

dict. Penis Abb. 12. Länge: 10—15 mm, Breite (hum.) 2,5—3,0 mm. Fort de Kock. 1 ♂, 2 ♀♀. Typen im Besitz des Sammlers (♀) und in meinem Besitz (♂).

Von den verwandtschaftlich nächsten Arten durch den hellen Prothorax, das ebenso gefärbte Schildchen und den nicht verdunkelten Deckengrund verschieden. Von *dissentaneus* trennt auch die Form des Penis, die *Jacobsoni* recht ähnlich sieht.

*Xylobanus fumigatus* C. O. Wtrh. Fort de Kock, 1 ♀.

*Xylobanus fenestratus* Pic. Fort de Kock, 1 ♂. Das vorliegende Tier ist mit Exemplaren Pics verglichen worden. Der Penisvergleich fiel positiv aus. Auf den ersten Blick glaubt man eine andere Art vor sich zu haben, weil die hellen Körperpartien, die bei Pic's Tieren bräunlichgelb waren, hier eine schöne zinnoberrote Farbe zeigten. Da aber alle morphologischen Merkmale übereinstimmen kann nur *fenestratus* in Frage kommen. Es ist überhaupt auffällig, daß alle von Jacobson gesammelten Lyciden viel intensiver gefärbt sind als solche aus der Ebene. Es scheint das mit zunehmender Höhe auch die Farben feuriger werden.

*Metriorrhynchus vagans* C. O. Wtrh. Fort de Kock, 1 ♀.

*Metanoeus dispar* C. O. Wtrh. Fort de Kock, 1 ♂, ♀. Die Individuen unterscheiden sich von denen aus Malakka und Borneo nicht; die Art ist weit verbreitet.

## Fauna sumatrensis.

(Beitrag Nr. 14).

### Neuroptera & Megaloptera.

By P. Esben-Petersen, Silkeborg.

(Mit 1 Fig. im Text).

### 1. Neuroptera.

The interesting lot of Neuroptera collected during 1921—22 by Mr. Edward Jacobson at Fort de Kock, Sumatra, 920 m, contains especially some fine series of *Chrysopidae*. Mr. Edw. Jacobson is very interested in this family, and he has sent me colour descriptions after living specimens of several species together with notes concerning their habits. I take the liberty to put his descriptions of the new and undescribed species after those, given by me from the dried specimens. It will then be evident that the use of the colours as specific characters in the descriptions of the *Chrysopidae* easily may be able to cause great mistakes, and I am sure that a large lot of species of the *Chrysopidae* are standing in our lists as synonyms only, due to descriptions based mainly upon divergent characters as to the colour. I should like to cite a few lines of Mr. Edw. Jacobson's observations with re-

gard to that question: "It strikes me how much importance, in their specific determinations, some authors have given to the colouring of the specimens. Now, there are few insects in which colour is so apt to fade or to change after death as in *Planipennia* (Neuroptera). My opinion therefore is, that very little importance should be given to the colours of preserved specimens of *Chrysopidae*. Many species are described as being yellow, but in reality they are green, and have only turned yellow by fading. In looking through my material you will see, that the same species is sometimes green, yellow or brown. The difference has often been caused by the chemicals in which the insects have been killed, or whether they have been dried quickly or slowly. So I have perceived that in using Acetas aethylicus, green specimens at once turn yellow, and afterwards brown. I therefore now use only chloroform for *Planipennia*. Some authors have also used other doubtful distinctions. — So, as a distinctive character of some of their new species, they mention that the wings were iridescent. But this is in fact the case with nearly all *Chrysopidae* if viewed in the right light. If on the other hand the wings come in contact with chloroform, ether or some other chemicals, the iridescence disappears and the wings become cloudy."

The types of the new species, described below, will be deposited at the Natural History Museum at Leyden.

*Myrmeleon celebensis* Mac Lachlan, Tijdschr. Entom., XVIII, pag. 5, pl. I, fig. 8 (1875). — Celebes. — 7 specimens, Fort de Kock, 920 m.

I cannot follow v. d. Weele in regarding *Myrmeleon solers* Walker (China) and *M. celebensis* M'Lachl. as synonyms of *M. acer* Walker (New Holland). I have at hand excellent photos of Walker's type specimens of *solers* and *acer*, and I possess much material of *solers* from China and Formosa. Although the three species are closely allied, good characters for discrimination are found in the venation and form of wings.

1. In the forewing the area between *Cu 1a* and posterior Banksian line broad, and containing at least three rows of cells in its apical half part. Posterior Banksian line in both pairs of wings rather inconspicuous. Apex of wings pointed. *M. solers* Walker (China). — The area narrow, and containing only one or two rows of cells. Posterior Banksian line conspicuous. Wings more rounded at apex.
2. The area between *Cu 1a* and posterior Banksian line in its basal half part with one row of cells, its apical half part with two regular rows of cells. *M. acer* Walker (Australia). — The area with one row of cells; in its apical half part the crossveins are very irregularly placed, and there is sometimes a tendency to forming still a row of irregular cells.

*M. celebensis* Mac Lachl. (Malayan Archipelago).

*Micromus pusillus* Gerstaecker, Mitt. naturw. Ver. Neu Vorpom. u. Rügen, pag. 171 (1893). — Java. — 16 specimens were present from Fort de Kock.

This small species seems to have a wide range in the Malayan Archipelago.

*Micromus morosus* Gerstaecker, Mitt. naturw. Ver. Neu Vorpom. u. Rügen, 170 (1893). — Java.

Of this very interesting species, which seems to be very scarce, one specimen from Fort de Kock was present.

*Micromus igrotus* Banks., Bull. Mus. Comp. Zool. Cambr. Mass., pag. 335 (1920). — Philippines. — 2 specimens were present.

*Notiobiella affinis* Banks, Trans. Am. Ent. Soc., 219 (1913). — Philippines. — 2 specimens present.

*Nothochrysa ferruginea* Mac Lachlan, Ent. Monthl. Mag., 26 (1869). — Borneo. — 1 ♀ Fort de Kock, August 1921.

So far as I know, this species is not before found, outside Borneo.

*Ancylopteryx trimaculata* Girard, Ann. Soc. Ent. Fr. pag. 163, pl. V, fig. 1 (1853). — Sumatra. — 11 specimens were present. When I take up Girard's name, although it is placed amongst the synonyms of *Anc. octopunctata* Fabr. (v. d. Weele, Notes Leyden Mus., vol. XXXI, 57 [1909]), it is due to the fact that the specimens from Fort de Kock exactly agree with the description given by Girard. I have not seen material of *Anc. 8-punctata* from Cochin-China, and until then I should like to keep Girard's name. In the most specimens a black dot is found about the middle of fore and intermediate tibiae anteriorly.

*Ancylopteryx polygramma* Gerstaecker, Mitt. naturw. Verein Neu Vorp. u. Rügen, 161 (1893). — Java; *Anc. nervosa* Navas, Ann. Soc. sc. Brux. 293, fig. 1 (1914). — Borneo. — 4 specimens present.

I have seen Gerstaecker's type-specimen, and the specimens from Fort de Kock exactly agree with it. The description of *nervosa* is made from an immature specimen.

*Sencera scioneura* Navas, Publ. Acad. de Ciencias de Zarag., 27, fig. 4 (1924). Bismarck Archipelago. — 2 ♂, Fort de Kock, 920 m. October 1920 and June 1921.

I have known this species for several years, and I possess specimens from the Philippines and Java.

The genus, based upon this species as geno-type, differs mainly from *Ancylopteryx* by the apparently unforked *M* in the forewing. Navas does not give any description of the pterostigma. In all the specimens before me the pterostigma is strongly brownish marked.

*Leucochrysa abnormis* Albarda, Midden-Sumatra IV, pag. 16 (1881). — Sumatra. V. d. Weele, Notes Leyden Mus. XXXI, pag. 80, pl. V,

fig. 33 (1909). — *Chrysopa lunigera* Gerstaecker, Mitt. naturw. Ver. Neu Vorp. u. Rügen, pag. 160 (1893). — Java.

63 specimens, Fort de Kock. — Edw. Jacobson remarks that it is a very common species.

*Chrysopa ochracea* Albarda, Midden-Sumatra, IV, pag. 15 (1881). — Sumatra. — V. d. Weele, Notes Leyden Mus. XXXI, pag. 69 (1909). — Java, Bavean. — 9 specimens, Fort de Kock.

I am able to state what already v. d. Weele has pointed out, that the colouration of the veins is liable to vary. Edw. Jacobson remarks: „General colour light green. Mouthparts transparent lightbrown, mandibles darkbrown. The entire head and scapus dark yellow, the remainder of the antennae light brown. Eyes purplish black, no green or red metallic colours. Pronotum bluish green. Meso- and metanotum yellowish green. Abdomen light green dorsally, no median yellow line; underside green. Prosternum transparent bluish green; meso- and metasternum light yellowish green. Legs transparent, very light green, apical part of tibiae and the tarsi light rusty brown. Wings hyaline, iridescent; veins light green; in forewings the series of gradate crossveins black; hindwing without black crossveins. Pterostigma yellowish green.“

*Chrysopa javanica* Esben-Petersen, Notes Leyden Mus., XXXV, pag. 230, fig. 3 (1914). — Java. — Of this species, only known by a female specimen from Goenoeng Oengaran (Java), collected by Edw. Jacobson in June 1910, a fine series from Fort de Kock is present.

To the description, based on the single Javanese specimen, I have to add that the numbers of gradate crossveins are greater in the specimens from Sumatra; in forewing  $7-8/7-8$ , in hindwing  $6/6-7$ . With the exception of 1 or 2 at the posterior end of the inner gradate series they are placed very regularly, and the series are parallel to the margin of the wing. In the forewing the crossveins in the outer series are mostly blackish; a few posterior ones in the inner series are sometimes dark. The dark spot on the exterior side of the basal joint of the antennae often absent in not fully matured specimens.

Edw. Jacobson gives the following description from a living specimen: „General colour light smaragdine. Mouthparts very light brown; clypeus transparent faintly greenish with a few faintly brown spots, a small whitish triangle on the forehead; occiput greenish yellow; antennae light brown; scapus transparent greenish yellow (Edw. Jacobson does not mention the dark spot on the exterior side of the joint). Eyes metallic green and red. Pronotum green, with a yellow longitudinal stripe. Apical area of mesonotum yellow with greenish yellow outer angles; lateral areas greenish transparent, laterally on each area a green dot, inner margins greenish and greenish yellow; basal area yellow with

transparent outer angles. Apical area of metanotum very small, greenish yellow; lateral areas greenish transparent, inner margins yellow; basal area yellow. Metaphragma green, yellow in the centre. Abdomen dorsally green with a very sharp longitudinal yellow stripe in the middle. Prosternum green; meso- and metasternum and venter greenish white. Legs transparent greenish, apical part of tibiae and the tarsi light brown. Wings hyaline, iridescent; veins green; outer gradate series in the forewing dark."

*Chrysopa sumatrensis* (n. sp.): Head, palpi and antennae greenish yellow, unmarked. Antennae somewhat longer than the forewings. Prothorax as long as broad, greenish yellow and with a reddish tinge along lateral margins; front angles rounded. Meso- and methorax greenish with a longitudinal median yellowish streak; in front part of mesothorax above the base of forewings a black spot. Abdomen pale, unmarked. Legs greenish yellow; claws yellowish brown, strongly broadened at base. Wings rather long and narrow, with rather acute apex especially in the hindwings. Venation and hairs greenish. Origin of *Rs*, 1st crossvein from *Rs* to  $M_1$ , 5th to 8th radial crossveins, all gradate crossveins in outer series black;  $M_2$  and 2nd to 4th crossvein from *Rs* to  $M_1$  sometimes partly dark. In hindwing the venation is greenish; 4th to 6th radial crossvein and the corresponding part of *Rs* as a rule brown to black. Apical margin of hindwing, especially the posterior part, dark; in mature specimens the apical margin of forewing is also brownish. Pterostigma greenish, opaque. In forewing 18—20 costal crossveins, 13 radial crossveins, 4 crossveins between *Rs* and *M*, 7 crossveins (seldom 8) in inner gradate series, 7 (seldom 8) in outer; 1st crossvein in inner series placed much more basad than the other (likewise in the hindwing); the gradate series parallel with the margin of the wings. The inner series a little nearer to *Rs* at its anterior end than at posterior end. 1st crossvein from *Rs* touches  $M_1$  within the basal median cell. In hindwing 15 costal crossveins, 11—12 radial crossveins, 6—7 crossveins in inner gradate series, 6—7 in outer; the gradate series parallel with the hind margin of wing. Forewing 19—21 mm; hindwing 18—19 mm.—14 specimens, Fort de Kock, collected during the months of January, March, April, May, July and December.

As to the form and the venation of the wings *Chr. sumatrensis* has much likeness to *Leucochr. abnormis*, but the place of posterior crossvein in inner gradate series — wide apart from the others — separates *sumatrensis* easily from *abnormis*. In *sumatrensis* the two series of gradate crossveins divide the area between *Rs* and the apical margin into three intervals of the same width.

Edw. Jacobson gives the following description of the living in-

sect: "General colour light smaragdine. Mouthparts very light brown, clypeus light bluegreen, antennae very light brown, scapus green; eyes metallic green and red; occiput greenish yellow. Pronotum green with a yellowish median stripe. Apical area of mesonotum yellow in its median part; laterally greenish; lateral areas in their median part yellow, bordered laterally with green, lateral halves of the areas nearly colourless, with a black dot on the apical end of each area; basal area yellow, in the middle a thin green dash. Apical area of metanotum yellow, lateral areas nearly colourless, the inner margins greenish yellow; basal area yellow, in the middle a greenish longitudinal dash. Metaphragma green, in the middle yellow. Abdomen with dark green spots dorsally, a yellowish band running longitudinally. The 1st—4th segments with a light brown spot on the left and one on the right of the yellow band. Venter brownish white. Legs transparent faintly green, the apical parts of all the tibiae and the tarsi light brown. Wings hyaline, iridescent; veins green, except those veins which are of a lighter or darker brown colour, as to be seen in the dried specimen. Pterostigma yellowish green."

*Chrysopa appendiculata* (n. sp.): Head and palpi orange. Antennae longer than wings, brown, basal joint stout and orange, second joint also orange. Prothorax as long as broad, greenish, with an indistinct, narrowly orange-coloured longitudinal median streak, and with indication of a reddish brown oblique streak at each side near front angles, which are strongly rounded and somewhat darker margined. Meso- and metathorax mostly orange-coloured; front part of mesothorax with two irregular blackish brown spots at each side; the larger (sometimes interrupted) above the root of the wing, the smaller and more indistinct below the base. The base of forewing with an indistinct oblique brownish black streak. A small irregular and indistinct dark spot where *Cu* separates from *R + M*. Abdomen yellowish green. Legs pale yellowish green;

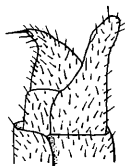


Fig. 1. *Chrysopa appendiculata*. ♂ Anal appendages, seen from side.

a distinct, narrow brown streak along each tibia anteriorly. Claws brown, broadly dilated at base. Wings narrow, acute at apex, especially in the hindwings. Venation greenish. When the wings are held in a certain direction against the light the crossveins in the gradate series and the apical half part of the hind margin seem to be darker. Pterostigma greenish, opaque. In forewing 19—21 costal crossveins, 11—12 radial crossveins, 5 crossveins between *Rs* and *M*<sub>1</sub>, <sup>6-7</sup>/<sub>7-8</sub> very regularly placed crossveins in the gradate series; the series parallel to hind margin; the area between *Rs* and hind margin divided into three intervals of equal width; the anterior end of inner series is however a little nearer to *Rs* than to the outer gradate series. In hindwing

13—15 costal crossveins, 10 radial crossveins, 4 crossveins between *Rs* and *M*<sub>1</sub>, <sup>5-6</sup>/<sub>6-7</sub> gradate crossveins, which are placed as in the forewing. In forewing the 1st crossvein from *Rs* touches *M*<sub>1</sub> within the basal cell of the median fork. In the male sex each of the upper anal appendages is ending in a strong yellowish brown spine. Forewing 12—13 mm; hindwing 11—12 mm. 1 ♂ Fort de Kock, February 1922; 2 ♀ at the same locality, April and June.

This interesting species is easily recognizeable on account of the peculiarly shaped appendages of the male and of the brownish marked tibiae; in the form of the wings and as to the colour of the antennae and the prothorax the species has, however, some likeness to *Chr. ruficeps* Mac Lachl., but it is smaller and the markings at the base of the wings and of the mesothorax separate it from this species.

Edw. Jacobson gives the following description from a living specimen:

„A rare species. General colour grassgreen. Mouthparts yellowish brown. Clypeus transparent dark yellow. Antennae brownish yellow; occiput with a dark yellow triangle on a greenish yellow ground; eyes metallic green and red. Pronotum bluish green, in the middle an interrupted yellow stripe, formed by 3 dashes of which the basal one is the largest. Apical area of mesonotum dark yellow with a blackish brown dot on each of the outer apical angles; lateral areas green, the inner angles yellowish, each area with 2 blackish brown dots, an inner larger and an outer small one, touching each other; basal area yellowish with greenish lateral margins. Apical area of metanotum yellowish; lateral areas green, with a small faint light brown speck on the inner apical angle; basal area yellowish. Metaphragma green with a median longitudinal yellowish stripe. Abdomen dorsally green with a median longitudinal yellow stripe, ventrally light green. Prosternum bluish green, on the outer margins with a black speck. Episternum of mesothorax with a blackish brown dot. Spiracles of meso- and metathorax dark brown. Legs transparent light green; tarsi and part of the tibiae light reddish brown. The tibiae of all the legs margined with blackish brown on the outer side. On the base of the second and third pair some bluish green. Wings hyaline, iridescent. Veins green. A blackish brown stripe across the root of wings; a blackish dot and a small dash on the base of subcosta. Pterostigma yellowish green.“

*Chrysopa mesonotalis* (n. sp.): Head and palpi reddish yellow, labrum black. Antennae a little longer than forewing, yellowish, becoming brown towards apex; basal joint stout, reddish yellow. Prothorax greenish yellow, a little broader than long and with truncate front angles; mesothorax conspicuously reddish brown; metathorax greenish yellow. Legs

pale yellowish; claws brown and strongly dilated a base. Abdomen greenish yellow. Wings moderately broad; apex rather obtuse. Venation greenish. Pterostigma greenish, rather long and opaque. In forewing 3A and the basal angle of the wing-margin strongly reddish brown. In forewing the following crossveins are brownish: 4th—13th costal crossveins towards *C*; origin of *Rs*; radial crossveins towards *R*; 1st crossvein between *Rs* and  $M_1$ ; basal crossvein between  $Cu_1$  and  $Cu_2$  and all the gradate crossveins. In the hindwing the gradate crossveins are brownish tinged. In the forewing 18—20 costal crossveins, 11 radial crossveins, 5 crossveins between *Rs* and  $M_1$ , 6 crossveins in inner gradate series, 7 in outer; the gradate crossveins regularly placed in two series, which are parallel to each other and to hind margin of the wing; the area between *Rs* and apical hindmargin of wing divided into three intervals of almost equal width. In hindwing 12—13 costal crossveins, 9 radial crossveins, 4 crossveins between *Rs* and  $M_1$ , 5 gradate crossveins in inner series, 6 in outer series; inner series nearer to *Rs* than to outer series, and outer series nearer to apical hindmargin than to inner series; the series parallel to each other. In forewing 1st crossvein from *Rs* touches  $M_1$  within the basal cell of the median fork. Forewing 11—12 mm; hindwing 10—10,5 mm. 3 ♀ Fort de Kock, October, December and January.

Edw. Jacobson gives the following remark about the living insect: „Characterized by the reddish brown colour of the mesonotum.“

*Chrysopa malayana* (n. sp.): Head, palpi and basal joint of antennae yellowish; an indistinct brownish red spot at posterior angle of clypeus. Antennae longer than forewing, pale brown at base, becoming dark brown towards apex. Prothorax broader than long, yellowish, with a faint brownish tinge towards the lateral margins; meso- and metathorax and abdomen greenish yellow. Legs greenish yellow; claws brownish, strongly dilated at base. Wings rather short and broad, hardly acute at apex. Venation completely greenish. Pterostigma green and opaque. In forewing 1st crossvein from *Rs* touches  $M_1$  within the basal cell of the median fork, but near the apical end of the cell. In forewing 16 costal crossveins, 10 radial crossveins, 4—5 crossveins between *Rs* and  $M_1$ , 5—6 crossveins in inner gradate series, 6—7 in outer series. The gradate crossveins are regularly placed, but in both pairs of wings the series are placed wide apart; the inner series a little nearer to *Rs* than the outer to the apical hindmargin of the wing. Near the base of the forewing, where *Cu* separates from the main-stem of  $R + M$  a faint brown spot is visible. In hindwing 11 costal crossveins, 9—10 radial crossveins, 3—4 crossveins between *Rs* and  $M_1$ ; 4—5 crossveins in inner gradate series,



5—6 in outer. Forewing 11 mm; hindwing 10 mm. 2 ♀ Fort de Kock, February and June.

***Chrysopa Esakii*** (n. sp.): Head yellowish, below the antennae yellowish white, strongly reddish tinged at each side below the eyes; at each side of clypeus a brown longitudinal streak. Maxillary palpi pale, brownish tinged. Antennae pale, becoming brown towards apex; basal joint stout, yellowish, with a faint reddish streak indicated exteriorly. On the occiput a faintly indicated reddish streak along the margin of each eye. Prothorax almost as long as broad, with rounded front angles; yellowish, greenish towards lateral margins. Meso- and metathorax greenish yellow; abdomen discoloured. Legs pale; claws brown, strongly dilated at base. Wings rather short, hardly acute at apex. Venation very conspicuous; pale green. In forewing 1st crossvein between *Rs* and *M*<sub>1</sub>, 1st crossvein between *Cu*<sub>1</sub> and *Cu*<sub>2</sub> and all the gradate crossveins totally dark brown; all the other crossveins distinctly dark brown at both ends. Origin of *Rs* and origin of the branches from *Rs* dark brown. In hindwing the costal crossveins, the gradate crossveins, the basal and the apical crossvein between *Psm* and *Pcu* totally dark brown. The radial crossveins dark brown at their ends. Pterostigma greenish; opaque. In forewing 19 costal crossveins, 10 radial crossveins, 4 crossveins between *Rs* and *M*<sub>1</sub>; the basal one touches *M*<sub>1</sub> within the basal cell of the median fork. 5 crossveins in inner gradate series, 6 in outer series; in both pairs of wings the two series parallel to each other and to apical hindmargin of the wing, and the area between *Rs* and hind margin of the wing is divided into three areas of equal width. In hindwing 14 costal crossveins, 9 radial crossveins and 5/6 gradate crossveins. Forewing 11 mm; hindwing 10 mm.

1 ♀ Fort de Kock, December 1921.

I take de liberty to name this species in honour of my friend, Teiso Esaki, the well-known Japanese entomologist.

## II. Megaloptera.

***Neuromus testaceus*** Rambour, Hist. Nat. Névropt., 442, pl. X, fig. 1 (1842); v. d. Weele, Megaloptera, Collections Selys, 27, figs. 18 and 19 (1910). — Java, Borneo, Labuan, Sumatra.

1 ♀ Fort de Kock, January 1922.

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## Supplement

by E. Jacobson, Fort de Kock (Sumatra).

When treating on the metamorphosis of *Myrmeleon* and *Chrysopa* in his paper: „Mecoptera and Planipennia ef Insulinde“ in the Notes

from the Leyden Museum 1909, vol. XXXI, Dr. H. W. van der Weele communicated on page 40 and 68/69 a statement made by Mr. E. Jacobson, to the effect, that the larvae of *Myrmeleon* and *Chrysopa*, when spinning their cocoons, provided already beforehand for a trapdoor for the exit of the imago. This same statement was repeated by Mr. Jacobson in his paper: „Biological Notes on some *Planipennia* from Java“, in *Tijdschrift voor Entomologie* 1912, part. LV.

On page 99 we read sub *Myrmeleon frontalis*:

„The opening (of the cocoon), from which the imago emerges, is not cut out by the pupa, as has, hitherto, generally been supposed, but I found, that in making the cocoon, the larva already provides for a trapdoor, consisting of a semicircular flap, on one side (the hinge) continuous with the cocoon itself, and on the other three sides fastened with a few threads only. This trapdoor is easily pushed open by the pupa when emerging from the cocoon.

The pre-existence of the trapdoor can be easily proved, by pulling at a newly finished cocoon in different places with a pair of forceps. The trapdoor will then soon be found to yield to a gentle pull, whereas the other parts of the cocoon offer a greater resistance, before fragments can be torn from them. This arrangement is not only found with *Myrmeleon frontalis*, but all the other *Myrmeleonidae*, I observed in Java, showed the same structure of cocoons. It is, therefore, very probable to me, that it is a general habit of the *Myrmeleonidae* (and also of another family of the *Planipennia*, as will be seen further on), that it is not the pupa or imago, which, with its mandibles, cuts a hole in the cocoon, as an exit for the imago, but that the larva, in spinning the cocoon, already provides for a trapdoor.“

And on page 192 sub *Chrysopa jacobsoni*.

„When spinning the cocoon the larva provides for a trapdoor in the same manner, as has been described above for the larva of *Myrmeleon frontalis*.“

Mr. Jacobson wrote to me as early as the 28. December 1920, that HE RETRACTET HIS FORMER STATEMENT, WHICH PROVED TO BE UTTERLY WRONG, HIS SUBSEQUENT RESEARCHES HAVING SHOWN HIM, THAT NEITHER MYRMELEON NOR CHRYSOPA PROVIDE FOR A TRAPDOOR WHEN SPINNING THEIR COCOON.

The erroneous conclusion was arrived at by the fact, that when pulling with a pair of forceps at the wall of such a cocoon, very often quite circular pieces are detached, which gave the impression of a pre-existing trapdoor.

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