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THE FOLKLORE OF 'GASTEROMYCETES'

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This article, and a companion one to follow on the uses of gasteromycetes, arose out of work on a forthcoming treatment of the British epigeous gasteromycetes. Much fascinating information was discovered about the folklore and uses of these fungi for which space could not be spared in an essentially taxonomic and floristic account. It was, therefore, decided to summarise this information elsewhere.

'Gasteromycetes' comprise an heterogeneous assemblage of many lineages. They are no longer considered as a taxonomic unit, although forming a traditional group. The wide range of unusual and beautiful forms taken by gasteromycetes has led inevitably to the development, in many parts of the world, of a rich folklore. The literature involved is vast, with many valuable references to be found in obscure places. This account does not claim to be comprehensive; there are undoubtedly many other sources to be trawled. Nevertheless, we hope that it at least touches on most aspects of the subject and provides a baseline for further study.

There are few popular summaries of fungal folklore. However, Dickinson & Lucas (1979), Findlay (1982), and Ramsbottom (1953) offer much of interest, and should be consulted.

Much fungus folklore stems from times when fungi were little understood, their fruitbodies being unexplained developments inevitably given magical connotations. Attempts to explain them, even in a supposedly scientific age, often led to widely inaccurate and fanciful statements. For example, it was considered by MacMillan (1861) that the Giant Puffball 'increases from the size of a pea to that of a melon in a single night'! In fact, its development to full size takes several days at least.

Most folklore involving gasteroid fungi is associated with puffballs and stinkhorns, which seem to have influenced cultures worldwide, often in similar ways. However, the Santal people of West Bengal appear to have a unique belief. Three species, *Lycoperdon pusillum* Batsch, a *Sclerodermа* and an *Astraeus*, have particular significance in the mythology of these people according to Heim (1978). The Santal attribute the appearance of these fungi to thunder and lightning and consider that, alone amongst all the fungi and plants, these three species are animate and have a soul.

Puffballs

Puffballs are nowadays mainly regarded as a curiosity, either because of their unusual method of spore dispersal – they puff when squeezed – or, in the case of the Giant Puffball, because of its great size; it has arguably the largest fruiting body of any fungus. They also held religious or magical significance to some North American Indian tribes. The Blackfoot, for example, referred to them as 'fallen stars' and used them as incense to keep away ghosts, and also as tinder. They also painted the base of their teepees with represen-

Fig 1 *Fungus anthropomorphos*, from Seger 1671. Usually accepted as an imaginative representation of the earthstar *Geastrum fornicatum*.

tations of the fruitbodies to 'ensure fire to those within' (Burk, 1983), an interesting example of sympathetic magic. Some tribes, however, held them in superstitious awe.

According to Wasson & Wasson (1957), there are more folk names for puffballs than for any other fungi. They are considered in detail in their chapter entitled 'Puffballs, filth and vermin'! Of these many names, some were recorded in the British Isles as early as the 16th century, such as Bulfists, Pulker-fist, Puckfist, Pucke Fusse and Molly-puffs (Gerard, 1597; James, 1747). These names, and others such as Puck's Stool, are said to reveal an association with the supernatural, referring either to the Devil (old English 'pouke') or Puck, the fairy Robin Goodfellow (Steele, 1888; Rolfe & Rolfe, 1925 and others). The names Bulfer or Bulfist were used in Norfolk, Cos-a-phouka or Pouka's Foot in Ireland, and Puckfoust in Gloucester. These and others, including Fusse bals, Puff Fistes, and Bofist, are clearly reflected in the generic name *Bovista*. However, the etymology of these words is remarkably complex. Their origin is linked by Wasson & Wasson (1957) with breaking wind rather than with the supernatural, and it is interesting to note that the generic name 'Lycoperdon' translates as 'wolf breaking wind'. Another possible derivation of these names is from 'pogge', meaning toad, and its diminutive, 'pixie', hence also the words 'pixie-stool' and 'toadstool' (Folkard, 1884; Friend, 1886), although the latter appears at least as early as the 14th century (Rolfe & Rolfe, 1925). Such fungi were thought to be derived from the Devil's droppings (Folkard, 1884).

Folk names with a similar derivation occur elsewhere in Europe. In Denmark, for example, various folk names are discussed by Brøndegaard (1987). These include 'ulvefis', which was in use by the 17th century and has the same meaning as the generic name *Lycoperdon*. Others refer to breaking wind linked with fruitbody shape, such as 'fæsebold' and 'fisebolle'. Puffballs were also considered in Denmark to be the homes of adders and this is indicated in the names 'hugormehoveder' (viper's head) and 'hugormeknolde', (viper's 'knot' or 'tuber') (Brøndegaard, 1987). Various other folk names exist for puffballs, these often reflecting the powdery spore mass in mature fruitbodies. Amongst these are 'Devil's Snuff-box', 'Old man's snuff-box', 'pixie-puff', 'the fungus that belches', 'Blindman's ball' or 'bellows' and, in Scotland, 'Blind Men's Een'. The last two refer to the common belief that the spores are damaging to the eyes. A similar belief was held by some North American Indian tribes who called puffballs names such as 'no-eyes' or 'ghost's makeup' (Burk, 1983). The terms 'poor-blinde' and 'sand-blinde' were used by Gerard & Johnson (1633) to describe the effects of the spores of puffballs in the eyes, and the latter term was used in 'The Merchant of Venice', perhaps for a similar condition (Anon., 1983). It is also reflected in the Danish name 'blinderøg'. In Wales, puffballs are known as 'cwm-y-mwg' (bag of smoke) (Friend, 1886), and in Greenland 'pujualigssuaq' (the one that contains a lot of dust) (Brøndegaard, 1987).

In Mexico, *'Lycoperdon umbrinum'* is known generally as 'kapxia', simply meaning ball, but in places it is called 'ju'ba'pbich nakai' or 'star excrement fugus' (Gonzalez, 1991). In Malawi, where some puffballs are used as food, popular names are applied to at least two species: *Handkea (Calvatia) utriformis*, known in the Zomba district as 'ngoma wa nyani' or 'the drum of the baboon', and *Lycoperdon citrinum*, known as 'fodya wa nyani' or 'tobacco of the baboon' (Morris, 1990). In Nigeria, there was a belief among the Yoruba people that the fruitbodies of *Calvatia cyathiformis* are produced by bush fowl (*Francolinus*) and they are hence called 'isoaparo', 'effluvium of the bush fowl' (Oso, 1977). The fruitbodies tend to occur commonly in pasture on cultivated farms where bush fowl occur (Oso, 1975). Another origin is found in Danish legend, according to which potatoes left in the field over the winter turn into puffballs (Brøndegaard, 1987).

Fig 2 *Geastrum fornicatum* – seen through the camera lens. (photo.: J. Benn).

Earthstars

Earthstars, surprisingly, perhaps, in view of their unique form, appear to have little associated folklore. However, in the 17th century, a human-like form was seen in *Geastrum fornicatum* by Seger (1671), who called it *'Fungus anthropomorphos'*, depicting it as a ring of human-like figures. Later, Seger (see Ramsbottom, 1953) introduced the genus *Anthropomorphus* for this fungus, an imaginative name later expanded by Professor McGinty, the pseudonym of the notorious American mycologist G. C. Lloyd, to include other species which had been placed in *Geaster* (Lloyd, 1906). The star-like form of the expanded fruit-bodies of earthstars is well known and is reflected in their common name. However, their evident star-like properties seem little-known! Badham (1863) alludes to these relating that they aspire 'occasionally to leave this earth', a fine example being afforded by W. Withering who found his first specimen of a *Geastrum* 'on the very highest pinnacle of St Pauls' (Cathedral)!

Some earthstars will grow in a fairy ring, although these are mostly due to other fungi. There is much folklore associated with fairy rings, which is outside the scope of this paper. However, an example of the ancient rite of wishing in a fairy ring, staged in a ring of *Geastrum schmidelii* (= *G. nanum*), is shown in Rotheroe *et al* (1987).

Stinkhorns

The folklore of stinkhorns, as might be expected, largely concerns their smell and phallic shape, although in places they have also been associated with death and the devil. The Common Stinkhorn (*Phallus impudicus*) has commonly been regarded as offensive, particularly in Victorian times, and in earlier times the eggs were thought to be those of evil spirits or devils (Findlay, 1982), with names such as 'Ghost's egg' and 'devil's egg' applied to them in England, and 'trolläg' in Sweden, 'hexeneier' in Germany, and 'unghers eyeren' ('grass snake eggs') in The Netherlands (Brøndegaard, 1983). However, at least one author (F. Bucholzer) took a different view and was moved to poetical praise of this fungus, 'In Praise of the Stinkhorn' (Findlay, 1982). Stinkhorns also featured in Greek herbalism, as shown by Wasson *et al.* (1978). The name 'stinkhorn' has long been in use, as indicated by Ray (1724) who wrote that it 'is known to all our people as stinkhorn'.

Popular names for the stinkhorn itself are many, sometimes reflecting its smell, as for example Devil's stinkpot (Yorkshire), Wood witch, Pow-cat, Carrion Flower (Brøndegaard) and Stinking polecat fungus (Miller, 1884; Smith, 1882). Others are direct references to its phallic shape: Pricke Mushroom (Gerard, 1597), Devil's Horn (Miller, 1884; Steele, 1888), the latter having been used in Norfolk, and Satan's member (Emboden, 1974). In pre-Linnean literature, before the introduction of binomials, it was even known as 'fungus foetidus penis imagenem referens' and 'fungus virilis penis arecti facie'. Other examples are given in Wasson & Wasson (1957).

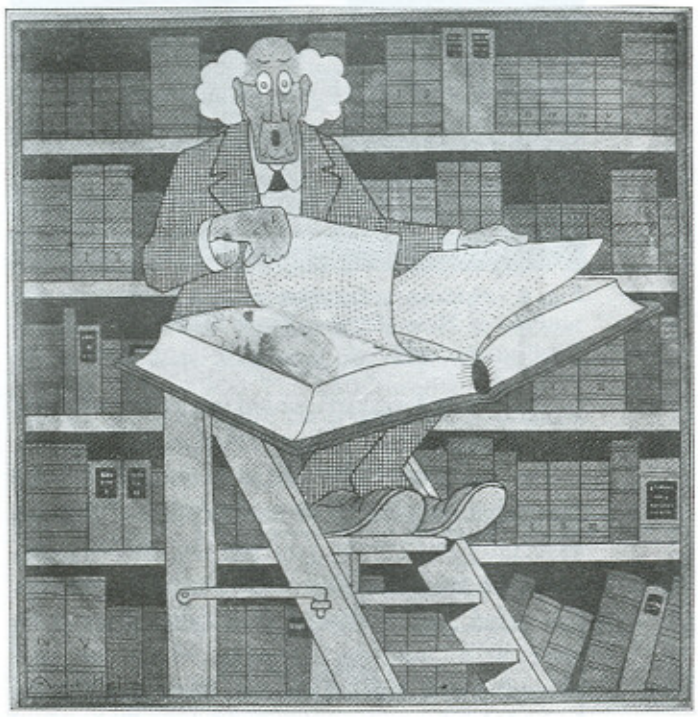

Fig 3 'Professor McGinty discovering the genus *Anthropomorphus*'. From Lloyd, Mycological Writings. Letter no. 48: 12, 1913.

The provocative shape of the stinkhorn has inevitably led, on the one hand, to its use as an aphrodisiac, and, on the other, to its causing of severe offence in puritanical circles. Shape was also a factor in the consumption of *Phallus indusiata* for divinatory purposes by Mexican Indians according to Wasson (1961). According to Emboden (1974), the related *Phallus indusiatus*, characterised by the presence of a net-like indusium which hangs below the cap and is reminis-

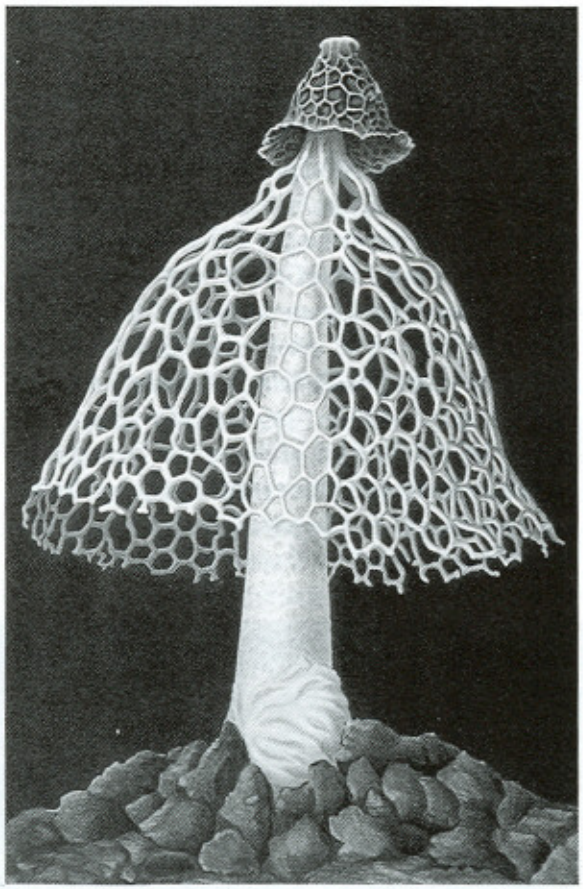

Fig 4 *Phallus indusiatus* – held in awe by the natives of New Guinea. From Möller, Brasilische Pilzblumen, 1895.

cent of a 'lacy foreskin', is held in awe by natives of New Guinea where it is regarded as semi-sacred.

The supposed aphrodisiac properties of the stinkhorn have led to its sale in parts of Europe, especially in Germany during the Middle Ages, just like truffles. Until comparatively recently, the dried and powdered fruitbodies were even used with livestock to bring them on heat (Brøndegaard, 1983). However, there is no physiological evidence in support of its effect as an aphrodisiac.

The offence taken at the form of the stinkhorn is exemplified by the attitude of Darwin's eldest daughter Etty. According to her niece Gwen Raverat in her book of Victorian reminiscences 'Period Piece', published in 1953, she would scour the local woods for stinkhorns and then bring them home to burn 'behind closed doors'. The story is recounted more fully in Findlay (1982) and in Wasson (1953). A similar attitude was held by Beatrix Potter who 'could not find courage to draw it' (Jay *et al.*, 1992). One of the earliest illustrations of the species was by Clusius (1601), whose figure was later reproduced, but tellingly upside down, by Gerard & Johnson (1633) in that edition of the famous herbal. This theme is further explored by Wasson & Wasson (1957).

The association of the stinkhorn with death occurs in the folklore of parts of Europe, America and Borneo (Brøndegaard, 1983). In Borneo, it was symbolised as the penis of a dead hero, now returning in spirit form. In Germany, stinkhorns appearing in a graveyard were regard as the fingers of a corpse pushing up from the grave indicating unrepented sin in the dead. It was known as 'Leichenfinger' (corpse finger') or 'totenpilz'. A similar tradition was found in Sweden, where stinkhorn was known as 'Ligsvamp'. In Massachusetts, the stinkhorn was known as a 'death baby', and its occurrence near the house was considered as a sign of imminent death in the family. In Nigeria, according to Oso (1975), *Phallus indusiatus, P. aurantiacus, P. rubicundus* and *Mutinus bambusinus* are all known as 'Akufodewa' by the Yoruba people. This refers to a legend about the 'hunger millipede' which was burnt to death in the forest by its enemies. Stinkhorns were used as a charm to make the hunter invisible when facing danger (Oso, 1976). Elsewhere in Nigeria, this and other stinkhorns are used as harmful charms by various tribes (Oso, 1976).

The related Cage fungus, *Clathrus ruber,* evidently also has some connections with death and demonology. Wasson & Wasson (1957), for example, report its depiction as a possible representation of a death's head in a 17th century painting by van Schriek with a supposed demonological theme.

Bird's-nest Fungi

There seems to be less associated folklore with these fungi. Although they were included by Clusius (1601) as a curiosity, he ascribed to them no particular uses. However, they have received some folk names, such as Elfin Cups, Fairy Goblets, and Corn Bells (Brodie, 1975), and in Lincolnshire they were called 'Fairy purses' (Friend, 1886). In England they were also known as Pixies' purses and in Scotland as Siller cups (Steele, 1888). To find them on the way to work was once regarded by Scottish country folk to be a lucky omen for the day (Steele, 1888). In Denmark, the quantity of bird's-nest fungi (*Cyathus* spp.) present in the harvest was used to predict the

price of the grain (Brøndegaard, 1987). These fungi certainly came to the attention of early naturalists, although their nature was misunderstood. The 'eggs' or peridioles were, not unreasonably, considered to be seeds, although this led to the interesting claim by Goedart that when 'cherished by the sun' these sprouted feet and began to live as birds. This he had observed, with careful scrutiny, over two successive years! (Emboden, 1974).

Finally, aphrodisiac properties have been attributed to some of the Bird's-nest fungi, notably in Colombia and Guadeloupe where they were reputedly used to stimulate fertility (Dickinson & Lucas, 1979, Brodie, 1975).

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