= Wynnea americana =

Wynnea americana , commonly known as moose antlers or rabbit ears , is a species of fungus in the family Sarcoscyphaceae . This uncommon inedible species is recognizable by its spoon @-@ shaped or rabbit @-@ ear shaped fruit bodies that may reach up to 13 cm (5 @.@ 1 in) tall . It has dark brown and warty outer surfaces , while the fertile spore @-@ bearing inner surface is orange to pinkish to reddish @-@ brown . The fruit bodies grow clustered together from large underground masses of compacted mycelia known as sclerotia . In eastern North America , where it is typically found growing in the soil underneath hardwood trees , it is found from New York to Michigan south to Mexico . The species has also been collected from Costa Rica , India , and Japan .

Wynnea americana is distinguished from other species in the genus Wynnea by the pustules (small bumps) on the outer surface , and microscopically by the large asymmetrical longitudinally ribbed spores with a sharply pointed tip . The spores are made in structures called asci , which have thickened rings at one end that are capped by a hinged structure known as the operculum ? a lid that is opened when spores are to be released from the ascus .

= = History and taxonomy = =

Wynnea americana was first described in 1905 by American mycologist Roland Thaxter . Thaxter found several clusters of fruit bodies in Burbank , Tennessee in 1888 , and believed the fungus to be Wynnea macrotis , one of the first identified species of genus Wynnea . An 1896 visit to the same location as well as Cranberry , North Carolina yielded further specimens . This time , however , Thaxter noticed that the fruit bodies were not attached to humus , as expected , but rather to " a large , irregularly lobed , brown , firm , tuber @-@ like body buried a few inches deep in the humus . " Microscopic examination of this structure and other tissue of the fruit body convinced Thaxter the material was sufficiently different from known Wynnea species to justify the creation of a new species . Both the Tennessee and the North Carolina specimens were used as syntypes to describe the taxon ; the Tennessee specimen has since been designated the lectotype (the name @-@ bearing type specimen) . In 1946 , French mycologist Marcelle Louise Fernande Le Gal determined that the ascus in W. americana was similar in structure to those species he placed in the suboperculate series .

The common names for W. americana are " moose antlers " , or " rabbit ears " .

= = Description = =

The fruit bodies (technically called apothecia) of W. americana are erect and spoon- or ear @-@ shaped , and may reach up to 13 cm (5 @.@ 1 in) tall by 6 cm (2 @.@ 4 in) wide with the edges usually rolled inward . The outside surface is dark brown , while the inner surface ? the spore @-@ bearing hymenium ? is pinkish orange to dull purplish red or brown at maturity . The outer surface may develop wrinkles in maturity . The apothecia , which occur singly or in groups of up to about 25 , arise from a short stalk . The stalk is variable in length and solid , dark outside , white within . The stalks originate from a sclerotium , a compact mass of hardened mycelium . The sclerotium has an almost gelatinous consistency with irregularly shaped lobes and internal chambers , and may reach a diameter of 4 to 6 cm (1 @.@ 6 to 2 @.@ 4 in) . The sclerotium 's function is thought to supply moisture and nutrients , or to serve as a resistant structure capable of sustaining the fungus through times of stress . W. macrotis is the only other species in the genus to bear a sclerotium .

Wynnea americana has no discernible odor , and its taste is unknown . It has been described as inedible due to its toughness .

= = = Microscopic characteristics = = =

With many cup fungi , microscopic analysis of the anatomy and structure of the apothecium is necessary for accurate identification of species , or to help distinguish between related species that

have a similar external appearance . In W. americana , the ectal excipulum (the outer layer of tissue comprising the apothecia) is 125 µm thick , and composed of dark angular to roughly spherical cells that are 40 ? 70 µm in diameter . The angular cells form pyramidal warts on the outer surface . The medullary excipulum (the inner fleshy layer of tissue underneath the ectal excipulum) is almost gelatinous , composed of interwoven hyphae 10 µm in diameter .

Several structural components are involved in spore discharge in W. americana , such as the ascus , the operculum , the suboperculum . The spore @-@ bearing cells , the asci , are 330 ? 400 µm long by 16 ? 20 µm wide . The ascus has a thickened apical ring that is capped by a hinged operculum , a lid that is opened when spores are to be released from the ascus . The presence of the apical ring beneath the operculum and the slanted opening that results is a condition known as " suboperculate " , and is shared with Cookeina tricholoma and Phillipsia domingensis , also in the family Sarcoscyphaceae .

The spores are scaphoid (boat @-@ shaped) , and have dimensions of 35 ? 38 by 12 ? 14 µm . They are marked with prominent longitudinal grooves , and when mature , are apiculate (ending abruptly in a short point) . The spores typically contain several oil droplets . The paraphyses (sterile cells interspersed among the asci) are 8 ? 9 µm long and have internal partitions called septa . The structure of the septa has been investigated using transmission electron microscopy , which has revealed that W. americana has a single pore plugged by a " fan @-@ shaped matrix " ? an electron @-@ dense region with a torus @-@ shaped ring of translucent tissue wrapped around it . The pore plug resembles those found in the Sarcoscyphaceae species Sarcoscypha occidentalis and Phillipsia domingensis .

= = = Similar species = = =

The closely related Wynnea sparassoides , known in the vernacular as the " stalked cauliflower fungus " , has a fruit body resembling a yellow @-@ brown cauliflower atop a long brown stem . In comparison to W. americana , W. gigantea has apothecia that are smaller , more rounded at the tips , more numerous in a single specimen , and paler in color . Donald H. Pfister , in his 1979 monograph on the genus Wynnea , suggests that the pustulate appearance of the outer surface clearly distinguishes W. americana from the other species in the genus .

= = Habitat and distribution = =

The fruit bodies of Wynnea americana grow solitarily or in clusters on the ground in deciduous forests , and prefer moist , organic soils . In both Asia and North America , fruit bodies are most often produced during August and September . The single Central American collection , from Costa Rica , was made in early November .

In North America , Wynnea americana has been collected from several locations , including Tennessee , New York , West Virginia , North Carolina , Ohio , and Pennsylvania . It has also been collected in Costa Rica , India , Mexico , and Japan .