

MYCOPHAGY OF A NEW ZEALAND EPIGEOUS FUNGUS, PROBABLY BY BRUSHTAIL POSSUMS (*TRICHOSURUS VULPECULA*)

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Amanita pekeoides G.S.Ridl. (Family Amanitaceae) is an endemic New Zealand epigeous fungus that was recognized as a distinct taxon only recently (Ridley 1991). It is widely distributed in both the North and South Islands, where it appears to be associated primarily with *Nothofagus* spp.

During the late afternoon of 4 December 1999, I photographed two mature sporocarps of *A. pekeoides* that were growing close together in silver beech (*N. menziesii*) forest in the South Waitaanga Conservation Area in eastern Taranaki in the North Island. There were not many fungi in the forest at this time, but a few sporocarps of two *Russula* spp. were growing in the immediate vicinity of the two *A. pekeoides*. I also photographed a large, but still developing, sporocarp of a third *A. pekeoides* that was growing on its own about 40 metres away. My companion and I decided to return the next day to see how much this developing sporocarp had progressed overnight, and to photograph it again.

Late the following morning, we found that one of the two *A. pekeoides* sporocarps growing together was completely gone, having been broken or chewed off at ground level. The other had also been broken or chewed off at ground level, but a small portion of its stipe was lying on the ground where it had been growing. All that remained at the site of the developing *A. pekeoides* sporocarp was a portion of its volva and a portion of its stipe which was cracked longitudinally. We were confident that nobody else had been in the area since we were there the day before. It seemed to us that some animal must have eaten the sporocarps, probably during the previous night.

No doubt goats (*Capra hircus*) eat some fungi in mainland New Zealand forests. Goats, and feral pigs (*Sus scrofa*), are widespread in the South Waitaanga forest, but they were not present in the area where the destroyed *A. pekeoides* sporocarps were growing. Ship rats (*Rattus rattus*), which eat at least some New Zealand forest fungi (Daniel 1973), are almost certainly present throughout the South Waitaanga forest. However, the nature and extent of the demolition of the *A. pekeoides* sporocarps indicate that it was almost certainly an animal with more destructive eating habits than those of a rat.

The introduced Australian brushtail possum (*Trichosurus vulpecula*) occurs throughout most of New Zealand. It is ubiquitous over large areas of the country, including all of the South Waitaanga forest. Several recent studies (e.g. Cochrane *et al.* 2003, Sweetapple 2003) confirm that fungi are an important part of the annual diet of possums living in a variety of New Zealand forest habitats, but the published accounts referred to do not give any indication of the specific identity of the fungi eaten by them. While the evidence presented here does not prove that possums ate the *A. pekeoides* sporocarps at South Waitaanga, it nonetheless strongly suggests they were the culprits.

Different species of fungi vary widely in their ability to accumulate nutrients in sporocarps (e.g. Clinton *et al.* 1999). The fact that none of the few *Russula* sporocarps growing in the immediate vicinity of two of the *A. pekeoides* sporocarps appear to have been touched, may indicate that the animal which ate the latter purposely selected them because of their greater nutritional value. On the other hand, several members of the *Amanita* genus contain toxins which are detrimental to mammals, but it is not known if *A. pekeoides* is one of them.

References

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