

Observations on Lymexylonidae in Indonesia and Malaya

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The *Lymexylonidae* constitute a family of small size, represented in various regions by few species, all living on wood and known for their morphological and ethological peculiarities. In Indonesia, including the former West New Guinea, some 6 species occur, two of which are found in Java, viz. *Atractocerus emarginatus* Cast. and *Melittoma javanicum* Chev. The former, which has the elytra reduced to short flaps and wings spread fan-like, is the more common; it has a wide distribution in the East and has had some occasional attention of local biologists. The latter has narrowed elytra which leave part of the much elongated abdomen exposed.

Notes from the literature. KONINGSBERGER in his zoological survey of Java (1915) mentions the *Atractocerus* beetles as a peculiar form of the forest fauna of the plains and hills up to 2500'. The beetles have a nocturnal flight and while on the wing draw the attention by a strong rustling sound ('geraas'), the much elongated abdomen hanging down rather limply. A newly caught female deposited numerous spindle-like eggs between sheets of filter paper at the bottom of a container during the first night. The newly hatched larvae bored into a piece of dry wood, but succumbed when they had only penetrated half-way.

KARNY (1922) brought home a dozen beetles of *A. emarginatus* taken at lamp-light during his collecting trip in the company of H. C. SIEBERS in December 1921 to the forest-surrounded rubber plantation Wai Lima, in the neighbourhood of Telokbetong, Lampong Districts, S. Sumatra. No beetles were found in the catches taken in higher situated jungle forests. KARNY paid special attention to the wide differentiation in size of the specimens, which is also observed in other Lymexylonidae. His catch could be divided into 4 groups of 18—20, 26—28, 31—35, and 38—45 mm respectively. The larger specimens appeared a week later than the smaller ones. They were all female beetles. The size of the eggs varied a little according to the size of the beetles, and ranged from 2.2—2.6 mm. KARNY suggested that these differences in size are due to a dissimilar number of larval moults.

In Wai Lima a single specimen of 10 mm was captured on the wing in the tent during day time; KARNY described it as *A. siebersi* n. sp.

The forest superintendent F. STEUP relates (*De Tropische Natuur*, 1930) how he was startled by the strong rustling noise of a large wasp-like insect which had entered his night quarters at the foot of the Klabat volcano, near Menado in N.E. Celebes. It appeared to be a female *Atractocerus* which immediately after being caught and held on a table top, began dropping white, 2 mm long eggs, the abdomen swinging to and fro apparently in search of a crack to introduce them into.

FULMEK (1930) in N.E. Sumatra captured female beetles of *Atractocerus* which also appeared to be in need of oviposition and glued their white glossy eggs on a

substratum. The duration of the egg-stage on a piece of a *Hevea* (rubber) trunk of 23 cm in diameter was nine days. In the same piece of wood he later found fullgrown larvae in galleries of 5 mm bore. A single beetle emerged in the month of February. FULMEK gave elaborate descriptions of the eggs, the egg-larva, the fullgrown larva and the pupa and illustrated them with accurate drawings.

BEESON in his handbook on the Forest Insects of India (1941) published several important particulars concerning oriental Lymexylonidae. The main breeding places are dying, top-broken trees or logs that remain green and sappy for long periods. The larvae move forwards and backwards in the galleries, they feed on sap and mould, the wood-dust being ejected. The beetles may assemble in swarms at dusk. The life-cycle is annual. Five species are listed, *Atractocerus emarginatus* again being the most common and best known. Its galleries lie in a plane at right angles to the axis of the log; they are curved or sinuous and run to the centre or to the opposite side of the log. Five host timbers are enumerated, which belong to the Moraceae, Anacardiaceae and Dipterocarpaceae.

In Malaya young Lymexylonid larvae have been found by K. D. MENON (1954) in logs of *Dryobalanops aromatica*, a camphor wood belonging to the Dipterocarpaceae, showing "needle worm" infestation. Timber with traces of heart rot was particularly affected. The galleries had a diameter of 3—4 mm. Small globules of very wed wood-dust were ejected. The tunnels were crowded in certain parts of the log.

Observations not published before. In July 1924 a borer-infested portion of a rubber trunk (*Hevea brasiliensis*, fam. Euphorbiaceae) was received at Bogor; it originated from an estate in C. Java (Tretes, Walikoekoen). Between 7 Aug. and 13 Sept. eight beetles emerged from the wood which had been kept in a zinc box.

In October 1924 typical crowded holes of a Lymexylonid were observed by me in the sides of a large, rotting log of a *Ficus* sp. (fam. Moraceae) in a forest plantation started on former jungle soil at Gadungan, Kediri, E. Java.

In May 1938 nine beetles were bred from a portion of a dead 'ingas' trunk (probably *Semecarpus heterophylla*, fam. Anacardiaceae) which had been found in the teak forest near the field station of Gedangan, Telawa in C. Java, and put in a cage some 3 weeks earlier. After these beetles as well as those from *Hevea* had been mounted and dried they measured from 24 to 26 mm, which coincides with KARNY's size-group 2.

These observations show that the insect is not bound to wet areas but also inhabits teak and rubber plantations in areas with a pronounced dry season from May to October. They further confirm the observations made in India, that dead and rotting timber of various botanical affinities may serve as breeding medium.

The well-known collector of Coleoptera F. C. DRESCHER told me in 1934, that he had seen *Atractocerus* beetles swarming in the neighbourhood of free hanging wasps' nests, the wasps manifesting great excitement. The same phenomenon was confirmed by other observers.

Melittomma javanicum appears to be less frequent than *Atractocerus*. I have seen specimens in the collection of Mr. DRESCHER at the time in Bandung, Java.

References

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Boursin, Ch., Die „Noctuidae“-Arten (*Agrotinae* vulgo sensu) aus Dr. h.c. H. HÖNE's China-Ausbeuten (Beitrag zur Fauna Sinica). Forschungsbericht Nr. 1170 des Landes Nordrhein-Westfalen. 105 pagina's, 22 platen, kaart. Westdeutscher Verlag, Köln und Opladen, 1963. Prijs D.M. 62,60.

In deze publicatie behandelt de auteur de soorten behorende tot bovengenoemde onderfamilie van de Noctuidae, die door de bekende Duitse verzamelaar Dr. H. HÖNE tijdens zijn verblijf in China verzameld werden en die zich thans in de collectie van het Museum Alexander König te Bonn bevinden. De bestudering van het materiaal heeft verscheidene jaren in beslag genomen, doordat niet alleen van alle verzamelde soorten, maar ook van tal van vroeger beschreven species, verspreid over diverse musea, genitaalpreparaten vervaardigd moesten worden.

Dat de behandeling van de Noctuidae in „SEITZ“ door WARREN, voor zijn tijd zeer modern, op vele punten onjuist bleek te zijn, is niet zo verwonderlijk, daar omstreeks 1910 immers nauwelijks aandacht aan de bouw van het genitaalapparaat werd besteed. Maar ook de bewerking in het supplement op dit werk door CORTI en DRAUDT bleek tal van onjuistheden te bevatten. Ter illustratie hiervan zij slechts vermeld, dat de soorten, die in dit supplement in het geslacht *Rhyacia* zijn opgenomen, tot 19 verschillende genera bleken te behoren!

Het resultaat van BOURSIN's studie is tenslotte een geheel nieuwe systematiek voor de onderfamilie geworden. Het is vooral hierom, dat bestudering van de publicatie ook van belang is voor hen, die zich niet speciaal interesseren voor de fauna van China, maar die wel belangstelling hebben voor de nieuwste inzichten in de systematische indeling van de Lepidoptera.

De meeste van de 27 nieuw beschreven soorten behoren tot het geslacht *Amathes*, dat dan ook het grootste deel van de publicatie vult (p. 13—65). Aan het slot van het werk geeft de auteur een lijst van de palaeartische genera, behorende tot de Noctuidae, volgens het door hem ontworpen nieuwe systeem (dat ook volledig is toegepast in supplement IX van Cat. Ned. Macrolep.). De platen I—VI geven 133 fotografische afbeeldingen van vlinders, terwijl op de platen VII—XXII 96 foto's van genitaliën zijn afgebeeld. Vooral deze laatste zijn voortreffelijk, mooi scherp. — LPK.

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W. J. KABOS, Secretaris.