



Title: 'Entoloma elegance'

Description: *Entoloma waikaremoana* at Pelorus Bridge

Photographer's name: Noelle Bennett

Where and when: Pelorus Bridge, Marlborough. June 2021.

Sustainability: This rather beautifully coloured fungus is known as *Entoloma waikaremoana*. With a diameter of just 10mm, it is quite tiny and could so easily be overlooked.

What exactly is a fungus? It is neither a plant, nor an animal, but rather a whole separate 'kingdom' of life. Biologists classify lifeforms into the following successively smaller and more specialised groups: Domain > Kingdom > Phylum > Class > Order > Family > Genus > Species > Subspecies > Variant. You can think of it like a tree – the Domain are divisions of the main trunk, big branches split out the Kingdoms, each Kingdom divides into several Phyla ... and so on ... until we reach the twigs made up of different species, subspecies and variants. It might seem a bit complicated at first, but actually classification helps us make sense of the bewildering array of 'biodiversity' out there and to identify each species and their relatives. "Taxonomy" is the science and sorting life into these categories so we can recognise them, understand them and conserve them.

So are fungi and mushrooms the same thing? I guess the best answer to that is that all mushrooms are fungi, but not all fungi are mushrooms! Not helpful? OK, the mushroom is the 'fruiting body' of the fungus, rather like the flower or a fruit in plants, whereas the fungus is the entire (and often invisible to the naked eye) organism the feeds and produces the mushroom itself - think of apple blossom and apples being equivalent to mushrooms, and the apple tree being equivalent to the fungi. Mature mushrooms produce microscopic spores - sometimes numbering in the trillions - that are similar to pollen or seeds.

The rest of the fungal organism typically lives in the soil, wood, or some other material and is composed of thread-like strands known as 'mycelium'. Individual mycelium can grow quite large. A well-documented case in Oregon

reported a single mycelium to cover more than 1,500 acres! The expanding growth of the mycelium often results in circles of mushrooms or “fairy rings.”

Fungi cannot produce their own food because they cannot photosynthesise. Instead, they extract carbohydrates and other nutrients from animals, plants or decaying matter that they live on or within. In the case of the *Entoloma waikaremoana* in my photograph, they feed on dead organic matter such as well decomposed tree stumps, the bases of tree ferns and leaf litter.

The taxonomy of fungi is poorly understood, but by giving them a whole new kingdom compared to plants and animals we are alerted to their uniqueness and potential value – certainly they are fascinating and sometimes beautiful.

Entoloma as a whole is a large genus of fungi, with an estimated 1,000 species worldwide whilst over 75 having been described in New Zealand. All have pink spores, but are otherwise rather drab. But this is where New Zealand bucks the trend. If you're lucky enough to have one of the newer \$50 notes in your pocket(!), have a close look at it just above the number 5. The *Entoloma (hochstetteri)* there is a nice shade of blue, but, believe me, that is nowhere near as beautiful a blue as when you see *Entoloma waikaremoana* in real life.

Photographer's notes: Taking the time to check out the seemingly uninteresting can be so rewarding. If I hadn't taken the time to poke about in damp leaf litter, I certainly wouldn't have found these beauties. We simply need to take time out from being too busy being busy to see the understated.

Photo specs: This individual image was focus-stacked using 50 images taken at two unit increments to ensure the whole of the structure was in sharp focus. Technical specs: The image was taken using a Panasonic DC-G9 camera and a Panasonic Leica DG Macro-Elmarit 45mm f/2.8 macro lens. Exposure details - 1/20 sec at f3.5 with an ISO of 200 and a focal length of 45mm (90mm full frame equivalent).

Digital specs: 7173 x 5777 pixels (41.44MP) @ 300dpi

Key words: fungi, fungus, mushroom, classification, taxonomy, Entoloma, Entoloma waikaremoana, heterotrophic, mycelium, endemic, Pelorus Bridge, Noelle Bennett, Ecosystems Photography, sustainability.

Price: \$250 (incl. GST) for use of the digital image. Visit www.ecosystemsp photography/sales for details & to order, or to get a quote if you would like a high-quality print.

Donation: The price includes a \$100 donation to a sustainability organisation or project of your choice, or otherwise to the *Marlborough Branch of the Royal Forest & Bird Protection Society* <https://www.forestandbird.org.nz/branches/marlborough>.

We recommend that the donation goes to *the Marlborough Branch of the Royal Forest & Bird Protection Society* to support their work on environmental monitoring, advocacy and education. Regional offices keep their eyes and ears tuned for local issues and combine with other branches to support a vigorous and effective national body based in Wellington – a good example of thinking nationally and acting locally. The branch members are monitoring bats at Pelorus Bridge where this photograph was taken.

Image ref: NB#011 (please use this reference in all orders and correspondence).

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22 December 2021