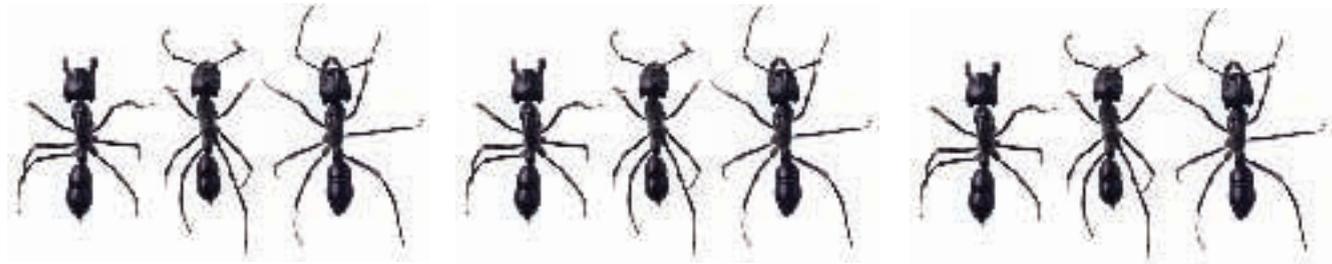


Jumping jack flash



THE JACK JUMPER ANT POSES A SERIOUS, SOMETIMES DEADLY, RISK TO THOSE ALLERGIC TO ITS STING. BUT IT MAY ALSO HAVE SOMETHING MEDICINE CAN GAIN FROM, WRITES JUSTINE COSTIGAN.

PHOTOGRAPHER: BRETT HARTWIG

When Robert Heddle first encountered jack jumper ants more than 30 years ago, the then little boy wasn't exactly sure what they were, but he knew straight away they might be dangerous.

On a family picnic near Mt Lofty in the Adelaide Hills, the primary school student was fascinated by the sudden appearance of the aggressive and nasty looking ants.

Wary of their interest, the family thought it best to move the picnic to a more peaceful location. Being in the middle of jack jumper ant territory, Robert Heddle's family was right to be cautious. When confronted on its own territory, the jack jumper is likely to become very aggressive, and its vicious sting has been known to cause an anaphylactic reaction (extreme allergic response) and, occasionally, death.

Now allergy director at the Department of Respiratory Medicine, Flinders Medical Centre and Flinders University of South Australia, immunopathologist Robert Heddle is one of just a handful of jack jumper ant experts in Australia.

Together with Simon Brown and Michael Wiese from the Royal Hobart Hospital, Dr Heddle has documented anaphylactic reactions to the jack jumper ant around Australia. Most commonly found in Tasmania, Victoria, the ACT, the Snowy Mountains, coastal NSW, the Adelaide Hills and small pockets in the Blue Mountains and Western Australia, the jack jumper is a serious risk to those with an allergy to its sting.

It is one of two ant groups within the genus *Myrmecia*, the other being inch, or bulldog, ants – the latter a name that aptly indicates their level of ferocity and aggression. While the two ant groups share some characteristics, bulldog ants are larger, about 15 to 25mm long, whereas jumper ants are generally 10 to 15mm long and often display jerky, jumping movements.

The jumper ant most frequently associated with allergic reactions is commonly known as the jack jumper or jumping jack, although jumper ants are also known as hopper ants in South

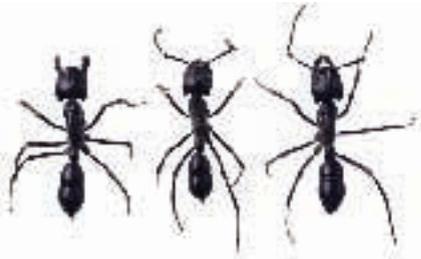
Australia and skipper ants in parts of Victoria.

Jack jumpers have a black body and orange/brown jaws/pincers and limbs, and live in underground nests. Sometimes found under rocks, they can stray far from the nest in search of food and have been known to turn up in people's houses and kitchens if the nest is located close to inhabited areas.

When in attack mode a jumper grasps its victim in its jaws then bends its body back to sting with its tail. Even if you are not allergic to it, the sting is typically very painful. Large local swelling can last for several days and minor allergic reactions such as swelling of the lips, face and eyes, congestion and watering of nose and eyes, hives or welts on the skin and headaches, anxiety and flushing are common.

A severe allergic reaction – anaphylaxis – will spark a range of serious symptoms including: difficulty breathing and/or talking; swelling of the tongue and throat; coughing and wheezing; chest

**Ant enthusiast and allergy specialist,
Dr Robert Heddle**



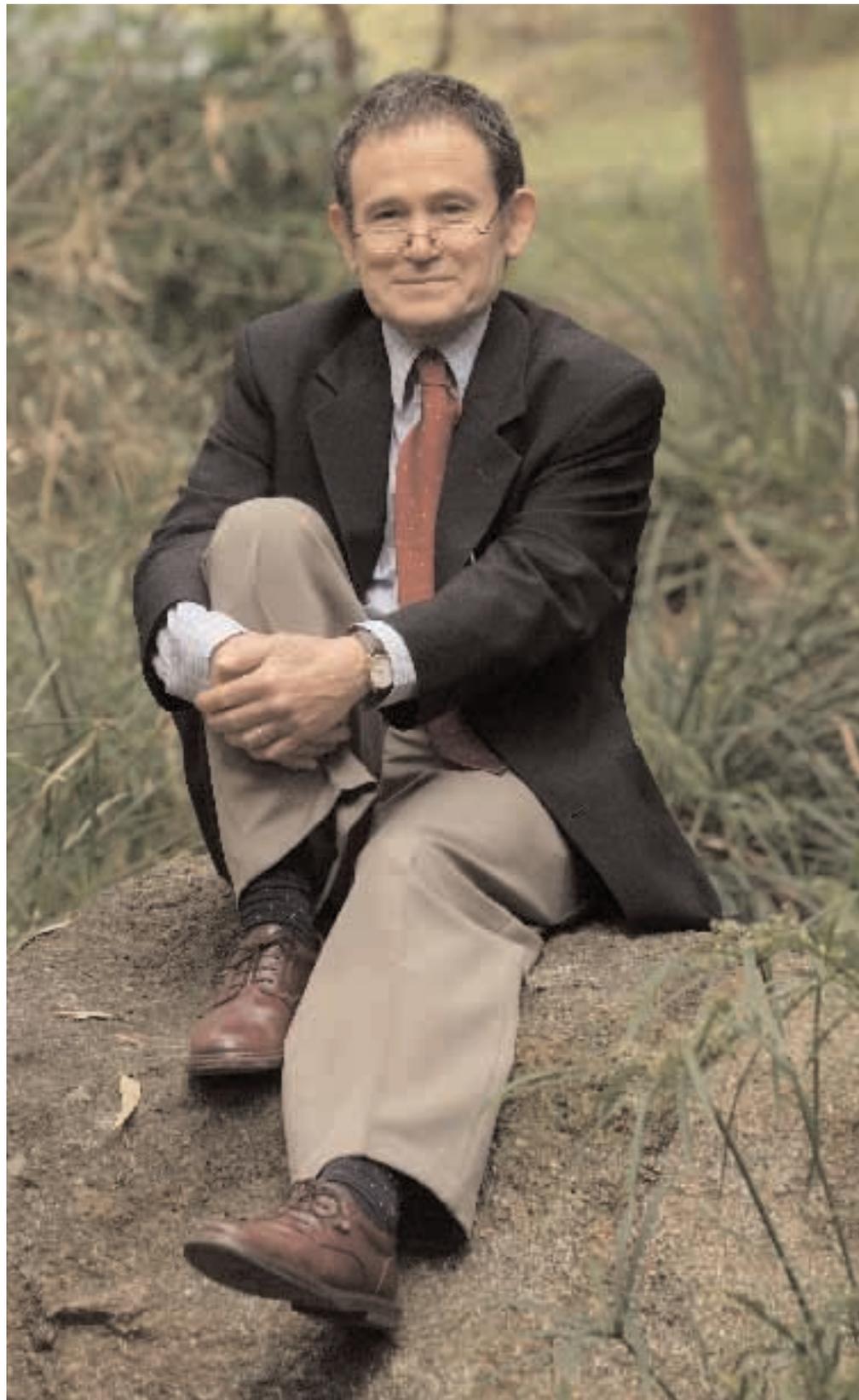
tightness; abdominal pain, nausea and vomiting; confusion, loss of consciousness and or/collapse; and in children paleness and floppiness.

If the victim is unable to get help quickly, there is a real risk of death and several cases have been recorded in recent years.

However, in a recent interview Professor Simon Brown warned that the extent of death caused by the jack jumper remains unclear because it is not recognised as a cause of death on Australia's mortality register. Professor Brown believes deaths from jumper jack ant stings may be misdiagnosed by doctors as a heart attack or listed as cause unknown, making it hard to judge the extent of the problem.

"You've got to look carefully for ant sting allergy, because it doesn't leave any characteristic features at post-mortem," he says. "People generally know that bees and wasps can cause sting anaphylaxis but a lot of doctors who sign death certificates and who do post-mortems have no idea that ants cause the same problem and simply don't think of it as a possibility."

A person's risk of developing a severe reaction to an ant sting is related to exposure. Once exposed to the venom the body will develop antibodies and the next time you're stung the body automatically swings into defence mode,



sometimes triggering an allergic reaction. The severity of the reaction is hard to anticipate, with many people experiencing both severe and mild reactions over time.

In the past couple of years, however, a study performed by Professor Brown's team in Tasmania demonstrated that immunotherapy ("desensitising therapy")

with jack jumper ant venom extracts was effective at switching off jack jumper ant allergy and preventing allergic reactions when patients were stung again.

Professor Brown says success requires accurate diagnosis of the species involved. Although he is now based at the University of Western Australia, he is



working to establish a treatment program in Tasmania and has begun a national study with collaborators including Dr Heddle into anaphylactic reactions and deaths from venom of jack jumper and other stinging ants.

While only 2-3 per cent of the population is likely to present any reaction to the jack jumper sting, it is impossible to know whether someone falls into the risk category in advance, and as most jack jumpers live in bushy areas, it is wise for everyone to be cautious of these potentially deadly creatures.

However, suggests Dr Heddle, more than just warning people about the dangers of being stung by a jack jumper, it's time Australians took a broader interest in these fascinating creatures. With studies proving their venom has powerful antibiotic qualities – no bacteria will grow in the venom unless it is highly diluted – it is just possible we may have more to learn than to fear from these ancient insects. 🐜

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What is immunopathology?

Immunopathology is the medical specialty that deals with the study, diagnosis and management of conditions in which the immune system does not function properly.

Immunopathologists contribute to the diagnosis and care of patients in whom the immune system is either overactive (as in allergic and autoimmune disorders) or underactive (such as primary and secondary immunodeficiencies). They may also be involved in the diagnosis and care of patients with cancers, with organ transplantation and in prevention of disease by immunisation. In the laboratory, immunopathologists design, perform and supervise a variety of tests of immunefunction that aid in the diagnosis and evaluation of disease.

Becoming an immunopathologist requires a qualification as a medical practitioner (including internship). Following your internship you need to train as a specialist in pathology, internal medicine or both. There are three categories of immunopathologists:

1. those who are primarily responsible for providing laboratory services;
2. those who provide both patient care and laboratory services;
3. those who are primarily responsible for patient care.

Specialist training requires a minimum of five years in a registrar position accredited by the Royal College of Pathologists of Australasia. This means that although you are undergoing further study, you are actually working and earning as a doctor at the same time. Once you have completed all the requirements and examinations and are accepted as a Fellow of the College, you are entitled to use the letters FRCPA after your name.

For more information visit the RCPA website at www.rcpa.edu.au

