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NOTULAE ENTOMOLOGICAE 1921.

On Halyomorpha Mayr and allied Genera.

By E. Bergroth.

One of the few weak points in Stål's systematic arrangement of the true Pentatominae of the Old World (Enum. Hem. V, p. 54—69) is his treatment of the allied genera *Tropicorypha* Mayr and *Halyomorpha* Mayr. He included in the former genus several heterogeneous elements and based the separation of the two genera practically only upon the colour and puncturation of the connexivum, — altogether insufficient characters. Since that time numerous new species of this group have been described, and owing to the vague limits of the two genera the true systematic place both of the old species and of the newcomers has been very uncertain until Jeannel in his work on the Pentatomidæ collected during his and Alluaud's expedition to East-Africa (Paris 1913) rendered the position of many forms of this group clearer by dividing it into four genera ¹⁾, to which *Hymenomaga* Karsch (apparently unknown to Jeannel) should be added, if we deem it desirable to separate it from *Boerias* Kirk., which in my opinion we cannot justly do, as it was based solely on a secondary sexual character (the curious form of the male membrane), all other characters, including the structure of the male and female genital segments, being exactly those of *Boerias*. ²⁾

Jeannel's generic division of this group purports a progress in our knowledge, but it is highly to be regretted that he in dividing the old genera and in characterizing those accepted by himself and their species paid no attention whatsoever to the structure of the metasternal orificia, which is of prime importance in the Pentatomidæ and markedly constant in the different genera. The orificia are of different structure in several species of this group, and in my opinion the old genera can not be satisfactorily subdivided without basing the new genera on the orificia in the first place. The structure of the orificia is not apt to be influenced by the habits and environments of the different species, and in agreement with Brunner von Wattenwyl's views I regard such characters as specially suitable for generic criteria. Many of the characters ascribed by Jeannel to the genera *Halycorypha* and *Halyomorpha* can not be regarded as of generic importance, the best ones being those taken from the male and female genital segments, although not even these are so reliable as might be desired. The genus *Halyomorpha* is characterized by Jeannel as having the sinuosity of the male genital segment V-shaped, but he refers the species *reflexa* Sign. and *annulicornis* Sign. to this genus, although the sinuosity in these species is U-shaped as in *Halycorypha*.

¹⁾ His fifth genus, *Farnya* Schout., has nothing to do with this group, as I have shown in Ann. Soc. Ent. Belg. 1914, p. 26. — The West-African *Cimex adpersus* Fabr., which Stål placed in *Antestia*, belongs to *Farnya*.

²⁾ A new *Hymenomaga* (*perplexa* Schout.) has recently been described, founded only on the female. It does not seem to resemble the typical species and the author does not state the reason why he refers it to *Hymenomaga*. From Cameroon I have both sexes of an apparently undescribed *Boerias* of the same group.

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My material of this group is not sufficient to base a generic revision upon, but the following remarks seem to be necessary.

The type of *Tropicorypha* Mayr, *bifida* Thunb., has a rather short, apically rounded and elevated, elongately spoon-shaped orificial process, and differs in so many other points from all other species, that the genus is now justly considered monotypical. Kirkaldy (Cat. Hem. I, p. 365) was right in separating the *Tropicoryphæ* with long, apically pointed orificial process as a distinct genus, *Boerias*, fixing *T. Victorini* Stål as type. Later Jeannel, overlooking *Boerias*, founded the genus *Halycorypha*. As this genus includes forms both with long and with short orificial fold, it must be divided into two genera, which should bear the names *Boerias* (with long orificia) and *Halycorypha* (with short orificia). It is true that Jeannel designated *T. Victorini* Stål as type of *Halycorypha*, and authors who stare their eyes out at so-called »types», without paying the slightest regard to the descriptions, would thus consider it a strict synonym of *Boerias*. This is, however, not the case. Jeannel gives a key to the species of *Halycorypha* known to him, in which the following characters are ascribed to *Victorini* Stål: »Angles latéraux du pronotum très saillants, aigus, noirs au sommet; connexivum jaune avec une barre transversale noir verdâtre très nette au bord antérieur et postérieur de chaque segment; article 3 des antennes deux fois plus long que l'article 2.» These characters are totally at variance with Stål's description, not even one of them fitting the true *Victorini* Stål, in which the pronotal lateral angles are but moderately prominent, not acute, pale, not black at apex, the entirely pale connexivum without a darker bar at the base and apex of the segments and the 3d antennal joint only a little longer than the 2d. *Victorini* Stål is a *Tropicorypha* (in Stål's sense), *Victorini* Jeann. (nec Stål) is a *Halyomorpha* (sensu Stål). From the few characters quoted above it is impossible to know to what species *Victorini* Jeann. really belongs, and from the rest of his key it is clear that the true *Victorini* Stål was unknown to him and that the generic description not even in part could have been founded on that species. Such being the case, *Victorini* Stål can not be the type of *Halycorypha*, and I herewith designate the species *ceruina* Germ. as its type. — In the same key Jeannel describes under the name *placida* Walk. a species which I think cannot be Walker's species. He says of it: »angles latéraux du prothorax effacés», but according to Walker these angles are »prominent and slightly acute», and in the description of *immuris* Walk. (a synonym of *placida*) they are said to be »acute, rather prominent.» He describes one species under the name *Halydicoris Schoutedeni* Bergr. I regret that he after seeing my description withdrew the name he had intended for that species, for *Schoutedeni* Jeann. is by no means identical with *Halyomorpha Schoutedeni* Bergr., and Jeannel has evidently not read my description of the connexivum with attention (»segmentorum connexivi parte interiore, fascia subcurvata antemediana rectaque apicali latiusculis viridi-nigris»). Although the type is not now before me, I think there can be little doubt that it is not a *Halydicoris* at all, and in the markings of the connexival segments it differs from all known species of this group, the anterior dark bar being somewhat curved (turning the convexity forward) and considerably removed from the base of the segments, lying in fact a little before the middle of the segments. Being a nomen false ci-

tatum, the name *H. Schoutedeni* Jeann. (nec Bergr.) can not be maintained, and I propose for this species the name *Halydicoris Jeanneli*.¹⁾

Among the species referred to *Tropicorypha* there is one that forms the following new genus.

***Allecbola* nov. gen.²⁾**

Corpus latiuscule ovatum. Juga supra apicem deflexum clypei approximata. Articulus secundus antennarum tertio longior. Pronotum ad angulos apicales in dentem majusculum acutum oculos longe superantem extrorsum productum, marginibus lateralibus anticis integris. Orificia metasternalia brevissima, articulo primo antennarum multo breviora, in rugam non continuata. Segmentum genitale maris apice late obtusangulariter sinuatum, in fundo intimo sinus iterum anguste rimiformiter sinuatulum.

Typus: Tropicorypha denticollis Bredd.

This genus is remarkable by the structure of the head and the very short orificia, which are not prolonged in a furrow or fold; the male genital segment is of the *Halyomorpha*-type.

Below I describe a beautiful and interesting species which one might feel tempted to place in the *Hymenomaga*-group of *Boeris* on account of its striking colouring, but its structural characters are those of *Halyomorpha*. The larva of this species, although similar in colour to the imago, is notable by the strong development of spines on the body and legs.

***Halyomorpha magnifica* n. sp.**

Ovalis, cærulea, limbo laterali postice dilatato prothoracis ab apice ultra medium rufo, macula media externa segmentorum connexivi, area magna ovata media corporis inferioris a medio gulæ usque ad apicem segmenti sexti ventris extensa, epipleura corii maculaque laterali media segmentorum ventris albidis, macula percurrente media mesosterni (carina excepta) metasternique, area evaporativa, vitta percurrente media segmenti tertii ventris, macula transversa media segmentorum ejus quarti et quinti maculaque media basali et apicali segmenti sexti nigris, membrana obscure ochracea, parte basali et venis totis nigris; antennæ cæruleæ (art. duo ultimi desunt); rostrum nigrum, articulo primo (basi et apice exceptis) et basi secundi albidis; pedes cærulei, coxis, trochanteribus, triente basali femorum anticorum, dimidio basali mediorum, parte plus quam dimidia basali posticorum, annulo lato mox ante medium tiliarum posteriorum tarsisque posticis (exceptis lateribus parteque inferiore articuli primi et apice tertii) albidis; subtiliter et sat dense punctulata, supra subopaca, subtus subnitida, partibus albidis corporis inferioris et maculis hujus nigris mediis fere impunctatis. Caput fere aequè longum ac latum, paullo ante oculos vix sinuatum, deinde parallelum, apice late rotunda-

¹⁾ Although Jeannel's work by the author's excellent descriptions and his careful studies of the genital segments (also in the hitherto in this respect much neglected females) must be ranked among the best recent contributions to hemipterology, it is to be regretted that he has largely based his keys to the species (especially those of *Carbula* Stål) on obviously incorrectly determined materials.

²⁾ *allos* = different, *ὀρθή* = orificium.

tum, jugis et clypeo aequè ceter sesqui longiore, buccæ segmenti tertii ventris attiore. Pronotum capite directis, distincte reflexis, Scutellum ad angulos basales includente instructum, lineola basali rotundata subcæm abdominis attingentia. Segmentum sextum ventris in medio aequè longum. Segmentum funde impressum, apice late

East-Africa: Condo te

Not closely related to structure to *H. viridescens* pale variety according to a

Larva, 5 th (or 4 th?) elevated disk of the ventral from apex to near posterior of the abdominal segment ment flavo-testaceous, unipatch of the same extent a large transverse bluish paler, lateral parts of ventral reddish, a pale yellow lateral slopes of both the brownish fuliginous; anterior luteous (fourth joint lackish; legs coloured as in the narrower and only a fainter tibias, all tarsi black immediately before the rounded at apex, their lateral joint (corresponding sulcated above, 3d joint npercurrent, rostrum slight apex of bucculæ. Pronotum flexed with a long black at the lateral angles and thers, basal margin broadly part not quite reaching a sal half of its costal margin is finely denticulate from the rest by a dist broadly depressed with a of the segments, the pair the discal parts both on t tergal elevation with a the spines of the 3d segmenteriously united by a str

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ab apice ulnæ dilatato prothoracis ab apice ulnæ segmentorum connexivi, area supra medio gulæ usque ad apicem segmenti maculaque laterali media segmenti recurrente media mesosterni (carina lateralis, vitta percurrente media segmentorum ejus quarti laterali segmenti sexti nigris, membranae nigrae totis nigris; antennæ cæruleæ, articulo primo (basi et apice exceptis) cærulei, coxis, trochanteribus, tibiae basali mediorum, parte plus quam dimidia mox ante medium tibiarum posterioribus parteque inferiore articulis et sat dense punctulata, supra albidis corporis inferioris et maculis. Caput fere aequè longum ac latum, frons parallela, apice late rotunda-

the author's excellent descriptions and illustrations (also in the hitherto in this respect among the best recent contributions to entomology) that he has largely based his keys to the genera on obviously incorrectly determined characters.

tum, jugis et clypeo aequè longis, articulo tertio antennarum secundo circiter sesqui longiore, bucculis basin capitis attingentibus, rostro basin segmenti tertii ventris attingente, articulo primo bucculis nonnihil brevior. Pronotum capite distincte longius, marginibus lateralibus anticis rectis, distincte reflexis, angulis lateralibus obtusis, parum prominulis. Scutellum ad angulos basales area triangula plana impunctata foveam includente instructum, linea longitudinali media laevigata ex area minuscula basali rotundata subcallosa usque ad medium currente. Elytra apicem abdominis attingentia. Connexivum fere totum detectum. Segmentum sextum ventris in mare quinto, quarto dimidioque tertii conjunctis medio aequè longum. Segmentum genitale maris medio transversim profunde impressum, apice late obtusangulariter sinuatum. Long. ♂ 15 mm.

East-Africa: Condo territory near Lake Nyassa (my coll.).

Not closely related to any described species, but coming nearest in structure to *H. viridescens* Walk. (of which *H. Erlangeri* Schout. is a pale variety according to a cotype in my collection).

Larva, 5 th (or 4 th?) stage: Ovate, dark blue, finely shagreened, the elevated disk of the venter smooth, lateral borders of prothorax almost from apex to near posterior angles broadly red, basal and apical margins of the abdominal segments above and a lateral median spot to each segment flavo-testaceous, under-side of body with a large pale yellow median patch of the same extent as in the imago, last four ventral segments with a large transverse bluish black basal spot, that of the third smaller and paler, lateral parts of ventral segments with the basal and apical margins reddish, a pale yellow lateral median spot to each ventral segment, the lateral slopes of both the tergal and ventral discal abdominal elevations brownish fuliginous; antennæ bluish black, apex of third joint narrowly luteous (fourth joint lacking); rostrum black, base of second joint whitish; legs coloured as in the imago, but the yellow basal part of the femora narrower and only a faint trace of the yellow annulation to the four posterior tibiae, all tarsi black. Head with a strong erect black lateral spine immediately before the eyes, juga a little longer than clypeus, narrowly rounded at apex, their lateral margins rather strongly rounded, 2d antennal joint (corresponding to joints 2+3 in the imago) as long as head, sulcated above, 3d joint more than half the length of 2d, bucculae low but percurrent, rostrum slightly longer than in the imago, first joint reaching apex of bucculae. Pronotum as long as head, lateral margins broadly reflexed with a long black spine at the apical angles and a still longer one at the lateral angles and two somewhat shorter red spines between the others, basal margin broadly rounded. Scuto-tegmen with the tegminal part not quite reaching apical margin of 2d abdominal segment, the basal half of its costal margin armed with three spines, between which the margin is finely denticulated, inner portion of tegminal part separated from the rest by a distinct suture. Abdomen with the lateral parts broadly depressed with a strong suberect black spine at the apical angles of the segments, the pair of trichobothria behind each spiracle distinct, the discal parts both on the tergal and ventral side convexly raised, the tergal elevation with a pair of spines on the 3d, 4th, and 5th segment, the spines of the 3d segment short and more distant from each other, posteriorly united by a straight transverse keel, the spines of the 4th and

5th segments larger, posteriorly united by a somewhat curved keel. Femora with some small spinules, mostly placed in rows, above and beneath, a 1d with a pair of stronger spines at the apex above; tibiae above near the base with a small spine on each side; the two-jointed tarsi with the basal joint shorter. Length 11 mm.

In the Halyinæ the larvæ are often if not always spinous, but in many of them the spines disappear at the last ecdysis, whilst they are permanent in other forms of that subfamily. It is not impossible that *Halyomorpha* and its allies would be better placed among the Halyinæ.

Brenthidologisches aus dem Museum Zoologicum Universitatis zu Helsingfors.

von R. Kleine, Stettin.

Mit. 3 Abbildungen.

Im Museum Zoologicum zu Helsingfors fand sich eine Anzahl Brenthiden aus den Sammlungen alter Autoren vor, die ich, so gut es ging, festgelegt habe. Nur eine kleine Zahl musste zurückbleiben, weil zuerst eine monographische Bearbeitung der Gattung voraufgehen muss. Zu einigen Amerikanern fehlte mir das Vergleichsmaterial, Prof. Heller, Dresden war so liebenswürdig hier auszuhelfen.

1. Aus Sammlung Deyrolle bezeichnet: *Cerobates parvulus* Schönh. n. sp. = *Stereodermus pygmaeus*. Gyll. Aus Sammlung Aubé und Schönherr desgl.

2. Aus Sammlung Dejean bezeichnet: *Cerobates pygmaeus* ♀, *Trachelizus Desmaristii* Dej. = *Sereod. pygmaeus* Gyll.

3. Aus Sammlung Chevrolat bezeichnet: *Sarcomathorhinus* Chevrolat nov. gen. *subcostatus* Chevrolat. Darunter ein Etiquet mit der Bezeichnung: *Cordus* Schh. n. g. *Mannerheimi* Schh. n. sp. = *Cordus hospes* Germar.

4. Aus Sammlung Dejean. Ohne Gattungsbezeichnung, nur *auriculatus* Dej. i. l. = *Caenorychodes serrirostris* F.

5. Aus Sammlung Kaehne bezeichnet: *Arrh. humeralis* Schönh. n. sp. = *Arrhenodes dispar* L.

6. Aus Sammlung Kyber bezeichnet: *sobrinus* Dej. ferner noch mit folgenden Bez.: *Arrhenodes turbatus* Schh. und *vitticollis*. = *Arrh. vitticollis* Gyll.

7. Aus Sammlung Mannerheim bezeichnet: *Belopherus bimucronatus* Mannerh. = *Schoenfeldtia impressicollis* Senna.

8. Aus Sammlung Thorey: *Brenthus* n. sp. = *Episphales pictus* Kirsch.

9. Aus Sammlung Henning bezeichnet: *Brenthus septentrionalis* Amer. bor. = *Platysystrophus minutus* Drury.

10. Aus Sammlung Mannerheim bezeichnet: *Ceocephalus bilineatus* Buquet. und *vittipennis* Boh. n. sp. = *Mygaleicus vittipennis* Fähr.

11. Aus Sammlung Boheman bezeichnet: *Brenthus delicatulus* Bohem. n. sp. (Wahlbg.). = *Pseudoceocephalus picipes*. Ol.

12. Aus Sammlung Melly bezeichnet: *Ceoc. latinus* Chevrolat, darunter Thoms.

13. Aus Sammlung Erichson bezeichnet: *B. bicalcaratus* Bohem.

14. Aus Sammlung Mannerheim bezeichnet: *Brenthus bidentatus* Mannerh. = *Brenthus bidentatus*.

15. Aus Sammlung Chevrolat bezeichnet: *n. sp. typus!* Schönherr kennt keine, handelt, ist erst nach sorgfältiger Untersuchung

16. Aus Sammlung Guérin bezeichnet: *Br. obtusus* Fabr. Letzterer Zeitschr. f. wiss. Insectenkunde. Bd. II, 1920, p. 6.

17. Aus Sammlung Dejean bezeichnet: *Br. femoratus* D. Sharp.

18. Aus Sammlung Chevrolat bezeichnet: *gills* Mannerh. bezeichnet ist, die Art zu stellen.

Unter dem sonstigen Material fand ich nachstehend festgelegt.

Synorychodes n. g.

Kopf einschliesslich Augen breit, terecken scharf, Oberseite gewölbt, $\frac{1}{4}$ Augendurchmesser, Unterseite flach, Druck klein, dreieckig; Augen gross, den ganzen seitlichen Kopf einnehmend.

Metarostum von Kopflänge gekräftigt gefurcht, Seiten rundlich, nicht gekielt oder gefurcht; Mesosoma seitlich dreieckig erweitert, Mittelfurche schmalen, kielenartigen Leisten als das Metarostum, an der Basis verankert mit weitstehenden einzelnen rückgebogenem Zahn, Vorderrand Mandibeln klein, zweispitzig.

Fühler lang, bis über die Hälfte lang wie das 2. und 3. zusammen, die 2. aber kürzer als das 2. und 3. zusammen, 2—6. mehr oder weniger gespitzt, kürzer als das 9. und 10. zusammen.

Prothorax kegelig, grösste Breite allmählich, gegen den Hinterrand kurz verengt, Hinterecken stumpflich, in der Mitte eingekerbt, gerippt.