cept that the Ennominae are shown to be largely monophyletic (assuming *Alsophila* has been misplaced into its own sub-family) and not paraphyletic as shown by Abraham.

The smaller combined gene analysis largely supports the 28SD2 analysis in that, the Larentiinae are in a basal position within the Geometridae and the Tasmanian Archiearinae are closely related to the Australian Nacophorini. The latter group hold a derived position in the phylogeny. Similarly the Oenochrominae s.str. hold a sister group position to the Geometrinae.

References

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The Foodplant relationships of the Australian Geometridae

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Australian Geometridae have diversified in a unique foodplant landscape, which features unusual plant taxa and extensive monogeneric tree canopies of low nutrient status. Sclerophylly and novel plant toxins are widespread in the flora. In addition, larvae must cope with an unpredictable climate, high fire frequency and large numbers of aggressive ants. However, there are few arboreal noctuids as potential competitors, except in the Queensland wet tropics. *Eucalyptus* (Myrtaceae) dominates the tree flora over much of the continent, while *Acacia* s.l. (Mimosaceae) dominates the extensive semi-arid shrublands.

A molecular phylogeny (28S D2) of a cross section of Australian geometrid genera gives some insight into their patterns of plant use, and indicates a complex pattern of host exploitation, involving apparent diversification within clades on some host genera, as well as some instances of putative host capture by individual taxa.

Myrtaceae, of Gondwanan origin, is the most widely used foodplant family, followed by Mimosaceae. This is not surprising given their vast geographical range across the continent. It is noteworthy that most taxa which feed on *Eucalyptus* do not feed on other Myrtaceae. *Leptospermum* and other myrtaceous shrubs have a distinct geometrid fauna. Interesting associations on other hosts include *Archephanes* on primitive Winteraceae, and *Dirce*, *Acalyphes* and *Corula* on Cupressaceae. Austral Proteaceae are exploited by *Oenochroma* and its allies, while Epacridaceae supports *Poecilasthena*.

Some associations appear to be global. Australian Caberini are associated with Mimosaceae and Rhamnaceae as elsewhere, while austral Macariini occur on Mimosaceae and Sapindaceae. Polyphagy on diverse woody plants is uncommon in Australia but has arisen in a few Boarmiini and the "nacophorine" genera *Chlenias* and *Androchela*.

Some widespread plant families, such as Casuarinaceae and Chenopodiaceae, are inexplicably poor in species of Geometridae, although the unusual monophagous genus *Rhynchopsota* has been reared from *Allocasuarina*.

The re-appearance of extra prolegs in some geometrid clades associated with *Eucalyptus* may be in response to leaf mimicry in an evergreen canopy and the challenge of traction on waxy sclerophyllic leaves.