Above: The brown birch bolete grows only on the roots of birch. The stem is covered with black flecks.

By Ian R Hall and John Fountain

Autumn mists and mushrooms

WHEN Ian Hall arrived in New Zealand nearly 50 years ago button mushrooms were one of the new foods. Even now our consumption of the little rubber things that grow on supermarket shelves and their more flavoursome cousins such as the Portabello and Swiss brown is still quite low, with annual production at only 8000 tonnes – about 2 kg each.

Our respect for alternative mushrooms like oyster mushrooms, shiitake, enokitake and straw mushroom is still developing but a giant puffball sitting in a paddock is still more likely to be dispatched with a boot rather than being collected as a delicacy.

Maybe our use of mushrooms has something to do with our conservative British ancestors or past tangata whenua, who ate few mushrooms. One mushroom Maori did use was awheto, otherwise known as the vegetable caterpillar fungus, dong chong xia cao in Mandarin (winter worm, summer grass) or Cordyceps. In New Zealand these are formed when a Cordyceps fungus mummifies the larvae of a large forest dwelling moth. These used to be steamed by Maori, ground to a paste, mixed with dye from mahoe berries and rubbed into freshly carved moko. Awheto is also used in Chinese herbal medicine to treat a wide range of complaints and is so popular its price has been as high as US$7500/kg.

But change is happening in New Zealand, led by the new breed of restaurateurs. Our Chinese and Japanese restaurants have included shiitake, straw and oyster mushrooms in their dishes for many years. Elsewhere, chefs use fine slivers of truffle to turn a perfect omelette into something par excellence; soups and stews are brought alive with a little porcini. At restaurants like Saffron in Arrowtown dishes may contain wild mushrooms like porcini, saffron milk cap or birch bolete.

Even so, we have far to go before mushrooms really come of age. In Finland, for example, a country 25 per cent larger than New Zealand in area and population, about 15,000 tonnes of wild edible mushrooms are

Photographs: Ian Hall

Above left: Awheto, otherwise known as the vegetable caterpillar fungus, grows inside ground dwelling larvae of forest moths. The larvae are killed and the fungus sends fruiting bodies out through the caterpillar's nose. (Courtesy Wang Yun).
Above right: Enokitake, often shortened to enoki, is very popular in Japan and China but also appeals to the European palate.

consumed each year, with a market value of at least $150 million. If that doesn't impress you, then consider mushroom production in China. This is China's sixth largest industry and in 2006 produced more than 14 million tonnes and 30 million people were involved. On top of that China also harvests more than 300,000 tonnes of wild mushrooms each year.

A few cultivated speciality mushrooms like the oyster mushroom, wood ear and enokitake have been available in New Zealand for several decades (a future article will tell you a little about how they can be cultivated on sawdust and various composts). Some of the cousins of these mushrooms are rarely or have yet to be cultivated and in New Zealand can only be harvested from the wild.

Field and horse mushrooms and giant puffballs pilfered from a farmer's paddock are three excellent examples. Incidentally, it is best to ask a farmer's permission first – you wouldn't like him to come and pick your lettuces.

How truffle growers view potential poachers was brought home to Ian when he walked into a French truffle plantation 20 years ago. His guide and interpreter told him not to do that again because he might have been shot, having been mistaken for a pigeon! Another French trufficulteur (a truffle grower) is supposedly protecting his truffière (a truffle plantation) with land mines. And who is going to test his honesty?

French and Italian cuisine simply wouldn't be the same without truffles, chanterelles, porcini, various boletes, and trompette de la mort (literally "trumpet of death", an unfortunate name for a superb mushroom). The vast majority of these types of mushrooms have never been cultivated partly because they only grow on the roots

Above: Young death caps at Eastwood Hills Arboretum near Gisborne. Eating even a small amount can kill.
Below right: As the death cap ages the colour can change from white to off white, buff, pale green or light brown.

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of trees. These are the mycorrhizal mushrooms and a few that are being grown in New Zealand are the Périgord black truffle, the bianchetto truffle, saffron milk cap and the painted bolete. We will tell a little about growing these in a future article.

Other mycorrhizal mushrooms that can only be harvested from the wild are porcini, which in New Zealand is almost restricted to greater Christchurch, the brown birch bolete, and the larch bolete.

But before you rush off and treat everything that is round as a delicious truffle and everything that has a stalk as edible, please stop. There are some delicious mushrooms growing

wild in New Zealand but there are a few really toxic ones too. The death cap is common at Eastwood Hills arboretum near Gisborne, and is not uncommon in Auckland and in the Waikato although it has probably spread further afield. Just one mushroom is enough to kill you and it is a nasty death that lasts about five days while your liver gradually fails. Little can be done to help if you don't get to a hospital in less than 18 hours, short of a liver transplant.

The little magic mushrooms so popular with a section of society can cause flashbacks – not good when you are driving a car. Worse, they can be confused with a deadly lbm (little brown mushroom). So before you eat, please think, and if in doubt, throw it out.

Whenever you eat wild mushrooms or a cultivated mushroom for the first time, eat only a small amount. Also, always put some uncooked ones aside in the refrigerator just in case you have made a mistake or have an allergic reaction to the mushroom. If you experience any illness after eating a mushroom, consult a doctor immediately.

The giant puffball is impossible to mistake but young, small poisonous mushrooms just before they have opened have been confused. Only the young, firm puffball with the pure white inside is edible.

Some more reading

Boa, E. Wild edible fungi a global overview of their use and importance to people. Non-wood forest products 17. Forest Department, Food and Agriculture Organisation of the United Nations. www.fao.org/docrep/007/Y5489E/y5489e00.htm#TopOfPage (2 MB)

Chang, S.-T. 2008. Training manual on mushroom cultivation technology. United Nations Economic and Social Commission for Asia and the Pacific. www.unapcaem.org/publication/TM-Mushroom.pdf (4.83 MB)

Boesi, A.; Cardi, F. 2009. Cordyceps sinensis medicinal fungus: traditional use among Tibetan people, harvesting techniques, and modern uses. HerbalGram 83: 52-61. http://cms.herbalgram.org/herbalgram/issue83/article3433.html?Issue=83

There are many books on edible and poisonous mushrooms. Two co-authored by Ian Hall are "Edible and poisonous mushrooms of the world" and "Taming the truffle". These are available for $65 each from Ian at P.O. Box 268, Dunedin 9054, truffle1@ihug.co.nz

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