

Some *Conocybe* species rare or new for Ukraine. 1. Section *Conocybe*

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Abstract: Detailed descriptions and further data about some interesting species of *Conocybe* sect. *Conocybe* found in Ukraine are presented. *Conocybe macrocephala*, *C. mesospora* and *C. subpallida* are new for the Ukraine. New localities are reported for *C. brachypodii*, *C. echinata*, *C. graminis*, *C. rickeniana*, *C. semiglobata*, and *C. subxerophytica* var. *brunnea*. *Conocybe semidesertorum* is found for the first time in Europe.

Zusammenfassung: Ausführliche Beschreibungen und weitere Daten über einige interessante *Conocybe*-Arten der Sektion *Conocybe*, die in der Ukraine gefunden wurden, werden vorgestellt. *Conocybe macrocephala*, *C. mesospora* und *C. subpallida* sind neu für die Ukraine. Für *Conocybe brachypodii*, *C. echinata*, *C. graminis*, *C. rickeniana*, *C. semiglobata* und *C. subxerophytica* var. *brunnea* werden neue Fundstellen gemeldet. *Conocybe semidesertorum* ist ein Erstfund für Europa.

Previously, the genus *Conocybe* rarely attracted attention of Ukrainian mycologists. As a rule species were mentioned only in general floristic lists of mushrooms of various regions of Ukraine. Long time only six species were known in Ukraine: *Conocybe albipes* (OTTH) HAUSKN., *C. pilosella* (PERS.: FR.) KÜHNER, *C. pubescens* (GILLET) KÜHNER, *C. rickeniana* P.D. ORTON, *C. semiglobata* KÜHNER et WATLING and *C. tenera* (SCHAEFF.: FR.) FAYOD (BOBYAK 1907; GIZHYTSKA 1929; PILÁT 1940; GANZHA 1960 a, 1960 b; WASSER 1973, 1974; WASSER & SOLDATOVA 1977; BESEDINA 1998; PRYDIUK 2003, 2005). Later, however, some investigations of the genus in Ukraine were carried out which allowed to find 13 species of *Conocybe* new for the Ukrainian funga (PRYDIUK 2007 a, b). Then these investigations were continued and some of their results are reported in this paper. In this article are treated representatives of section *Conocybe* comprising species with stipitipellis consisting mainly of lecythiform elements (though some globose, clavate, cylindrical and lageniform ones can also be present) (HAUSKNECHT & KRISAI-GREILHUBER 2006).

Materials and methods

The microscopic structures were observed in dried material. Microscopic sections of lamellae and pileipellis were made at about ½ radius of the pileus and examined in 3% KOH. The spores were studied in water and 3% KOH separately. Data on spore size are based on 20 spore measurements per fruit body from one habitat. For basidia and cystidia the mean of the smallest and the largest ones per fruit

body is given with 10 measurements in each case. Ammoniacal reaction was investigated according to instructions of HAUSKNECHT (1999, 2009).

All collections mentioned in the paper are deposited in the Herbarium of the M. G. KHOLODNY Institute of Botany, National Academy of Sciences of Ukraine, Kiev, Ukraine (KW). All these collections except separately marked ones are gathered by author.

In the descriptions the following abbreviations are used: B = average width of the spores in front view; Ls = average length of the spores; L = number of lamellae reaching stipe; l = number of short lamellae (not reaching stipe) between two long ones; Q = length divided by width; av. Q = average Q.

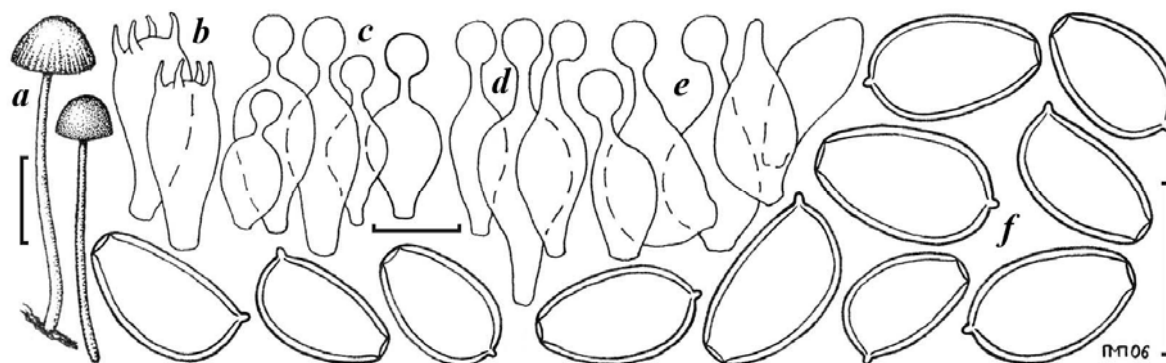


Fig. 1. *Conocybe graminis*: a basidiomata, b basidia, c cheilocystidia, d pileocystidia, e caulocystidia, f spores. Bar: 10 mm for basidiomata, 10 µm for microstructures.

Results

On the whole ten species of sect. *Conocybe* were collected in Ukraine during 2008–2013. For the first time on its territory were registered *Conocybe macrocephala* KÜHNER & Watling, *C. mesospora* KÜHNER & WATLING, *C. semidesertorum* HAUSKN. & KALAMEES and *C. subpallida* ENDERLE. Still six taxa (*C. brachypodii* (VELEN.) HAUSKN. & SVRČEK, *C. echinata* (VELEN.) SINGER, *C. graminis* HAUSKN., *C. rickeniana* P. D. ORTON, *C. semiglobata* (KÜHNER) KÜHNER & WATLING, and *C. subxerophytica* SINGER & HAUSKN. var. *brunnea* HAUSKN.) were known in Ukraine only from one location and are apparently rare. Many of the above mentioned species are rare in Europe and one, *C. semidesertorum*, is found for the first time in Europe. Below more detailed information about all the species is given. The species are arranged according to the infrageneric system of HAUSKNECHT & KRISAI-GREILHUBER (2006).

Conocybe Fayod
Section *Conocybe*
Series *Graminis* HAUSKN. & KRISAI

***Conocybe graminis* HAUSKN., Österr. Z. Pilzk. 5: 181. 1996. (Fig. 1)**

Pileus: 5–15 mm, at first campanulate, later hemispheric to convex, sometimes with low umbo, smooth, hygrophanous, dark brown, dirty rust-brown, brown to light brown, striate to $\frac{1}{2}$ radius when fresh, on drying soon non-striate, pale ochraceous brown with darker center.

Lamellae: narrowly adnate to almost free, rather crowded to moderately crowded ($L = 15\text{--}20$, $l = 1\text{--}3$), slightly ventricose, up to 1.5 mm broad, at first pale brownish, later pale brown or pale rust-brown, with concolorous finely flocculose lamellar edge.

Stipe: $20\text{--}35 \times 1\text{--}2$ mm, cylindrical with slightly swollen clavate basis, sometimes with pseudorhiza up to 10 mm long (may be hardly developed and unnoticeable), hollow, slightly longitudinally pruinose-striate, whitish, pale ochraceous, pale straw yellow, later pale brown, near base darker to rusty brownish.

Context: in pileus and stipe whitish with brownish yellow hue. Taste and smell indistinct.

Spore-print: rusty brown.

Spores: $(6.5\text{--})7.5\text{--}10.5(-11.0) \times 5.0\text{--}6.5$ μm , $Q = 1.30\text{--}1.94$; av. $L_s = 8.9 \pm 0.75$ μm , av. $B = 5.7 \pm 0.43$ μm , av. $Q = 1.55 \pm 0.12$; in face view ovate, ovate-ellipsoid to ellipsoid, in profile ellipsoid, slightly flattened ventrally, germ-pore central, up to 1 μm broad, rather thin-walled, in water pale honey-brown, in alkali light reddish brown.

Basidia: $17.0\text{--}24.0 \times 8.5\text{--}10.0$ μm , clavate, 4-spored.

Cheilocystidia: $13.0\text{--}24.0 \times 6.0\text{--}9.5$ μm , lecythiform, neck up to 3.5×1.5 μm , head $3.5\text{--}5.5$ μm wide.

Pleurocystidia: absent.

Pileocystidia: lecythiform, $17.0\text{--}32.0 \times 5.0\text{--}14.0$ μm , narrower than cheilocystidia, neck up to 12.0×1.5 μm , head $3.5\text{--}5.5$ μm wide, scarce.

Caulocystidia: mainly lecythiform $15.0\text{--}31.0 \times 7.0\text{--}15.5$ μm , neck up to 9.0×1.5 μm , head $3.5\text{--}6.5$ μm wide, with admixture of some globose and clavate elements up to 11.0×8.5 μm .

Pileipellis: hymeniform, consisting of pyriform and spheropedunculate elements up to $10.0\text{--}22.0$ μm wide.

Clamp connections: present.

Chemical reaction: Ammoniacal reaction negative.

Habitat and distribution: On soil in connection with dead grass roots, solitary or in small groups, in steppes, dry meadows, roadsides and other ruderal places in late autumn. In Ukraine rare, earlier known only from one location (PRYDIUK 2007 b). Also known from Central, South and North Europe, Asia and North Africa (HAUSKNECHT 1996, 2009).

Specimens examined: Ukraine: Odessa region, Kiliya district, Biosphere reserve «Dunajski plavni», north-west environs of the town Vylkovo, $45^{\circ}24'45''$ N, $29^{\circ}34'03''$ E, 21 October 2009 (KW 40142), northern border of the town Vylkovo, $45^{\circ}24'50''$ N, $29^{\circ}34'43''$ E, 21 October 2009 (KW 40143), about 0.5 km north-westwards from the town Vylkovo, $45^{\circ}24'55''$ N, $29^{\circ}34'03''$ E, 21. October 2009, leg. M. P. PRYDIUK (KW 40144).

Conocybe graminis is characterised by the presence of a root-like stipe basis attached to dead grass roots, small thin-walled spores and stipitipellis consisting mainly of lecythiform elements. The most similar species is *C. herbarum* HAUSKN., which has paler, often rugose pilei, more distant lamellae and darker, broader spores (HAUSKNECHT 1996, 2009). It must be pointed out that our specimens possess some pileocystidia, which feature is more characteristic for *C. herbarum*. However, most of the macro- and microscopical features of the Ukrainian specimens better fit to *C. graminis*. Differences with other related species, *C. semidesertorum* Hauskn. & Kalamees, will be considered below. One must remember that pseudorhiza of *C. graminis* may sometimes be hardly developed or practically absent (as at many basidiomata of

C. graminis collected in Ukraine). In those cases the species can be confused with *C. brachypodii* (VELEN.) HAUSKN. & SVRČEK, which, however, has narrower and smaller spores, as well as often positive ammoniacal reaction. Besides, *C. brachypodii* grows mainly in forests and moist meadows, while *C. graminis* prefers dry habitats.

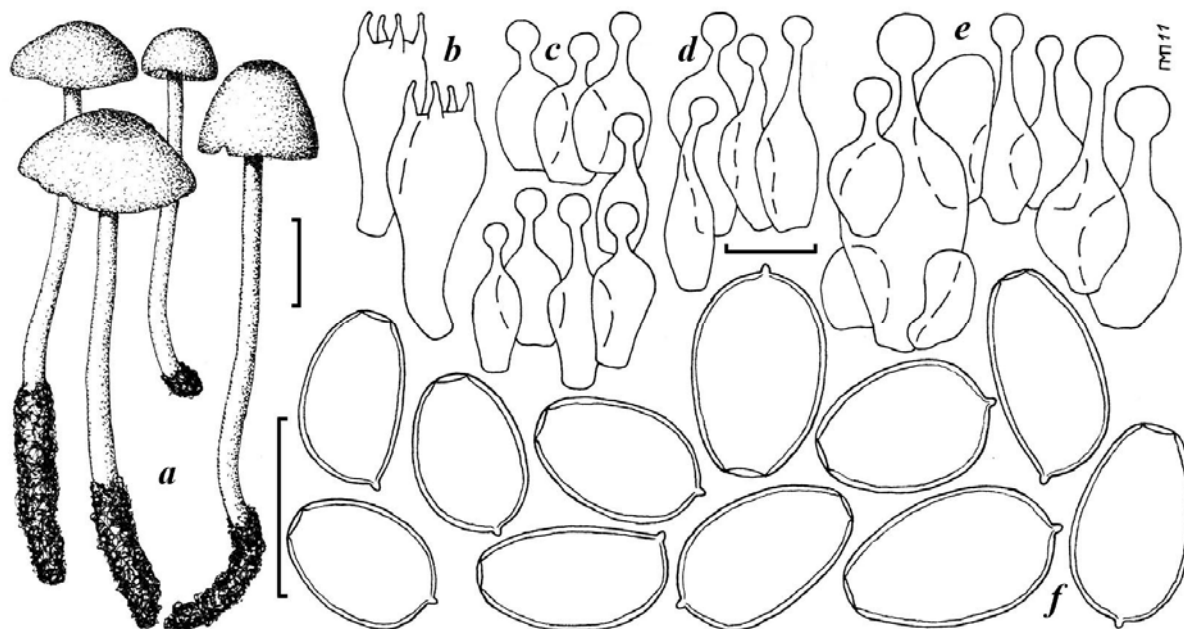


Fig. 2. *Conocybe semidesertorum*: a basidiomata, b basidia, c cheilocystidia, d pileocystidia, e caulocystidia, f spores. Bar: 10 mm for basidiomata, 10 µm for microstructures.

***Conocybe semidesertorum* HAUSKN. & KALAMEES in HAUSKN. & al., Folia Cryptog. Estonica 45: 32. 2009. (Fig. 2)**

Pileus: 9–20 mm, at first hemispherical to hemispherical campanulate, later campanulate, conical campanulate, convex to plano-convex, smooth, hygrophanous, striate only at margin, at first rusty brown with paler margins, later light rusty brown in centre, closer to margin paler, to yellowish brown or ochraceous brown, upon drying pale yellowish brown or pale ochraceous brown with somewhat darker centre.

Lamellae: narrowly adnate to almost free, rather crowded ($L = 19\text{--}28$, $l = 1\text{--}3$), ventricose, up to 2 mm broad, at first pale brown, later light rust-brown to rust-brown, with concolorous finely flocculose edge.

Stipe: $40\text{--}70 \times 1\text{--}3$ mm, cylindrical with clavate or slightly swollen (up to 5 mm wide) base, usually with pseudorhiza up to 20 mm long (sometimes hardly developed), hollow, longitudinally pruinose-striate, whitish or pale ochraceous, later becoming darker to pale brown.

Context: in pileus and stipe whitish with brownish hue. Taste and smell indistinct.

Spore-print: light rust-brown.

Spores: $9.0\text{--}12.0\text{--}12.5 \times 6.0\text{--}7.5$ µm, $Q = 1.38\text{--}1.79$; av. $L_s = 10.8 \pm 0.83$ µm, av. $B = 6.7 \pm 0.31$ µm, av. $Q = 1.61 \pm 0.09$; in face view ovate and broadly ellipsoid, in profile ellipsoid, slightly flattened ventrally, germ-pore central or slightly eccentric, up to 1.8 µm broad, rather thick-walled, in water pale honey-brown, in alkali light orange brown.

B a s i d i a : 22.0–26.0 × 9.0–11.0 µm, clavate, 4-spored.

Cheilocystidia: 15.0–22.0 × 6.0–8.5 µm, lecythiform, neck up to 4.5 × 1.5 µm, head 3.5–4.0 µm wide.

P l e u r o c y s t i d i a : absent.

P i l e o c y s t i d i a : 22.0–25.0 × 6.0–8.5 µm, lecythiform, narrower than cheilocystidia, with neck up to 4.0 × 1.5 µm, head 3.5–4.0 wide, often with somewhat thickened brownish walls, scattered.

C a u l o c y s t i d i a : mainly lecythiform, 17.0–38.0 × 8.0–14.5 µm, neck up to 9.5 × 1.5 µm, head 3.5–7.0 µm wide, with some admixture globose and clavate elements up to 17.0 × 8.5 µm.

P i l e i p e l l i s : hymeniform, consisting of spheropedunculate and pyriform elements 12.0–22.0 µm wide.

C l a m p c o n n e c t i o n s : present.

C h e m i c a l r e a c t i o n : Ammoniacal reaction negative.

Habitat and distribution: Solitary or in small groups on soil (in contact with dead grass roots) in steppes, dry meadows and ruderal places, in late autumn. Rare in Ukraine. The species is found for the first time in Europe and earlier was known only from Central Asia (Afghanistan, Tadjikistan, Turkmenistan, Uzbekistan) (HAUSKNECHT & al. 2009).

Specimens examined: Ukraine: Odessa region, Kiliya district, Biosphere reserve «Dunajski plavni», about 1.5 km northwards from the town Vylkovo, 45° 25' 10" N, 29° 34' 57" E, 23. October 2009. leg. M. P. PRYDIUK (KW 40154, 40155).

Conocybe semidesertorum differs from related *C. graminis* and *C. herbarum* by its larger spores with slightly eccentric germ-pore and more robust basidiomata. Other species possessing spores with eccentric germ-pore is *C. halophila* Singer, which, however is representative of the section *Pilosellae* (HAUSKNECHT & al. 2009). Spores of the specimen collected in Ukraine are somewhat longer and its basidiomata larger than indicated for *C. semidesertorum* (HAUSKNECHT & al. 2009), but other features fit rather well.

Series *Tenera* HAUSKN. & KRISAI

***Conocybe macrocephala* KÜHNER & WATLING in WATLING, Notes R. Bot. Gard. Edinburgh 38: 335. 1980. (Fig. 3)**

Conocybe tenera f. *macrocephala* KÜHNER, Genre Galera: 73. 1935. – *Conocybe macrocephala* (KÜHNER) KÜHNER & ROMAGN., Fl. anal. Champ. sup.: 346. 1953. – *Conocybe abrutibulbosa* WATLING, Notes R. Bot. Gard. Edinburgh 38: 345. 1980. – *Conocybe herinkii* SVRČEK, Czech Mykol. 48: 295. 1996.

P i l e u s : 10–35 mm, at first campanulate to conical-campanulate, later conical-convex to plano-convex, as a rule umbonate, sometimes with somewhat uprolled margin, smooth, sometimes slightly radially rugulose, hygrophanous, striate to ½ radius and more, at first brown, rust-brown or light rust-brown to light brownish, later, beginning from margin becoming paler, to light greyish brown or brownish ochraceous, upon drying pale greyish orange, ochraceous, cream or almost whitish, with paler margin.

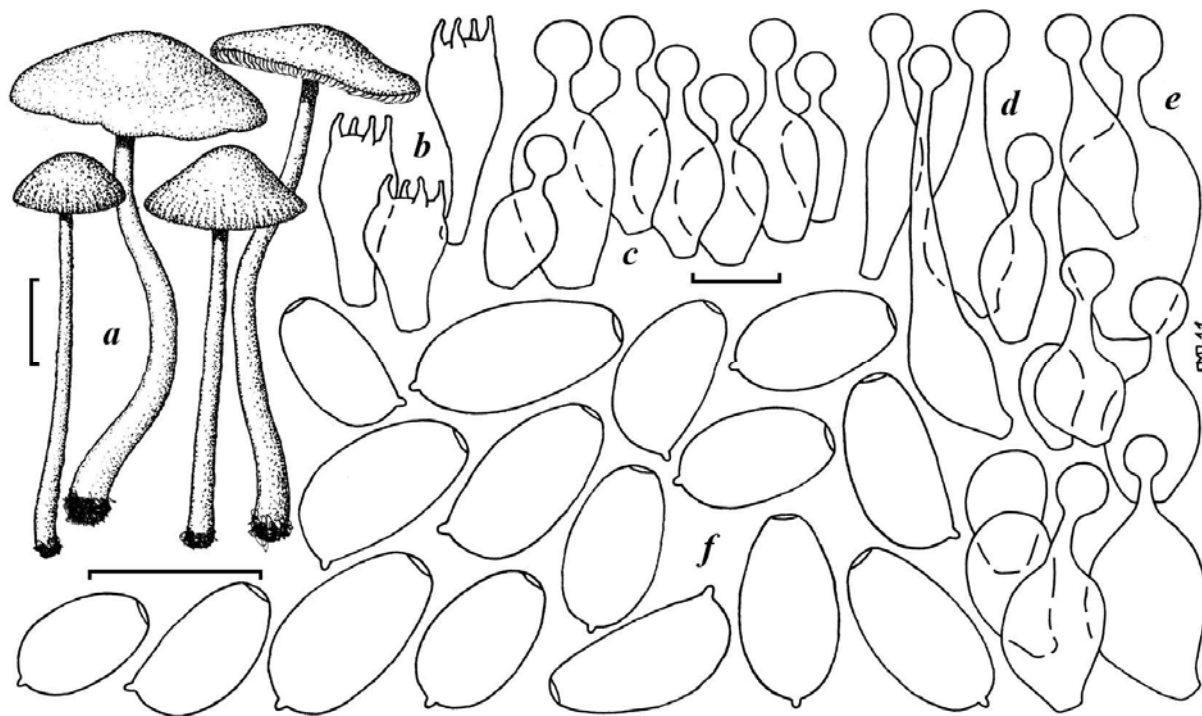


Fig. 3. *Conocybe macrocephala*: a basidiomata, b basidia, c cheilocystidia, d pileocystidia, e caulocystidia, f spores. Bar: 10 mm for basidiomata, 10 μm for microstructures.

L a m e l l a e: narrowly adnate to almost free, moderately crowded to crowded ($L = 18\text{--}30$, $l = 1\text{--}7$), ventricose, up to 5 mm broad, at first ochraceous, later pale yellowish brown to orange, brown, with pale finely flocculose edge.

S t i p e: $20\text{--}70 \times 1\text{--}3$ mm, cylindrical or slightly thickening towards clavate or nearly bulbous base (up to 5 mm wide), hollow, longitudinally pruinose-striate, at first whitish or cream, later darkening from base upwards to pale yellowish brownish, brownish, brownish orange or dark brownish.

C o n t e x t: in pileus up to 2 mm broad, whitish, in stipe whitish to dull brownish in stipe base. Taste and smell indistinct.

S p o r e - p r i n t: light rust-brown.

S p o r e s: $(8.0\text{--})9.0\text{--}11.0(\text{--}12.0) \times (4.5\text{--})5.0\text{--}6.0(\text{--}6.5)$ μm , $Q = 1.6\text{--}2.0$; av. $L_s = 10.0 \pm 0.72$ μm , av. $B = 5.5 \pm 0.38$ μm , av. $Q = 1.83 \pm 0.09$; in face view ovate-ellipsoid, ellipsoid, in profile ellipsoid, slightly flattened ventrally to nearly amygdaliform, germ-pore central, up to $1.0\text{--}1.5$ μm wide, thin-walled, in water honey-brown, in alkali light rust-brown.

B a s i d i a: $16.0\text{--}24.0 \times 7.0\text{--}9.5$ μm , clavate, 4-spored.

C h e i l o c y s t i d i a: $17.0\text{--}31.0 \times 7.0\text{--}12.0$ μm , lecythiform, neck up to 5.0×2.5 μm , head $5.0\text{--}6.5$ μm wide.

P l e u r o c y s t i d i a: absent.

P i l e o c y s t i d i a: $24.0\text{--}45.0 \times 6.5\text{--}10.5$ μm , lecythiform, narrower than cheilocystidia, neck up to 15.0×2.5 μm , head $3.5\text{--}6.5$ μm wide, scarce.

C a u l o c y s t i d i a: mainly lecythiform, $15.5\text{--}38.0 \times 7.0\text{--}18.0$ μm , neck up to 7.0×2.5 μm , head $4.0\text{--}7.5$ μm wide, with admixture of globose and clavate elements up to 17.0×12.0 μm , at the top of stipe sometimes also present scattered hairs up to $100.0 \times 2.5\text{--}5.0$ μm .

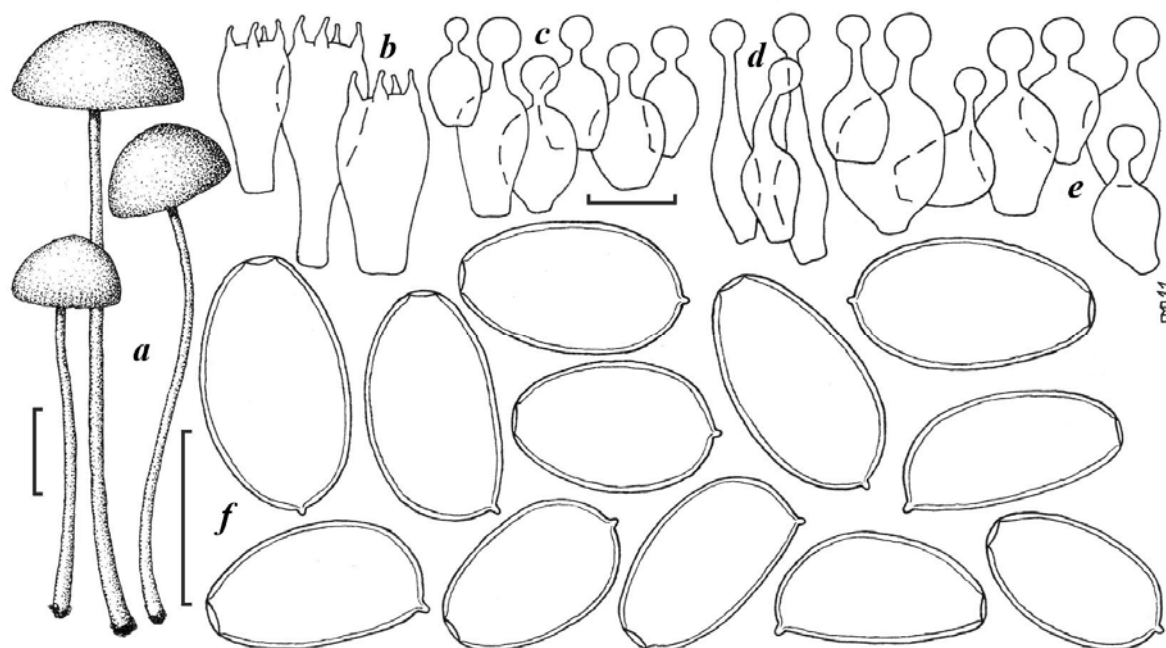


Fig. 4. *Conocybe semiglobata*: a basidiomata, b basidia, c cheilocystidia, d pileocystidia, e caulocystidia, f spores. Bar: 10 mm for basidiomata, 10 µm for microstructures.

Pileipellis: hymeniform, consisting of spheropedunculate and pyriform elements 10.0–27.0 µm wide.

Clamp connections: present.

Chemical reaction: Ammoniacal reaction as a rule positive and spontaneous (detectable in a few minutes), but sometimes weak and appearing only in several hours.

Habitat and distribution: Solitary and in small groups on soil in deciduous forests, from summer to autumn. Apparently rare in Ukraine. Known from Europe and Central Asia (Uzbekistan) (HAUSKNECHT 2009).

Specimens examined: Ukraine: Ternopil region, Gusiатыn district, Nature reserve «Medobory», 49° 20' 30" N, 26° 07' 43" E, 26. June 2007 (KW 35049), 49° 20' 14" N, 26° 07' 53" E, 25. September 2007 (KW 35050), 49° 19' 06" N, 26° 09' 15" E, 28. September 2007 (KW 35051), 49° 11' 01" N, 26° 08' 31" E, 29. September 2007 (KW 35052), 49° 20' 59" N, 26° 07' 11" E, 30. September 2007 (KW 35053), leg. M. P. PRYDIUK.

Conocybe macrocephala differs from related species mainly by rather small and thin-walled spores in combination with fairly large-headed cystidia. Another rather unreliable distinctive feature is presence of positive ammoniacal reaction. In cases when the reaction is weak, *C. macrocephala* can be confused with *C. juniana* (VELEN.) HAUSKN. & SVRČEK, which, however, has smaller basidiomata, larger and darker thick-walled spores, as well as caulocystidia with much larger heads (HAUSKNECHT 2009).

***Conocybe semiglobata* KÜHNER & WATLING in WATLING**, Notes R. Bot. Gard. Edinburgh **38**: 337. 1980. (Fig. 4)

Conocybe tenera f. *semiglobata* KÜHNER, Genre Galera: 79. 1935. – *Conocybe semiglobata* (KÜHNER) KÜHNER & ROMAGN., Fl. anal. Champ. sup.: 347. 1953. – *Galera tenera* f. *convexa* J.E. LANGE, Dansk. bot. Ark. **9**: 37. 1938. – *Conocybe affinis* sensu

SINGER & HAUSKN., Pl. Syst. Evol. **180**: 87. 1992; HAUSKN., Boll. Gruppo micol. G. Bres. **36**: 38. 1993; MOSER & JÜLICH, Farbatl. Basidiomyc.: III *Conocybe* 16. 1985. – *Conocybe tenera* sensu BREITENB. & KRÄNZL., Pilze Schweiz. **4**: pl. 394. 1995.

Pileus: 10–25 mm, as a rule hemispheric, later conical-convex to convex, sometimes slightly umbonate, smooth, hygrophanous, striate only at same margin or not striate, at first light greyish brown, ochraceous brown or dirty rust-brown, in centre darker, dark brownish to dark brown, upon drying paler to greyish ochraceous or cream.

Lamellae: narrowly adnate to almost free, fairly crowded, ($L = 15\text{--}25$, $l = 3\text{--}7$), ventricose, up to 3 mm broad, at first pale ochraceous, later rust-brown, with whitish finely flocculose edge.

Stipe: $30\text{--}70 \times 1\text{--}2$ mm, cylindrical, base clavate or slightly bulbous, up to 4 mm broad, hollow, slightly longitudinally pruinose-striate, at first cream or ochraceous, later, beginning from base, darkening upwards to orange-brown, rust-brown or dark brown (at same base).

Context: in pileus up to 1.5 mm broad, pale ochraceous or pale yellowish ochraceous, in stipe pale brownish, at basis darker, up to dark brownish. Taste and smell indistinct.

Spore-print: light rust-brown.

Spores: $(10.0\text{--})11.0\text{--}15.0 \times 6.0\text{--}8.5(-9.0)$ μm , $Q = 1.41\text{--}2.14$; av. $L_s = 13.2 \pm 1.23$ μm , av. $B = 7.6 \pm 0.86$ μm , av. $Q = 1.76 \pm 0.2$; in face view ellipsoid and narrowly ellipsoid, in profile ellipsoid, slightly ventrally flattened to nearly amygdaliform, germ-pore central, up to $1.5\text{--}2.0$ μm wide, thick-walled, in water yellowish brown, in alkali orange-brown to rust-brown.

Basidia: $16.0\text{--}26.0 \times 8.5\text{--}11.5$ μm , clavate, 4-spored.

Cheilocystidia: $12.0\text{--}23.0 \times 6.0\text{--}9.0$ μm , lecythiform, neck up to 3.0×1.5 μm , head $3.5\text{--}5.0$ μm wide.

Pleurocystidia: absent.

Pileocystidia: $22.0\text{--}29.0 \times 5.5\text{--}6.5$ μm , lecythiform but longer and narrower than hymenial ones, neck up to 12.0×1.5 μm , head $4.0\text{--}5.0$ μm wide, with slightly brownish walls, rather numerous to scattered.

Caulocystidia: $16.0\text{--}26.0 \times 8.5\text{--}13.0$ μm , mainly lecythiform, neck up to $4.0\text{--}5.0$ μm , head $3.5\text{--}5.5$ μm wide, some globose and elongate elements present only at stipe apex.

Pileipellis: hymeniform, consisting of spheropedunculate and pyriform elements $9.0\text{--}26.0$ μm wide.

Clamp connections: present.

Chemical reaction: Ammoniacal reaction weak.

Habitat and distribution: Solitary or in small groups on soil in steppes, meadows and roadsides, from May to October. Rather rare in Ukraine, earlier known only from one locality (BESEDINA 1998). In Europe rather common, known also from Asia, North Africa and South America (HAUSKNECHT 2009).

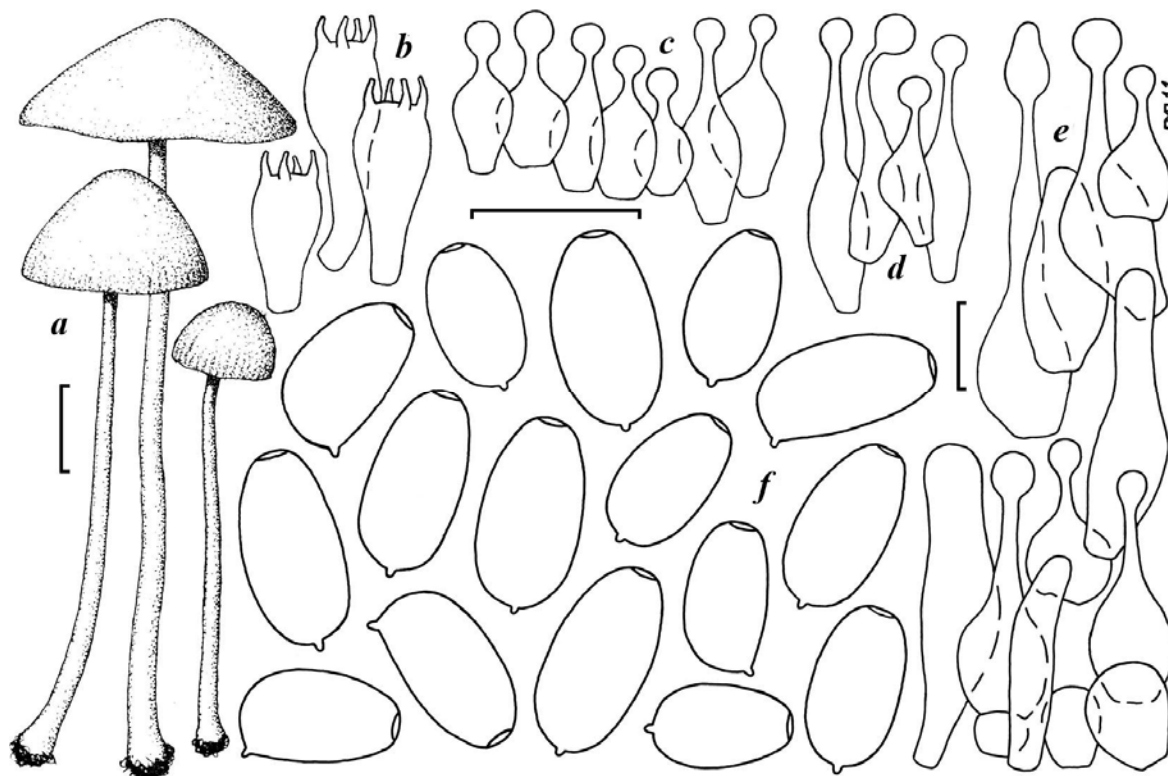


Fig. 5. *Conocybe subpallida*: a basidiomata, b basidia, c cheilocystidia, d pileocystidia, e caulocystidia, f spores. Bar: 10 mm for basidiomata, 10 µm for microstructures.

Specimens examined: Ukraine: Donetsk region, Slovyansk district, National nature park «Sviati Gory», eastern margin of the village Bogorodichne, 49° 01' 1 8" N, 37° 29' 33" E, 1. October 2004 (KW 27153), leg. M. P. PRYDIUK; Odessa region, Kiliya district, Biosphere reserve «Dunajski plavni», northern margin of the town Vylkovo, 45° 24' 49" N, 29° 35' 08" E, 21. October 2009 (KW 40157), north-western margin of the town Vylkovo, coast of the Danube, 45° 25' 13" N, 29° 34' 01" E, 21. October (KW 40156), about 2 km northwards from the town Vylkovo, 45° 25' 42" N, 29° 34' 38" E, 23. October 2009 (KW 40158), leg. M. P. PRYDIUK.

Conocybe semiglobata is in many aspects similar to *C. tenera* but differs by somewhat larger and in face view more globose spores with thicker walls (spores of *C. tenera* are more or less ellipsoid-limoniform in face view and rather amygdaliform in profile). Besides, *C. tenera* has a stronger and more spontaneous ammoniacal reaction. *Conocybe subovalis* Kühner & Watling possessing fairly similar spores has larger cystidia with heads up to 7.0 µm wide. Basidiomata of *C. subovalis* are larger with a pileus striate at least to 1/3 of radius, and have a more bulbous stipe base (HAUSKNECHT 2009).

***Conocybe subpallida* ENDERLE, Z. Mykol. 57: 91. 1991. (Fig. 5)**

Pileus: 10–30 mm, at first hemispheric, campanulate-conical or conical-convex, later convex to plano-convex or plano-conical, smooth or slightly radially rugose, hygrophanous, not striate or very slightly striate, pale yellow, light brownish orange, light greyish blond, ochraceous or light yellow, in centre darker, ochraceous brown, light brown or dark brownish, sometimes with slight olivaceous tinge, upon drying pale ochraceous or pale greyish brown.

Lamellae: narrowly adnate to nearly free, moderately crowded ($L = 23\text{--}28$, $l = 3\text{--}7$), ventricose, up to 3 mm wide, at first pale orange, later light rust-brown, with paler finely flocculose edge.

Stipe: $50\text{--}85 \times 1.5\text{--}2.5$ mm, cylindrical with bulbous base up to 6 mm broad, hollow, longitudinally pruinose-striate, at first whitish to pale yellowish, later brownish yellow to light honey-brown, at base darker up to clay-brown.

Context: in pileus up to 1.5 mm broad, whitish with yellowish tinge, in stipe pale brownish, at base to dark clay-brown. Taste and smell indistinct.

Spore-print: light rust-brown.

Spores: $(8.5\text{--})9.0\text{--}11.5(-12.0) \times 5.0\text{--}6.5$ μm , $Q = 1.46\text{--}2.0$; av. $L_s = 10.3 \pm 0.79$ μm , av. $B = 5.9 \pm 0.38$ μm , av. $Q = 1.75 \pm 0.1$; in face view ellipsoid and narrowly ellipsoid, in profile ellipsoid, slightly flattened ventrally, germ-pore central, $1.5\text{--}2.0$ μm wide, thin-walled, in water pale yellowish brown, in alkali pale honey-brown to pale orange-brown.

Basidia: $17.0\text{--}26.0 \times 8.5\text{--}9.5$ μm , clavate, 4-spored.

Cheilocystidia: $15.0\text{--}19.0 \times 6.0\text{--}8.5$ μm , lecythiform, neck up to 3.5×1.5 μm , head $3.0\text{--}5.0$ μm wide.

Pleurocystidia: absent.

Pileocystidia: $20.0\text{--}35.0 \times 6.0\text{--}8.0$ μm , lecythiform, with long neck up to 12.0×1.5 μm , head $4.0\text{--}5.0$ μm wide, often with brownish walls, scattered to fairly numerous.

Caulocystidia: $16.0\text{--}48.0 \times 8.5\text{--}11.5$ μm , lecythiform. with rather long ($4.5\text{--}20.0 \times 1.5$ μm) neck, head $3.0\text{--}6.5$ μm wide, with rather considerable admixture of globose elements up to 12.0×9.5 μm , at stipe apex also present clavate and lageniform elements up to 36.0×9.5 μm , as well as scattered hairs up to 80.0×4.5 μm .

Pileipellis: hymeniform, consisting of spheropedunculate and pyriform elements $10.0\text{--}25.0$ μm wide.

Clamp connections: present.

Chemical reaction: Ammoniacal reaction as a rule positive and spontaneous.

Habitat and distribution: Solitary or in small groups on soil in deciduous forests, meadows and roadsides, in autumn. Apparently rare in Ukraine. In Europe rather rare, known also from North Africa (HAUSKNECHT 2009).

Specimens examined: Ukraine: Poltava region, Dykanka district, environs of the town Dykanka, $49^\circ 48' 17''$ N, $34^\circ 34' 17''$ E, 24. October 2003 (KW 27085), leg. M. P. PRYDIUK; Ternopil region, Gusiатыn district, Nature reserve «Medobory», $49^\circ 17' 21''$ N, $26^\circ 10' 06''$ E, 28. September 2007 (KW 35056), $49^\circ 18' 56''$ N, $26^\circ 10' 18''$ E, 9. October 2008 (KW 40160), leg. M. P. PRYDIUK; Chernivtsi region, Vyzhnytsia district, National nature park «Vyzhnytskyj», $48^\circ 10' 54''$ N, $25^\circ 13' 48''$ E, 9. September 2013 (KW 50673), leg. M. P. PRYDIUK.

Conocybe subpallida has considerable admixture of non-lecythiform elements in stipitipellis, therefore ENDERLE (1991) attributed this species to sect. *Mixtae* SINGER. HAUSKNECHT (2000), however, included the taxon in sect. *Conocybe*, because of its positive ammoniacal reaction, that is not characteristic for representatives of the section *Mixtae*. Though specimens of *C. subpallida* collected in Ukraine have slightly smaller spores than HAUSKNECHT (2009) indicated, their other features (rather large basidiocarps with pale and mostly non-striate pilei, pale thin-walled spores, stipitipellis

with admixture of non-lecythiform elements at stipe apex, presence of positive ammoniacal reaction) allow to identify them as *C. subpallida*.

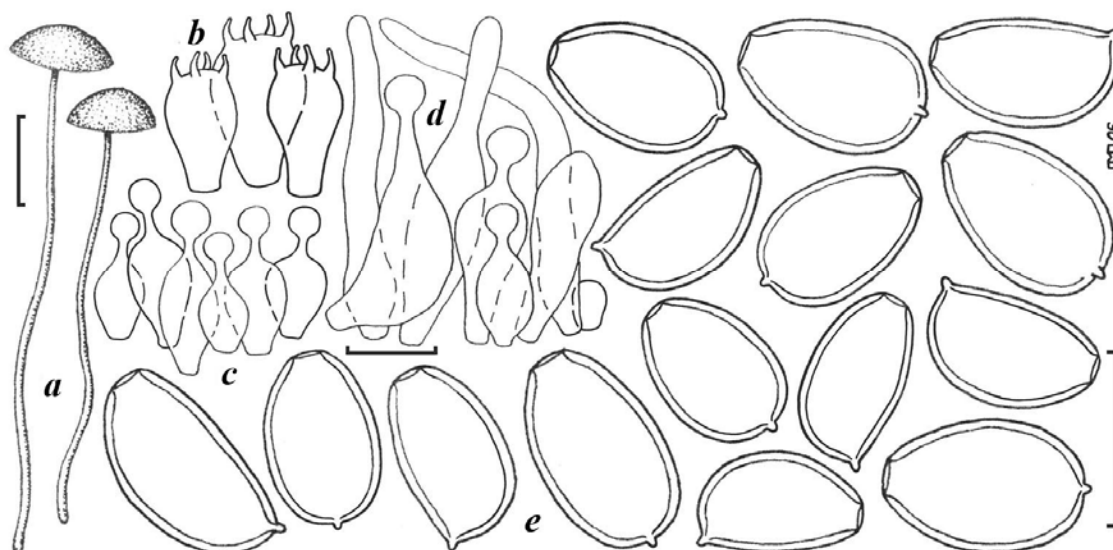


Fig. 6. *Conocybe subxerophytica* var. *brunnea*: a basidiomata, b basidia, c cheilocystidia, d caulocystidia, e spores. Bar: 10 mm for basidiomata, 10 µm for microstructures.

***Conocybe subxerophytica* SINGER & HAUSKN. var. *brunnea* HAUSKN., Österr. Z. Pilzk. 11: 74. 2002. (Fig. 6)**

Pileus: 7–12 mm, at first conical-convex, later convex, smooth or slightly radially rugulose, hygrophanous, not striate, light rust-brown with reddish hue, upon drying orange ochraceous or brownish ochraceous.

Lamellae: narrowly adnate to almost free, rather crowded (L = 18–25, l = 1–3), slightly ventricose, up to 1.5 mm wide, at first pale brown, later rust-brown, with paler finely flocculose edge.

Stipe: 40–50 × 0.7–1.0 mm, cylindrical with slightly swollen clavate base, hollow, pruinose, at first whitish or cream, later darkening to pale brown.

Context: in pileus and stipe yellowish to orange-white. Taste and smell indistinct.

Spore-print: not recorded.

Spores: 9.5–12.5(–13.2) × 6.5–8.0 × 6.0–6.7 µm, Q = 1.43–1.85; av. Ls = 11.4 ± 0.78 µm, av. B = 7.2 ± 0.46 µm, av. Q = 1.59 ± 0.09; rather distinctly lentiform, in face view ovate to ellipsoid-ovate, in profile narrowly ellipsoid, germ-pore central, up to 1.5 µm wide, thick-walled, in water honey-brown, in alkali reddish brown.

Basidia: 15.0–23.0 × 8.0–11.5 µm, clavate, 4-spored.

Cheilocystidia: 14.5–24.0 × 6.0–9.5 µm, lecythiform, neck up to 2.5 × 1.5 µm, head 3.0–5.0 µm wide.

Pleurocystidia: absent.

Pileocystidia: 22.0–26.0 × 6.0–10.3 µm, lecythiform, neck up to 7.5 × 2.0 µm, head 3.0–4.5 µm wide, scattered.

Caulocystidia: mainly lecythiform 12.0–31.0 × 7.0–9.5 µm, neck up to 4.0 × 2.0 µm, head 3.5–5.0 µm wide, near stipe apex admixture of non-lecythiform, clavate (up to 15.0 × 7.0 µm), narrowly lageniform and cylindrical elements 24.0–43.0 × 6.0–7.0 µm.

Pileipellis: hymeniform, consisting of spheropedunculate and pyriform elements 10.0–25.0 µm wide.

Clamp connections: present.

Chemical reaction: Ammoniacal reaction negative.

Habitat and distribution: Solitary or in small groups on soil in grasslands (steppes, dry meadows and roadsides), from summer to autumn. Apparently rare in Ukraine, earlier was known only from one locality (PRYDIUK 2007 b). Rare in Europe (HAUSKNECHT 2009).

Specimens examined: Ukraine: Kyiv region, Obukhiv district, environs of the village Trypillia, 50° 07' 38" N, 30° 46' 02" E, 19. June 2008 (KW 40162), leg. M. P. PRYDIUK; Odessa region, Kiliya district, Biosphere reserve «Dunajski plavni», about 0.5 km northwards from the town Vylkovo, 45° 25' 08" N, 29° 34' 41" E, 22. October 2009 (KW 40163), leg. M. P. PRYDIUK.

Conocybe subxerophytica var. *brunnea* differs from the typical variation of the species (still unknown in Ukraine) mainly by larger and darker basidiomata with more crowded lamellae, as well as slightly rugose pileus surface. Other representatives of the series *Tenera* being similar in some aspects (*C. semiglobata* and *C. dunensis* T. J. WALLACE) do not have lentiform spores (HAUSKNECHT 2009).

Series *Mesospora* HAUSKN. & KRISAI

***Conocybe brachypodii* (VELEN.) HAUSKN. & SVRČEK**, Czech Mycol. **51**: 43. 1999. (Fig. 7)

Galera brachypodii VELEN., Novit. mycol. nov.: 67. 1947. – *Galera albipes* VELEN., Novit. mycol. nov.: 128. ('1939') 1940; non *Conocybe albipes* (OTTH) HAUSKN. – *Conocybe mesospora* var. *excedens* KÜHNER, Genre *Galera*: 56. 1935. – *Conocybe excedens* KÜHNER & WATLING in WATLING, Notes R. Bot. Gard. Edinburgh **40**: 537. 1983. – *Conocybe excedens* var. *pseudomesospora* SINGER & HAUSKN., Pl. Syst. Evol. **180**: 95. 1992. – *Conocybe macrocephala* var. *riedheimensis* HAUSKN. & ENDERLE in HAUSKN., Österr. Z. Pilzk. **9**: 95. 2000.

Pileus: 6–15 mm, at first campanulate to hemispheric, later convex to plane-convex, slightly umbonate, smooth, hygrophanous, striate to ½ radius and more, dark clay-brown, reddish brown or ochraceous brown, at centre darker, dark brownish, at margins paler, up to pale clay-brown, upon drying light grey, with brownish tinge, light ochraceous grey or greyish cream to nearly whitish, at centre darker, brown-grey.

Lamellae: narrowly adnate to nearly free, moderately distant (L = 15–25, l = 1–3), ventricose, up to 1.5 mm broad, at first light ochraceous, later light orange-brown to rust-brown, with paler finely flocculose edge.

Stipe: 20–50 × 1–1.5 mm, cylindrical, base clavate or slightly swollen (up to 3 mm wide), hollow, pruinose, at first white to pale ochraceous or pale yellow, later pale brown with greyish tinge, at base darker, up to reddish brown.

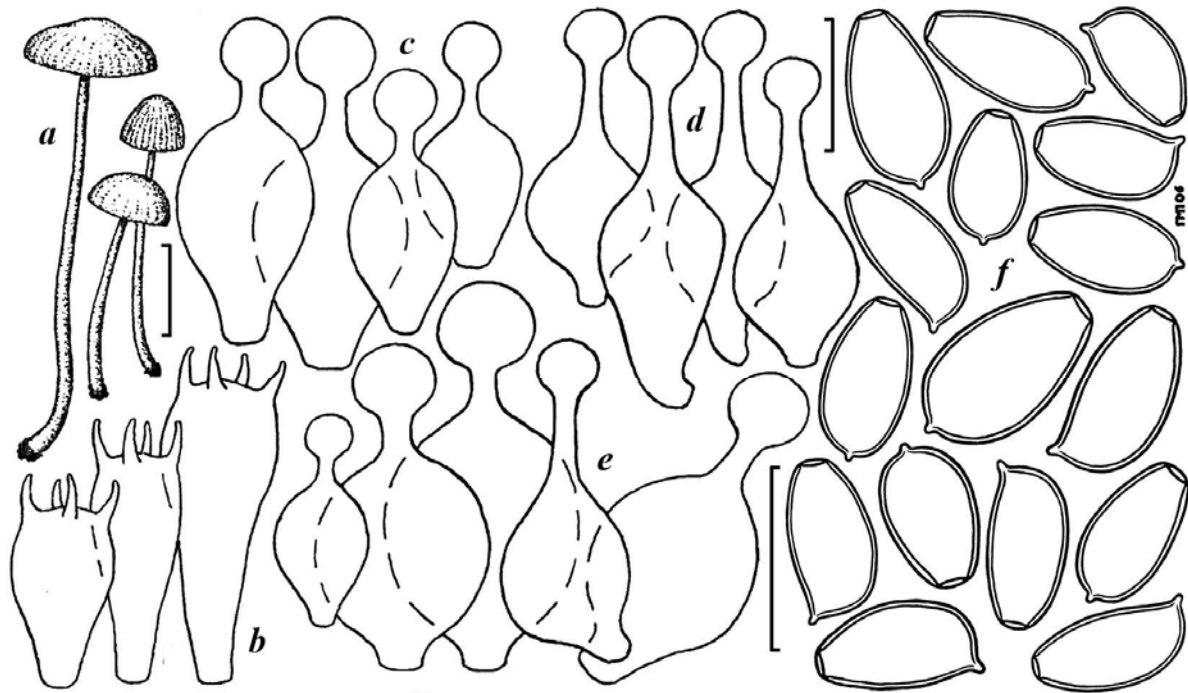


Fig. 7. *Conocybe brachypodii*: a basidiomata, b basidia, c cheilocystidia, d pileocystidia, e caulocystidia, f spores. Bar: 10 mm for basidiomata, 10 µm for microstructures.

C o n t e x t : in pileus up to 1 mm wide, pale ochraceous, in stipe pale brownish, darker at stipe base. Smell and taste indistinct.

S p o r e - p r i n t : pale orange-brown.

S p o r e s : (6.5–)7.0–9.5(–10.5) × 4.0–5.5(–6.0) µm, Q = 1.49–2.10; av. Ls = 8.4 ± 0.75 µm, av. B = 4.9 ± 0.44 µm, av. Q = 1.74 ± 0.13; in face view narrowly ovate, ellipsoid and narrowly ellipsoid, in profile slightly ventrally flattened, ellipsoid to slightly amygdaliform, germ-pore central, up to 1.0 µm wide, thin-walled, in water pale yellowish brown, in alkali light reddish brown.

B a s i d i a : 13.0–24.0 × 7.5–8.5 µm, clavate, 4-spored.

C h e i l o c y s t i d i a : 13.0–26.0 × 5.5–11.5 µm, lecythiform, neck up to 2.5 × 1.5 µm, head 3.0–5.5 µm.

P l e u r o c y s t i d i a : absent.

P i l e o c y s t i d i a : 18.0–29.0 × 5.5–12.0 µm, narrower than hymenial ones, neck up to 12.0 × 2.5 µm, head 3.5–5.5 µm, scattered or rather numerous.

C a u l o c y s t i d i a : 12.5–29.0 × 6.5–14.5 µm, mainly lecythiform, neck up to 9.0 × 2.5 µm, head 3.0–6.0 µm wide, with small admixture of non lecythiform, globose and globose-clavate elements up to 9.5 × 7.0 µm.

P i l e i p e l l i s : hymeniform, consisting of pyriform and spheropedunculate elements 12.0–26.0 µm wide.

C l a m p c o n n e c t i o n s : present.

C h e m i c a l r e a c t i o n : Ammoniacal reaction varies from positive to negative.

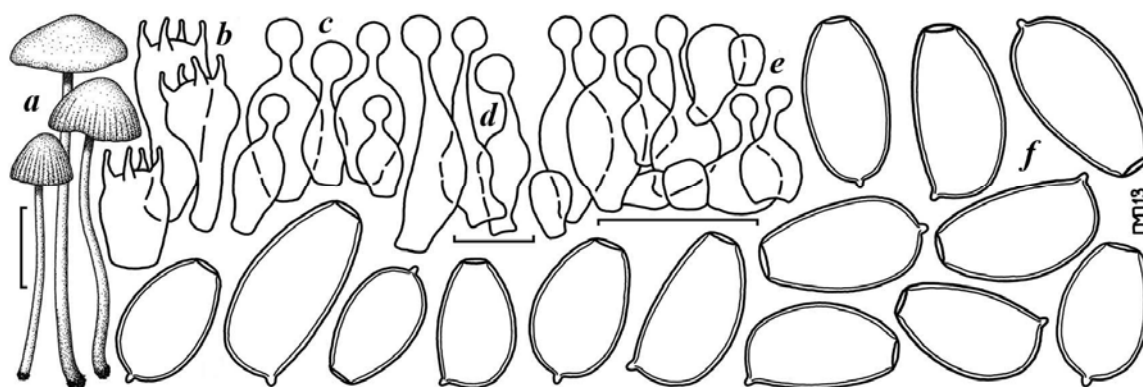


Fig. 8. *Conocybe mesospora*: a basidiomata, b basidia, c cheilocystidia, d pileocystidia, e caulocystidia, f spores. Bar: 10 mm for basidiomata, 10 μ m for microstructures.

Habitat and distribution: Solitary or in small groups on soil in deciduous forests, shrubs and grasslands (meadows, pastures and roadsides), in autumn. Rather rare in Ukraine, earlier was known only from two localities (PRYDIUK 2007 b). Rare in Europe, also known from North Africa (HAUSKNECHT 2009).

Specimens examined: Ukraine: Ternopil region, Gusiатыn district, environs of the village Glibiv, 49° 20' 23" N, 25° 59' 43" E, 12. October 2008 (KW 40136, 40137), environs of the village Grymailiv, 49° 20' 18" N, 26° 00' 06" E, 12. October 2008 (KW 40138), leg. M. P. PRYDIUK; Odessa region, Kiliya district, Biosphere reserve «Dunajski plavni», environs of the village Lisky, 45° 27' 57" N, 29° 27' 54" E, 25. October 2009 (KW 40139), north-westwards from the town Vylkovo, 45° 24' 50" N, 29° 33' 53" E, 27. October 2009 (KW 40140), leg. M. P. PRYDIUK.

Conocybe brachypodii is characterised by rather small dull brown basidiomata, upon drying greyish, small thin-walled spores and cystidia with small heads. The closest species is *C. mesospora* KÜHNER & WATLING possessing, however, much brighter coloured carpophores (yellowish orange, orange and brownish orange), which are never greyish after drying. Besides, it has slightly larger spores and always negative ammoniacal reaction (HAUSKNECHT 2002, 2009).

***Conocybe mesospora* KÜHNER & WATLING in WATLING, Notes R. Bot. Gard. Edinburgh 38: 336. 1980. (Fig. 8)**

Conocybe mesospora KÜHNER, Genre Galera: 54. 1935. – *Conocybe mesospora* KÜHNER & SINGER, Mycologia 5: 395. 1959.

Pileus: 8–15 mm, at first campanulate or campanulate-conical, later conical-convex to plano-convex, slightly umbonate, smooth, hygrophorous, striate to $\frac{1}{2}$ radius and more, orange-brown or rust-brown, at margin paler, yellowish brown to brownish orange, upon drying pale orange or ochraceous yellow but never whitish or greyish.

Lamella: narrowly adnate to almost free, fairly distant ($L = 15\text{--}25$, $l = 3\text{--}7$), ventricose, up to 2 mm wide, at first light ochraceous, later yellowish brown to rust-brown, with concolorous or slightly paler finely flocculose edge.

Stipe: 20–45 \times 1–1.5 mm, cylindrical, with clavate slightly swollen base up to 3 mm wide, hollow, longitudinally pruinose-striate, at first cream to pale ochraceous, later, beginning from base, darkening to honey-brown or orange-brown.

C o n t e x t : in pileus up to 1 mm wide, pale yellowish, in stipe pale orange-brownish, darker at base. Smell and taste indistinct.

S p o r e - p r i n t : light rust-brown.

S p o r e s : 7.5–10.5(–12.0) × 5.0–6.0 μm, Q = 1.50–2.06; av. Ls = 9.2±1.0 μm, av. B = 5.4±0.36 μm, av. Q = 1.7±0.15; in face view ovate, narrowly ovate and ellipsoid, in profile ellipsoid, slightly flattened ventrally to slightly amygdaliform, germ-pore central, up to 1.0 μm wide, thin-walled, in water brownish yellow, in alkali brownish orange or orange-brown.

B a s i d i a : 14.0–22.0 × 8.0–9.0 μm, clavate, 4-spored.

C h e i l o c y s t i d i a : 12.0–22.0 × 6.0–9.5 μm, lecythiform, neck up to 2.5 × 1.5 μm, head 3.0–5.0 μm wide.

P l e u r o c y s t i d i a : absent.

P i l e o c y s t i d i a : 22.0–29.0 × 6.5–7.0 μm, lecythiform, narrower than hymenial ones, neck up to 10.0 × 2.0 μm, head 4.0–5.0 μm wide, with brownish walls, scattered.

C a u l o c y s t i d i a : mainly lecythiform, 14.0–24.0 × 8.0–10.0 μm, neck up to 6.5 × 2.0 μm, head 3.5–5.0 μm wide, with insignificant admixture of globose and broadly clavate elements up to 12.0 × 6.5 μm.

P i l e i p e l l i s : hymeniform, consisting of spheropedunculate and pyriform elements 14.0–25.0 μm wide.

C l a m p c o n n e c t i o n s : present.

C h e m i c a l r e a c t i o n : Ammoniacal reaction negative.

H a b i t a t a n d d i s t r i b u t i o n : Solitary or in small groups on soil in grasslands (meadows, pastures and roadsides), in spring, apparently in summer and autumn. Apparently rare in Ukraine. Worldwide distributed (HAUSKNECHT 2009).

S p e c i m e n s e x a m i n e d : Ukraine: Chernigiv region, Korop district, National nature park «Mezynskyj», about 1.5 km northwards from the village Sverdlovka, coast of the Desna, 51° 48' 35" N, 33° 04' 46" E, 26. May 2009 (KW 40147), leg. M. P. PRYDIUK.

The closest to *Conocybe mesospora* species is *C. brachypodii*. The differences between those species were considered above. *Conocybe rickeniana* is rather similar macroscopically having cheilo- and caulocystidia with much larger heads 5.0–11.0 μm wide (ARNOLDS 2005). Though spores of the Ukrainian specimen of *C. mesospora* are slightly narrower than indicated by Anton HAUSKNECHT (HAUSKNECHT 2002, 2009), their identification as *C. mesospora* seems rather reliable.

Series *Magnicapitata* HAUSKN. & KRISAI

***Conocybe echinata* (VELEN.) SINGER**, Fieldiana, Bot., n. s. **21**: 103. ('1987')1989. (Fig. 9)

Galera echinata VELEN., Novit. mycol. nov.: 69. 1947. – *Conocybe spicula* f. *sordida* KÜHNER, Genre *Galera*: 62. 1935. – *Conocybe sordida* KÜHNER & WATLING in WATLING, Notes R. Bot. Gard. Edinburgh **38**: 339. 1980.

P i l e u s : 5–30 mm, at first hemispheric, later campanulate-convex, convex to plano-convex, with low umbo, smooth, hygrophanous, hardly striate, at first dark brown, hazel-brown, greyish brown, dull brown, sometimes with purple or greyish violet tinge, towards margin paler, light brown, light greyish brown, brownish beige, upon drying pale coffee-brown or ochraceous brown.

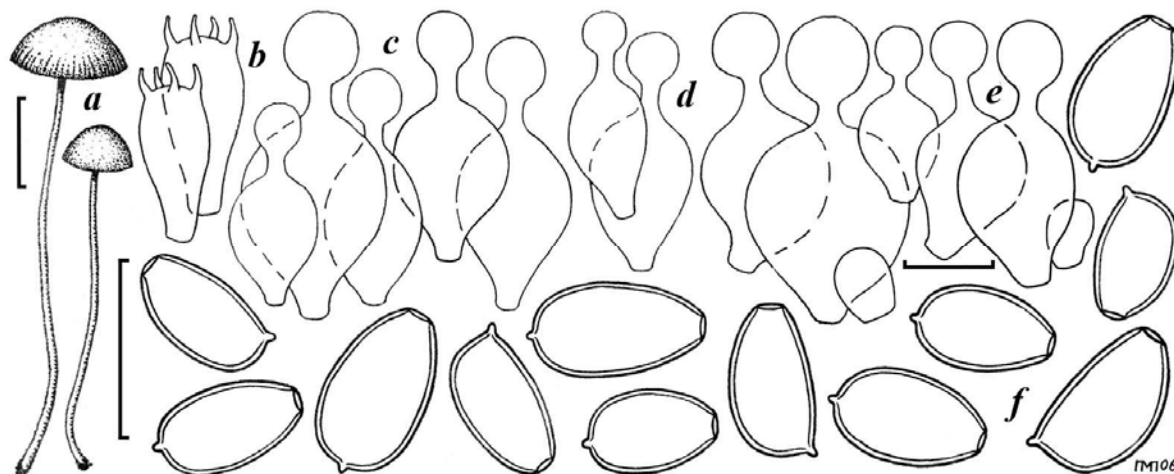


Fig. 9. *Conocybe echinata*: a basidiomata, b basidia, c cheilocystidia, d pileocystidia, e caulocystidia, f spores. Bar: 10 mm for basidiomata, 10 μm for microstructures.

L a m e l l a e: narrowly adnate to almost free, rather crowded ($L = 15\text{--}20$, $l = 1\text{--}3(-7)$), ventricose, up to 3 mm broad, at first pale ochraceous, later ochraceous brown to light rust-brown, with whitish finely flocculose edge.

S t i p e: $30\text{--}75 \times 1.0\text{--}3.0$ mm, cylindrical, with clavate or slightly bulbous (up to 4 mm broad) base, hollow, pruinose to longitudinally pruinose-striate, at first pale yellow, pale ochraceous or pale yellowish brown with contrasting darker, brownish orange, light brown, grey-brown to dark brown base, later completely dull brown to dark brown.

C o n t e x t: in pileus up to 1.5 mm broad, pale yellowish to pale brownish yellow, in stipe darker, up to greyish brown. Taste and smell indistinct.

S p o r e - p r i n t: light rust-brown.

S p o r e s: $7.0\text{--}10.0(-10.5) \times 4.5\text{--}5.5$ μm , $Q = 1.50\text{--}2.23$; av. $L_s = 9.0 \pm 0.73$ μm , av. $B = 4.8 \pm 0.29$ μm , av. $Q = 1.87 \pm 0.16$; in face view ovate-ellipsoid, ellipsoid and narrowly ellipsoid, in profile ellipsoid, slightly flattened ventrally, sometimes slightly amygdaliform, germ pore central, up to 1.5 μm wide, thin-walled, in water light yellow, in alkali light brown-yellow.

B a s i d i a: $17.0\text{--}19.0 \times 8.0\text{--}10.0$ μm , clavate, 4-spored.

C h e i l o c y s t i d i a: $22.0\text{--}33.5 \times 11.0\text{--}17.0$ μm , lecythiform, neck up to 3.5×2.5 μm , head $5.5\text{--}8.5$ μm wide.

P l e u r o c y s t i d i a: absent.

P i l e o c y s t i d i a: $26.0\text{--}31.0 \times 10.0\text{--}12.0$ μm , lecythiform, somewhat narrower than cheilocystidia, neck up to 7.0×2.5 μm , head $6.0\text{--}7.0$ μm wide.

C a u l o c y s t i d i a: $22.0\text{--}33.5 \times 9.5\text{--}19.0$ μm , lecythiform, neck up to 5.0×2.5 μm , head $(3.5\text{--})5.0\text{--}9.5$ μm wide, with admixture of globose and globose-clavate elements $12.0\text{--}12.5 \times 8.0\text{--}9.5$ μm .

P i l e i p e l l i s: hymeniform, consisting of spheropedunculate and pyriform elements $10.0\text{--}24.0$ μm wide.

C l a m p c o n n e c t i o n s: present.

C h e m i c a l r e a c t i o n: Ammoniacal reaction negative.

H a b i t a t a n d d i s t r i b u t i o n: Solitary or in small groups on soil in deciduous forests, sometimes also in grasslands (meadows and pastures), in autumn. Apparently rare in

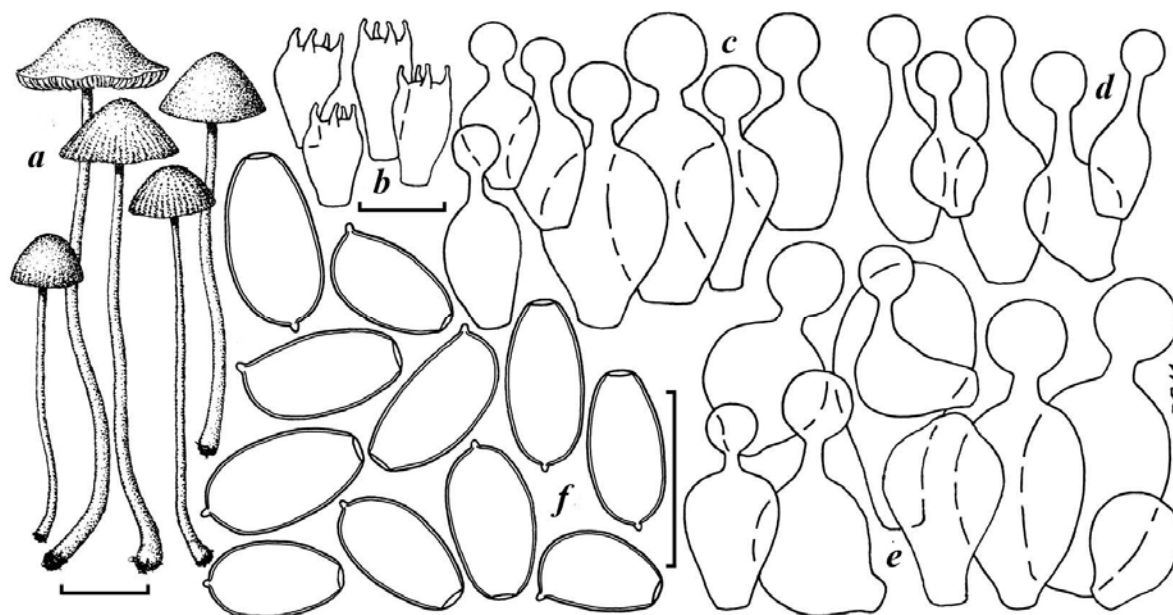


Fig. 10. *Conocybe rickeniana*: a basidiomata, b basidia, c cheilocystidia, d pileocystidia, e caulocystidia, f spores. Bar: 10 mm for basidiomata, 10 µm for microstructures.

Ukraine, earlier was known only from one location (PRYDIUK 2007 b). Rather frequent in Europe, also known from Asia (Siberia) (HAUSKNECHT 2009).

Specimens examined: Ukraine: Ternopil region, Gusiатыn district, Nature reserve «Medobory», 49° 20' 22" N, 26° 07' 48" E, 25. September 2007 (KW 35045), 49° 17' 14" N, 26° 10' 21" E, 28. September 2007 (KW 35046), leg. M. P. PRYDIUK; Chernivtsi region, Vyzhnytsia district, National nature park «Vyzhnytskyj», 48° 12' 04" N, 25° 19' 22" E, 06. September 2013 (KW 50672), leg. M. P. PRYDIUK.

Conocybe echinata is microscopically very close to *C. rickeniana* P. D. ORTON differing mainly by darker coloured pileus (dark brown to greyish brown, sometimes even with purplish tinge) and two-coloured stipe (HAUSKNECHT 1999). When herbarium material is in bad condition both species can be hardly separated each from other. ARNOLDS (2005) suggested that *C. echinata* is only a variation of *C. rickeniana*.

***Conocybe rickeniana* P. D. ORTON**, Trans. Br. Mycol. Soc. **43**: 195. 1960; non sensu DÄHNCKE, 1200 Pilze: 581. 1993 (= *C. juniana*). (Fig. 10)

Galera teneroides (PECK) SACC. sensu J.E. LANGE, Fl. Agar. Dan. **4**: 33. 1939. – *Galera spicula* sensu RICKEN, Blätterpilze: 226. 1915. – *Conocybe spicula* f. *typica* sensu KÜHNER, Genre *Galera*: 64. 1935.

Pileus: 5–25 mm, at first campanulate or conical-campanulate, later conical-convex to plano-convex, slightly umbonate, smooth, hygrophanous, striate almost to centre, at first pale brown, light reddish brown, brownish orange to yellow-brown or ochraceous yellow, darker in centre, upon drying pale orange, light orange or light ochraceous yellow.

Lamellae: narrowly adnate to almost free, fairly crowded (L = 15–25, l = 1–3(–7)), ventricose, up to 2 mm wide, at first pale ochraceous, later brownish ochraceous to light rust-brown, with whitish finely flocculose edge.

Stipe: 20–65 × 0.5–2.0 mm, cylindrical with slightly bulbous base up to 3.5 mm wide, hollow, pruinose to longitudinally pruinose-striate, at first pale orange to pale

brown, later in lower part darkening to orange-brown or light rust-brown, at base up to reddish brown.

C o n t e x t : in pileus up to 1.5 mm broad, pale yellow to pale orange, in stipe darker, from pale brown at apex to reddish brown at base. Taste and smell indistinct.

S p o r e - p r i n t : light rust-brown.

S p o r e s : 7.0–10.0(–11.0) × 4.0–5.5 µm, Q = 1.50–2.12; av. Ls = 8.7±0.81 µm, av. B = 4.8±0.36 µm, av. Q = 1.82±0.15; in face view narrowly ovate, ovate-ellipsoid, ellipsoid and narrowly ellipsoid, in profile ellipsoid, slightly flattened ventrally, sometimes nearly amygdaliform, germ-pore central, up to 1.5 µm wide, thin-walled, in water pale yellow, in alkali brownish yellow or rust-yellow.

B a s i d i a : 15.0–23.0 × 7.0–9.0 µm, clavate, 4-spored.

C h e i l o c y s t i d i a : 15.0–34.0 × 7.0–15.5 µm, lecythiform, neck up to 3.5 × 2.5 µm, head 4.5–9.0 µm wide.

P l e u r o c y s t i d i a : absent.

P i l e o c y s t i d i a : 19.0–36.5 × 7.0–15.0 µm, lecythiform but narrower than hymenial ones, neck up to 8.5 × 2.5 µm, head 5.0–7.0 µm wide, scattered to fairly numerous.

C a u l o c y s t i d i a : 20.0–38.0 × 9.0–22.0 µm, mainly lecythiform, neck up to 5.0 × 3.0 µm, head 5.0–10.0 µm wide, with small admixture of globose-clavate and clavate elements 13.0–30.0 × 11.5–17.0 µm.

P i l e i p e l l i s : hymenial, consisting of spheropedunculate and pyriform elements 10.0–25.0 µm wide.

C l a m p c o n n e c t i o n s : present.

C h e m i c a l r e a c t i o n : Ammoniacal reaction negative.

Habitat and distribution: Solitary or in small groups on soil in deciduous forests, parks, gardens and forest plantations, sometimes also in grasslands (meadows and pastures), in autumn. Apparently rather rare in Ukraine, earlier known from two locations (PRYDIUK 2003, 2005). Rather common in Europe (HAUSKNECHT 2009).

Specimens examined: Ukraine: Dnipropetrovsk region, Dnipropetrovsk, Botanical Garden of the Dnipropetrovsk National University, 48° 26' 08" N, 35° 02' 35" E, 8. October 1970 (KW 3535), leg. S. P. WASSER; Ternopil region, Gusiатыn district, Nature reserve «Medobory», 49° 20' 42" N, 26° 13' 23" E, 1. October 2007 (KW 35054), leg. M. P. PRYDIUK; Lviv region, Skole district, National nature park «Skolivski Beskydy», 49° 02' 52" N, 23° 32' 19" E, 23. September 2010 (KW 40150), 49° 00' 53" N, 23° 34' 01" E, 24. September 2010 (KW 40151), leg. M. P. PRYDIUK.

Conocybe rickeniana differs from *C. echinata* by rather bright coloured basidiomata, while microscopical differences are minimal. Other rather similar species is *C. spiculoides* KÜHNER & WATLING possessing, however, very pale (hyaline or yellowish hyaline) spores without germ-pore (HAUSKNECHT 2009).

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References

- ARNOLDS, E., 2005: 2. *Conocybe* Fay. – In NOORDELOOS, M. E., KUYPER, T. W., VELLINGA, E. C. (Eds): Flora Agaricina Neerlandica 6. *Bolbitiaceae* (*Bolbitius*, *Conocybe*, *Pholiotina*, *Agrocybe*) and *Coprinaceae* (I): the genus *Coprinus*, pp. 120–179. – Boca Raton, London, New York, Singapore: Taylor & Francis.
- BESEDINA, I. S., 1998: [Summary of the species composition of agaricoid basidiomycetes of the Pridneprovskoj lowland (in the Left-Bank Forest-Steppe of Ukraine)]. – Poltava. (In Russian)

- BOBYAK, H., 1907: [Additions to the mycology of eastern Halychyna. Fungi of surroundings of Berezhany]. – Zbirn. Mat.-Prir.-Lik. Sekts. Nauk. Tov. Shevchenka **11**: 1–40. (In Ukrainian)
- ENDERLE, M., 1991: *Conocybe-Pholiotina* Studien. I: Bestimmungsschlüssel für europäische Arten der Gattung *Conocybe* FAYOD. – Z. Mykol. **57**: 55–74.
- GANZHA, R.V., 1960 a: [Mushrooms of the order *Agaricales* of the mixed forests over the Vorskla]. – Ukr. Bot. Zh. [Ukrainian Journal of Botany] **27**(5): 72–84. (In Ukrainian)
- GANZHA, R.V., 1960 b: [Cap mushrooms of oak forests of the valley of the river Vorskla]. – Bot. Zh. [Journal of Botany] **45**(5): 758–764. (In Russian)
- GIZHYTSKA, Z.G., 1929: [Material to the mycological flora of the Ukraine]. – Bull. Kiev Bot. Gard. **10**: 4–41. (In Ukrainian).
- HAUSKNECHT, A., 1996: Beiträge zur Kenntniss der *Bolbitiaceae* 3. Europäische *Conocybe*-Arten mit wurzelndem oder tief im Substrat eingesenktem Stiel. – Österr. Z. Pilzk. **5**: 161–202.
- HAUSKNECHT, A., 1999: Beiträge zur Kenntniss der *Bolbitiaceae* 5. Die *Conocybe rickeniana*- und *C. magnicapitata*-Gruppe in Europa. – Österr. Z. Pilzk. **8**: 35–61.
- HAUSKNECHT, A., 2000: Beiträge zur Kenntniss der *Bolbitiaceae* 6. Die *Conocybe tenera*-Gruppe in Europa, Teil 1. – Österr. Z. Pilzk. **9**: 73–109.
- HAUSKNECHT, A., 2002: Beiträge zur Kenntniss der *Bolbitiaceae* 7. Die *Conocybe tenera*-Gruppe in Europa, Teil 2 und eine Revision der Arten um *Conocybe mesospora* in Europe. – Österr. Z. Pilzk. **11**: 35–77.
- HAUSKNECHT, A., 2009: A monograph of the genera *Conocybe* Fayod and *Pholiotina* Fayod in Europe. – Fungi Europaei 11. – Alassio: Edizioni Candusso.
- HAUSKNECHT, A., KALAMEES, K., KNUDSEN, H., MUKNIN, V., 2009: The genera *Conocybe* and *Pholiotina* (*Agaricomycotina*, *Bolbitiaceae*) in temperate Asia. – Folia Cryptog. Estonica **45**: 23–47.
- HAUSKNECHT, A., KRISAI-GREILHUBER, I., 2006: Infragenetic division of the genus *Conocybe* – a classical approach. – Österr. Z. Pilzk. **15**: 187–212.
- PILÁT, A., 1940: Hymenomycetes Carpatorum orientalium. – Sb. Nár. Mus. Praze **2**.B.(3): 37–80.
- PRYDIUK, M. P., 2003: [Rare macromycetes (*Agaricaceae*, *Bolbitiaceae*) from the Crimean nature reserve]. – Ukr. Bot. Zh. [Ukrainian Journal of Botany] **60**(3): 305–313. (In Ukrainian)
- PRYDIUK, M. P., 2005: [Basidial macromycetes of the Luhansk nature reserve]. – Coll. Sci. Works Luhansk NAU. Series Biol. Sci. **56**(79): 69–92. (In Ukrainian)
- PRYDIUK, M. P., 2007 a: New records of *Conocybe* species from Ukraine. I. The sections *Mixtae* and *Pilosellae*. – Czech Mycol. **59**(1): 25–38.
- PRYDIUK, M. P., 2007 b: New records of *Conocybe* species from Ukraine. II. The section *Conocybe*. – Czech Mycol. **59**(1): 39–50.
- WASSER, S. P., 1973: [The flora of *Agaricales* of virgin steppe of the Ukraine]. – Ukr. Bot. Zh. [Ukrainian Journal of Botany] **30**(4): 457–467. (In Ukrainian)
- WASSER, S. P., 1974: [Cap mushrooms (orders *Boletales*, *Agaricales*, *Russulales*) of the natural forests of the Ukraine. II. Mushrooms of the long- and short-flooded forests]. – Ukr. Bot. Zh. [Ukrainian Journal of Botany] **31**(4): 440–445. (In Ukrainian)
- WASSER, S. P., SOLDATOVA, I. M., 1977: [Higher *Basidiomycetes* of Steppe zone of Ukraine]. – Kiev: Naukova Dumka. (In Russian).

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