

= *Lysurus periphragmoides* =

Lysurus periphragmoides , commonly known as the stalked lattice stinkhorn or chambered stinkhorn , is a species of fungus in the stinkhorn family . It was originally described as *Simblum periphragmoides* in 1831 , and has been known as many different names before being transferred to *Lysurus* in 1980 . The saprobic fungus has a pantropical distribution , and has been found in Africa , Asia , Australasia , and the Americas , where it grows on fertile ground and on mulch . The fruit body , which can extend up to 15 cm (5 @. @ 9 in) tall , consists of a reddish latticed head (a receptaculum) placed on top of a long stalk . A dark olive @-@ green spore mass , the gleba , fills the interior of the lattice and extends outwards between the arms . Like other members of the Phallaceae family , the gleba has a fetid odor that attracts flies and other insects to help disperse its spores . The immature " egg " form of the fungus is considered edible .

= = Taxonomy and naming = =

The basionym for this species is *Simblum periphragmoides* , first described by German mycologist Johann Friedrich Klotzsch in 1831 , based on specimens collected in Bois Chéry in Mauritius . Klotzsch designated it as the type species of *Simblum* , a genus differentiated from the similar genus *Lysurus* by having the fruit body ending in a spherical , chambered head , with gleba developing within the depressions of the chambers . *Lysurus periphragmoides* is a morphologically variable species ; as a result , it has acquired an extensive number of synonyms , as various authors have decided that the different forms warranted being designated as new species . Donald Malcolm Dring 's 1980 monograph on the Clathraceae (a family that has since been subsumed into the Phallaceae) transferred the taxon to *Lysurus* , explaining " a distinction between " *Simblum* " and *Lysurus* in the original restricted sense cannot be easily maintained because there are examples of intermediates states " , and he lumped 18 synonyms under *L. periphragmoides* .

In one noted example of an author being too eager to assign a new name , in 1902 George Francis Atkinson described a specimen he found in Texas , otherwise similar to *Simblum* but with a loose net drooping from the head ; he initiated the new genus *Dictybole* to include his " new " species *D. texense* . The species was , according to mycologist Curtis Gates Lloyd , merely a decomposing or insect @-@ damaged specimen of *L. periphragmoides* that had been preserved in alcohol . Lloyd criticized Atkinson 's poor judgment in his self @-@ published journal *Mycological Notes* , and later , humiliated him under the pen name N.J. McGinty . William H. Long later (1907) transferred Atkinson 's taxon to the genus *Simblum* , claiming that the yellow arms and longer spores were sufficiently distinct to consider it distinct from *L. periphragmoides* (then known as *Simblum sphaerocephalum*) ; however , according to Dring , *D. texense* should also be considered a synonym of *L. periphragmoides* . Despite Dring 's renaming , and the subsequent acceptance of his subsuming of the genus *Simblum* into *Lysurus* , the species is still occasionally referred to *Simblum sphaerocephalum* .

The specific epithet *periphragmoides* means " fenced in all around " , and refers to the latticed structure of the cap . The fungus is commonly known as the " stalked lattice stinkhorn " or " chambered stinkhorn " .

= = Description = =

Immature fruiting bodies of *L. periphragmoides* start as round or oval " eggs " that may be up to 5 cm (2 @. @ 0 in) in diameter . On the underside of the egg are whitish rhizomorphs that anchor it to the substrate . The peridium is white to buff @-@ colored on the external surface , and has a gelatinous layer inside . An egg cut in half lengthwise reveals internal layers , including a tough white outer peridium , and a thick layer of firm , translucent , gelatinous matter transversed by strands (trabeculae) of denser white tissue . The strands are anastomosing partitions , connecting with the peridium externally and with the bars of the receptaculum within . The gelatinous layer is therefore divided up into many irregular longitudinal chambers .

The egg eventually ruptures as the stalk expands and breaks through , creating a volva at the base of the stipe . In maturity , the fruit bodies , are up to 15 cm (5 @. @ 9 in) tall , with a latticed spherical cap (the receptaculum) atop a long yellow or reddish stipe . In general , Old World specimens tend to be yellow , while New World specimens are reddish , although exceptions have been noted in the literature . The receptaculum is typically 1 @. @ 5 ? 3 @. @ 5 cm (0 @. @ 6 ? 1 @. @ 4 in) in diameter and forms a red or orange lattice , or mesh . There are typically between 20 and 100 small pentagonal to hexagonal meshes in the receptaculum ; the arms of the mesh have sharp ridges on the outer surface , corrugations on the sides , and are flat to weakly ridged on the inner surface . The internal surfaces of the receptaculum are covered with an olive @-@ green spore @-@ bearing gleba , which sometimes seeps through the mesh holes . Like most stinkhorn species , the gleba has a foul odor , comparable to rotten meat , but it is " less @-@ offensive " than most . The smell of fresh , newly exposed gleba has been reported to be sweet , similar to amyl acetate ; the foul odor forming only after it has been exposed to air for some time . The stipe is 5 ? 15 cm (2 @. @ 0 ? 5 @. @ 9 in) by 0 @. @ 8 ? 3 cm (0 @. @ 3 ? 1 @. @ 2 in) thick , and is hollow and spongy . The walls of the stipe are made of an inner layer of large tubes and two or three outer layers of small tubes . Specimens may occasionally be found with fused heads on two separate stipes arising from a single volva .

A variety with a white fruit body is known , *Lysurus periphragmoides* var. *albidum* (originally described as *Simblum texense* var. *albidum* by Long) . It was reported growing from sandy alkaline soil in semi @-@ arid regions of New Mexico , but has not been reported again since Long 's collections in 1941 .

Spores are elliptical or oblong in shape , smooth , inamyloid , and have dimensions of 3 @. @ 5 ? 4 @. @ 5 by 1 @. @ 5 ? 2 @. @ 5 μ m . The use of scanning electron microscopy has revealed that *L. periphragmoides* (in addition to several other Phallales species) has a hilar scar ? a small indentation in the surface of the spore where it was previously connected to the basidium via the sterigma .

Like many of the stinkhorns , *L. periphragmoides* is generally considered only edible when in its immature " egg " form .

= = = Similar species = = =

Lysurus periphragmoides is morphologically distinct , and unlikely to be confused with any other species . Within the genus *Lysurus* , *L. mokusin* has an angular stipe and a receptacle of four to five clasped arms , contoured like the stipe with alternating ribs and furrows . *L. cruciatus* has a rounder stipe with receptacle arms that are not clasped together at maturity . The receptacle of *L. gardneri* , found in south @-@ east Asia , India , and Africa , is made of five to seven reddish @-@ brown fingers that are initially pressed together before separating .

= = Habitat and distribution = =

This species is typically found growing solitary or in groups on lawns , mulch , pastures , and open woods . A North American field guide notes an association with apple orchards and cornfields .

Lysurus periphragmoides has a pantropical distribution . The fungus has been reported from Africa (Mauritius , Tanzania) , Asia (Jilin Province , China , Sri Lanka , India , Pakistan , Thailand , Indonesia) , Australasia (New Guinea) , North America (Bahamas , Dominica , Mexico) and South America (Argentina , Brazil , and Venezuela) . The distribution extends north to the Ryukyu Islands in Asia . It is fairly common in South America , but is usually restricts its appearance to periods of wet weather in southern North America .