Addendum. Enkele nieuwe paddenstoelen uit Drenthe

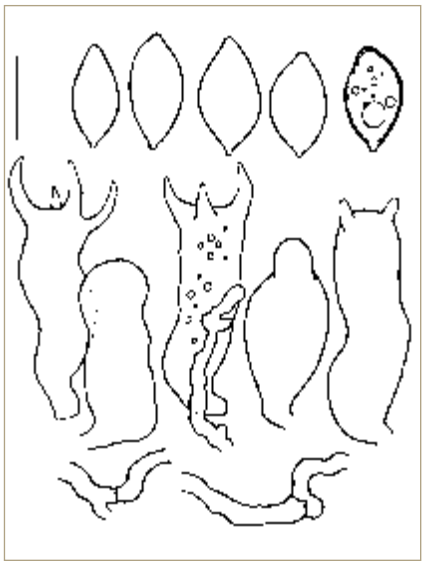
Eef Arnolds

Tijdens de paddenstoelenkartering van Drenthe zijn diverse paddenstoelen aangetroffen die behoren tot nog onbeschreven taxa. In de traditie van de Drentse mycologie (hoofdstuk 2) worden enkele daarvan hieronder officieel beschreven. Dit gebeurt in het Engels omdat een Engelstalige beschrijving verplicht is volgens de geldende nomenclatuurregels en omdat deze beschrijvingen ook toegankelijk moeten zijn voor buitenlandse mycologen.

Addendum. Some new fungal taxa from Drenthe

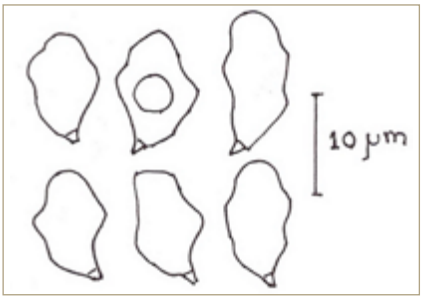
During recent fieldwork in Drenthe several fungi have been encountered that are considered undescribed taxa. Some of them are described in this chapter.

Dendrothele papillata B. de Vries & Arnolds, *spec.nov.*
MycoBank number: 811688
Diagnose: Basidiocarp ± 20x 4-5 mm, resupinate, thin, membranaceous, slightly porous when dried, greyish white to grey, with thinner, pruinose margin. Basidiospores 11.5-14(-15) x 6-7.5 µm, amygdaliform to citriform, often more or less papillate, with slightly thickened wall, not amyloid or dextrinoid. Basidia 25-30 x 8-10 µm, 4-spored, with sterigmata up to 8 µm long, intermixed with scattered dendrohyphidia. In addition one basidium-like cystidium or cystidiole has been seen, 24 x 7 µm, with slightly thickened wall (0.4 µm). Trama monomytic, made up of 1.5-3 µm broad hyphae; septae in part with clamp-connections; crystals scarce.
Holotype: The Netherlands, Drenthe, Beilen, 'Schepping', on dead branches of *Cytisus scoparius* in young forest on nutrient-rich, humus-rich soil, leg. E.J.M. Arnolds, 19 Nov. 2005 (B.W.L. de Vries nr. 7095), Nationaal Herbarium Leiden (L, 0950251).
Notes: This species shows some similarity with *Dendrothele amygdalispora* Hjortstam, in particular in the shape of the spores. However, in that species spores are considerably smaller (8.5-11 x 5-7 µm), basidia are smaller (15-25 x 6-8 µm), clamp-connections are absent, and dendrohyphidia and crystals are numerous (Hjortstam, 1987). *Dendrothele papillata* has been provisionally described by De Vries (2012) under the name of *Dendrothele sarothamni*. In the meantime, the species has also found in several places in Czech Republic on different deciduous trees (pers. comm. F. Kotlaba and Z. Pouzar).



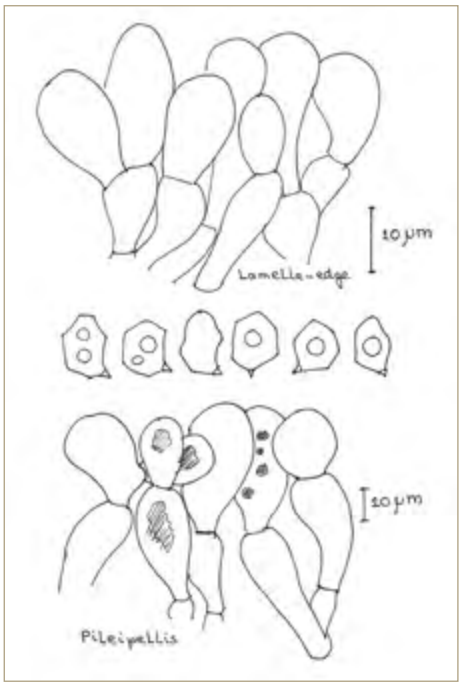
Entoloma anisatum Arnolds *spec.nov.*
MycoBank number: 811689
Diagnose: Pileus 6-14 mm broad, conico-convex with blunt centre, not hygrophanous, brownish violet, slightly translucent-striate, radially fibrillose, becoming slightly squamulose at centre. Lamellae adnexed, moderately crowded, initially pale greyish, then greyish pink with concolorous, even edge. Stipe 28-43 x 1-1.7 µm, cylindrical, bright blue, dark blue fibrillose-striate lengthwise, apex pruinose, base pale yellow, becoming bright greenish yellow after handling. Context inside stipe whitish, in stipe base yellowish. Smell strong, aromatic, like anise-seed. Spores 9-10.5(-14) x 6.5-7.2 µm, Q= 1.3-1.75, 5-7 angled to almost gibbose. Basidia 35-44 x 9.5-13 µm, predominantly 4-spored, some 1- or 2-spored (producing abnormally large spores). Lamella edge fertile. Pileipellis at centre a trichodermium with cylindrical, septate hyphae and inflated terminal cells, 12-18 µm wide, with diffused, violaceous, intracellular pigment. Clamp-connections numerous.
Holotype: The Netherlands, Drenthe, Beilen, 'Schepping', in poor, moss-rich grassland on acidic, loamy sand, leg. E.J.M. Arnolds nr. 10-89, 3 Okt. 2010, Nationaal Herbarium Leiden (L).

Notes: This species belongs to *Entoloma* section *Leptonia*, characterized, among other things, by the presence of clamp-connections. Striking field



characteristics of *Entoloma anisatum* are the strong, anise-like smell and the yellowing stipe base. The species may be related to *E. dichroum*, which has a similar contrast between a violaceous brown pileus and dark blue, striate stipe. In microscopic characters the latter species is also different in microscopic characters, viz. in the larger spores (9.5-12 x 7-9.5 µm according to Noordeloos, 1992) and the presence of cheilocystidia.

Entoloma claviferum Arnolds & Enzlin *spec. nov.*
MycoBank number: 811690
Diagnose: Pileus 9 mm broad, plano-convex with weak umbo, hygrophanous, when moist at centre dark brown, outwards slightly paler brown, translucent-striate up to ¾ of the radius, on drying becoming pale brown and not striate, around centre strongly radially wrinkled (as in *Pluteus phlebophorus*), minutely roughened towards margin. Lamellae (L= 22, l= 3) adnate, crowded, not ventricose, up to 1.5 mm broad, flesh-coloured pink with pale brown edge. Stipe 14 x 1.5 mm, equal, apex greyish buff, downwards grey-brown, polished-smooth. Spores 7-9.5(-10.5) x (5.5-)6-6.5 µm, Q= 1.15-1.45, heterodiametrical, 5-7-angled. Basidia 20-24 x 7.5-9.5 µm. Lamella edge sterile, made up of broadly clavate cells, often in chains, 15-33 x 8.5-12 µm, colourless or with pale brown intracellular pigment. Lamella trama made up of subcylindrical elements, 55-175 x 2.5-11 µm. Pileipellis a hymeniderm, made up of spheropedunculate to clavate cells, 14-50 x 9.5-20 µm, with diffuse, pale brown intracellular pigment and dark brown clots. Clamp-connections absent.
Holotype: The Netherlands, Drenthe, Ekehaar, on bare, loamy soil in grassy roadside-verge, 23 Aug. 2004, leg. R. Enzlin (E.J.M. Arnolds 04-25), Nationaal Herbarium Leiden (L)

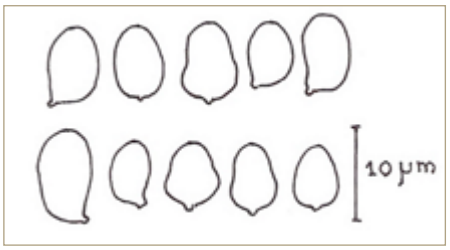


Notes: This species belongs to *Entoloma* section *Calliderma*, well-characterized by a hymeniform pileipellis, made up of broadly clavate cells. In Europe only few representatives of this section are known (Noordeloos, 2004). In view of the sterile, brownish edge of the lamellae with clavate cheilocystidia and the absence of clamp-connections *Entoloma claviferum* seems to be closely related to *E. pluteidermum* Arnolds & Noordeloos (in Noordeloos, 2004), but the latter species differs in macroscopical respect in larger sporocarps with a pileus that is not hygrophanous, not translucently striate and not radially wrinkled; in addition in ventricose lamellae and in the striate stipe. Moreover, the spores of *E. pluteidermum* are larger (8-12 x 6.5-9.5 µm), as well as the cells of the pileipellis (20-134 x 13-40 µm). Many characters, such as the size of sporocarps, the hygrophanous, rugulose pileus, the size of spores and structure of the pileipellis are in better agreement with *E. phlebodermum* Noordel. & Hauskn., but that species differs fundamentally by the heterogeneous lamella edge with scattered, filiform to coralloid cheilocystidia (Noordeloos & Hausknecht, 2002). The epithet '*claviferum*' was chosen because both the pileus surface and the edge of the lamellae are made up of broadly clavate cells.

Hygrocybe miniata (Fr.) P. Kumm. var. ***turundoides*** Arnolds *var. nov.*
MycoBank number: 811691
Diagnose: This variety differs from *Hygrocybe miniata* var. *miniata* and var, *mollis* (Berk. & Broome) Arnolds in the presence of numerous grey-brown to brown, erect scales and fibrils on the pileus, contrasting with the orange-red to orange-yellow colour of the background.
Holotype: The Netherlands, Overijssel, Ommen, Junner Koeland, among the grass *Deschampsia flexuosa* in scrub of *Juniperus communis* on dry, poor, acid, sandy soil, 24 Sept. 1979, B.W.L. de Vries 3860, National Herbarium Leiden (L) (originally deposited in Herbarium Biological Station Wijster under the name of *Hygrocybe turunda*).
Additional collections: The Netherlands: Drenthe, Beilen, Holthe, in old scrub of *Juniperus communis* on dry, poor, acidic sand, leg. A. Masselink 65-49 (National Herbarium Leiden (L) (originally deposited in Herbarium Biological Station Wijster under the name of *Hygrocybe turunda*). – Groningen, Redoute near Bourtange, among the moss *Polytrichum commune* in grass-heath on poor, sandy soil, 21 Oct. 1978, Arnolds 4052, Nationaal Herbarium Leiden (L) (originally deposited in Herbarium Biological Station Wijster under the name of *Hygrocybe miniata* forma).

Notes: This taxon has been known in the Netherlands as *Hygrocybe*

turunda in view of the pileus with fine, brown scales, contrasting with the orange background (Arnolds, 1974; Arnolds in Bas et al., 1990; Arnolds et al., 1995). Nowadays *H. turunda* is generally interpreted as a different species with coarser and darker squamules, much larger spores (9.5-11.5 x 5.5-7 µm) and a boreal distribution (Orton, 1960; Boertmann, 2010). *Hygrocybe miniata* var. *turundoides* has much smaller spores, 7-8.5 x 4.5-5.5 µm, with the characteristic shape of the spores of typical *H. miniata*, viz. often slightly broader and constricted (pear-shaped) in front-view. The only difference with that species seem to be the brown colour of the scales on the pileus, that is already present in young specimens, and therefore it is distinguished in the rank of variety. This taxon was provisionally described by Bon (1990) as *Hygrocybe arnoldsii* ad int.



Hygrocybe miniata var. *turundoides*

Inocybe stellifera Arnolds *spec.nov.*
MycoBank number: 811692
Diagnose: Pileus 20-42 mm, conical, then plano-convex with umbo, at centre dark brown to blackish, smooth, outwards paler brown, radially fibrillose and rimulose. Lamellae (L= 35-50, l= 1-3) narrowly adnexed, fairly crowded, up to 6 mm broad, first greyish buff, then grey-brown, with whitish fimbriate edge. Stipe 45-85 x 3-6 mm, equal or slightly swollen at base (up to 7 mm), not bulbous, whitish to greyish or pinkish brown, extreme apex pruinose, downwards slightly to distinctly striate. Cortina present when young, soon vanishing. Context whitish to pale buff in stipe. Smell indistinct to spermatic. Spores (6.5-)7-10 x 5.5-8.5 µm, strongly 5-7 nodulose, in profile often star-shaped with four nodules. Basidia 24-36 x 9-12 µm, 4-spored. Cheilocystidia and pleurocystidia frequent, scattered, 42-76(-79) x 15-24 µm, with 1-3 µm thick, pale yellow wall and crystalliferous apex. Stipe at extreme apex with caulocystidia, similar to hymenial cystidia, downwards with some thin-walled hairs only.
Synonym: *Inocybe pseudoasterospora* var. *microsperma* Kuyp. & Keizer in Persoonia 14: 441. 1992.
Holotype: The Netherlands, Drenthe, Pesse, 'Spaarbankbos', 20 Aug. 1986, Kuyper 2695 (Nationaal Herbarium Leiden (L, originally under the name of *Inocybe pseudoasterospora* var. *microsperma*).
Additional collections: The Netherlands: Orvelte, 'Rustveld', under *Quercus robur* along sandy road through deciduous forest on acidic sandy soil, 11 July 2004, National Herbarium Leiden (L); material depicted in this work in vol. 3, p. 254. Other collections mentioned by Kuyper & Keizer (1992).

Notes: This taxon has been provisionally described by Weholt (1984) as *Inocybe pseudoasterospora* var. *microsperma*, a name later validated by Kuyper & Keizer (1992). It differs from *Inocybe pseudoasterospora* Kühner & Boursier mainly by much smaller spores, described as (9.2-) 10-13 x 7.2-10 µm in that species (Kühner & Boursier, 1932; Kühner & Romagnesi, 1953). In our opinion this difference warrants distinction at species level. The specific epithet *microsperma* was available, but has not been used by us since the spores of this species are not particular small within the genus *Inocybe*. Therefore at specific level a new name is proposed. In addition the two species may differ in ecology. *I. pseudoasterospora* is reported from deciduous forests on base-rich soils (Krieglsteiner & Gminder, 2010). *I. stellata* is one of the few *Inocybe* species that is found on poor, acidic soils, in the province of Drenthe mainly in stands of *Betulo-Quercetum* and in roadside-verges with old *Quercus robur* (see Vol. 3: 254). *I. stellata* (under the name *I. pseudoasterspora* var. *microsperma*) is widespread in northwestern Europe, with records from e.g. Belgium (Walleyn & Vandeven, 2006), Germany (Kuyper & Keizer, 1992) and all Scandinavian countries (Knudsen & Vesterholt, 2008). The species is illustrated in this work in vol. 3, p. 254, based on collection E.J.M. Arnolds 04-15 (L). Drawings of microscopic characters were presented by Kuyper & Keizer (1992).

Octospora drenthensis Arnolds *spec. nov.*
MycoBank number: 811681
Diagnose: Apothecia 2-5 mm broad, up to 1.5 mm thick, sessile, first subglobose, soon flattened to saucer-shaped with convex margin. Hymenium bright orange. Receptaculum paler orange, towards the base whitish, dull, without hairs. Ascospores 19.5-27 x 13.5-16.5 µm, Q= (1.3-)1.4-1.85, ellipsoid to ellipsoid-oblong, smooth, colourless, with one large central oil-drop, often accompanied by some small droplets, rarely with two large drops. Asci 225-260 x 18-23 µm, 8-spored, operculate, inamyloid. Paraphyses straight, septate, occasionally branched, 4-5 µm wide, at apex slenderly clavate, 6-9 µm, filled with orange droplets. Excipilum a textura intricata.
Holotype: The Netherlands, Drenthe, Beilen, 'Schepping', among the moss *Funaria hygrometrica* between charcoal on a recent bonfire place in open area, 19 Aug. 2006, E.J.M. Arnolds 06-40, Nationaal Herbarium Leiden (L; originally under the name of *Octospora roxheimii* var. *aestivalis*).

Notes: This species is regarded as identical with *Octospora roxheimii* Dennis & Itzerott var. *aestivalis* Caillet & Moyne, described in 1987 from Doubs, France, but without identification of a holotype and therefore invalid. The species differs from *Octospora roxheimii* Dennis & Itzerott in larger spore size and different periodicity (Caillet & Moyne, 1987). The spores in *O. roxheimii* measure 17-20(-21) x 12.5-15 µm (Dennis & Itzerott, 1973; Dennis, 1981; Caillet & Moyne, 1987). The apothecia of *O. drenthensis* appear in summer, whereas *O. roxheimii* is a typical winter-species. The species is named after the province of Drenthe in The Netherlands, the area of which the mycoflora is described in the present book. A photograph of *O. drenthensis* is presented in vol. 3 of this work (p.689).