= Engleromyces sinensis =

Engleromyces sinensis is a species of fungus in the family Xylariaceae . It was described as new to science in 2010 , based on specimens collected in 1958 and incorrectly identified as Engleromyces goetzii . The fungus is known only from China , where it grows on bamboo culms . It forms fruit bodies in the shape of two roughly circular buff @-@ colored lobes measuring up to 50 cm (20 in) in diameter that envelop the bamboo . E. sinensis has been used as a folk remedy against cancer and infection in Tibet , Yunnan , and Sichuan Provinces . Several bioactive metabolites have been isolated and identified from the fungus .

= = Discovery = =

Engleromyces sinensis was described as a new species in 2010 . The authors were studying members of the family Xylariaceae that were housed in the Mycological Herbarium of the Chinese Academy of Sciences in Beijing , and discovered that five specimens labeled as E. goetzii , collected from Jade Dragon Snow Mountain (Yunnan Province) in 1958 , did not match descriptions of the species published by Paul Christoph Hennings (1900) , Curtis Gates Lloyd (1917) , R.W.G. Dennis (1961) or Jack Rogers (1981) . These species descriptions , which were based on collections made in Africa , convinced the authors that the Chinese collections were sufficiently different from E. goetzii to warrant describing a new species . Prior to this discovery , Engleromyces was a monotypic genus . The specific epithet sinensis means " Chinese " .

= = Description = =

The fruit bodies of Engleromyces sinensis form two roughly spherical lobes that partially envelop the bamboo substrate . The official description gives dimensions of 4 @.@ 3 ? 4 @.@ 9 cm (1 @.@ 7 ? 1 @.@ 9 in) by 4 ? 5 @.@ 5 cm (1 @.@ 6 ? 2 @.@ 2 in) and 1 @.@ 6 ? 4 cm (0 @.@ 6 ? 1 @.@ 6 in) in height , although specimens in markets measuring 10 to 50 cm (4 to 20 in) in diameter have been noted . When young , the surface is buff @-@ colored with a pinkish hue and slightly dimpled surface ; the color changes to grayish @-@ brown and the surface becomes smoother as the fungus matures . The internal flesh is buff colored , with a firm texture that later becomes woody . The ostioles (minute openings through which spores are released) , which are scattered about the surface of the fruit bodies , are somewhat nipple @-@ like when young but later become sharper (punctate) . Situated under a crust with a thickness of about 1 mm , the perithecia are arranged in rows . They are spherical to flask shaped , with eight @-@ spored asci . The asci are funnel or T @-@ shaped , somewhat like a golf tee , and measure about 4 by 4 µm . They have an apical apparatus (a region at the ascus tip that forms the spore @-@ shooting mechanism) that stains blue in Melzer 's reagent . The smooth , black ascospores are lined up in a single row , and feature drop @-@ like appendages that are visible when still in the ascus . Measuring 15 ? 19 by 11 @.@ 5 ? 12 @.@ 5 µm , they are broadly inequilateral with one or both ends shortened , and lack a germ pore .

In contrast to E. goetzii (the type species of Engleromyces) , E. sinensis has smaller spores , and an apical apparatus that is T @-@ shaped rather than cuboid . E. goetzii fruit bodies can grow quite large ? " to the size of a football " ? and weigh up to 4 kilograms (8 @.@ 8 lb) . They only grow on the African alpine bamboo (Yushania alpina) . The Siamese jelly ball fungus , Gelatinomyces siamensis , produces fruit bodies that are superficially similar to those of E. sinensis . However , the former are smaller , have a gelatinous texture , and are only found in Thailand , where they grow on bamboo culms and branches at elevations ranging from 390 ? 840 m (1 @,@ 280 ? 2 @,@ 760 ft) .

= = Habitat and distribution = =

Engleromyces sinensis is known only from China , including its type location in Yunnan , China , in

Yulong County . The fungus has also been collected from Mêdog County (Tibet) , where it was found growing in a coniferous forest . It has been collected at elevations between 2 @,@ 000 to 3 @,@ 500 m (6 @,@ 600 to 11 @,@ 500 ft) . Fruit bodies grow on and partially envelop bamboo culms . Specifically , E. sinensis has been recorded from a species of bamboo variously known as Fargesia melanostachys or F. yulongshanensis , depending on the authority . Engleromyces collections made in Nepal , initially identified as E. goetzii , are likely to be E. sinensis .

= = Research = =

Engleromyces sinensis is used in China in traditional medicine for its antibiotic and antiinflammatory properties , and is sold in market stalls in Yunnan . Several bioactive metabolites have been isolated and identified from the fungus . It produces engleromycin , a cytochalasin . This compound , which is also made by E. goetzii , has antibiotic and cytotoxic activity . Additional metabolites include the novel compound neoengleromycin , and the previously known cytochalasin D and 19 @,@ 20 @-@ epoxycytochalasin D. Neoengleromycin has an unusual chemical structure featuring a rare amine @-@ substituted hydroxamic acid skeleton .