

Some remarks on »The generic names of the British Neuroptera».

By

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With 1 figure in the text.

In the series »The generic names of British Insects, prepared by the Committee on Generic Nomenclature of the Royal Entomological Society of London» there appeared in 1937 the fourth report, dealing with the order Neuroptera. Annexed to this report we find a »Second report of the sub-committee on the Neuropteroid Groups», and this latter report has further as annex a paper by Mr. Fredk J. Killington, entitled »The generic names of the British Neuroptera». In the report of the sub-committee on the Neuropteroid Groups there is also included a check list of the British Neuroptera.

The nomenclature brought forward agrees wholly with that used by Killington in his admirable Monograph of the British Neuroptera (Ray Society, 1936, 1937). Some of the adopted genera seem to me to be somewhat obscure, and some less necessary alterations of hitherto used genus- and species-names have been brought forward. Furthermore, the sense of the order Neuroptera seems to me to be too restricted. I think therefore that it should not be superfluous to discuss certain points of the nomenclature.

The order **Neuroptera**.

The existing arrangements of the Neuropterous families show the tendency towards a division of the old order into three sub-orders, the *Sialoidea*, the *Raphidioidea*, and the *Planipennia*. Certain authors have dealt with these suborders as different orders, and other authors have dealt with the orders *Megaloptera* (*Sialoidea* and *Raphidioidea*) and *Neuroptera* (*Planipennia*). The order *Neuroptera* in the sense of Killington comprises only the suborder *Planipennia*. The families *Sialidae* and *Raphididae* have accordingly not been dealt with in the mentioned papers. Dr. Holger

Klingstedt has recently (Nature, Vol. 139, pp. 468—470, 1937) stated — from cytological evidence — that *Raphidioidea* may be even closer to *Planipennia* than to *Sialoidea* and that the distinction between *Megaloptera* and true *Neuroptera* therefore is unsound. I think he is doubtless right. I have found it impossible to trace so important differences between the suborders in question as to justify their separation as orders. The limits are indeed very vague. I have recently tried to state (Opuscula Ent., 1937, pp. 138—148) that the *Dilaridae*, which were considered as true *Planipennia*, on account of the female genital structures have to be removed to the *Raphidioidea*. The female genitalia of the *Osmylidae* (*Planipennia*) show also some very striking similarities with those of the *Sialidae* (*Sialoidea*). The *Dilaridae* seems to represent an intergrading family between the *Planipennia* and the *Raphidioidea*. The *Osmylidae* seems to form a similar link between the *Planipennia* and the *Sialoidea*. I consider therefore that the *Sialoidea*, the *Raphidioidea*, and the *Planipennia* have to be regarded as suborders of the order *Neuroptera*. The list of the generic names of British Neuroptera is thus incomplete, dealing only with the suborder of *Planipennia*.

***Semidalis aleyrodiformis* (Stephens, 1836).**

The species-name was originally spelled in the above manner, perhaps owing to a typographical error. The name is derived from the Greek *ἄλευρον* (= powder) which has to be spelled *aleuron*. Later authors have also altered the spelling into the correct *aleurodiformis*. I consider that an orthographical error should not be readopted, and that the species has to be cited: *Semidalis aleyrodiformis*. (The Greek *aleuron* is also met with in the genus-name *Aleuropteryx*, correctly spelled in the list.)

***Parasemidalis annae* Enderlein, 1905.**

The species was already in 1929 by Esben-Petersen (Danmarks Fauna, 33. Netvinger og Skorpionfluer) degraded to synonymy of *P. fuscipennis* Reut. *P. fuscipennis* was described from Finland in 1894 and has been found in Courland and Sweden. *P. annae* was described from Germany and has been recorded from England. I have examined material from Courland and Sweden. The genital structures of this material agree perfectly with the figures given by Withycombe and Killington of British specimens. Though I have not been able to compare the types I feel sure that Esben-Petersen is right and that the species has to be dealt with as *Parasemidalis fuscipennis* Reut.

Aleuropteryx Löw, 1885.

Killington considers it extremely doubtful whether Enderlein's division of *Aleuropteryx* Löw was necessary. He regards the genus *Helicoconis* End. as synonymous with *Aleuropteryx*. Perhaps he is right. I think, however, that the matter can be settled for good only after thorough examinations and comparisons of the genital structures of representatives of Löw's and Enderlein's genera. The type of *Aleuropteryx*, *A. loewi* Klap., is a scarce species, which I have not yet been able to examine. Enderlein has, however, given figures of the ♀ genitalia. If these figures are adequate, there are apparently great and surely sufficient generic differences between *A. loewi* Klap. and the type of *Helicoconis* End., *H. lutea* Wall., which latter species I have examined. The gonapophyses laterales (gonocoxites) of *A. loewi* are by Enderlein figured as narrow, hairless structures, while in *H. lutea* I have found large, rounded, hairy structures, much more similar to those of *Coniopteryx*. The last abdominal segments of *A. loewi* seem to be to great extent fused, which is not the case in *H. lutea* where they are distinctly separated. Enderlein has further stated that there is no pair of eversible sacs («Ventralsäckchen») on the 7th segment of *A. loewi*. In *H. lutea* I have found a distinct — but smaller — pair of such structures also on the 7th segment. The peculiar Coniopterygid *Fontenella maroccana* Carp. & Lest. (Receuil de l'Inst. Zool. Torley-Rousseau, I, 1927, pp. 153—172) which shows many abdominal characteristics common with *Helicoconis*, carries also rudimentary eversible sacs on the 7th segment.

In consequence of the mentioned differences between the female genitalia of *A. loewi* as figured by Enderlein, and those of *H. lutea* known to me from Swedish material, I find it advisable to deal with the British species — for the present — as *Helicoconis lutea* Wall. The genus *Aleuropteryx* Löw (sens. Enderlein) has no known representatives in Great Britain.

Eumicromus Nakahara, 1915.

Killington has transferred the two well-known species *angulatus* Steph. and *paganus* L. to the above genus but has retained *variegatus* F. in *Micromus* Ramb. The two genera are separated only by the following venational characteristics. Rs in *Micromus* 3-parted, in *Eumicromus* 4—5-parted. M_{3+4} in the hindwing of *Micromus* fused with Cu_1 , except at the base, in *Eumicromus* not fused with Cu_1 . The wings of *Micromus* are described as narrow and elongate, while broadly oval in *Eumicromus*. These differences might perhaps

be used for the separation of species-groups but they cannot — in my opinion — be regarded as generic distinctions. The shape of the genitalia show also distinctly that the three species in question are to be regarded as congeneric. Killington has also in his description of *E. angulatus* stated that the anal segments of the female closely resemble those of *M. variegatus*. I consider therefore that the species *angulatus* Steph. and *paganus* L. have to be ranged in the genus *Micromus* Ramb.

I have not examined the genotype of *Eumicromus* Nak. (*M. numerosus* Nav.). It is, to judge from the description, very likely also a *Micromus*. If so the genus *Eumicromus* has to be dealt with as synonymous with *Micromus*.

Hemerobius humulinus Linnaeus, 1758.

The name *Hemerobius humuli* L. (Faun. Suec. 1761) has been used by all neuropterologists since 1761, until Killington in 1931 (The Entomologist, 64, 112) discovered that Linné himself originally described the species under the name *humulinus*. The two names have exactly the same sense. I do not know why Linné made this change but I suppose that he found the shorter name more preferable than the longer. I cannot find it necessary to follow the law of priority in this case, which would entail the abandonment of a name familiarized by usage during 170 years. I hope that the neuropterologists will follow Linné and continue to deal with the species as *Hemerobius humuli* L. (I regret much that I have once — in a brief list of some Norwegian species — inadvicely used the name *humulinus*). The name *Hemerobius humuli* L. must be considered as a »*nomen conservandum*».

Kimminsia Killington, 1937.

Killington has observed that Banks for the first time, in 1904, used the name *Boriomyia* (without description) in connection with the species *Hem. fidelis* Banks and *H. speciosus* Banks. Though Banks himself in 1906 — when describing the genus *Boriomyia* — cited *H. disjunctus* Banks as the genotype, Killington has now designated *H. fidelis* Banks as the genotype, stating that Banks was incorrect in 1906, when he designated *H. disjunctus* as genotype. The International Rules of Nomenclature were claimed. Banks has in 1930 raised a new subgenus, *Allotomyia*, for *fidelis* and *speciosus*, and has subsequently dealt with *Allotomyia* as a good genus. Killington has accordingly placed *Allotomyia* as a synonym of *Boriomyia* (*sens.* Kill.) (genotype: *H. fidelis* Banks) and has raised the new genus *Kimminsia* for other species, which hitherto

generally were dealt with as *Boriomyia* (*mortoni* Mc Lachl., *rava* With., *baltica* Tjed., *betulina* Ström, and *subnebulosa* Steph.). As genotype he has designated *H. betulinus* Ström (*nervosus* F.). Killington examined one ♀ specimen of *Boriomyia fidelis* Banks.

The generic differences between *Boriomyia* Banks (*sens.* Kill.) and *Kimminsia* Kill. are — according to Killington — confined to the wing-venation. In *Boriomyia* there is but one branch from Cu, between the lowest cross-vein of the inner gradate series and the basal cross-vein connecting M and Cu,. In *Kimminsia* there are several such branches. Some other venational differences are described but the just mentioned characteristic, already used by Banks, is apparently the fundamental difference between the genera. Killington states that this difference is very important. Perhaps he is right. The wing-venation is, however, in this order very variable, and there exist of course a number of more obvious differences between all true genera. The ♂ and ♀ genital structures offer — as far as I am hitherto aware — always very distinct differences for separation of the genera. I have examined my *Boriomyia* (*Kimminsia*) specimens with regard to the number of branches from Cu, between the lowest cross-vein of the inner gradate series and the basal cross-vein connecting M and Cu,, and I have found that the number varies at least from 3 to 6. Unfortunately I have not seen the species *fidelis* and *speciosus*. It is possible that the genera *Boriomyia* (*s.* Kill.) and *Kimminsia* are distinct, but I consider that a thorough examination of the genitalia is necessary to settle the matter. Until a such comparison has been made, I find it therefore advisable to deal with the British species, which by Killington were transferred to *Kimminsia*, as species of *Boriomyia* Banks. Banks has given a figure of the ♂ genitalia of *B. fidelis* (genotype of *Boriomyia s.* Kill.). It is a side-view figure which only shows the shape of the superior appendages. These are apparently of the same general shape as those of *B. nervosa* F. (genotype of *Kimminsia* Kill.), but more slender and apically less curved.

Kimminsia betulina (Ström, 1788).

Ström's description and figures of *Hemerobius betulinus* in his paper of 1788 has effected contrasts in recent literature. Schøyen considered with doubt the species to be *H. subnebulosus* Steph. Esben-Petersen and Killington have stated that it is the same as *H. nervosus* F. Morton has expressed a decided opinion that it is quite impossible to identify *betulinus* with certainty from the description and figures only. As no types exist and the figures of the wing and the larva are very vague, I think we have better

to follow Morton and retain the name *nervosus* of Fabricius, which is one of the most well-known names in the order and which has been used between 1793 and 1925 by all neuropterologists. The name must be considered as a »nomen conservandum», and I hope that the neuropterologists will continue to deal with the species in question as *Boriomyia nervosa* Fabr.

Wesmaelius Krüger, 1922.

The genus *Wesmaelius* was established for *Boriomyia concinna* Steph. and *B. quadrifasciata* Reut. It was based solely on venational characteristics and has not been accepted by later authors, until Killington in 1937 adopted it. He remarks that structural differences between *Boriomyia* (*Kimminsia*) and *Wesmaelius* also exist in the ♂ and ♀ genital structures and in the egg and the larval stages. The micropylar projection of the egg of *Boriomyia* is described as a small, flattened knob or disc; in *Wesmaelius* large, rounded, and conspicuous. The larva of *Boriomyia* is described as having the jaws slightly shorter than the head and the antennae longer than the head, while the larva of *Wesmaelius* has the jaws approximately as long as the head and the antennae only a little longer than the jaws. So far as I can judge, these distinctions are of less importance as generic characteristics. In the genitalia there are some differences. The gonocoxites of the ♀ are triangularly rounded in *Boriomyia*, while they are elongate and upturned in *Wesmaelius*. These are the only important differences in the ♀ genitalia, and they suggest a division into species-groups. I think the difference is too small to allow a generic division. The following principal differences are present in the ♂ genitalia. The superior appendages of *Boriomyia* (the British species) have the basal portion band-like and the apex produced and bearing one or two rows of small but strong teeth, while in *Wesmaelius* the appendages appear triangular with a projection from the inner surface of the lower margin, armed with a row of small but strong teeth. This difference appears to be very important but if the appendages are viewed from the inside, they show a very great similarity in general appearance. The rows of teeth indicate immediately the apex of the appendage. The appendage has thus in *Wesmaelius* been bent in such a manner, that the apex appears as a projection from the lower margin. I illustrate this fact with figures of *Boriomyia nervosa* F. (Fig. 1 A), *B. enontekiensis* Klingst. (Fig. 1 B), and *B. (Wesmaelius) concinna* Steph. (Fig. 1 C). The interesting species *B. enontekiensis* seems to form an intergrading species between the *nervosa*-group and the *concinna*-group. Its appendages may scarcely be described as band-like, but are more triangular in shape.

Also the well-developed and very long inferior appendages of *B. enontekiensis* confirm this supposition. They are in shape much closer to those of the *concinna*-group (*Wesmaelius*) than to those of the *nervosa*-group. I have not been able to trace any more differences of importance between *Boriomyia* (sensu Krüger) and *Wesmaelius* Krüger than those just mentioned, and I cannot find them to be of sufficient value for a division of the genus into two genera. The presence of an intergrading species, *B. enontekiensis* Klingst. emphasizes also the necessity of retaining the *concinna*-group in the genus *Boriomyia* Banks.

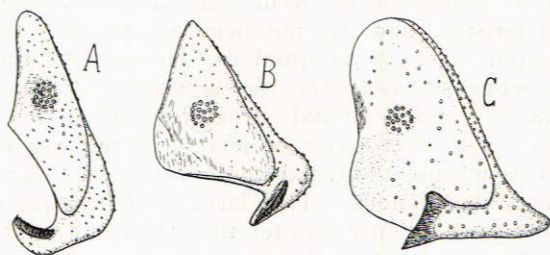


Fig. 1. Superior appendage, inside, of: A. *Boriomyia nervosa* F. ♂, B. *Boriomyia enontekiensis* Klingst. ♂, and C. *Boriomyia concinna* Steph. ♂.

Drepanopteryx Leach, 1815.

The name was originally spelled in the above manner, perhaps owing to a misprint. It is derivated from *Drepana* (a moth) and the Greek *pteron* (= a wing) and should consequently be spelled *Drepanopteryx*. Most authors have also used the latter spelling but Killington has readopted the original form. I prefer to use the correct name *Drepanopteryx*.

Nathanica Navás, 1913.

Mac Lachlan described in his Monograph of the British Neuroptera-Planipennia (1868) the new genus *Nothochrysa* for the reception of the two British species *fulviceps*, Steph. and *capitata* Fabr., which he re-described. He omitted to specify a genotype and, unfortunately, he enumerated some exotic species which should also be placed in the new genus. Navás has in 1913 described the new genus *Nathanica* (genotype: *Hemerobius capitatus* Fabr.) for the reception of the mentioned two British species, stating that *Nothochrysa* Mc Lachl. should be used for the other species, enumerated by Mac Lachlan. I find his action less correct, as Mac Lachlan undoubtedly raised his genus at first hand for the

described British species and in a monograph of the British Neuroptera. The other species were only mentioned cursorily. I am not sure that the division of *Nothochrysa* was at all necessary but — for the present — I am not able to take up a position in reference to this question. I note, however, that — as far as I am aware — no neuropterologists have used Navás's name *Nathanica*, until Mr. Killington adopted it. As no genotype of *Nothochrysa* Mc Lachl. seems to have hitherto been specified, I feel justified in designating *Chrysopa fulviceps* Steph. as the genotype of *Nothochrysa* Mc Lachl. (1868). Through this action I hope to have re-established the original sense of the genus. The name *Nathanica* has to be considered as a synonym of *Nothochrysa*.