Amanita marinae

The genus *Amanita* contains more than 1000 species, including the most recognisable mushroom in the world, the bright red-capped *Amanita muscaria*. This is known as the 'fly agaric' because of its use historically as an insecticide when powdered. Its distinctive red cap, flecked with white scales, can grow up to 20 centimetres in diameter and the species is often featured in fairy tales and other literature. This seemingly innocuous mushroom is also one of several poisonous species in the genus. With common names including the 'death cap' (*Amanita phalloides*) and 'destroying angel' (several species, including *Amanita virosa*), it's not surprising that *Amanita* is best avoided in a culinary sense. There are also several non-toxic species, but it takes a trained eye to distinguish these, and identification can be difficult.

About 100 species of *Amanita* are known in Australia, but it is likely that many more are awaiting discovery. In Western Australia, more than 50 species are known, including *A. muscaria*, which is native to the Northern Hemisphere but has been unintentionally introduced to southern Western Australia. It has been seen in gardens and parks, in areas including the Perth Hills, Manjimup and Margaret River under introduced pines, birch and oak trees. The species is also found in all southern Australian states, reaching as far north as Brisbane on the east coast.

A large portion of the WA species of *Amanita* were recognised and described as new species by Dr Elaine Davison, adjunct Associate Professor at Curtin University, and a Research Associate of the Department of Biodiversity, Conservation and Attractions' Western Australian Herbarium. Elaine, either solely or with associates Danielle Giustiniano and mycologist Neale Bougher (also a Research Associate of the Herbarium), has described 17 species of *Amanita*, mostly from the south-west forests. Elaine conducts detailed morphological examinations of specimens and these are supported by molecular analyses undertaken by Danielle. In addition, Elaine, Danielle and Neale have clarified the descriptions and uniqueness of a further eight named species.

Now we welcome a new species, *Amanita marinae*, described by Elaine in collaboration with Danielle. The new species was collected by Elaine and her husband, Peter, in Lesueur National Park. The park is well known for its botanical richness, with more than 900 plant species recorded, some 10 per cent of WA's known flora, and now its fungal diversity is being explored. The ivory white *A. marinae* grows mostly in sand over limestone, either as individuals or in groups, and can reach up to 85 millimetres in diameter. Compared with the vivid red caps of *A. muscaria*, the new species is not brightly coloured and unlikely to catch the eye. To place the species in *Amanita*, certain features must be present, including a membranous or friable 'universal veil', which is the membrane that initially encases the young mushroom but is broken as it grows larger. The remnants of the universal veil can be seen as the white flecks on the red cap of the fly agaric. Other microscopic features also distinguish *Amanita*, but these require assessment by a trained eye, and the uniqueness of the species must be supported by molecular analyses.

The name of the new species might suggest a beachside species, but it honours Dr Marina Wallace of Fiona Stanley Hospital. Elaine recently had a brush with cancer, and Dr Wallace and her surgical team provided the care that saved Elaine's life. To have a mushroom named for you is certainly an unusual accolade for a physician, but it is bestowed with heartfelt gratitude and admiration.

Above *Amanita marinae* from Lesueur National Park.
Photo – Dr Elaine Davison