Jelly from Space?

What is the true, terrestrial explanation behind the mythology of “star jelly”, found on the surface of our planet in the wake of showers of meteorites?

Bernard Dixon

Many microbiologists will be vaguely aware of occasional media reports about the gelatinous material, sometimes called star jelly or Powdre Ser, which is said to arrive on Earth during meteorite showers. Few will know the reality behind these stories. Some may have been berated, as I have, by the taunts of true believers, who insist that orthodox science is fecklessly ignoring evidence of fungal arrivals from space.

Most will be surprised to find that the folklore surrounding phenomena such as star jelly now forms part of a formal discipline known as ethnomycology. Indeed, Angel Niemes-Rivera and Andrew White, writing in the British Mycological Society’s *Mycologist* (20:22, 2006), assert that the beliefs found in ancestral cultures concerning links between space phenomena and terrestrial blobs of jelly are “useful”. In their view, such ideas enhance ethnomycology because they illustrate the “range of complexity and conditions in which a fungus myth was developed”.

Over the centuries, there have certainly been lots of descriptions of weird gelatinous goo, observed shortly after the appearance of shooting stars (meteors that burn up when they enter the atmosphere). The goo is often brightly coloured, from yellow to red, and is sometimes said to stink unpleasantly.

The British Isles—unsurprisingly perhaps, in light of their often damp weather—have been the source of many of these tales. Probably the earliest came from the pen of the English poet Sir John Suckling in 1641:

As he whose quicker eye doth trace
A false star shot to a mark’d place

Do’s run apace
And, thinking it to catch,
A jelly up do snatch.

Just over a decade later, the English philosopher Henry More wrote “That the Starres eat . . . that those falling Starres, as some call them, which are found on the earth in the form of a trembling jelly, are their excrement.” A few years later another English poet, John Dryden, described how: “when I had taken up what I supposed a fallen star I found I had been cozened with a jelly.” The Scottish novelist Sir Walter Scott, in *The Talisman* (1825), wrote: “Seek a fallen star, said the hermit, and thou shalt only light on some foul jelly, which, in shooting through the horizon, has assumed for a moment an appearance of splendour.”

In 1846, *Scientific American* carried a report of an apparently doubly spectacular meteor fall. “It appeared larger than the Sun, illuminated the hemisphere as light as day,” said the account. And when it fell “a large company of the citizens immediately repaired to the spot and found a body of fetid jelly, four feet in diameter.” Even *Nature* (83:492, 1910) has published a paper on the mysterious gunge. The author, T. McKenny Hughes, described Pwdre Ser as “a mass of white translucent jelly lying on the turf.”

The term Pwdre Ser comes from Wales, bestowed by Welsh shepherds who made many observations on the “rot of the stars”. They also described the disappearance of the jelly, by evaporation or some other process, within a few hours of its arrival. Pwdre Ser was most often seen in the early morning, encouraging the folk belief that it had probably been projected onto the Earth by a shooting star unobserved during the hours of darkness.

However, as Hughes pointed out long ago, the association between astronomical events...
and the discovery of perplexing gels may be purely circumstantial. If people are searching intently for fragments of fallen meteorite, they will be more than usually vigilant about any unfamiliar goo on the ground, and will tend to give it special significance. This is even more likely to happen to people already conscious of the mythology of Powdre Ser.

So what exactly is this stuff? Its presence has been reported sufficiently often, and sufficiently reliably, to exclude explanations based purely on delusion or optical illusion. Nieves-Rivera and White argue that there is probably more than one cause. While bird vomit and other non-microbiological substances may have contributed to the folklore, other sightings are probably attributable to organisms such as the cyanobacterium Nostoc. Members of the Tremellaceae are prime candidates too—not least Tremella lutescens Fr, sometimes known as fairy butter, which is often found in a yellow, gelatinous form after heavy rain. T. concrescens also forms pale translucent globs in the axes of tufts of grass.

“Mycxomyctes too are known by their close encounters with humans,” the two mycologists write. “In 1973, residents of a small suburb in Dallas, Texas, experienced terror at the sight of moving bright yellow plasmodia of a myxomycete, Fuligo septica (L) Wigg. This motile mass of protoplasma was immediately mistaken as an alien entity in the form of microbes that was starting an invasion of the Earth. The news kept many U.S. citizens spellbound and encircled the nation, similar to Orson Welles’s classical radio transmission of an alien invasion on Halloween’s Eve in 1938.”

Elsewhere, other myxomycetes have attracted human curiosity because of their seemingly extraterrestrial origin. Locals in the State of Vera-cruz in Mexico refer to two of them, Entierdium lycoperdon (Bull.) Farr and E. septica, as “caca de luna” (moon’s excrement). However, this epithet does not deter them from frying and eating the myxomycetes’ immature fruiting bodies.

One of the most recent sightings of Powdre Ser was in Scotland on 29 March 2004, by geologist Bill Baird. Climbing with his friend Ronnie Leask, he made the observation as they were approaching the 747-m summit of Meall Mor, which lies about 2 km north of the western end of Loch Katrine. The wind was dry and breezy with a fairly cloudy sky and a temperature a few degrees above freezing. There were drifts of snow from a previous snowfall.

“As they both took a breather before going on to the summit, Ronnie poked one of several pieces of snow lying on the grass and remarked that it was the first they had come to,” says an account in the Autumn 2004 issue of The Edinburgh Geologist. “Bill noticed that the reaction of the snow fragment to a poke with Ronnie’s stick was unusual. He bent down and picked the piece of ‘snow’ up and found that it had the consistency of a firm blancmange. The appearance even at arm’s length was still absolutely the same as that of a piece of settled fragmented snow bank but the tactile message was of something entirely different.”

What they had apparently found was a sample of star jelly. Certainly the material matched the description given by Hughes in his Nature paper—“a mass of white translucent jelly lying on the turf.” There was, however, a difference in size, Hughes describing his pieces as about as large as a man’s fist, while those on Meall Mor were bigger than a half brick. Also, Hughes and Leask detected no smell—a common feature in past reports.

The most surprising aspect of the Powdre Ser story is that, despite a considerable amount of literature (more than ever since the advent of the Web), sightings have received very little scientific attention. The vast majority of reports, whether by mycologists or nonmycologists, have been purely descriptive. Identification, when attempted at all, has been on purely morphological criteria. There seem to have been no studies at all using modern molecular techniques.

Perhaps microbiologists, being serious minded people, consider the entire subject simply risible—or worse?