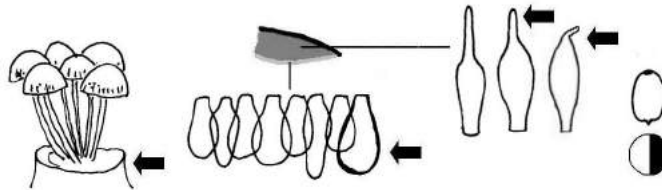
*P. carinthiaca* P. VOTO

- 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.



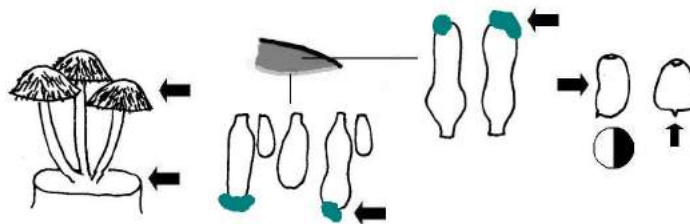
*P. fragrans* A. H. SM.

- 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.

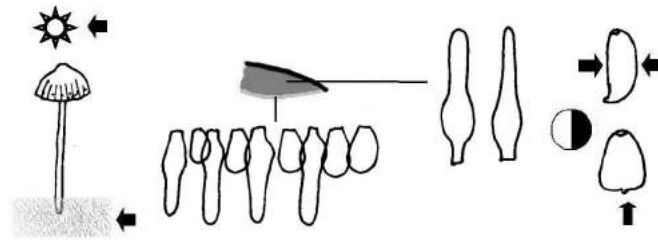
- 8 (5) Spores in front view partly triangular, irregular or strikingly round. 9  
 8\* Spores in front view elliptical or ovoid. 12  
 9 (8) Cystidia often with deposits, blueish green in NH<sub>4</sub>OH; on wood.  
 C. up to 50(70) mm broad. V. strongly developed, fibrils ochraceous to brown. Sp. 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*).



*P. populina* (BRTZELM.) KITS VAN WAV.  
 (Syn.: *Agaricus populinus* (BRITZELM., *P. hispida* HEINEM.?)

9\* Cystidia without such deposits; on soil. 10

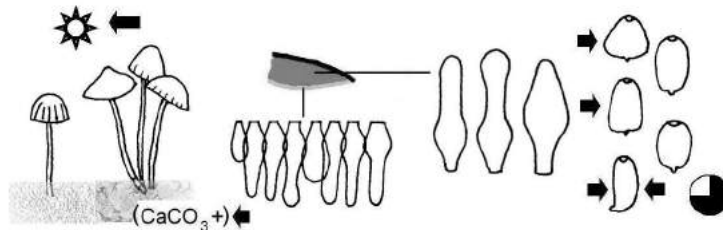
10 (9) **Cheilocystidia mostly lageniform.**  
C. up to 20 mm broad. V. scanty. Sp. 7-9 x 4,5-5,5 µm. Pl. 35-60 x 9-15 µm. Ch. 30-45 x 7,5-15 µm. Sandy soil, dunes.



*P. seymourensis* A. H. SM.

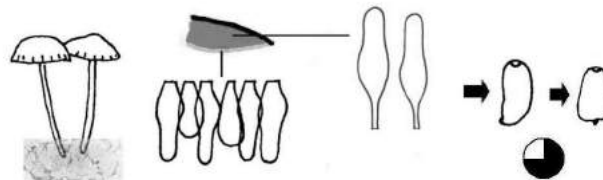
10\* Cheilocystidia mostly lageniform. 11

11 (10) **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.)

11\* **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.

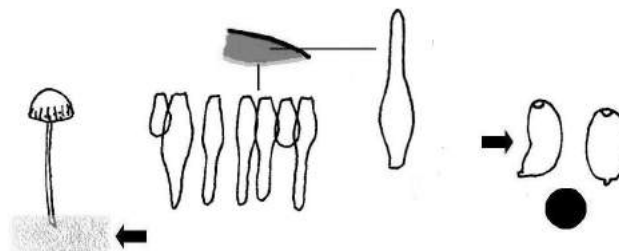


*P. tephrophylla* (ROMAGN.) M. M. MOSER ex BON  
(Syn.: *P. fusca* (SCHUMACH.) A. PEARSON, *P. abieticola* A. H. SM.)

12 (8) **Spores at least partially very strikingly phaseoliform.** 13  
(see also *P. cotonea*).

12\* **Spores at most slightly phaseoliform.** 14

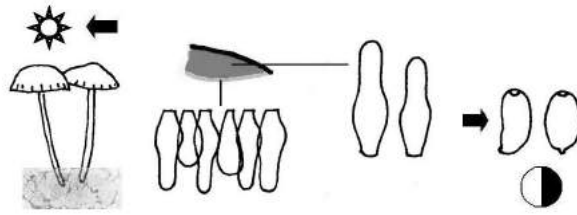
13 (12) **Pleurocystidia lageniform.**  
C. 10-25 mm broad. V. scanty. Sp. (8,5)9-11(12,5) x 4,5-6(7) µm. Pl. 35-65 x 8-13(15) µm. Ch. 25-40(50) x 8-20 µm, closely packed. Dunes, sandy soil.



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

13\* **Pleurocystidia utriform.**

C. up to 28(35) mm broad. V. scanty. Sp. 9,7-11,5(12,5) x 5,2-6(6,5)  $\mu\text{m}$ , mostly phaseoliform. Pl. 35-65 x (10)12-20  $\mu\text{m}$ . Ch. 25-54 x 10-18  $\mu\text{m}$ . Observed on a cornfield.

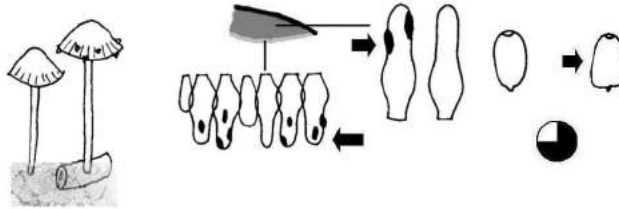


*P. thujina* A. H. Sm.

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

- 14 (12) Cystidia with conspicuous deposits. 15
- 14\* Cystidia without conspicuous deposits. 22
- 15 (14) Deposits in  $\text{NH}_4\text{OH}$  without greenish color. 16
- 15\* Deposits in  $\text{NH}_4\text{OH}$  greenish. 18
- 16 (15) Spores up to 11,5(12,5) x 6,5  $\mu\text{m}$ .

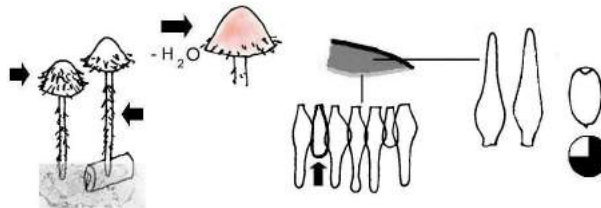
C. up to 50(75) mm broad. V. scanty. Sp. 9-11,5(12,5) x (4,5)5-7  $\mu\text{m}$ , mostly ovoid, often triangular, also lentiform. Pl. (35)47,5-65(80) x 12,5-17,5(20)  $\mu\text{m}$ . Ch. 30-70 x (7,5)10-17,5  $\mu\text{m}$ , closely packed. Deposits visible only in fresh material. Soil, pieces of wood.



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

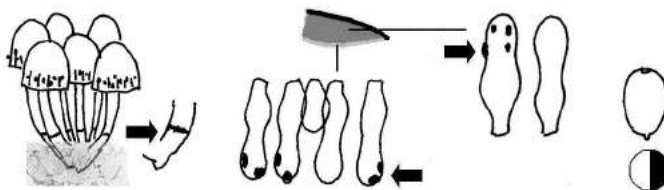
- 16\* Spores up to 9(10,5) x 5,5(6)  $\mu\text{m}$ . 17
- 17 (16) Pleurocystidia lageniform.

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)  $\mu\text{m}$ . Pl. 35-55(65) x 10-17,5  $\mu\text{m}$ . Ch. 20-55 x 7,5-15  $\mu\text{m}$ . Cystidia often with many deposits in fresh material. Soil, buried wood.



*P. impexa* (ROMAGN.) BON

- 17\* Pleurocystidia utriform.
- C. 5-30 mm broad. V. distinct. St. base with annular zone. Sp. (7,5)8-9(10) x (4,5)4,75-5,5(6)  $\mu\text{m}$ . Pl. 53-60 x 12-16  $\mu\text{m}$ . Ch. 30-60 x 10-15  $\mu\text{m}$ . Soil.



*P. conferta* EYSSART. & CHIAFFI

- 18 (15) Spores up to 15(18,5)  $\mu\text{m}$  long.
- P. bipellis* (QUÉL.) A. H. SM.

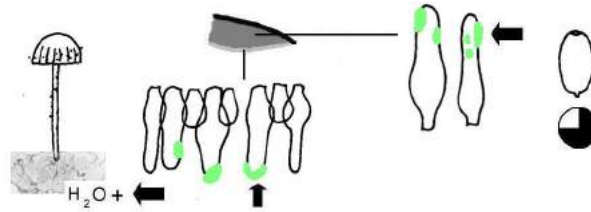


18\* Spores shorter.

19

19 (18) **Pleurocystidia +/- utriform (versiform).**

C. up to 50 mm broad. V. distinct. Sp. (7,5)8-11 x 4,5-6  $\mu\text{m}$ . Pl. 30-80 x 10-20(25)  $\mu\text{m}$ . Ch. 25-70 x 7,5-20  $\mu\text{m}$ . Deposits distinct, in  $\text{NH}_4\text{OH}$  blueish green, exceptionally absent. Wet soil.



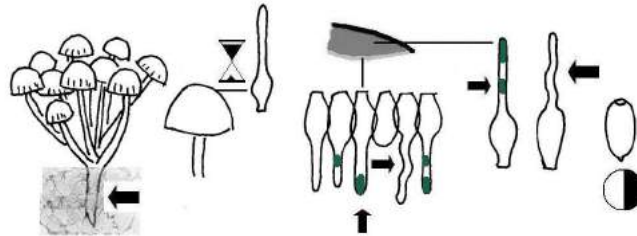
*P. lutensis* (ROMAGN.) M. M. MOSER ex BON  
(Syn.: *P. vialis* A. H. SM.?)

19\* **Pleurocystidia lageniform.**

20

20 (21) **Spores up to 8(9)  $\mu\text{m}$  long.**

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



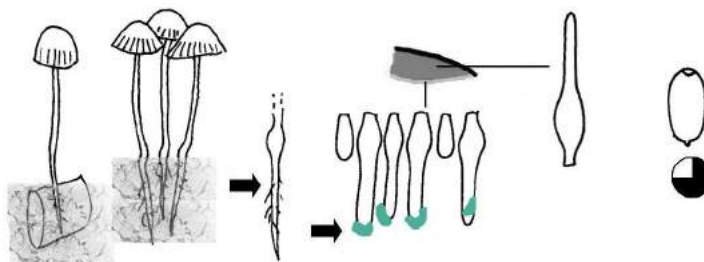
*P. multipedata* (PECK) A. H. SM.  
(Syn.: *P. columbiana* K. A. HARRISON & A. H. SM.)

20\* **Spores longer.**

21

21 (20) **Smell unpleasant, Spores 8,5-12,5 x 4,5-7  $\mu\text{m}$ .**

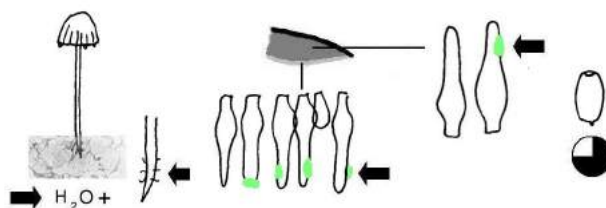
C. up to 40 mm broad. V. practically absent. St. rooting. Pl. 30-65 x 10-15  $\mu\text{m}$ . Ch. 27,5-50(65) x 7-15  $\mu\text{m}$ . Smell like asphalt, bugs. Soil.



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

21\* **Smell insignificant, Spores 9,8-13,5 x 5,5-7  $\mu\text{m}$ .**

C. 15-33 mm broad. V. scanty. St. somewhat rooting. 35-70 x 11-22  $\mu\text{m}$ . Ch. 25-65 x 7-17  $\mu\text{m}$ . Soil.



*P. jacobssonii* ÖRSTADIUS

22 (15) **Cheilocystidia (very) numerous, often closely packed.**

Clavate and sphaeropedunculate marginal cells not dominating.

E



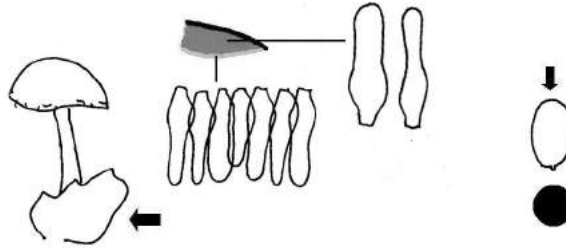
**Cheilocystidia scattered to absent.**

Clavate and sphaeropedunculate marginal cells dominating.

Because of unequal distribution of the marginal elements try alternatively Part E!

**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.

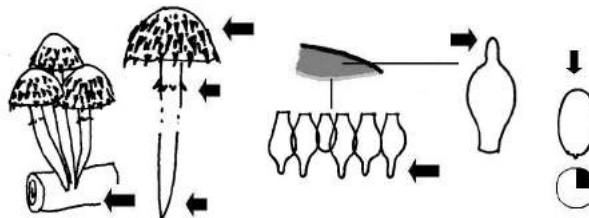
3

2\* Spores longer.

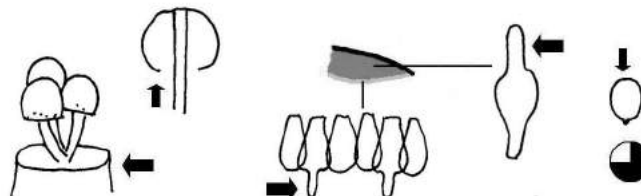
4

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

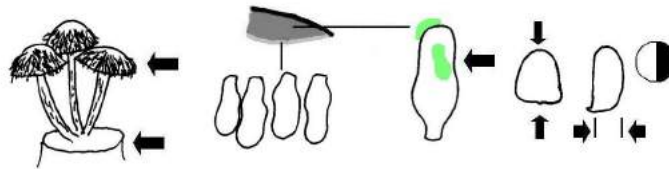
4\* Spores not lentiform.

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*).



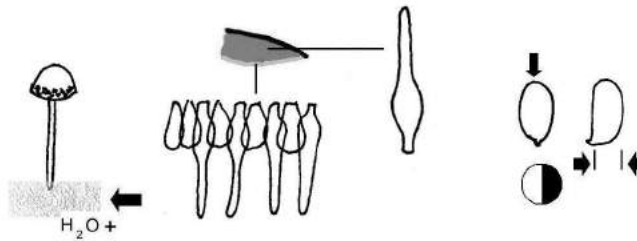
***Cystoagaricus gunneri* (FR.) A. MELZER comb. prov.**

(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.

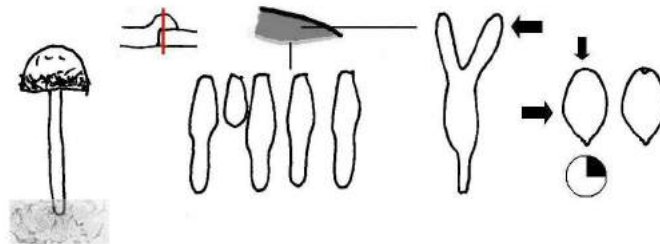


***P. parva* A. H. SM.**

6 (4) Spores strikingly ovoid or fusiform. 7

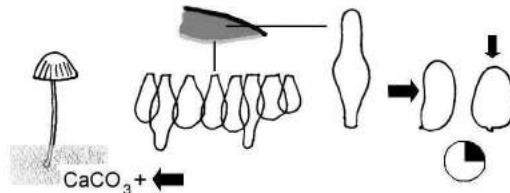
6\* Spores not strikingly ovoid or fusiform. 8

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**

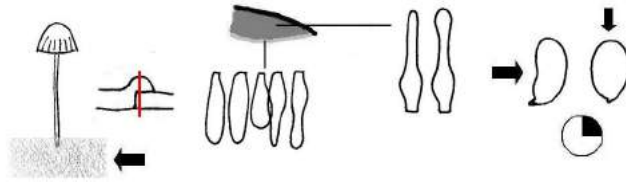
8 (6) Spores in KOH strikingly pale. 9

8\* Spores in KOH not strikingly pale. 17

9 (8) Spores partly ≥10 µm long. 10

9\* Spores always distinctly shorter. 12

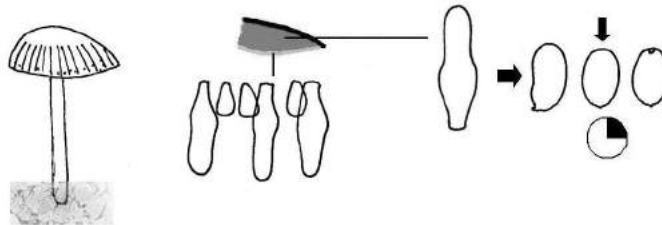
10 (9) Small species, clamps absent.  
C. 3-12 mm broad. V. scanty. Sp. 4,4-10 x 3,8-6 µm. Pl. 30-45 x 7,5-9 µm. Ch. 30-42 x 7-9 µm. Coastal dunes.



*P. liciosae* CONTU & PACIONI

10\* Larger species, clamps present. 11

11 (10) Stipe without an annulus, spores up to 6,5 µm broad.  
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.)

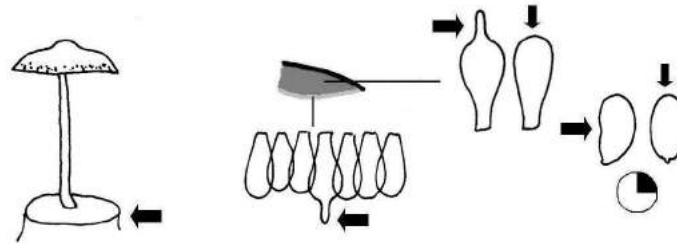
11\* Stipe often with an annulus, spores up to 5,5 µm broad.  
*P. langei* (MALENCON) CONTU  
(see B 14)

12 (9) Pleurocystidia often mucronat. 13

12\* Pleurocystidia otherwise. 14

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

13\* Pleurocystidia often with a straight extention.  
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).

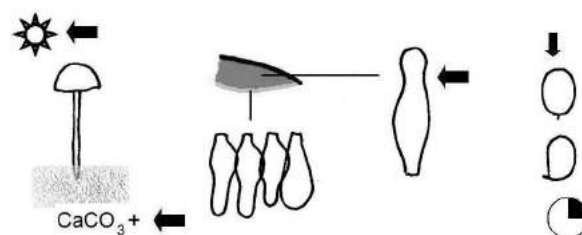


*P. mucrocystis* A. H. SM.  
(Syn.: *P. chondrodermoides* ROMAGN.)

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.

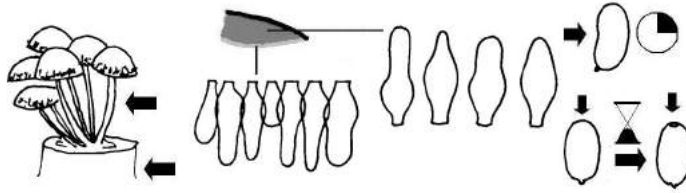


15\* Spores not strikingly broadly ellipsoid.

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.

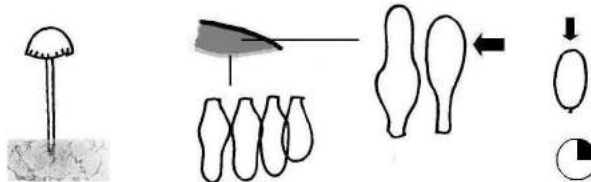


*P. piluliformis* (BULL.: FR.) P. D. ORTON

(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.

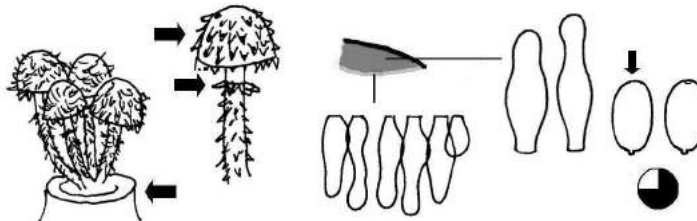
C. up to 30 mm broad. V. sparse. Sp. 5,5-7 x 3,5-4,5 µm. Pl. 25-50 x 10-16 µm. Ch. 25-40 x 8-14 µm. Soil.



*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. SM.?)

17\* Veil not very strongly developed or absent.

18

18 (17) Cheilocystidia mostly closely packed.

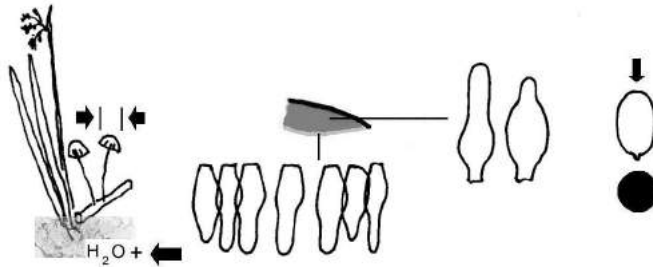
19

18\* Cheilocystidia distracted, only partly closely packed.

22

19 (18) Tiny species.

C. up to 4 mm broad. V. young distinct. Sp. 5-7,5 x 3,1-4 µm. Pl. 22-51 x 7,5-16,5 µm. Ch. 20-46,5 x 5,5-15 µm. On *Juncuss*, *Phragmites*.



*P. scheppingensis* ARNOLDS

19\* Larger species. 20

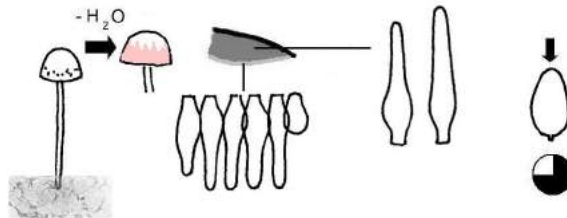
20 (19) Spores up to 12,5 x 7,5 µm.

*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).

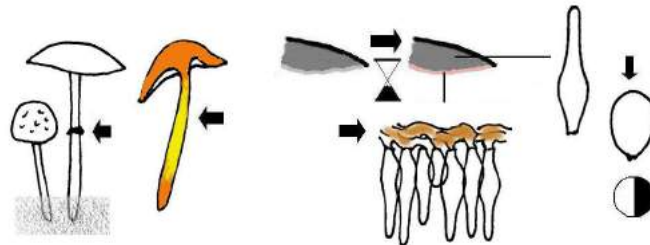


*P. atomatoides* (PECK) A. H. SM.

(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

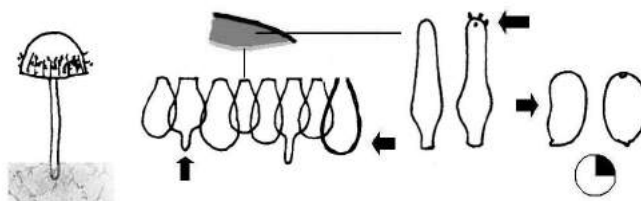
22 (18) Pleurocystidia with deposits.

*Homophron cernuum* (VAHL: FR.) ÖRSTADIUS & E. LARSS.  
(see B 7)

22\* Pleurocystidia without deposits. 23

23 (22) Cheilocystidia mucronat.

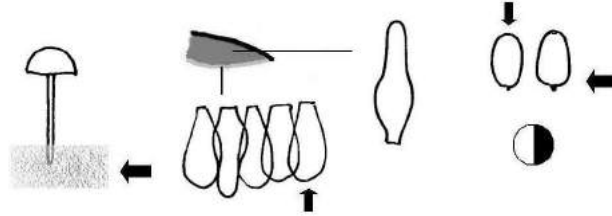
C. up to 30 mm broad. V. scanty. Sp. 7-10 x 4,5-5,5(6) µm, germ pore absent or tiny. Pl. 25-75 x 9-16 µm, mostly utriform, rarely lageniform, sometimes with granules. Ch. 30-50 x 7,5-17 µm, scattered, mucronat. Soil.



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

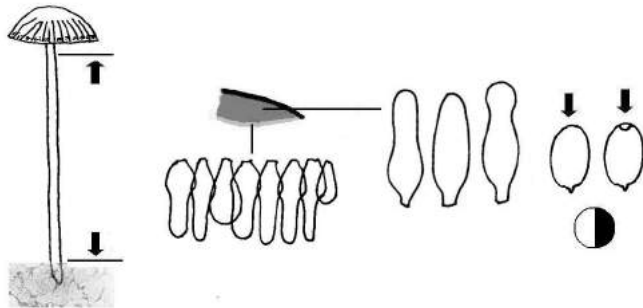
(Syn.: *P. tubarioides* A. H. SM.?, *P. vrynwyensis* KITS V. WAV.)

- 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.

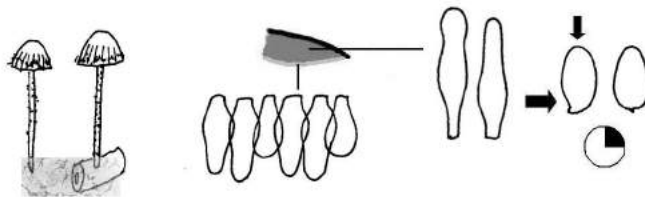
- 25\* **Larger species, cheilocystidia up to 60(70) long.**  
C. up to 40(50) mm broad. V. scanty to distinct. St. often disproportionately long. Sp. 7-9,5(10) x (4)4,5-5,5(6) µm, germ pore absent to distinct. Pl. (25)30-60(70) x 10-17,5(20) µm. Ch. 20-60(70) x (6)10-17,5(20) µm. Soil, pieces of wood.



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

(Syn.: *P. badia* KITS. V. WAV., *P. capitocystis* 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.

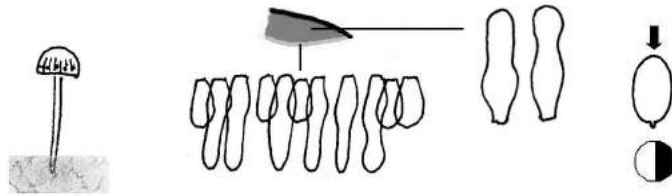


*P. kitsiana* ÖRSTADIUS

(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.



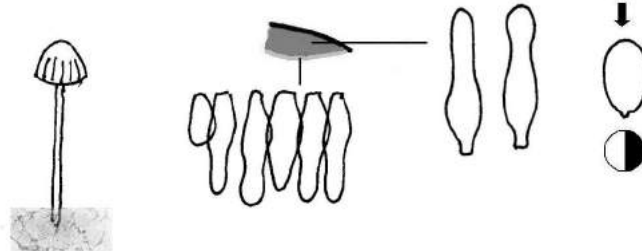


*P. denniensis* KITS. v. WAV.

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.

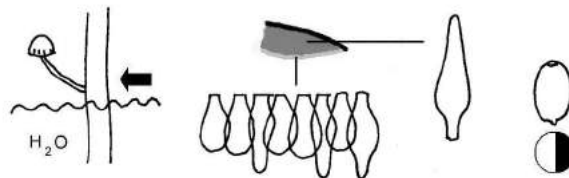
**Part E**

**(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\*

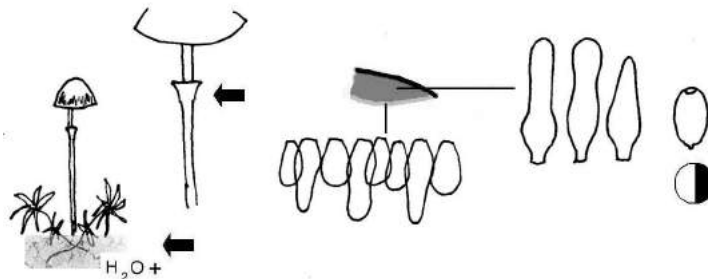
**Other habitat.**

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 predominately up to 10,5 μm long.**

4

3\*

**Spores predominately longer.**

**G**

4

(3) **Pleurocystidia often forked.**

5

(see also *P. minutissima*)

4\* Pleurocystidia not or very rarely forked. 7

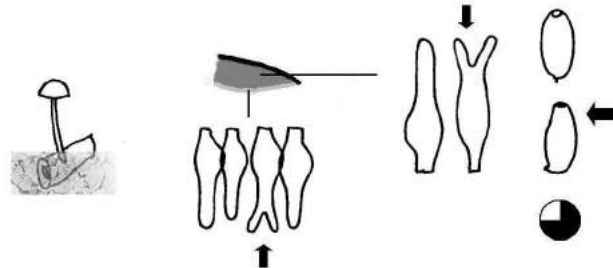
5 (4) On dung.

*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.

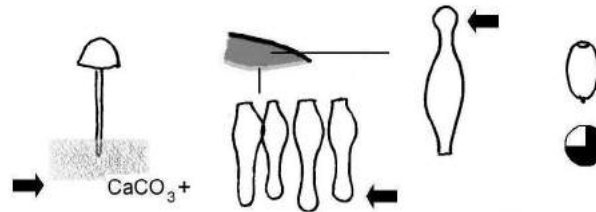
*P. langei* (MALENCON) CONTU  
(see B 14)

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.

*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

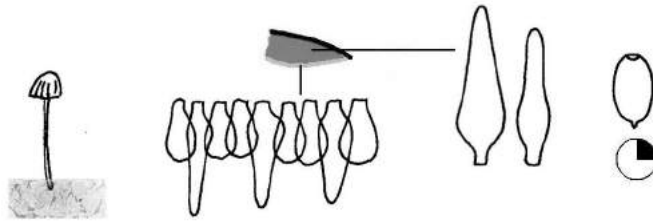
10\* Lamellae edge at least partly pigmented. 17

11 (10) Pleuro- and cheilocystidia mostly lageniform to subutriform. 12

11\* Pleuro- and cheilocystidia mostly utriform. 15

12 (11) Neck of the cystidia mostly tapering.

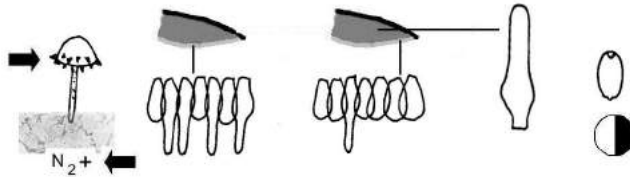
C. up to 9 mm broad. V. scanty. Sp. 9-10 x 4,5-5,5 µm. Pl. 45-70 x 12,5 - 17,5(20), apically sometimes forked or bent. Ch. 35-50(55) x 10-16 µm. Soil.



*P. minutissima* KITS V. WAV.

12\* Neck of the cystidia mostly not tapering. 13

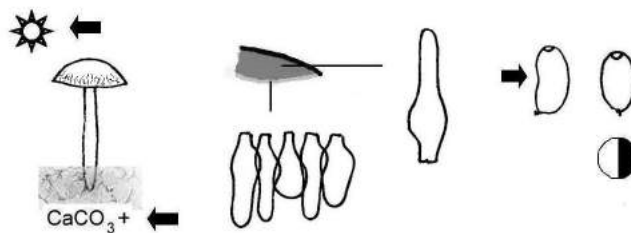
13 (12) On dung, spores up to 8 μm long.  
C. 5-20 mm broad. V. scanty. Sp. 6,5-8 x 3,5-4,5 μm. Pl. 25-50 x 8-15 μm, lageniform and subutriform. Ch. 20-40 x 6-13 μm, near margin of cap very rare. Cow dung.



*P. merdicola* ÖRSTADIUS & E. LARSSON

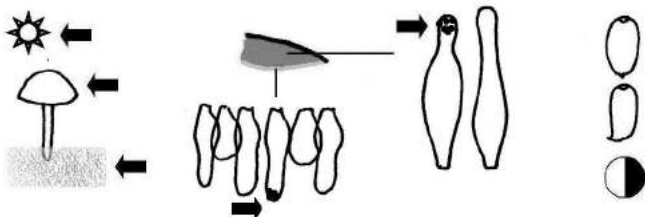
13\* Not on dung. 14

14 (13) On calcareous sandy soil, spores slightly phaseoliform.  
C. up to 15 mm broad. V. only young distinct. Sp. 7-9 x 4-5 μm. Pl. 25-55 x 7-13 μm. Ch. 20-40 x 7-13 μm.



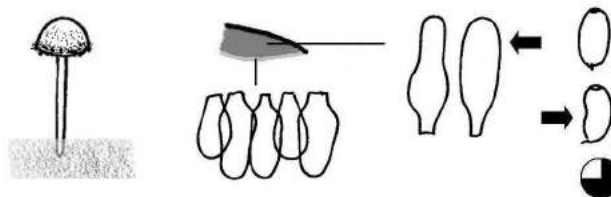
*P. arenosa* ÖRSTADIUS & E. LARSS.

14\* On saline sandy soil, spores not phaseoliform.  
C. up to 30 mm broad, not straited. V. very sparse. Sp. (7,2)7,5 - 9,7(10,2) x (4,3)4,8-6,2(6,4) μm. Pl. 30-58 x 8-15 μm. Ch. 32-50 (57) x 8,5-13 μm. Cystidia sometimes with deposits.



*Psathyrella salina* BROUSSAL, G. MIR, J. CARBO & PEREZ-DE-GREG.

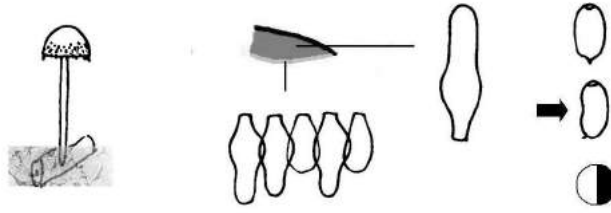
15 (11) Pleurocystidia utriform and clavate.  
C. up to 33 mm broad. V. young distinct. Sp- 7-9,5 x 4-5 μm. Pl. 35-50 x 12-26 μm. Ch. 25-55 x 8-35 μm. Wet sandy soil, near remnants of *Phragmites*.



*P. madida* ÖRSTADIUS & E. LARSS.

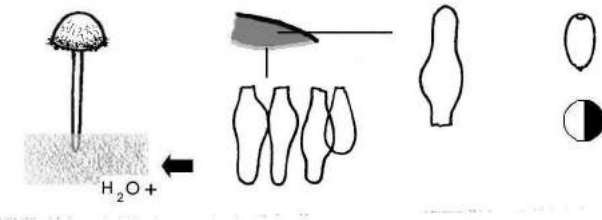
15\* Pleurocystidia only utriform. 16

- 16 (15) **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.

- 16\* **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.

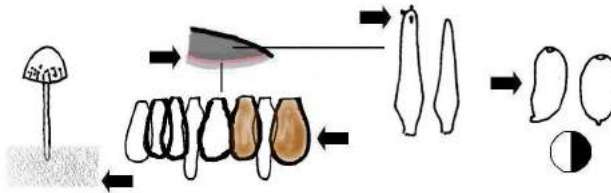


*P. rybergii* ÖRSTADIUS UND E. LARSS.

- 17 (10) **On dung.**  
*P. scatophila* ÖRSTADIUS & E. LARSSON  
 (see B 13)

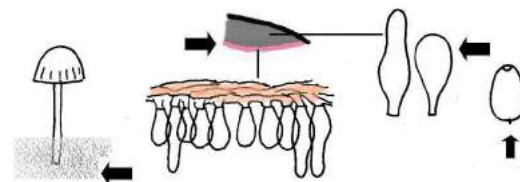
17\* **Not on dung.** 18

- 18 (17) **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.

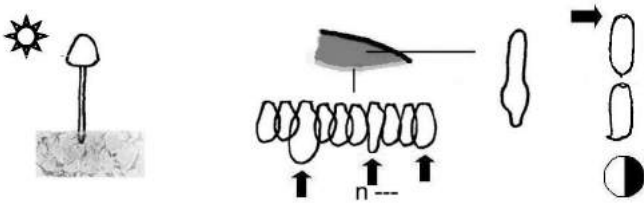
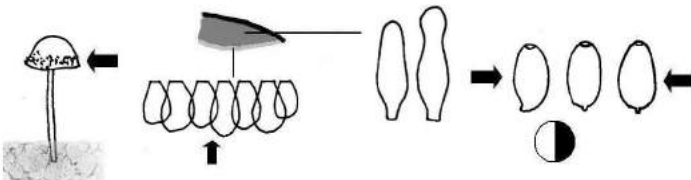
- 18\* **Clavate marginal cells not or only very rarely so.**  
 C. up to 25 mm broad. V. scanty. Sp. 8-10,5 x 4,5-6,5(7) µm. Pl. 35,5-52,5 x 10-16,5 µm, utriform, fusiform or lageniform, spheropedunculate cells also present. Ch. 24,5-50 x 9,5-15 µm, scattered. On sandy soil, dunes.

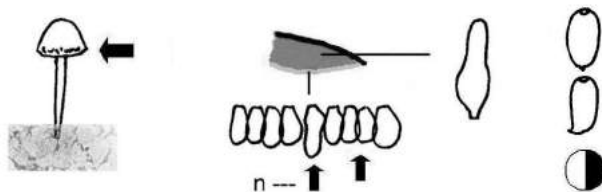


*P. dunarum* KITS V. WAV.

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.<br>(see E 17)   |    |
| 3* | Lamellae edge never pigmented.  | 4  |
| 4  | On dung, spores up to 8 µm long.<br>C. 5-20 mm broad. V. scanty. Sp. 6,5-8 x 3,5-4,5 µm. Pl. 25-50 x 8-15 µm,<br>lageniform and subutriform. Ch. 20-40 x 6-13 µm, near margin of cap very rare.<br>Cow dung.                                  |    |
|    | <i>P. merdicola</i> ÖRSTADIUS & E. LARSSON<br>(see E 13)  |    |
| 4* | Not on dung, spores up to 10 µm long.   | 5  |
| 5  | (4) Cheilocystidia mucronat.  |    |
|    | <i>P. obtusata</i> (PERS.: FR.) A. H. SM.<br>(see D 23)   |    |
| 5* | Cheilocystidia not mucronat.  |    |
|    | <i>P. minutissima</i> KITS V. WAV.<br>(see E 12)  |    |
| 6  | (2) Lamellae edge almost exclusively with clavate marginal cells.<br>(see also <i>P. spadiceogrisea</i> )   | 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.<br>C. up to 30 mm broad. V. minimal. Sp. 8-10,5 x 4,5-5 µm, never phaseoliform. Ch.<br>22-27 x 11-12,3 µm, extremely rare. Pl. 30-55(63) x 10-16 µm. Dead wood,<br>calcareous soil. |    |
|    |   |    |
|    | <i>P. marquana</i> A. MELZER, KELLNER & WÄCHTER   |    |
| 8* | Spores otherwise.   | 9  |
| 9  | (8) Spores predominantly ovoid.<br>C. up to 40 mm broad. V. distinct. Sp. 7,5-8,8 x 4,5-5 µm, hardly phaseoliform,<br>partly with suprahilar depression. Pl. 29-45 x 12,3-16,5 µm. Ch. 24,5-41 x 9,5-19<br>µm, extremely rare. Soil.          |    |
|    |   |    |
|    | <i>P. groegeri</i> G. HIRSCH<br>(Syn.: <i>P. obtusata</i> var. <i>vernalis</i> (J. E. LANGE) M. M. MOSER)   |    |
| 9* | Spores predominantly ellipsoid.<br>C. up to 50 mm broad. V. distinct. Sp. 7,5-9,5 (-10) x 4,5-5,5 µm, sometimes<br>phaseoliform. Ch. 19-40 x 7-13,7 µm, extremely rare. Pl. 27-70 x 11-22 µm. Soil,<br>dead wood.                             |    |



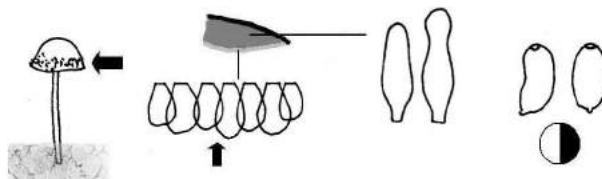
*P. cascoides* A. MELZER, KARICH & WÄCHTER

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

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

- 10\* Pleurocyttidia 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.

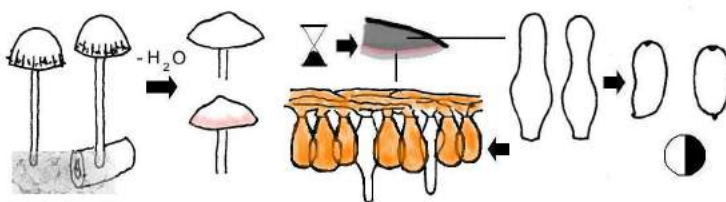
12

- 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.



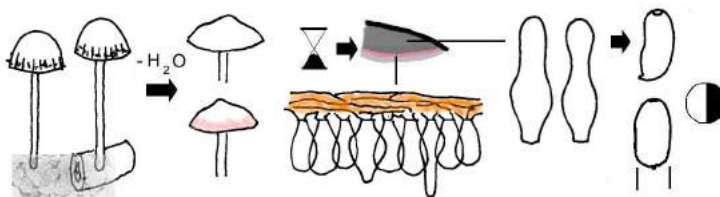
*P. pseudocorrugis* (ROMAGN.) BON  
(Syn.: *P. borgensis* KITS V. WAV.)

- 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. fatua* (FR.) KONR. & MAUBL.  
(Syn.: *P. exalbicans* (ROMAGN.) M. M. MOSER ex BON, *P. spadiceogrisea* f. *exalbicans* (ROMAGN.) KITS. V. WAV., *P. pseudocorrugis* (ROMAGN.) BON ss. K.V.WAV., ARNOLDS, ENDERLE)

- 13\* Spores laterally not phaseoliform, in front view ovoid.

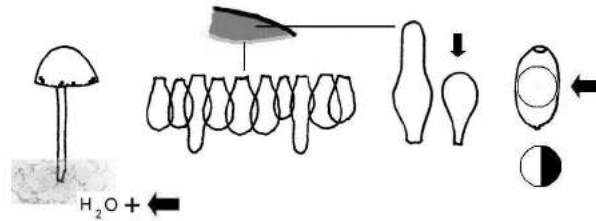
*P. dunarum* KITS V. WAV.  
(see E 17\*)

- 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.

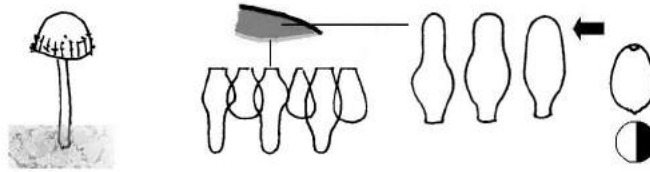


*P. ephemera* A. H. SM.

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.

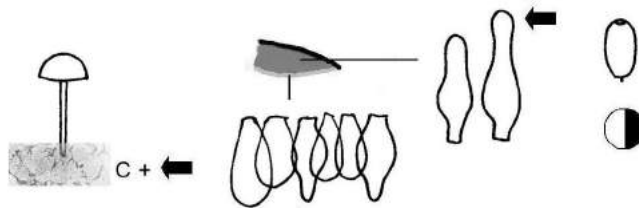


*P. phegophila* ROMAGN.

15\* Pleurocystidia 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.

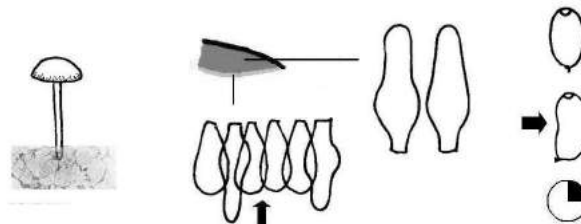


*P. ichnusae* ÖRSTADIUS, CONTU, E. LARSS.

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.

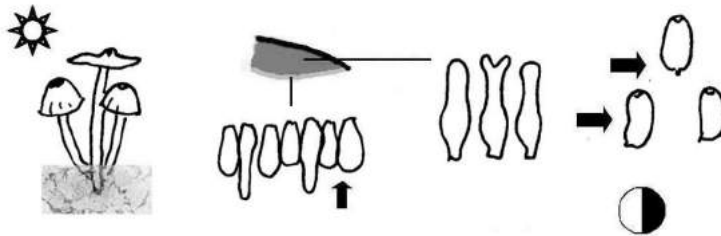


*P. carminei* ÖRSTADIUS & E. LARSS.

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.



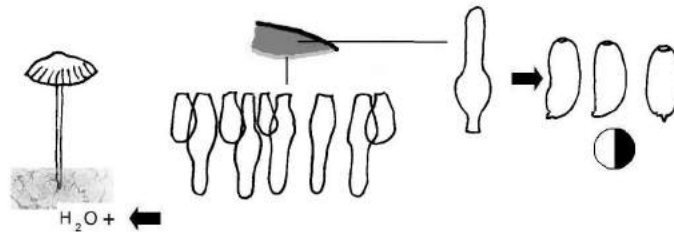
*P. hellebosensis* DESCHUYTENEER & A. MELZER

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  $\mu\text{m}$ . Pl. 40-65 x 10-20  $\mu\text{m}$ . Ch. 37,5-50 x 9-15  $\mu\text{m}$ . Muddy soil, shores.



*P. thujina* A. H. SM.

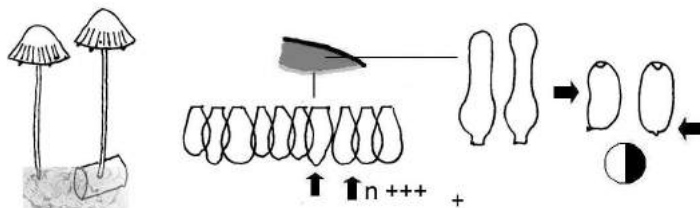
(Syn.: *P. almerensis* KITS V. WAV., *P. lutulenta* ESTEVE-RAV. & M. VILLAREAL)

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  $\mu\text{m}$ . Pl. 27,5-67,5 x 10-22  $\mu\text{m}$ . Ch. 20-50 x 9,5-16,5  $\mu\text{m}$ . Soil, pieces of wood.



*P. spadiceogrisea* (SCHAEFF.: FR.) MAIRE

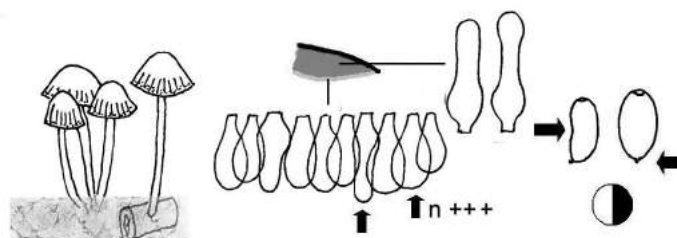
(Syn.: *P. spadiceogrisea* f. *mammifera* (ROMAGN.) KITS V. WAV., *P. spadiceogrisea* f. *vernalis* (J. E. LANGE) KITS V. WAV.)

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  $\mu\text{m}$ . Pl. 33-75 x 10-25  $\mu\text{m}$ . Ch. 20-54,5 x 7-13,5  $\mu\text{m}$ , rare. Soil, pieces of wood.

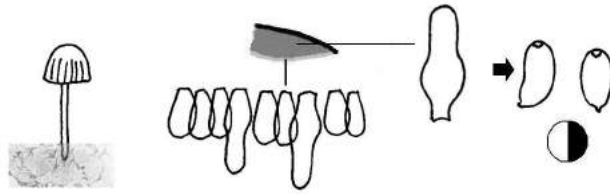


*P. fatua* (FR.) KONR. & MAUBL.

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

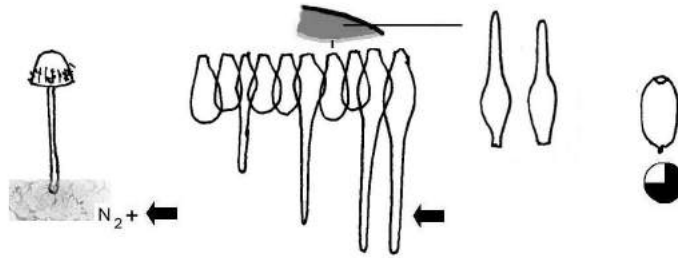
21\* Sporen in part strongly phaseoliform.

C. up to 18 mm broad. V. sparse or absent. Sp. 8-10 x 5-6  $\mu\text{m}$ . Pl. 30-50 x 10-12,5(20)  $\mu\text{m}$ . Ch. 27-35 x 7,5-10(12)  $\mu\text{m}$ , rare. Soil.



*P. phaseolispora* ARNOLDS

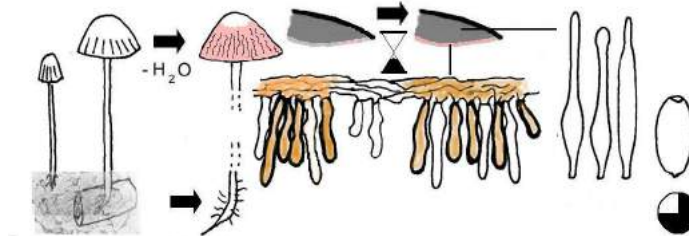
- 22 (1) **Cheilocystidia in part longer than pleurocystidia.**  
 C. 4-13 mm broad. V. scanty. Sp. 11-14,5 x 6-7 μm. Pl. 32,5-65 x 8-18 μm. Ch. 20-80 x 6-28 μm. Dung.



*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.**

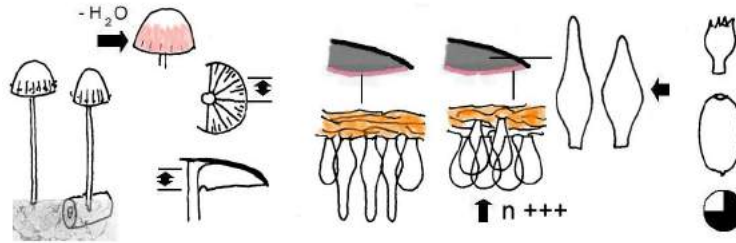
C. up to 17 mm broad. V. scanty. Spores 11,5-12,5 x 6,5-7 μm. Pl. 47,5-70 x 12,5-15 μm. Ch. practically absent. Soil.

*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.

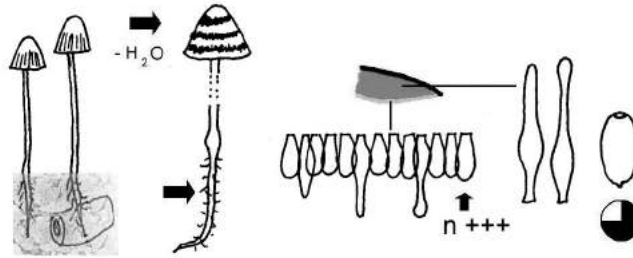


***P. prona* (FR.) GILLET**

(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)  $\mu$ m. Pl. 42,5-80 x 7,5-15(17,5)  $\mu$ m, partly slightly capitate. Ch. 22,5-40 x 7,5-10(12,5)  $\mu$ m, 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.**

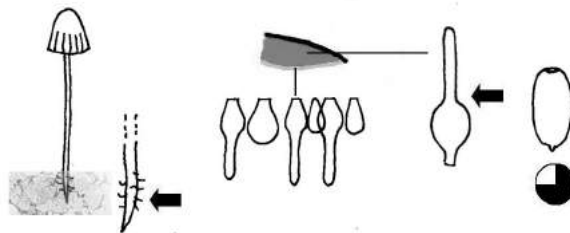
C. up to 40 mm broad. V. practically absent. Sp. 11-14,5 x 6,5-7,5  $\mu$ m, sometimes giant spores. Pl. 35-82 x 9-17  $\mu$ m. Ch. 22,5-55 x 6-15  $\mu$ m. Soil, pieces of wood.

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

(see also F 24)

**28\* Cheilocystidia mixed with few clavate marginal cells.**

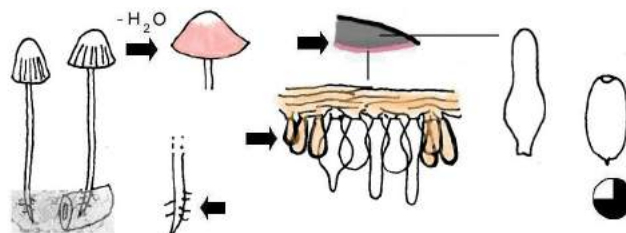
C. up to 13 mm broad. V. scanty. St. rooting. Sp. 11,5-13,5 x 6,5-7  $\mu$ m. Pl. 40-75 x 10-12  $\mu$ m. Ch. 35-47,5 x 8-12,5  $\mu$ m. Soil.



***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)  $\mu$ m, sometimes giant spores. Pl. 35-80(100) x 10-20  $\mu$ m, broadly fusiform or utriform. Ch. 20-60(75) x 7,5-17,5(20)  $\mu$ m. Soil, pieces of wood.



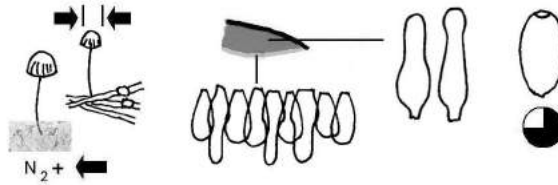
***P. pseudogracilis* (ROMAGN.) M. M. MOSER**

(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)  $\mu\text{m}$ . Pl. 25-60 x 8-17,5  $\mu\text{m}$ . Ch. 13,5-50 x 6-20  $\mu\text{m}$ . Dead grass, hay, straw, dung.



*P. romagnesii* KITS V. WAV.  
(see also main 10\*)

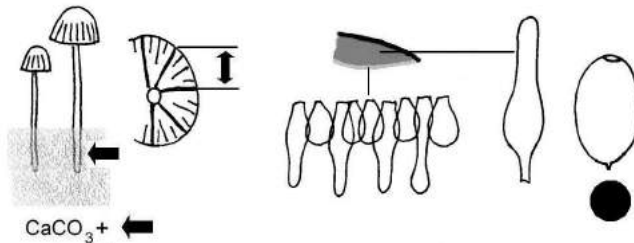
## Part G

### (Part E)

1

**Spores up to 19  $\mu\text{m}$  long.**

Hut 5-20 mm broad. V. scanty. L. distant. Sp. 12-19 x 7-10  $\mu\text{m}$ . Pl. 45-70(80) x 9,5-13,5  $\mu\text{m}$ . Ch. (24,5)27-50 x 8-20  $\mu\text{m}$ , 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  $\mu\text{m}$  long.**

3

2\*

**Spores maximum of 12,5  $\mu\text{m}$  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  $\mu\text{m}$ . Pl. (40)55-85(90) x 7,5-15,5(17,5)  $\mu\text{m}$ . Ch. 25-57,5(70) x 7,5-15  $\mu\text{m}$ , 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\*

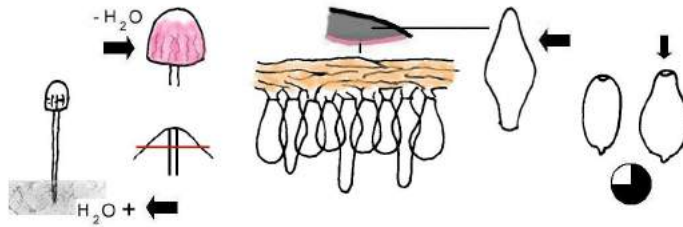
**Pleurocystidia lageniform or fusiform.**

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)  $\mu\text{m}$  (larger if 2-sporiged basidia present). Pl. 35-60(70) x 10-15  $\mu\text{m}$ . Ch. 40-60 x 10-15  $\mu\text{m}$ . Wet soil.



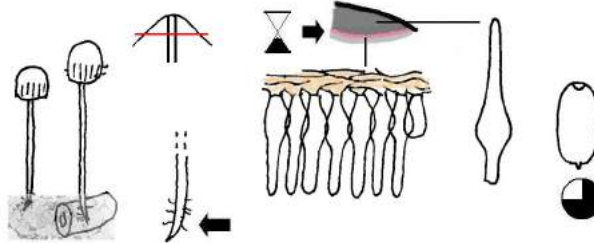
*P. orbitarum* (ROMAGN.) M. M. MOSER  
(Syn.: *P. prona* f. *orbitarum* (ROMAGN.) KITS v. WAV.)

6\* **Pleurocystidia lageniform, with a long neck.**

7

7 (6) **Cap 2-20 mm broad.**

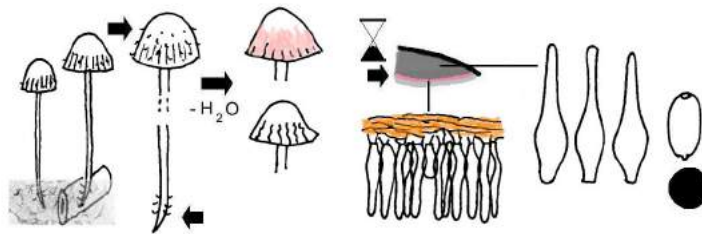
C. never expanding. V. scanty. St. rooting. Sp. (9,5)10-13,5 x 5,5-7  $\mu$ m. Pl. (35)40-70(80) x 10-15(17,5)  $\mu$ m. Ch. 25-50 x 7,5-12,5  $\mu$ m. Soil, pieces of wood.



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

7\* **Cap up to 50 mm broad.**

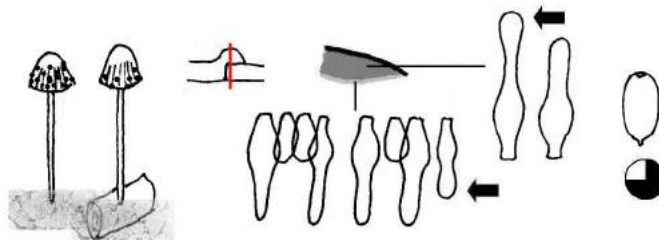
C. during drying often pinkish. V. scanty. St. rooting. Sp. 10-13,5(14,5) x (5,5)6-7(8)  $\mu$ m. Pl. 40-70(85) x 8-15  $\mu$ m. Ch. 20-55 x 5-16,5  $\mu$ m. Soil, pieces of wood.



*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  $\mu$ m. Pl. (35)40-65(80) x 11-20  $\mu$ m. Ch. 20-55(60) x 10-15(20)  $\mu$ m. Soil, pieces of wood.



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

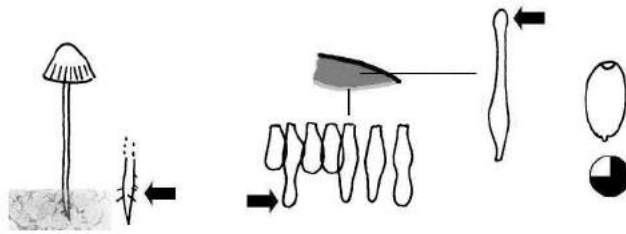
8\* **Clamps present.**

9

9 (8) **Pleurocystidia mostly (sub-) capitate.**

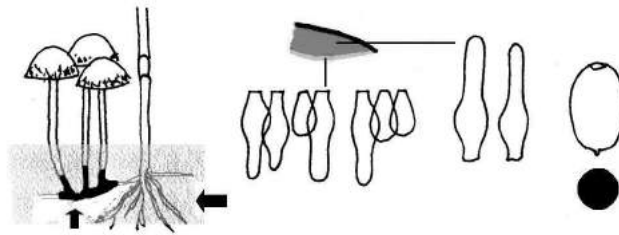
C. up to 20 mm broad. V. scanty. St. rooting. Sp. 11,5-13,5 x 6,5-7  $\mu$ m. Pl. 40-60 x 7,5-14(17,5)  $\mu$ m. Ch. 30-45 x 6-10  $\mu$ m. Around a stump of *Fagus* on a costal dune.





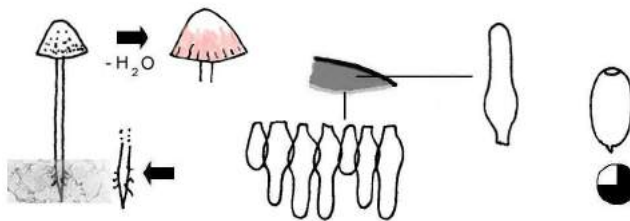
*P. ridicula* KITS V. WAV.

- 9\* Pleurocystidia not or only rarely (sub-) capitata. 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)  $\mu\text{m}$ . Pl. 30-75 x 10-27,5  $\mu\text{m}$ . Ch. 25-55(70) x 10-17,5(20)  $\mu\text{m}$ . Plant roots enclosing.



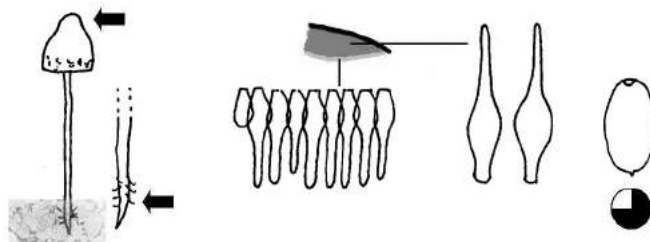
*P. ammophila* (DURIEU & LEV.) P. D. ORTON  
 (Syn.: *P. arenulina* (PECK) A. H. SM.)

- 11\* Habitat otherwise.  
 C. 10-35 mm broad. St. rooting. Sp. 8-14 x 4,5-6,3  $\mu\text{m}$ . Pl. (40)46,5-70 x 11-23  $\mu\text{m}$ . Ch. 24,5-63 x 8-22(24,5)  $\mu\text{m}$ . Soil, pieces of wood.



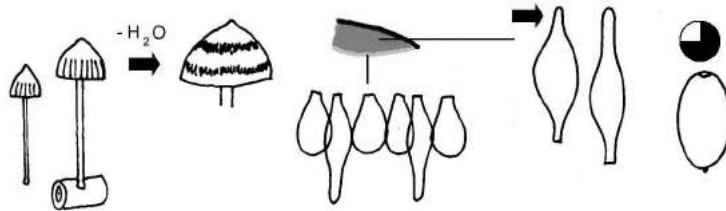
*P. bifrons* (BERKELEY) A. H. SM. ss. A. H. SM.

- 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  $\mu\text{m}$ . Pl. 32-63 x 8,5-14,5  $\mu\text{m}$ . Ch. 30-35 x 7,5-10  $\mu\text{m}$ . 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 predominatingly brown, spores up to 7  $\mu\text{m}$  broad.  
 C. 6-25 mm broad. V. scanty. Sp. 10-14 x (4,5)5-7  $\mu\text{m}$ . Pl. 35,5-60 x 9,5-16,5  $\mu\text{m}$ . Ch. 24,5-60 x 8-16,5  $\mu\text{m}$ . Soil, pieces of wood.

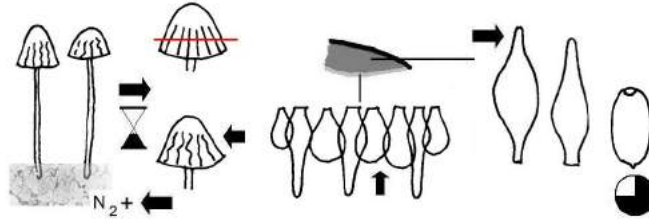


***P. albidula* (ROMAGN.) M. M. MOSER**

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

- 13\* **Cap fresh not striated, colour predominatingly grey, spores up to 8,5 (9)  $\mu$ m broad.**

C. 5-30 mm broad. V. scanty. Sp. (11)12,5-16(18) x (5)6-8,5(9)  $\mu$ m. Pl. 35-80 x 10-20  $\mu$ m. Ch. 22-65(85) x 5,5-16,5  $\mu$ m. 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.**

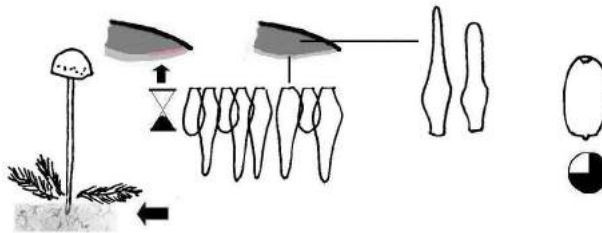
C. 10-25 mm broad. V. practically absent. Sp. 10-12,5 x 5-7(7,5)  $\mu$ m. Pl. (40)46,5-70(80) x 8-13,5(16,5)  $\mu$ m. Ch. 24,5-55 x 7-13,5  $\mu$ m. Clavate and irregular marginal cells often with thickend. Soil, pieces of wood.

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

- 16\* **Without irregular cells.** 17

- 17 (16) **Cheilocystidia mostly with a long neck.**

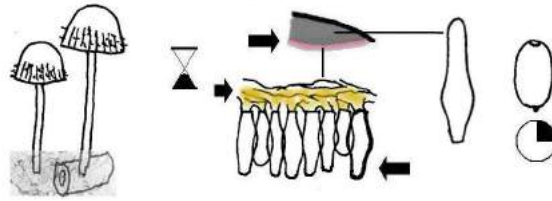
C. up to 30(50) mm broad. V. scanty. Lamellae edge sometimes pigmented near the margin of cap. Sp. (9)10-12(12,5) x 5,5-6,5  $\mu$ m. Pl. 47,5-72,5 x 10-17,5(19)  $\mu$ m. Ch. (27,5)32,5-50(60) x 7,5-12,5  $\mu$ m. Mossy, poor soil.



***P. dicrani* (A. E. JANSEN) KITS v. WAV.**

- 17\* **Cheilocystidia mostly with a short neck.**

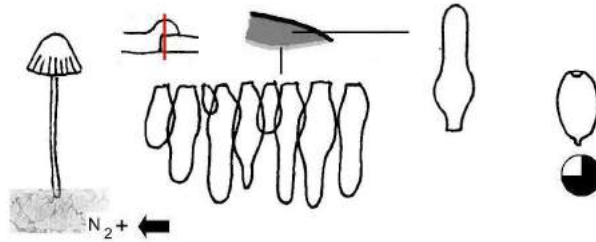
C. up to 70 mm broad. V. scanty. Sp. (8,5) 9-11,5 x (5)5,5-6,5(7)  $\mu$ m. Pl. 40-80 x 10-16(17,5)  $\mu$ m. Ch. 30-60 x 12,5-15  $\mu$ m, sometimes with slightly thickened walls. Lamellae edge in aging often pigmented. Soil, pieces of wood, under *Fagus* (and *Castanea sativa*).



*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.

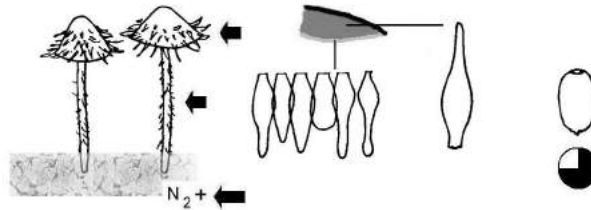
*P. magnispora* HEYKOOP & G. MORENO  
(see B 10)

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 µm. Pl. (20)30-55(60) x 10-17,5 µm. Ch. 25-50 x 7,5-15 µm. Dung, fertilized soil.



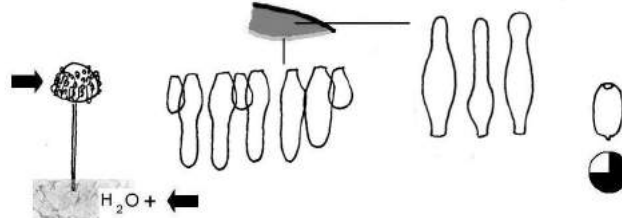
*P. hirta* PECK  
(Syn.: *P. coprobia* (J. E. LANGE) A. H. SM.)

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) µm. Pl. (35)50-80 x 8-20 µm. Ch. 32,5-57,5 x 8-12,5 µm. 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 µm long.

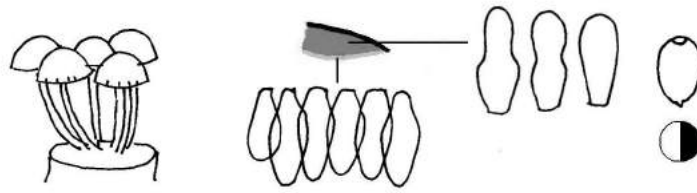
23

22\* Pleurocystidia up to 75(90) µm 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 µm. Pl. 35-50 x 12,5-22,5 µm. Ch. 35-50 x 12,5-22,5 µm.

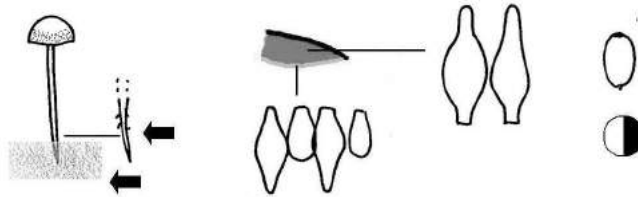


*P. storea* (FR.) M. M. MOSER ex BON

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.

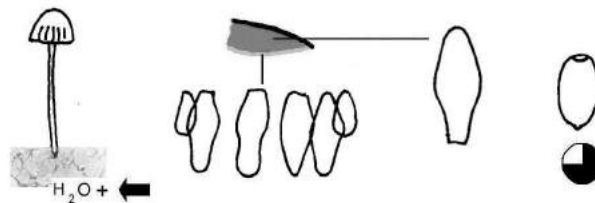


*P. sublatispora* ÖRSTADIUS, S.-Å. HANSON & E. LARSS

24\* On muddy soil. 25

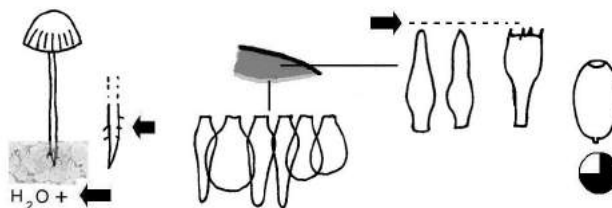
25 (24) Cap 3,5-10 mm broad.

V. scanty. Sp. 9,5-14 x 5-7 µm. Pl. 35-68 x 10-16,5 µm. Ch. 14,5-45 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.



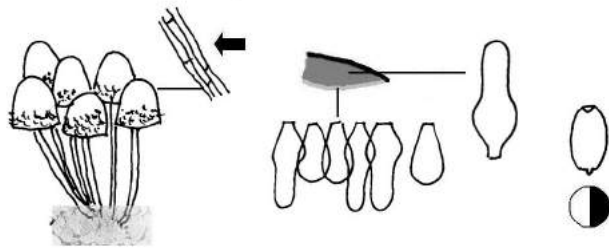
*P. trepida* (FR.) GILLET

26 (22) Cheilocystidia predominantly utriform. 27

26\* Cheilocystidia predominantly 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.



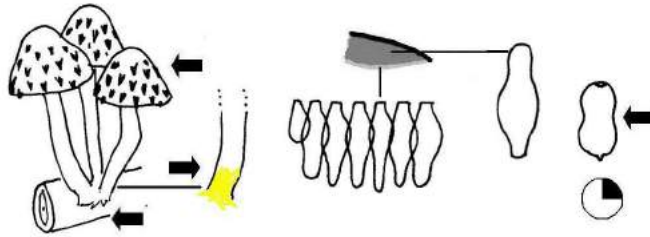
*Coprinopsis pannucioides* (J. E. LANGE) ÖRSTADIUS & E. LARSSON  
 (Syn.: *P. cuspidata* A. H. SM., *P. pannucioides* (J. E. Lange) M. M. Moser)

- 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 (see F 25\*)
- 28\* Stipe without a pseudorhiza. *P. dicrani* (A. E. JANSEN) KITS V. WAV. (see G 17)

## Part H

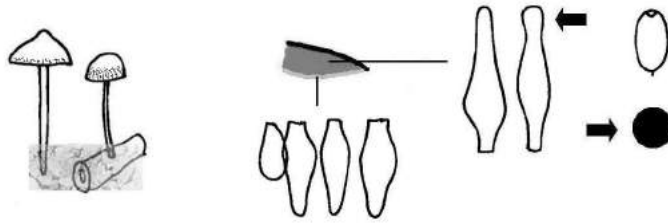
### (Part E)

- 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.)

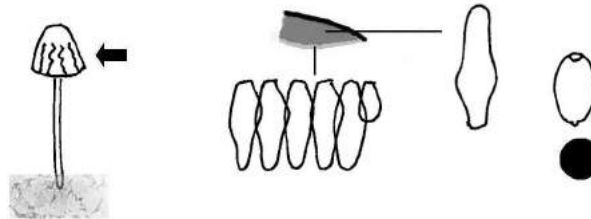
- 1\* **Spores otherwise.** 2
- 2 (1) **Spores often up to 6 µm broad.** 3
- 2\* **Spores predominantly only up to 5 µm broad.** 5
- 3\* (2) **Pleurocystidia lageniform.** *P. impexa* (ROMAGN.) BON (see C 17)
- 3\* **Pleurocystidia utriform.** 4
- 4 (3) **Pleurocystidia often (sub-)capitate.**  
 C. 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.**

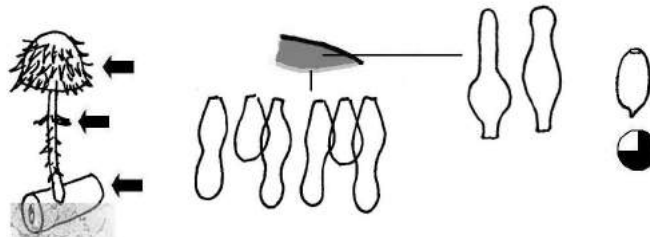
6

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.



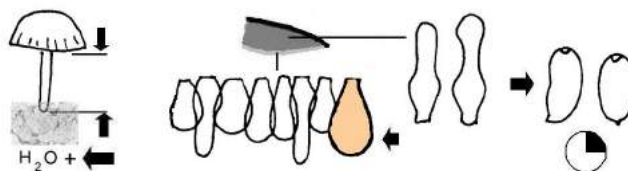
*P. suavissima* AYER  
(Syn.: *P. sacchariolens* ENDERLE)

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.

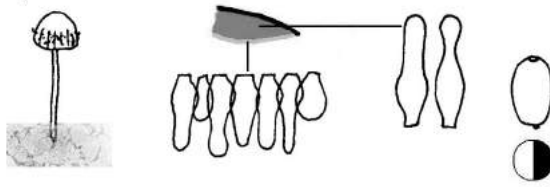


*P. noli-tangere* (FR.) A. PEARSON & DENNIS

7\* **Spores up to 7,5 µm.**

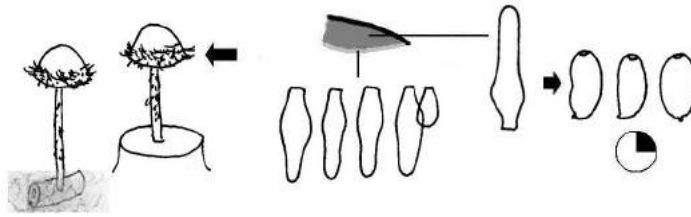
C. up to 16 mm broad. V. scanty. Sp. 6,2-7,5 x 3,7-4,5 µm. Pl. 33-57,5 x 9,5-17,5 µm. Ch. 22-40(50) x 8-15 µm. Soil.





*P. mookensis* KITS V. WAV.

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



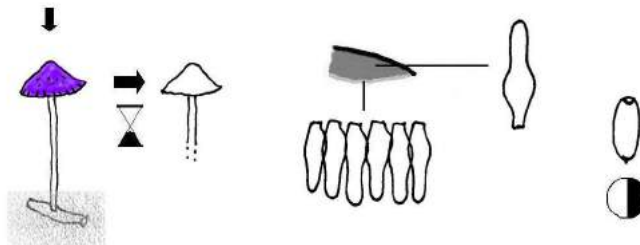
*P. squamosa* (P. KARST) M. M. MOSER ex A. H. SM.  
(Syn.: *P. artemisiae* var. *microspora* KITS V. WAV.)

- 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)  $\mu\text{m}$ . Pl. 30-50 x 7-14  $\mu\text{m}$ . Ch. 30-50 x 7-14  $\mu\text{m}$ . Sandy soil, floodplain forest with *Alnus*; Switzerland.



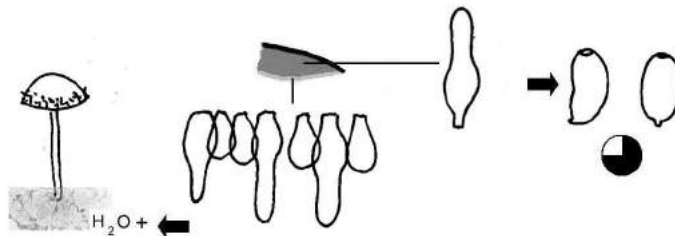
*P. immaculata* HORAK & GRIESSER

- 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  $\mu\text{m}$ . Pl. and Ch. 24-45 x 9-15  $\mu\text{m}$ . 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  $\mu\text{m}$ . Pl. 25-48 x 7-14  $\mu\text{m}$ . Ch. 15-40 x 6-14  $\mu\text{m}$ .



*P. rubiginosa* A. H. SM.

12\* Habitat otherwise.

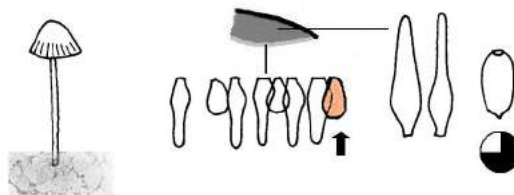
*P. senex* (PECK) A. H. SM.  
(see D 25\*)

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.



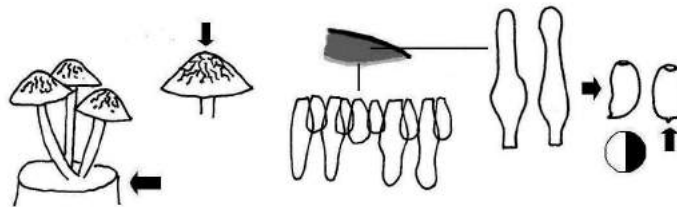
*P. fulvescens* (ROMAGN.) M. M. MOSER

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

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

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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