

# German scientists study big trees

by Lachlan McCaw

**DATA gathered recently from the majestic forests of the Walpole-Nornalup National Park by two German scientists may soon contribute to greater efficiency in European industry.**

The scientists, Dr Claus Mattheck and his assistant Dr Klaus Bethge, hope the tingle and karri forests will provide further information about the mechanical attributes of hollow trees.

The principles derived from the scientists' previous studies of tree biomechanics have been used in industrial design to improve engineering structures including machinery parts and vehicle components.

The scientists are visiting Western Australia from Karlsruhe, where Dr Mattheck is head of the Biomechanics Department

at the Institute for Materials Research.

They spent several days in the Walpole District accompanied by Grant Wardell-Johnson and myself from CALM's Manjimup Research Centre.

Dr Mattheck has made a comprehensive study of the biomechanics of trees and is currently investigating the stability of hollow trees.

Using data collected from a wide variety of species he has developed a model to predict the maximum extent of hollow formation which may occur before a tree becomes mechanically unstable.

Until this visit to WA, most of the data in the model was for western

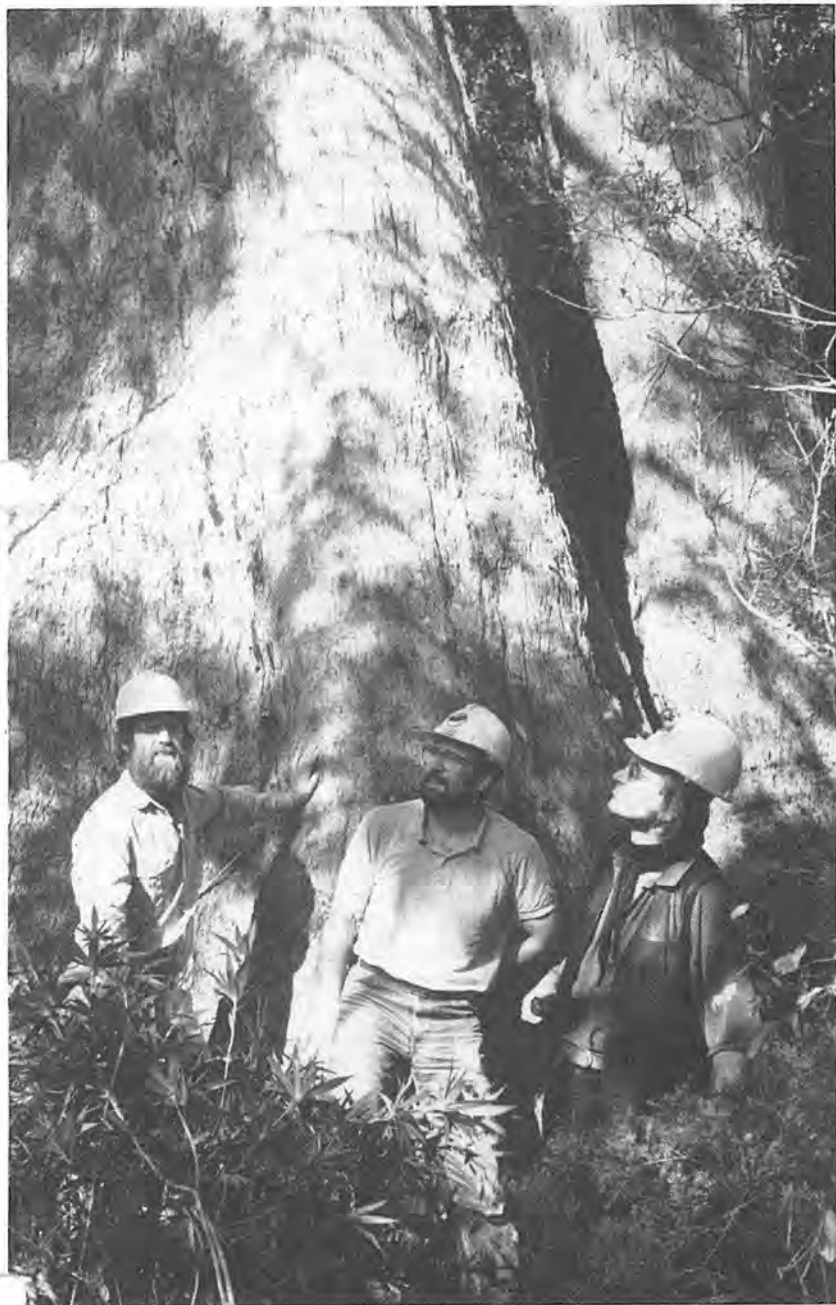
European species, and there was little data for hollow trees more than one metre in diameter.

While at Walpole the scientists were able to measure many large red tingle, yellow tingle and karri trees.

The visitors were greatly impressed by the enormous size of some of the veteran tingle trees. Being the largest trees they had seen the measurements gained from them allowed the scientists to extend the parameters of their model.

Dr Mattheck has published several books about the mechanics of tree growth and defect, including an illustrated field guide for foresters, biologists and naturalists which is available in English.

A copy of the field guide is available from the Manjimup Research Centre.



*Left to right, senior research scientist Grant Wardell-Johnson explains the features of a large red tingle tree to visiting German scientists Dr Klaus Bethge and Dr Claus Mattheck.*

Photo by Lachlan McCaw