

= Amanita onusta =

Amanita onusta , commonly known as the loaded *Lepidella* or the gunpowder *Lepidella* , is a species of fungus in the *Amanitaceae* family of mushrooms . It is characterized by its small to medium @-@ sized fruit bodies that have white to pale gray caps crowded with roughly conical , pyramidal , or irregular gray warts . The stipe is whitish @-@ gray with woolly or wart @-@ like veil remnants , and at the base is a spindle- or turnip @-@ shaped base that is rooted somewhat deeply in the soil . The species is distributed in eastern North America , from Nova Scotia to Mexico , and may be found growing on the ground in deciduous forests , particularly those with oak , hickory and chestnut . Fruit bodies smell somewhat like bleaching powder , and their edibility is unknown , but possibly toxic .

= = Taxonomy = =

Amanita onusta was first described in 1874 by American mycologist Elliot Calvin Howe as *Agaricus onustus* . Later , in 1891 , Pier Andrea Saccardo transferred the species to the genus *Amanita* . *Amanita* authority Cornelis Bas , writing in his extensive 1969 monograph on the genus , placed the species in his stirps *Microlepis* , subsection *Solitariae* , section *Lepidellus* . This grouping of *Amanita* mushroom species also includes *A. abrupta* , *A. atkinsoniana* , *A. costaricensis* (a provisionally named species authored by Tulloss , Halling , & G.M. Muell .) , *A. nitida* (as Coker described the species) and *A. sphaerobulbosa* .

The Latin epithet *onustusa* means " charged , load @-@ carrying , burdened " , and a regular adjective derived from *onus* , " burden " (the same word that gave the English *onus*) . *A. onusta* is commonly known as the " loaded *Lepidella* " , or the " gunpowder *Lepidella* " .

= = Description = =

The fruit bodies of *Amanita onusta* have caps that are initially broadly convex but flatten out as they mature , reaching diameters of 5 to 10 cm (2 @.@ 0 to 3 @.@ 9 in) . The cap surface , grayish @-@ white in color , is ornamented with conical or pyramidal raised warts , or flattened , symmetrically arranged gray to brownish gray , grayish brown or grayish @-@ orange small scales (squamules) that are densely arranged over the surface .

The squamules are less crowded near the edge of the cap (the margin) . The margin does not have striations , and is typically fringed with remnants of the veil . The gills on the underside of the cap are spaced closely together , and either free or narrowly attached to the stipe . They are white to cream color , and are interspersed with short lamellulae (gills that do not extend completely from cap margin to stipe) . The gills may look as if they are waterlogged .

The stipe is 5 @.@ 5 to 12 cm (2 @.@ 2 to 4 @.@ 7 in) long , 0 @.@ 6 to 1 @.@ 5 cm (0 @.@ 2 to 0 @.@ 6 in) thick , and tapers slightly upwards . It is solid gray to brownish @-@ gray near base , paler towards the top , and appears cottony (floccose) or hairy (fibrillose) . The bulb at the base of the stipe is roughly spindle- to turnip @-@ shaped , and may root deeply into the soil , especially if the soil is loose . The short @-@ lived partial veil is white , and attached just below the top of the stipe . It is sticky and in maturity often clings to the upper part of the stipe , or may have some meagre remnants hanging from the cap margin . The universal veil remains are arranged in rows of warts and patches of gray to brownish @-@ gray small scales over the upper portion of the bulb ; below this , the color is a dirty white . The flesh is firm and white . Fruit bodies can range in smell from mild to " slightly unpleasant " . The odor has been described as resembling " chloride of lime " , a smell similar to some bathroom disinfectants containing bleach .

= = = Microscopic characteristics = = =

Viewed in deposit , such as with a spore print , the spores are white . Viewed with a microscope , the spores are broadly ellipsoid to elongate , translucent , thin @-@ walled , amyloid , and have

dimensions of 8 @. @ 3 ? 11 @. @ 6 by 4 @. @ 9 ? 6 @. @ 6 μm . The basidia (spore @-@ bearing cells) are 38 ? 46 by 9 ? 11 μm , club @-@ shaped , mostly 4 @-@ spored but some are 2- or 3-spored , with clamps . The cheilocystidia (cystidia found on the edge of a gill) are 23 @. @ 3 ? 31 @. @ 5 by 11 @. @ 6 ? 15 @. @ 7 μm , ellipsoid , club- to pear @-@ shaped cells , partly in short rows . The cap cuticle is up to 168 μm thick , and consists of thin @-@ walled interwoven hyphae that are 2 ? 5 @. @ 3 μm diameter , and gelatinized . Clamp connections are present in the hyphae of this species ? these are short branches connecting one cell to the previous cell to allow passage of the products of nuclear division .

= = = Edibility = = =

The edibility of *A. onusta* is unknown , but the mushroom has been described as " possibly poisonous " . In general , species of *Amanita* are best avoided for consumption because of the prevalence of toxic species in that genus .

= = = Similar species = = =

Amanita onusta may be confused with *A. cinereoconia* because of the similar gray powdery veil remnants on the cap surface . *A. cinereoconia* is distinguished from *A. onusta* by the absence of clamps , its powdery @-@ wooly to powdery @-@ warty cap , as well as the absence of warts or scales at the base of the stipe . *A. cinereoconia* also smells distinctly of chloride of lime . Another similar species is *A. costaricensis* , found only in Costa Rica . *A. atkinsoniana* , another North American species , has shorter warts that are spaced further apart than those of *A. onusta* , and the warts on the basal bulb are arranged in parallel rows .

= = Habitat and distribution = =

Amanita onusta grows solitary or scattered on the ground in mixed oak , hickory and chestnut forests from southern New England to Texas . The species has a preference for sandy or loose soils . Its range extends north to Nova Scotia , Canada , and south to Mexico .

= = = Cited books = = =

Jenkins DB . (1986) . *Amanita of North America* . Eureka , California : Mad River Press . ISBN 978 @-@ 0 @-@ 916422 @-@ 55 @-@ 4 .