Spectrum

Where our eucalypts are

Dominated as they are by eucalypts, our forests appear somewhat uniform.

But the more discerning observer finds that far from true. There are more than 500 species of *Eucalyptus* in Australia, and different species will dominate in different areas, depending on climate, habitat, soil moisture, and soil nutrients. Indeed, the vegetation community of an area usually has two, and sometimes up to six, co-dominant eucalypt species growing together.

Eucalypts range in size from dwarfs only a metre or two high to forest giants. Many species grow in localities that suffer a marked shortage of water for a major part of the year. Most are resistant to fire and a few tolerate sub-zero temperatures.

Mr George Chippendale of the CSIRO Division of Forest Research has recently published maps showing where each *Eucalyptus* species is found. These maps should allow us to better understand the factors that control the distribution of the genus.

The maps are the result of 6 years' work, during which time the label of every Australian herbarium eucalypt specimen collected from 1770 onwards was photographed.

These amounted to more than 100 000 and, in a continuing operation, the details from about half have now been transferred to computer cards. Herbaria in Kew, England, and at the British Museum of Natural History, London, were also included in the list.

Mr Ludek Wolf of the Division created the necessary computer program.

The Bureau of Flora and Fauna is contributing money to the enterprise. Eventually the Bureau would like the whole of the Australian flora to be recorded in a computer data bank (the contents of the Brisbane Herbarium are already listed on computer).

Enough data on eucalypts are now available to allow fairly definitive maps of species' distribution to be drawn. The Australian National Parks and Wildlife Service financed the publication of the maps.

In booklet form, the maps show the localities where each of the 511 currently described species (and 39 other undescribed ones) has been collected. The localities are grid cells of 1° latitude and 1½° longitude — each 136 km by 115 km. Each of these areas corresponds to one of the 1:250 000 topographical survey maps produced by NATMAP.

Mr Chippendale has prepared another map that shows, for each grid cell, how many different *Eucalyptus* species have been collected there. A simplified version of this map is reproduced here.

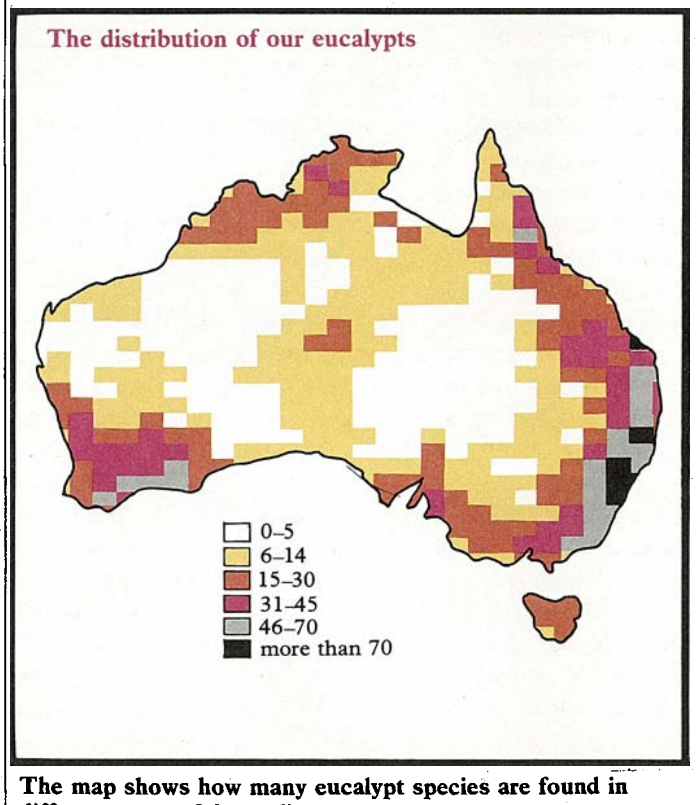
It shows peaks in the natural distribution, with the highest numbers (greater than 70 per grid cell) occurring in the Dorrigo, Singleton, Sydney, and Wollongong areas. Generally, high values occur in the temperate zone, which contains a diversity of habitats and climates. Such areas mostly exist in coastal, mountainous, or tablelands regions.

Flowers of the eucalypt, *E. haemastoma*.

The numbers of species found in each grid cell decrease as one moves inland. It seems that there is a clear relation between rainfall and the number of species per unit area.

Many of the grids with low numbers (0 to 5) are in sparsely inhabited areas. Usually, they are dry shrublands and grasslands. A few extra species might be expected to be found in these areas, given time and collecting effort. Indeed, it is possible that the number in any grid could be revised upwards.

Some 56% of Australia's area has 10 or fewer species



The map shows how many eucalypt species are found in different parts of Australia.

per grid, 31% has 11–30, and 13% has 31–97.

The booklet gives the names of the species found in each grid. This will help those wishing to identify a naturally occurring specimen in their locality. They can compare the listed species with those in Mr Chippendale's book 'Eucalyptus Buds and Fruits' (or a similar guide) and make an identification. (However, they must bear in mind that there are more than 20 unnamed taxa for which no maps have been prepared; the system doesn't work for planted trees, either.)

Mr Chippendale encourages interested collectors to prove that a map is wrong. He would welcome specimens from people who can show that a eucalypt grows naturally outside its presently mapped area.

'The Natural Distribution of *Eucalyptus* in Australia.' George M. Chippendale and Ludek Wolf. *Australian National Parks and Wildlife Service, Special Publication* No. 6, 1981.