

Finlayson (1935), an overlooked reference on the biology and distribution of the Australian cicada, *Thopha colorata* Distant, 1907 (Homoptera: Cicadidae)

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Abstract: The anthropologically well-known book entitled *The Red Centre* by H.H. Finlayson was first published in 1935 and recent study of this book by the present author has revealed a previously overlooked account of the biology of the cicada, *Thopha colorata* Distant, 1907 (Homoptera: Cicadidae), a species which is restricted to central and western Australia. The data are repeated here verbatim and the information discussed.

Introduction

The anthropologically well-known book entitled *The Red Centre* by H.H. Finlayson was first published in 1935 with several later editions and additional printings, eg. 1936, 1943, 1945, 1952 etc. In my collection of Australian natural history books I have two of these editions. Recently I have had some time to read this book and I noted that Finlayson provided an eyewitness account of an emergence by the arid-adapted cicada *Thopha colorata* Distant, 1907 in the Musgrave Ranges during December 1933. The data provided by Finlayson does not appear to have been referred previously to by entomologists.

In recent years I have been concerned about the loss of significant and noteworthy historical biological data, and have written several papers discussing these forgotten but usually very noteworthy researches, e.g. Hawkeswood (1991, 2003, 2005, 2007a,b,c) and Hawkeswood & Turner (2003), so that future workers will now have these data available [also from my website, www.calodema.com]. Finlayson (1935 and subsequent editions) provided interesting biological data and a distribution record for *Thopha colorata* which are repeated and discussed below. This reference was not cited by Moulds (1990) in his popular monograph of the Australian Cicadidae. The information included in Finlayson (1935) for the species conforms some information provided in Moulds (1990)(see discussion below).

Description of emergence of *Thopha colorata* Distant, 1907

Finlayson (1935, 1936, 1953 etc) writes, near the start of Chapter 5:

“Heavy rains stimulate other forms of insect life less chastening to man (sic). In the Musgraves (sic) in December 1933, after a series of falls (sic) which ran the Ferdinand Creek, there was witnessed one of the most fascinating of entomological spectacles - the swarming and metamorphosis of a cicada on a grand scale.

The species involved was *Thopha colorata*, which in the familiar adult condition is seldom seen in large numbers in this part of the country. In the larval form it dwells underground in deep burrows of its own making, where it lives by sucking the sap from tree-roots. The period of its larval life is uncertain and perhaps variable; it must sometimes extend to many years,* [*An American species is known to have a larval period of

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seventeen years] for although the blacks (sic) have a name for the creature, few of the younger men in the Musgraves (sic) had ever seen the winged insect. The larva is a rather forbidding looking, more or less beetle-like creature about three-quarters of an inch long [18-20 mm, TJH] and of a dull brown colour. When it feels the urge to enter upon its new life it crawls briskly out of its burrow and ascends the nearest gum-trunk to a height of about four or five feet [approx. 1.5 metres, TJH]. Here it selects a favourable spot, anchors itself firmly to the bark by means of its powerfully hooked forelegs and then becomes perfectly immobile - and as far as its larval life is concerned, "dies". Within a few minutes of its "death", however, its horny case splits open down the back and the adult form of the creature slowly emerges, becoming quite free in about half an hour, and ranges itself alongside the empty case.

The newly emerged insect is an exquisite thing of very pale smoke-grey, with large transparent wings delicately patterned in green. It is an inch and a half long [approx. 3.8 cm, TJH], with a wing span of four inches [approx. 5.0 cm, TJH], and a more astonishing contrast to the ugly gnome-like larva, it would be difficult to conceive. It remains quite stationary on the bark, while the wings slowly unfold and harden, and at the same time it begins to change colour, till (sic) at the end of an hour, it is a rich red-brown with splashes of scarlet on the sides and jet-black crescentic markings on the thorax. With wings now hard and serviceable, the cicada launches itself on its first flight which takes it no farther than the top of the nearest and most suitable gum-tree.

Here, in the fierce sunlight of the upper world, the males begin their terrific song; a song which has induced modern Americans to bestow upon them the elegant name, "screech bugs", and which inspired a Greek of old to a cynical couplet which has been quoted by most writers on the cicada in the form:

"Happy the cicadas' lives,
For they will have voiceless wives!"

How many millions were singing in the trees I will not venture to guess, but the numbers involved in the transformations were enormous; not only the trunks of the creek gums, but much of the smaller vegetation as well, was smothered with larvae and their empty cases. The noise was tremendous and all-pervading. When it ceased for a moment, the relief was like the lifting of a burden. It went on day and night for a week or more, with occasional brief intermissions as though some warning signal had spread throughout the multitude. The noise is somewhat suggestive of the "revving" of an electric motor, and has the same short-pulsing quality; imitated by the Luritja name for cicada - tcheereeree.

The life-span of the adult insect is not accurately known, but apparently it is limited to a few days, during which the female lays some hundred (sic) of eggs, in crevices of the bark. From the eggs small larvae subsequently hatch, and these crawl down the trees and burrow into the soil to wax great by sap sucking, and prepare themselves for the call which, years hence it may be, will take them to the tree-tops."

Discussion

It is evident that Finlayson (1935) provided some interesting data on *T. colorata*, viz. locality and temporal data, a record of mass emergence and behaviour on host trees and other plants, as well as aboriginal knowledge about the creature, or lack thereof. Moulds (1990) recorded locality data, behaviour and a host tree species for the cicada but failed to acknowledge Finlayson's (1935) records. Moulds noted that (a) the distribution of the species included the Musgrave Ranges, (b) the adults occur from early October to February, (c) the host tree is *Eucalyptus camaldulensis* (Myrtaceae), (d) nymphs feed on the roots of the adult host tree, and (e) mass emergences are common and usually occur after good spring or summer rain. [It

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is therefore interesting to note, in contrast, that Finlayson (1935) stated that the adults of *T. colorata* were rarely observed in that area of the country and that the aboriginals were unfamiliar with the insect]. Moulds (1990) also noted that he had observed some nymphs emerging on grass stalks, shrubs and even fallen logs; however Finlayson (1935) had also recorded nymphs smothering “smaller vegetation”. As with the case of Metcalfe (1895) (see Hawkeswood, 2007b), the cicada book of Moulds (1990) would have been enhanced if this reference on *T. colorata* and the enclosed data had have been included. Some of the data recorded in Moulds (1990) and appearing to be original, was apparently first observed by Finlayson (1935).

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