

= Mythicomycetes =

Mythicomyces is a fungal genus in the family Psathyrellaceae . A monotypic genus , it contains the single species Mythicomycetes corneipes , first described by Elias Fries in 1861 . The fungus produces fruit bodies with shiny yellowish @-@ orange to tawny caps that are 1 ? 3 cm (0 @.@ 4 ? 1 @.@ 2 in) in diameter . These are supported by stems measuring 2 ? 5 @.@ 7 cm (0 @.@ 8 ? 2 @.@ 2 in) long and 1 ? 2 mm thick . A rare to uncommon species , it is found in northern temperate regions of North America and Europe , where it typically fruits in groups , in wet areas of coniferous forests . There are several species with which M. corneipes might be confused due to a comparable appearance or similar range and habitat , but microscopic characteristics can be used to reliably distinguish between them .

= = Taxonomy = =

The genus Mythicomycetes was circumscribed in 1986 by mycologists Scott Redhead and Alexander H. Smith to contain the species originally named Agaricus corneipes by Elias Magnus Fries in 1861 . Fries described the species from collections made in a fir forest near Alsike , Sweden ; it was subsequently recorded in North America (northwestern USA) by Andrew Price Morgan in 1907 , and several times by Smith . When listing the synonyms of the species , Redhead and Smith cited the publication year of Fries 's work as 1863 instead of the correct 1861 , which rendered their new combination invalid according to the rules of International Code of Botanical Nomenclature , although the generic name was valid . The binomial was subsequently published validly in 2011 .

In its taxonomic history , the species has also been placed in Geophila by Lucien Quélet in 1886 , and Psilocybe by Petter Karsten in 1879 . Psilocybe specialist Gastón Guzmán excluded the taxon from the latter genus in his 1983 monograph , based on its roughened spores that lacked a germ pore , pale spore print , stem texture , and the tawny basal mycelium . Guzmán , who examined Smith 's US collections , suggested that the material might be more appropriately considered a Galerina , but Redhead and Smith noted that several features of Mythicomycetes corneipes are inconsistent with placement in Galerina , including spore print color , presence of metuloids , stem texture , and tawny basal mycelium .

Redhead and Smith placed the genus in the Strophariaceae , as the biology of the fruit bodies and spore print color fit the broad concept of that family envisaged by Robert Kühner in 1984 . They noted , however , that the genus did not fit well in a more restricted concept of the family due to its lack of a germ pore and roughened spore walls . More recently , taxonomic authorities have placed the genus in the family Psathyrellaceae ; molecular analysis shows it to be most closely allied to this group . Mythicomycetes and Stagnicola form a clade that is sister to the rest of the family .

= = Description = =

The cap is initially somewhat conical with margins rolled inward , and expands to become bell @-@ shaped or broadly convex in maturity , reaching a diameter of 1 ? 3 cm (0 @.@ 4 ? 1 @.@ 2 in) . The cap sometimes has an umbo , which is rounded to conical . The color of the cap ranges from dull to bright orange when young , to yellowish @-@ brown (tawny) in maturity . It is hygrophanous , and the color fades to yellowish @-@ buff . The cap surface is smooth and polished , and somewhat translucent , such that the radial gill lines can be seen on the margin . The gills are closely spaced , and have two tiers of interspersed lamellulae (short gills) . Gills have an adnate to adnexed attachment to the stem , although the gills tend to secede (separate from the stem) in maturity . They are initially pallid to whitish in color before turning brownish when the spores mature . The smooth stem measures 3 ? 5 @.@ 7 cm (1 @.@ 2 ? 2 @.@ 2 in) long by 1 ? 2 mm thick . Yellowish to pale orange near the top and dark reddish brown below , it has tawny mycelium at the base . In maturity the stem turns black from the base upward . In 1907 , Morgan noted the stipe to be remarkably similar to that of Marasmius cohaerens . The mushroom flesh has an odor that ranges from indistinct to somewhat of geraniums , while its taste is indistinct to faintly bitter . The

edibility of the mushroom is unknown .

The spore print is pale purplish brown . Spores are ovoid (egg @-@ shaped) to somewhat ellipsoidal , binucleate (visible when stained with acetocarmine solution) , often contain a single oil droplet , and measure $6 \text{ ? } 8 \text{ @.@ } 5$ by $4 \text{ ? } 5 \text{ @.@ } 5 \text{ }\mu\text{m}$. The spore walls are roughened with small points and ridges , and have a small plage . The basidia (spore @-@ bearing cells) are club @-@ shaped , four @-@ spored , and measure $24 \text{ ? } 26$ by $6 \text{ ? } 8 \text{ @.@ } 5 \text{ }\mu\text{m}$. Cystidia on the gill face (pleurocystidia) are abundant . They are spindle @-@ shaped with swollen middles , and thick tips that are occasionally encrusted with translucent crystals . They have dimensions of $43 \text{ ? } 86$ by $10 \text{ ? } 24 \text{ }\mu\text{m}$, with walls that are pale brown to translucent , and up to $3 \text{ }\mu\text{m}$ thick . Cystidia on the gill edge (cheilocystidia) are roughly the same morphologically , but shorter . The cap cuticle comprises a layer of radially arranged gelatinized hyphae measuring $1 \text{ ? } 4 \text{ }\mu\text{m}$ in diameter . Clamp connections are present in the hyphae .

= = = Similar species = = =

Stagnicola perplexa is similar in appearance and shares habitats and a geographical range comparable to *Mythicomycetes corneipes* . *S. perplexa* generally has a more faded coloration , and produces brownish spore prints lacking purplish tones . The two species can be reliably distinguished by microscopic characteristics , as *Stagnicola* has smooth spores and cheilocystidia with thin walls . Owing to its similarly colored cap and habitat amongst mosses , *Phaeocollybia attenuata* might be confused with *M. corneipes* . *Phaeocollybia attenuata* can readily be differentiated in the field by the long wirelike pseudorhiza extending below the substrate , and microscopically by the much more heavily ornamented limoniform @-@ globose spores and absence of pleurocystidia . Other morphologically similar species include *Hypholoma udum* and *H. elongatum* , but unlike *M. corneipes* , both of these agarics have smooth spores , yellow chrysocystidia , and lack metuloids . The lookalike *Galerina sideroides* is found in Washington , Michigan , and Sweden , where it fruits in groups on rotten conifer logs . It has distinct microscopic characteristics , such as a wider range of basidial widths ($20 \text{ ? } 40 \text{ }\mu\text{m}$) , and a lack of pleurocystidia .

= = Habitat and distribution = =

Mythicomycetes corneipes is a saprobic fungus , and uses plant debris ? usually bits of wood ? as a substrate . Fruit bodies appear in autumn , and grow in groups among mosses in moist habitats , such as near the edges of bogs , or under conifers or birch in soil wet from spring flooding . It has been recorded from North America , where it is most common in the Pacific Northwest region , and Europe , where it is rare , but widespread across the northern part of the continent . In 1938 , Smith called the species " extremely rare " .