

SL205

연사 5

The taxonomic and paleobotanical significance of cuticle micromorphology

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The cuticle contains an imprint of all the cells of the epidermis, and the detail of this can be of major taxonomic significance. This therefore allows quite detailed systematic research to be undertaken, with comparison usually proceeding down to the species level. The majority of the macrofossil record of conifers consists of vegetative remains. These can be highly instructive if they include organic preservation. When leaves are organically preserved it is usually possible to retrieve the waxy outer layer of the leaf, the cuticle, for microscopic analysis. Furthermore, the leaf is the energetic powerhouse of the plant, where photosynthesis takes place, and thus it is particularly sensitive to climatic change. The fact that leaves are susceptible to climatic change led to them being under-utilised by taxonomists, but now that effect of climate on leaf structure and morphology is better understood this variation can be used in a positive way to interpret climatic change and plant response (e.g. Hill 1995, Whang and Hill 1995).

This presentation will be including the identification of fossil remains of Cupressaceae from Cenozoic localities in southeastern Australia and northwest Tasmania respectively. Vegetative twigs from Oligocene sediments in Tasmania are assigned to a new fossil species of *Fitzroya*, *F. tasmanensis*. These twigs have leaves in alternate whorls of three, like extant *F. cupressoides*, but differ in leaf shape and stomatal orientation and morphology. This is not the first fossil record of *Fitzroya*, but it is first outside the current broad range of the genus (South America)