

## SIGG DOREX DRYERS

It seems that it is no longer possible to buy SIGG Dryers in Australia. There is an Australian agent for SIGG outdoor products but there is currently no agent for SIGG kitchen products (such as the dryer). So please disregard the information on where to get SIGG Dryers in *Newsletter 14 (1)* as it is no longer correct.

J. Curnow

## RECENT MUSHROOM POISONINGS IN NEW ZEALAND

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Mushroom poisonings have increased in New Zealand over the past 4 years, according to records collated by the National Poisons Centre, University of Otago, Dunedin. In most reported cases, however, material of the toxic mushroom has not been retained and its identity is unknown. The literature on poisonous species in New Zealand (e.g., Connor 1977, Larson 1991, Craw 1995) concentrates on introduced species of known toxicity, and on genera in which members are known elsewhere to be toxic. Knowledge of indigenous species is poor. Craw (1995), Dingley (1978), Larson (1991), and Taylor (1981) provide brief descriptions of field characters to assist identification of some edible and poisonous species.

Landcare Research, Auckland, is the national centre for fungal systematics research and houses the New Zealand Fungal Herbarium (Herbarium PDD) and the International Collection of Micro-organisms from Plants (Culture collection ICMP). Two recent cases of mushroom poisonings, in which Landcare Research mycologists assisted with identification, are discussed. Mycologists are working to improve knowledge of New Zealand's poisonous species. A case registry form has been developed to collate accurate information from future poisonings.

**Case 1.** *Amanita phalloides* (death cap) was consumed by a 31 year old man who collected immature fruit-bodies, apparently in the button stage, under *Quercus* in a Hamilton city park in February 1995 (Nicholls *et al.* 1995). The mushrooms were sliced and cooked in a soup. Several caps were consumed, and the remainder of the soup was stored in a refrigerator. The patient vomited shortly after eating the mushrooms, possibly minimising the amount of toxin ingested. Gastrointestinal symptoms persisted and medical advice was sought after 4 days. Following 6 days of supportive treatment in hospital the patient was discharged.

Immature mushrooms from the refrigerated soup were identified. Morphological features of gills, volva, cheilocystidia, and immature basidia accorded with herbarium material of the species (B.P. Segedin, pers. comm.). Using pieces of the cooked mushroom, the crude Meixner Test (Meixner 1979, Trestrail 1991) was positive for the presence of amatoxin, producing a blue coloration from the acid-catalysed reaction of amatoxin with lignin. The test is performed simply by squeezing juice from the mushroom tissue onto a piece of newspaper, gently drying the spot, and adding a drop of concentrated hydrochloric acid. Typically, fresh mushrooms have been used for the test. The rate of coloration varies from 1 to 20 minutes depending on concentration of the toxin.

Death cap mushrooms were found to be abundant under several oaks in the Hamilton park. According to records in Herbarium PDD, *A. phalloides* is known from Auckland, Cambridge, and Hamilton cities. In addition, Harris (1995) reported the species from Dunedin.

**Case 2.** *Scleroderma areolatum* (earth ball, det. S. Yoshimi, pers. comm.) was collected in March 1994 under *Castanea sativa* at Katikati (east coast, North Island) and consumed by a 58 year old man who assumed the fungus to be an edible puffball. Three immature fruit-bodies were cooked, but only one was eaten with reportedly poor taste. The patient immediately felt unwell and lost consciousness about 15 minutes after ingestion. After vomiting several times, he received supportive treatment in hospital and was discharged next morning. The only other documented case of poisoning by *Scleroderma* in New Zealand was a non-fatal poisoning of a young girl in Auckland in 1982 by *S. albidum*, mentioned by Taylor (1983).

Poisoning by *Scleroderma* is well documented in North America. Beug (1984) described toxicity from

ingestion of *S. areolatum* by a woman in Washington. Within 1.5 hours of eating two cooked fruit-bodies the woman became violently ill, sweating and vomiting, briefly passed out twice, and was unable to walk or talk. She recovered soon after except for an upset stomach. The woman had noted that internal tissues of picked fruit-bodies were pure white and edibility was assumed on the basis of advice that white puffballs were edible. The case prompted the author to express caution in the assessment of edibility of puffballs, with the following statement: 'puffballs are edible if they are pure white inside, are soft like a marshmallow, and have a texture of a marshmallow with no signs of a developing cap, gills, and stem characteristic of a developing *Amanita*.' Stevenson & Benjamin (1961) and Pomerleau & Potvin (1983) reported poisonings by *S. aurantium* and *S. cepa* in North America. Southcott (1974) did not mention *Scleroderma* species in his treatise on fungal poisonings in Australia.

In New Zealand from 1991–4, the number of reported cases of mushroom poisonings logged at the National Poisons Centre has increased annually (1991—38, 1992—65, 1993—95, 1994—102). In a collaborative initiative between the Centre and mycologists at Landcare Research, a case registry form has been prepared (see below), adapted from the NAMA Toxic Exposure Reporting Form (Cochran 1988). The form will be distributed by the National Poisons Centre from 1996, in order to better document poisonings, solicit mushroom material for identification, improve knowledge of the toxicity of New Zealand mushrooms, and lead to more rapid diagnosis and treatment.

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#### References

- Beug, M.W. (1984). A case of *Scleroderma* poisoning in the Pacific Northwest. *Mcllvanea* 6, 33.
- Cochran, K.W. (1988). NAMA mushroom poisoning case registry, 1986–7 annual progress report. *Mycological Society of America Newsletter* 39, 57–66.
- Connor, H.E. (1977). The Poisonous Plants in New Zealand. Government Printer, Wellington. 247 pp.
- Craw, C.J. (1995). Poisonous Plants and Fungi in New Zealand. Northland Regional Council, Whangarei. 88 pp.
- Dingley, J.M. (1978). Some common Auckland fungi. Auckland War Memorial Museum Leaflet no. 17. 9 pp.
- Harris, A. (1995). Nature file—Be wary of the deadly night cap. *Otago Daily Times*, 19 April 1995.
- Larson, P. (1991). Poisonous Plants and Fungi in New Zealand, a Guide for Health Professionals. Thesis, Bachelor of Pharmacy with Honours, School of Pharmacy, University of Otago, Dunedin. 186 pp.
- Meixner, A. (1979). Amatoxin-Nachweis in Pilzen. *Zeitschrift für Mykologie* 45, 137–139.
- Nicholls, D.W.; Hyne, B.E.B.; Buchanan, P. (1995). Death cap mushroom poisoning. *New Zealand Medical Journal*, 14 June 1995, p. 234.
- Pomerleau, R.; Potvin, L. (1983). A case of *Scleroderma* poisoning in Quebec. *Mcllvanea* 6, 8.
- Southcott, R.V. (1974). Notes on some poisonings and other clinical effects following ingestion of Australian fungi. *South Australian Clinics* 6, 441–478.
- Stevenson, J.A., Benjamin, C.R. (1961). *Scleroderma* poisoning. *Mycologia* 53, 438–439.
- Taylor, G.M. (1981). Mushrooms and Toadstools. Mobil New Zealand Nature Series. A.H. & A.W. Reed, Wellington. 79 pp.
- Taylor, M. (1983). Some common fungi of Auckland city. *Tane* 29, 133–142.
- Trestrail, J.H. III (?1991). Mushroom identification. Grand Rapids, Michigan. Mimeographed. 43 pp.

## MUSHROOM POISONING CASE REGISTRY (HUMAN OR ANIMAL)

REGISTER No. \_\_\_\_\_

The National Poisons Centre, in association with Landcare Research, is compiling a registry of mushroom poisonings to improve speed of access to information on diagnosis and treatment. Names of patients and informants are strictly confidential to the National Poisons Centre.

Please answer all the questions on this form by ticking the appropriate box or by writing in the information requested. Please tick the 'don't know' box if you do not know the answer. Use a separate form for each patient.

1. Name and address of person filling out this form: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Telephone: ( ) \_\_\_\_\_

This form is about:

myself  patient  student  club  animal  other   
 member

(If animal, what species?: \_\_\_\_\_)

2. About the incident Don't know
- A. Was the mushroom eaten: Raw?  Cooked?
- B. How many mushrooms were eaten? \_\_\_\_\_
- C. Was mushroom eaten: accidentally?  for food?  intentionally, for 'recreation'?
- D. Was mushroom eaten at more than one meal? Yes  No
- E. Was more than one kind of mushroom eaten? Yes  No
- F. When was mushroom collected? Date \_\_\_\_\_   
 Where was mushroom collected? \_\_\_\_\_
- G. When was mushroom first eaten? Date \_\_\_\_\_ Time \_\_\_\_\_
- H. When was the first sign of illness? Date \_\_\_\_\_   
 Time \_\_\_\_\_ Time since eaten: \_\_\_\_\_ hours
- I. Was alcohol consumed with mushroom, or within 24 hours? Yes  No
- J. How many persons ate the mushrooms? \_\_\_\_\_
- K. Were all persons who ate mushrooms ill? Yes  No
- L. Were persons in the group who did not eat mushrooms ill? Yes  No

3. Symptoms of poisoning

A. What were the symptoms? Circle all symptoms which occurred:

chills	drooling	hallucination	sweating
confusion	drowsiness	muscle spasm	vomiting
diarrhoea	feeling sick	rash	weakness
dizziness	flushing	stomach cramps	

Were there other symptoms? Yes  No

What were the other symptoms? \_\_\_\_\_

Don't know

B. Was treatment given? Yes  No    
 What was the treatment? \_\_\_\_\_   
 \_\_\_\_\_  
 What were the results of treatment?   
 \_\_\_\_\_  
 Case or chart number, if available \_\_\_\_\_ (important for follow-up)  
 Hospital name: \_\_\_\_\_  
 Attending physician: \_\_\_\_\_  
 Patient's age: \_\_\_\_\_ Patient's sex: \_\_\_\_\_  
 Patient's name (optional): \_\_\_\_\_

C. Has the person ever eaten this mushroom before? Yes  No

D. Were the effects the same? Same  Different

4. About the mushroom

A. Brief description of mushroom: (colour, size, shape)   
 \_\_\_\_\_  
 \_\_\_\_\_

B. Where found? (e.g., under a particular tree, on grass, on wood)   
 \_\_\_\_\_

C. Name of mushroom species, if known: \_\_\_\_\_

D. Who identified the species? \_\_\_\_\_

E. Were any special mushroom tests done? Yes  No    
 List the test and results: \_\_\_\_\_  
 \_\_\_\_\_

F. Specimens for identification. Date mailed: \_\_\_\_\_  
 If available, please mail fresh or dried specimens by Fastpost to Landcare Research for identification. It is important to wrap material in paper (not plastic) and to enclose within a sturdy box, as available at Post Shops. Cost of postage and packaging will be reimbursed up to \$10. Please label 'Perishable Specimens' and send to: New Zealand Fungal Herbarium (Attn: Dr Peter Buchanan), Landcare Research, Private Bag 92-170, Auckland (Ph: 09-849-3660, Fax: 09-849-7093).

5. Other comments about the case or the mushroom, or attach separate material  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Please send completed form to:

The Director  
 National Toxicology Group  
 Medical School, University of Otago  
 P.O. Box 913, Dunedin  
 Ph: (03) 479-7244  
 Fax: (03) 477-0509