

# AN INTRODUCTION TO MICROSCOPIC WOOD IDENTIFICATION BY DR ADAM BOWETT, THE GEFFRYE MUSEUM

Saturday 1st November 2003

Around a dozen members met at the Geffrye Museum for what was to prove a most enjoyable and informative day. Coming from different backgrounds, some with a lifetime's experience of working with wood and others comparatively new to the subject, those attending shared a common desire to better understand the raw material from which most of our furniture is made. We were to discover that under the microscope, wood is as fascinating, varied and beautiful as the furniture we so admire.

Adam began with an illustrated lecture on the structure of wood. He spoke about the growth of trees, the differences between the composition of hardwoods and softwoods and how the growth patterns of different species can be recognised in their cellular structure under the microscope. He explained that in order to obtain the maximum amount of information relating to a species from a sample, we need to examine three reference sections, the transverse face, the radial section and the tangential face. Features observed in the cellular structure may then be checked against a timber identification database.

Adam pointed out that microscopic wood identification is not infallible; some timbers such as paduk and rosewood being almost impossible to tell apart. In such cases the use of chemical analysis may

provide a conclusive result, however, in most situations microscopic identification is accurate and also has the advantage of being a cheap system that anyone can carry out given access to a simple microscope and a suitable database. There are, of course, issues relating to the taking of samples from important and valuable pieces of furniture but Adam explained that since only tiny samples are required this process is relatively non-invasive.

Much of the day was taken up with practical activities. Members were each provided with three unnamed samples of timber around a centimetre square, previously softened by boiling in water until they sank. Slivers were first cut off the transverse section or end grain; these had to be very thin and almost translucent. The technique took most people a little time to master and Adam worked with everyone individually to ensure that we obtained a satisfactory result. Under the microscope the slivers looked quite spectacular. The next challenge was to identify the radial section of the original sample and to cut an equally thin sliver along the line of the rays and then a third at 90 degrees to this, off the tangential face. Adam helped members throughout, pointing out some of the key species indicators that could be observed on our slides. By the time we had completed three slides for each sample we were gaining confidence and using the information given in the lecture, we were able to draw some conclusions about the species of timber we were dealing with.

In the last session, Adam asked us to look at some larger samples and to apply what we had learned to the identification of wood using the naked eye, as we might in the 'real world'. After the day's activities it seemed natural to peer closely at the structure of the timber as well as to draw conclusions from the figure, colour, density and so on. Adam pointed out some common timbers that may be incorrectly identified given superficial examination but, which, if looked at more closely with the naked eye or a simple hand lens, show features relating to their cellular composition that can enable an accurate identification to be made.

Through the day it became apparent that whatever our level of expertise in timber identification, microscopic identification has something to offer. For those of us new to the subject, it may help us identify common timbers with more confidence and for those with years of experience it can provide a system to help solve problems which can only be resolved through accurate identification.

Many thanks are due to Dr. Adam Bowett for running this excellent course, to David Dewing and the Geffrye Museum for hosting it and to Polly Legg for her hard work and attention to detail in organising it.

*Jenny Cowking*