a closer look

Wood allergies

A REACTION CAN STRIKE RANDOMLY AND WITH LITTLE WARNING

BY DAVID H. JONES

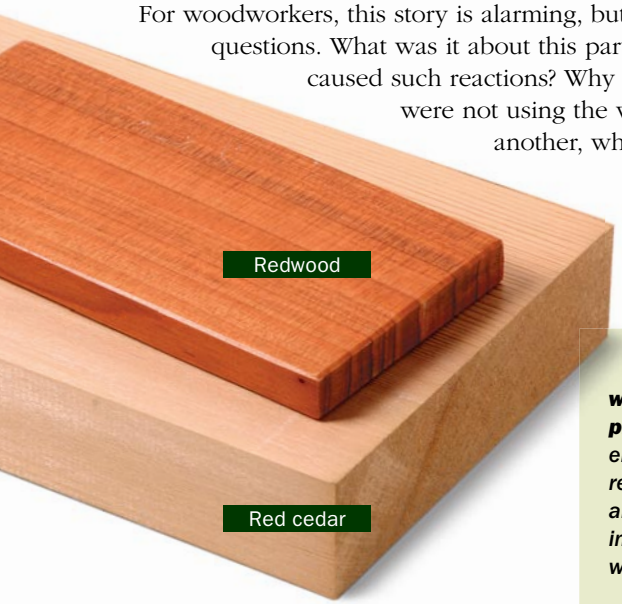
Near fatal attraction. *Australian lacewood is strikingly attractive, but some of the woodworkers making this piece had a serious allergic reaction to the wood.*

The cabinetmakers at ShackletonThomas, a custom furniture maker in Bridgewater, Vt., were excited at the prospect of working with a new wood. A customer had ordered a bedroom set to be made from Australian lacewood. Five workers assigned to the order began jointing, planing, and rough-cutting the boards as normal.

On the third day, one of the workers developed a red rash on his arms that soon turned into blisters. Taking no chances, the shop manager sent him to the hospital. But the genie was already out of the bottle. Of the five people directly working with the lacewood, four had allergic reactions, as did two others working on different projects in the same room.

While the six victims were recuperating at home on steroids, the remaining woodworkers donned Tyvek suits and respirators to complete the bedroom set. After the pieces were shipped, the entire workshop was professionally vacuumed, air filtration units were installed, and the bags on the dust-collection system were replaced.

For woodworkers, this story is alarming, but it also raises questions. What was it about this particular species that caused such reactions? Why did some who were not using the wood react while another, who was in direct contact with it, didn't? Finally, is there any way you can avoid such a reaction yourself, short of looking like a member of a hazmat team every time you use a new wood?



Even domestic woods can cause problems. *Western red cedar and redwood can cause allergic reactions in a few who work with them.*

A wood's natural defenses are to blame

We all know that some plants, such as poison ivy or deadly nightshade, are toxic to humans and should be avoided. Trees also contain poisons to deter browsing animals or fungal attack. These poisons are mostly concentrated in the leaves, bark, and sapwood. While very few woods are toxic to humans, many can cause allergic reactions.

Handle with care. *Tropical hardwoods such as teak and rosewood are the most likely woods to cause allergic reactions. While benign to the majority of woodworkers, they can give others skin irritation or flu-like symptoms.*

An allergenic plant is different from a toxic one because while the latter affects almost everyone, the former can be benign to one person yet cause a severe reaction in another. Wood allergies are triggered by extractives, chemical compounds found in the heartwood. Who is sensitive is a matter of chance, since each person's unique metabolism

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determines whether he or she will have a reaction. Some people have an immediate reaction to a certain wood, but the chances of a reaction increase as exposure increases.

What is more frightening is that after you have an initial reaction you enter a permanent state of sensitization or hypersensitivity. From that point on, your body will always respond to this particular wood, and you may become allergic to other woods that did not bother you before.

Symptoms to look for—Wood allergies affect the skin or the respiratory system. Sensitization dermatitis, a skin allergy, is similar to a poison ivy outbreak. The reaction ranges from simple reddening and itching of the skin to swelling, blisters, and possibly permanent skin thickening and cracking.

Two reactions occur in the respiratory system. Wood dust-triggered asthma is a swelling of the air passages in the lungs that makes breathing difficult. A rarer respiratory reaction is hypersensitivity pneumonitis, which exhibits flu-like symptoms. Sometimes allergies cause general symptoms such as swelling or stiffness in the hands, severe headaches, visual disturbances, a rapid pulse, difficulty in swallowing, and diarrhea.

With allergies, exposure refers to the amount of an allergen that contacts the body. Several factors determine the degree of your exposure. The smaller the particle, the greater the danger for two reasons: Small particles can lodge deeper in the lungs; and, for the same weight of wood, small particles have a larger surface area that can contact the skin. For example, you sustain a greater exposure from a pound of fine dust than the same weight of handplane shavings.

Also important is the intensity of the contact: More dust in the air increases your exposure. And, obviously, the longer you work with a wood the greater your exposure.

Approved protection. *Don't rely on a simple hardware-store dust mask to protect you. Use a NIOSH-approved dust mask or respirator.*

Woods that may cause reactions—Unfortunately there has been no comprehensive scientific study of wood allergies, and among the published reports there is very little agreement on which woods are most dangerous. In very general terms, the risk of allergies increases from domestic softwoods to domestic hardwoods to tropical species.

Exceptions to the safe softwoods rule are western red cedar and, to a lesser extent, redwood. While slightly more dangerous overall than domestic softwoods, no domestic hardwood seems to stand out as causing widespread allergies. The real danger comes from certain tropical woods. The good news is that American mahogany, probably the most common tropical wood used for fine furniture, is relatively benign. Among the woods to look out for are rosewood, cocobolo, Goncalo alves, olive, teak, and the aforementioned Australian lacewood, also known as silky oak.

The big cover-up. *If you are susceptible to allergic reactions, minimize your contact with dust when sanding tropical hardwoods.*

Minimize the risk

Although allergies affect only 2% to 5% of people, if you are a regular or first-time user of tropical woods in particular, it is still worth taking precautions. Various Internet sites give lists of allergenic woods, the types of allergic reaction each wood causes, and the likelihood of a reaction (see p. 32).

If you choose to use a wood that causes allergic reactions, minimize your contact,

particularly with the dust. Use a central dust-collection system or shop vacuum attached to power tools to catch as much dust as possible at the source. Open some windows and outside doors to draw fresh air into the shop. Since dust collectors are not 100% effective, also use dust masks and respirators approved by NIOSH (The National Institute for Occupational Safety and Health; for more, see *FWW* #201, "Protect Yourself from Wood Dust"). Meticulously clean the shop by removing dust immediately after completing a task, and ultimately when you finish the project.

To prevent skin contact, wear long pants, a shirt with tight, long sleeves, close-fitting gloves, and a hat. An apron will add protection by keeping dust from entering the top of your pants. Once you have finished work for the day, take a shower and change clothes as soon as possible. The key is to minimize your total exposure time.

Web info on toxic woods

www.mnwoodturners.com/New_Member_Docs/Toxic_Woods_Chart.html

www.mimf.com/archives/toxic.htm

http://old.mendelu.cz/~horacek/toxic.htm

If possible, search by the scientific name, as some common names cover multiple species, some benign, others potentially dangerous.

Be ready for the worst

For most woodworkers who suffer an allergy to wood, the experience is more of a nuisance than an emergency, with just a rash or flu-like symptoms. In the most extreme circumstances, if swelling develops rapidly, particularly involving the mouth or throat; if you have trouble breathing, or feel dizzy, light-headed, or faint, doctors advise that you leave the shop and call 911 for an ambulance to the hospital. Anaphylactic shock (hypersensitivity to a foreign substance) can be fatal if it leads to severe low blood pressure or respiratory or cardiac arrest. While waiting for the ambulance, take an antihistamine such as Benadryl if you can swallow without difficulty.

If you are feeling faint or light-headed, lie down with your feet higher than your head. If you have been prescribed an epinephrine kit, or Epipen, inject yourself. Bystanders may have to administer CPR if you lose consciousness, quit breathing, and have no pulse. Be prepared to tell the medical professionals what medications you have taken or injected—if you are alone, write down this information in case you lose consciousness.

The chances of this kind of reaction are very, very small. Woodworkers should go on exploring the world of beautiful woods but just use a little caution when using them. Have fun and remain healthy. □