

STATUS OF THE GERMAR AND LEACH TYPES OF AUSTRALIAN CICADAS (HOMOPTERA) HELD AT THE HOPE ENTOMOLOGICAL COLLECTIONS, OXFORD

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Abstract

There is strong evidence to suggest that syntypes of Australian cicadas described by Germar (1834) exist in the Hope Entomological Collections (University Museum), Oxford: viz. *Cicada melanopygia*, *C. encaustica*, *C. varians*, *C. argentata*, *C. curvicosta*, *C. moerens* and *C. tristigma*. Two specimens from the Haworth collection (pre - 1833), of *Tettigonia marginata* and *T. harrisii* have also been identified, representing contemporary specimens with those described by Leach in 1814. The locations of the Leach types have been previously unknown and evidence suggests that these Hope specimens are the missing types.

Introduction

The exact location and identity of the type specimens of Australian cicadas described by Leach (1814) and Germar (1834) have long been in doubt (e.g. Burns, 1957). Examination of material in the Hope Entomological Collection at the University Museum, Oxford (HEC), during 1980, 1984 and 1988 by the author, have led to the conclusion that types from both authors almost certainly exist in these collections. The identification of these types is of significance with respect to *Pauropsalta encaustica* (Germar), *Pauropsalta melanopygia* (Germar) and *Pauropsalta marginata* (Leach), owing to the need to clarify current taxonomic difficulties regarding these species, based on the author's current revisionary work (Ewart 1989).

The Germar Types

Germar (1834) described nine cicadas from Australia, namely *Cicada melanopygia*, *C. varians*, *C. encaustica*, *C. argentata*, *C. curvicosta*, *C. moerens*, *C. tristigma*, *C. hilaris*, and *C. angularis*. The localities for the first eight of these species are listed as "Australasia (Hope)", the latter indicating material from the Hope Collection, now housed at the Hope Entomological Collections, University Museum, Oxford. The type locality of *C. angularis* was listed as Sierra Leone, apparently incorrectly (e.g. Distant 1906; Burns 1957; Metcalf 1963a) but as there is no indication that this specimen was from the Hope Collection, no further reference is made to this species in this report.

Examination of the Australian material in the HEC has revealed the presence of relatively old specimens of seven of these eight remaining species, the exception being *C. hilaris*, which is in fact not an Australian species (Distant 1906; Burns 1957; Metcalf 1963a), and thus was plausibly separated from the other Australian species in the collections.

William Holland, Assistant in the HEC, rearranged the Cicadidae sometime prior to his retirement in 1913. Many specimens were reset and repinned, and many of the original labels, especially drawer labels, were lost or replaced (I. Lansbury, HEC; pers. comm. January 1982 and December 1984; see also Smith, 1986: 56).

Following are specific details of the seven Australian species described by Germar (1834). The data labels attached to these specimens show how, collectively, they correspond to those described by Germar. Abbreviated locality labels are written in what appears to be oak gall ink.

Cicada melanopygia. Labelled as *Melampsalta melanopygia*. 3 males, all repinned. One specimen has a small white diamond blank label on which only a black spot is marked (Hem. Type No. 791 2/3). A second specimen (Hem. Type No. 791 3/3) has a small white label on which is written 'M.I.' [Melville Island]. The third specimen (Hem. Type No. 791 1/3) has two labels, one a small white label on which 'M.I.' is written; the second is blue with 'melanopyga Germ' (note spelling error) written in pencil, and the genitalia have been dissected. The last specimen is set in old style but shows evidence of an older, rusted pin hole and is the designated lectotype (Ewart 1989).

It is relevant to note here that Melville Island was temporarily settled with a garrison on 26 September 1824 (Clark, 1973: 4-5), which was subsequently relieved, in a dispirited state, in 1827 (Hughes, 1987: 574). These dates precede the date of publication of *C. melanopygia*.

Cicada encaustica. Labelled as *Melampsalta encaustica*. 3 males, all repinned, representing two species. One of these (Hem. Type No. 785 1/3) has two labels; one a white label with 'N.H.' [New Holland] written in ink; the second label gives the following data: 'Melampsalta encaustica Germ. Named in British Museum by W.W. Fowler 1896. Moreton Bay Australia etc. Dist[ribution]. of sp. in B.M.' (partly handwritten, partly printed). This specimen is the designated lectotype (Ewart 1989). The second specimen (Hem. Type No. 785 2/3) has a single white label with 'VDL' [Van Diemens Land] written in ink. The third specimen (not conspecific with previous two specimens) bears a label 'Hem. Type No. 785 3/3' plus a white label 'NH' [New Holland] written in ink.

Cicada varians. Labelled as *Melampsalta varians*. Four specimens of possible relevance, each repinned. Two females, (Hem. Type Nos. 786 2/4 and 786 3/4) with white labels (Hope labels, but not in Hope's handwriting) with 'NH' [New Holland]. One of these has an additional label with symbol '9' (Type No. 3/4). A third specimen, a male, (Hem. Type No. 786 4/4) possesses a white label (Hope label, but again not in Hope's handwriting) with 'NSW'; The fourth specimen, a female, (Hem. Type No. 786 1/4) with blue label with

'varians Germ marginata ♀ Leach' written in pencil but no locality label.

Cicada argentata. Labelled as *Psaltoda moerens* (W.W. Fowler handwriting). One male (Hem. Type No. 789), set upside down and showing signs of resetting. Two labels, one a white label with 'NSW', the second a Fowler label.

Cicada curvicosta. Labelled as *Tympanoterpes curvicosta*. Two males, with short, thick, heavy pins of the old dressmaker type. One specimen (Hem. Type No. 790 2/2) with white label with 'NH' handwritten in ink. The second specimen (Hem. Type No. 790 1/2) with two labels, one white with 'NH'; the second blue with 'curvicosta Germ' written in pencil.

Cicada moerens. Labelled as *Psaltoda moerens*. 3 males, with heavy pins, two with tops removed. One specimen (Hem. Type No. 788 3/3) unset, with blue label with 'moerens Germ' written in pencil. Second specimen (Hem. Type No. 788 2/3) with white label with 'NH' written in ink. Third specimen (Hem. Type No. 788 1/3) with two labels, one pink with 'Kirby' printed (from Kirby collection), the second white with 'MI.NH' (there being some ambiguity regarding both the reading of this label and its implied geographic location).

Cicada tristigma. Labelled as *Abroma tristigma*. One female (Hem. Type No. 787) repinned. Blue label with 'Abroma tristigma Germ' written in ink (possibly handwriting of Stål; I. Lansbury, pers. comm.). The subgenus *Abroma* was proposed by Stål (1866) but the species never has been formally placed in the genus (Metcalf, 1963b: 684).

Notes: Confirmation of exchange of specimens between Hope and Germar is provided by letters in the archives of HEC. For example, the following passage is quoted from a translation of a letter from Germar to F.W. Hope, dated 17 Aug. 1829 (both original and translation in archives): "My next entomological essay will refer to the Cicadariae, but my collection of them is poor in Indian species, and from New Holland I do not possess a single one. I should therefore acknowledge it with much gratitude if you could communicate to me some species of this family, was it even for a temporary loan only." This letter was accompanied by a small parcel of ?Coleoptera specimens. Further evidence of exchange of insect specimens between Germar and F.W. Hope is provided by a letter dated July 21, 1831, from a Mr Hunneman (Hope's Agent) of Queen Street, Soho, to Mr Hope, which includes handling costs for a box of insects and books from Dr Germar (also in HEC archives).

No further Germar types of Australian cicadas have been located in other European museum collections (M.D. Webb, British Museum

(Natural History), pers. comm., Dec. 1984). It is therefore concluded that the specimens discussed above and housed in HEC, represent German syntypes.

The Leach Types

Leach (1814) described two Australian cicadas, *Tettigonia marginata* and *T. harrisii*. During examination of the HEC Australian cicada material, single specimens of both these species were found which bear distinctive Haworth Collection labels (I. Lansbury, pers. comm.) and are thus pre - 1833 (the date of Haworth's death). The labels are white 'Haworth triangles' (in fact with lower corners of triangles cut, giving a pentagonal outline), with points towards abdomen. The male *T. marginata* specimen, (Hem. Type No. 784), which has been reset and repinned at a date unknown, has the following data written in ink on the label: 'marginata L.Z 39. NH'. This is interpreted (I. Lansbury, pers. comm.) as: L = Leach; Z = Zoological Miscellany; 39 = Plate 39; NH = New Holland.

The *T. harrisii* specimen, a female, (Hem. Type No. 783) has an original old pin and is set in old British style, with the label bearing the following data: 'Harrisii LZ. 39.2 NH'. This is interpreted as L = Leach; Z = Zoological Miscellany; 39.2 = page 39, fig. 2; NH = New Holland.

Both label references correspond exactly to the original descriptions and illustrations in Leach (1814). Moreover, Westwood exchanged insects with Haworth in 1823 and when Haworth's collection was sold in 1834, Westwood purchased many specimens, some of which he gave to F.W. Hope; Westwood eventually sold his collections to F.W. Hope in 1857 (Smith, 1986: 25, 37). Thus, there is ample evidence that Haworth's specimens should be found in HEC. It is not known, however, how the specimens described by Leach could have been incorporated into the Haworth collection. In the case of *T. marginata*, a later specimen was described by Walker (1850) under the name of *Cicada themiscura*, subsequently synonymised by Distant (1906); this specimen is held in the British Museum (Natural History). The HEC specimen is the only pre - 1850 specimen of *T. marginata* so far known to exist.

It is concluded that both specimens of *T. marginata* and *T. harrisii* are at least contemporary specimens with those described by Leach (1814) and are eligible for type status.

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