

4. On Stridulating Hemiptera of the Subfamily *Halyinæ*,
with Descriptions of new Genera and new Species. By
Dr. E. BERGROTH, C.M.Z.S., Tammerfors, Finland.

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In his paper "Zur Kenntniss der Stridulationsorgane bei den Rhynchoten," Handlirsch* has described three different kinds of stridulatory organs in the Rhynchota: the prosternal furrow of the Reduviidæ; the strigose ventral patches of the Division Tetyraria of the Scutelleridæ; and the, at that time, still incompletely known stridulating apparatus of the Corixidæ, of which Kirkaldy† has since given us a complete description and a probably correct interpretation. There is, however, one group of Rhynchota in which these organs have remained unknown to Handlirsch and all other zoologists, except the distinguished systematist Stål, who knew them without recognising their function. In his important paper "Bidrag till Hemipterernas systematik"‡ he states that the Pentatomid genera *Platycoris*, *Niarius*, *Alphenor*, and *Oncocoris* have the following character in common: "segmentis ventris secundo et tertio latera versus vitta longitudinali nonnihil curvata, opaca, vix elevata, transversim densissime subtilissimeque strigosa, instructis." Although *Gilippus* is described in the same paper, Stål seems to have overlooked the fact that this genus possesses the same structure, and in the systematic arrangement he places *Oncocoris* far apart from the other genera above mentioned. In a subsequent memoir§ he ascribes the same character to *Mecidea*, the species of which are mostly African, though it is also represented in India and the temperate parts of America. In a third work||, finally, he gives "ventre antérieur vitta laterali transversim strigosa vel rugosa instructo" to a group of genera comprising *Mecidea* Dall., *Platycoris* Guér., *Niarius* Stål, *Oncocoris* Mayr, *Gilippus* Stål, *Alphenor* Stål, and *Caridophthalmus* Assm. (*Allocotus* Mayr, præocc.). Mayr¶ has also seen these organs in his *Oncocoris punctatus*, but simply mentions them as a "schwache Erhöhung," without having observed that they are strigose. That they were not quite unknown to Dallas and Walker, will be shown below. Distant** has lately removed *Mecidea* from the Halyinæ, placing it together with a part of the genus *Niphe* Stål (*Aenaria* Dist. nec Stål) in a division which he names Mecidaria, without mentioning the transversely striolated ventral patches of *Mecidea* at all. This is, however, no systematic improvement, these two genera scarcely having anything in common except the

* Ann. Naturhist. Hofmus. Wien, xv. (1900) pp. 127-141.

† Entomologist, 1901, p. 9; Journ. Quekett Micr. Club, (2) viii. pp. 33-46 (1901).

‡ Cfv. Vet.-Ak. Förh. 1867, pp. 491-560.

§ Enum. Hem. ii. p. 17 (1872).

|| Enum. Hem. v. p. 34 (1876).

¶ Reise d. Novara, Hem. p. 46 (1866).

** Rhynch. Brit. India, i. p. 140 (1902).

more or less "elongated body." Berg* has described two new genera from the southern parts of South America, *Procelicus* and *Lobepomis*, which he says are allied to the genera *Amaurochrous* Stål and *Oncocoris* Mayr; but judging from the descriptions it seems very doubtful whether they belong here, the more so as *Amaurochrous* does not appertain to the Halyinæ at all. Distant† has also described an African genus, *Crollius*, which he places near *Platycoris*, but as nothing is said in the description as to the presence or absence of the strigose ventral patches, its position is uncertain. It is said to have the "rostrum about reaching the anterior coxæ"; if this be correct, it scarcely belongs to the Halyinæ. Besides the seven genera referred to this group by Stål, there is one described genus which appertains to the same group, viz. *Commius* Stål. Stål overlooked the striolated ventral patches of this genus and therefore incorrectly placed it among the Pentatominae s. str., near *Chalcocoris* Dall. For this division of the Halyinæ I propose the name *Platycoraria*; all its genera, except *Mecidea*, are Australian, two of them (*Oncocoris* and *Caridophthalmus*) extending to the Austro-Malayan region (New Britain, New Guinea, Timor, Flores, Ceram).

As Stål‡ calls the strigose ventral patches of the *Tetyraria* "*maculæ stridulatoriæ*," but only speaks of "*vittæ strigose*" in the *Platycoraria*, it is evident that he did not recognise their true nature in the latter division. A close examination of the ventral patches of the *Platycoraria* shows, however, that they are perfectly homologous to the strigose areas of the *Tetyraria*. As described by Handlirsch, the stridulatory organs of the *Tetyraria* are made up of two different parts—(1) the passive element, consisting of the strigose ventral patches; and (2) the active element, consisting of a series of minute wart-shaped tubercles, bearing a subapical tooth or bristle and placed on the inner side of the tibiæ. The ventral patches are straight and situate on each side of the median line of the fourth and fifth segments, sometimes extending to the third or sixth segment; they converge behind and the striae are arranged longitudinally, being nearly parallel to the axis of the body. When the insect bends the tibia against the femur and again stretches it, the spinous tubercles of the tibia pass across the strigose surface of the venter, thus enabling the insect, by rapidly repeating these movements, to produce an audible sound. In the *Platycoraria* both the active and the passive parts of the stridulatory organ show the same structure as in the *Tetyraria*, but the ventral patches are usually comma-shaped, a little elevated and placed near the base of the venter, beginning with a rather broad base at the anterior margin of the second segment and proceeding, gradually tapering and curved inwardly, to the posterior margin of the third (rarely second) segment, where they end not far from the median line. The

* An. Soc. Cient. Arg. xxxii. pp. 234 & 236 (1891).

† Ann. & Mag. Nat. Hist. (7) vii. p. 21 (1901).

‡ Enum. Hem. iii. p. 3 (1873).

patches are transversely strigose in the basal part, but the striæ gradually become more oblique and are often practically longitudinal at the narrow end. From the position of the patches it is clear that the tibiæ cannot come in contact with them, and the active part of the stridulatory organ must be sought for elsewhere. I have found it on the inner side of the hind femur, where it consists of a number of very small spinous knobs arranged either in a single regular row or in two or three irregular ones. They are visible under a common pocket-lens, but under a compound microscope they present exactly the same structure as the tibial spinules of the *Tetyraria*. I propose to call them "*spicula stridulatoria*." The movements of the femur exactly correspond to the different direction of the striæ of the ventral patches, these striæ being always crossed at a right angle by the "*spicula*." By rubbing the inner side of the femur over the ventral patch I have experimentally produced a stridulating noise. Stål seems to have observed the "*spicula stridulatoria*" in *Platycoris* and *Niarius*, for in his above-quoted paper of 1867 he says they have the "*femoribus posticis intus granulatis*." In his larger work of 1876 he has omitted to mention it.

In his revision of the Hemiptera Heteroptera of the British Museum, Distant was apparently not satisfied with the state in which he left the genus *Dictyotus*. He says*: "*Dictyotus* requires revision; all the species which Dallas included in his genus do not appear to be congeneric." Without having seen Dallas's types I had myself, in determining some species of this genus, come to the same conclusion. In some of his specific descriptions Dallas speaks of "a curved raised line on each side of the second and third segments" of the venter. Walker has also described his *Mormidea detera* as having the "abdomen beneath with a short curved smooth line on each side near the base." I therefore suspected that these particular species belong to the genus *Oncocoris*, and this supposition has proved to be correct, my friend Mr. Distant having at my request kindly re-examined the types of the British authors previously referred by him to *Dictyotus*. It is therefore necessary to give a complete revised list of the species of *Oncocoris*, which follows here, and which is essentially founded upon the communications received from Mr. Distant.

ONCOCORIS Mayr.

Verh. zool.-bot. Ges. Wien, xvi. p. 362 (1866); Reise d.
Novara, Hem. p. 44 (1866).

Dictyotus Dall. List Hem. Brit. Mus. i. p. 139 (pro parte).
Tarba Walk. Cat. Het. Hem. Brit. Mus. i. p. 236 (1867).

1. ONCOCORIS APICALIS Dall.

West Australia.

Dictyotus apicalis Dall. List, i. p. 141 (1851).

* Ann. & Mag. Nat. Hist. (7) v. p. 388 (1900).

2. ONCOCORIS CŒLEBS Fabr. Australia*.
Cimex cœlebs Fabr. Ent. Syst. iv. p. 111 (1794).
Oncocoris cœlebs Stål, Hem. Fabr. i. p. 23.
3. ONCOCORIS CONFINIS Dall. Australia.
Dictyotus confinis Dall. List, i. p. 143.
4. ONCOCORIS DETERSUS Walk. Ceram.
Mormidea detersa Walk. Cat. iii. p. 554 (1868).
Dictyotus detersus Dist. Ann. & Mag. Nat. Hist. (7) v. p. 388 (1900).
5. ONCOCORIS DIMIDIATUS Mont. Victoria.
O. dimidiatus Mont. Bull. Soc. Sc. Bucarest, xii. p. 291 (1903).
6. ONCOCORIS DISCOIDEUS Dall. North Australia.
Dictyotus discoideus Dall. List, i. p. 144.
7. ONCOCORIS FAVILLACEUS Walk. North Australia.
Tarba favillacea Walk. Cat. i. p. 237.
Dictyotus favillaceus Dist. Ann. & Mag. Nat. Hist. (7) iv. p. 434 (1899).
8. ONCOCORIS GENICULATUS Dall. South Australia.
Dictyotus geniculatus Dall. List, i. p. 142; Dist. l. c.
Dictyotus lineatus Walk. Cat. i. p. 181.
9. ONCOCORIS INSULANUS Bergr. New Britain.
O. insulanus Bergr. Rev. d'Ent. x. p. 202 (1891).
10. ONCOCORIS LETHIERRYI Mont. Australia.
O. lethierryi Mont. Bull. Soc. Sc. Bucarest, xii. p. 294 (1903).
11. ONCOCORIS MODESTUS Horv. New South Wales.
O. modestus Horv. Term. Füz. xxv. p. 601 (1902).
12. ONCOCORIS OVALIS Bergr., *infra*, p. 153. Queensland.
13. ONCOCORIS PUNCTATUS Mayr. New South Wales.
O. punctatus Mayr, Verh. zool.-bot. Ges. Wien, xvi. p. 362 (1866); Reise d. Novara, Hem. p. 46, tab. i. fig. 6.
14. ONCOCORIS SEMIMARGINATUS Westw. West Australia.
Pentatoma semimarginata Westw. Cat. Hem. Coll. Hope, i. p. 42 (1837).
Dictyotus semimarginatus Dist. P.Z.S. 1900, p. 810.
15. ONCOCORIS SIMILIS Dall. Tasmania.
Dictyotus similis Dall. List, i. p. 143; Dist. Ann. & Mag. Nat. Hist. (7) iv. p. 434 (1899).
Pentatoma truncatula Walk. Cat. ii. p. 311 (1867).

* Fabricius gives no nearer habitat; I possess examples of the species from Queensland.

16. ONCOCORIS SUBSIMILIS Mont. Victoria.
O. subsimilis Mont. Bull. Soc. Sc. Bucarest, xii. p. 293 (1903).
17. ONCOCORIS TRANSVERSUS Carp. Murray Isl.
Dictyotus transversus Carp. Proc. Roy. Dublin Soc. vii.
 p. 138, pl. xii. f. 1 (1891).
18. ONCOCORIS TRUNCATELLUS Walk. Australia.
Eysarcoris truncatellus Walk. Cat. iii. p. 558.
Dictyotus truncatellus Dist. Ann. & Mag. Nat. Hist. (7) iv.
 p. 434 (1899).
19. ONCOCORIS VENTRALIS Walk. North Australia.
Mormidea ventralis Walk. Cat. iii. p. 555.
Dictyotus ventralis Dist. Ann. & Mag. Nat. Hist. (7) iv.
 p. 434 (1899).

The species of *Oncocoris* are very similar in *facies* to those of *Dictyotus*, but, apart from the stridulatory patches, are easily distinguished by having the antenniferous tubercles visible from above and the metasternal orifice prolonged in a keel.

Before proceeding to describe some new forms of this group, I may remark that in *Oncocoris* and *Commius* the "*spicula stridulatoria*" are arranged in a single straight row, whilst in *Platycoris* and *Niarius* they are placed in two or three irregular rows. The other described genera of the group are unknown to me.

NIARIUS TRYONI, sp. n.

Ovatus, opacus, niger, subtiliter sat dense punctulatus, supra callulis minutis flavidis conspersus, vitta superiore posteriore et margine angusto laterali capitis, basi hujus subtus, basi articuli primi, tertii quartique antennarum, rostro (articulo ultimo excepto), limbo laterali prothoracis et partis basalis corii, epipleuris, macula prope angulos basales et apice scutelli, macula oblonga laterali intus rotundata segmentorum abdominalium, acetabulis pedibusque (annulo anteapicali femorum excepto) flavo-ochraceis, ventre medio impunctato, dilute piceo, nitido. Articulus primus antennarum apicem capitis haud attingens, secundus duobus ultimis unitis æquilongus, tertius et quartus subæque longi. Pronotum lateribus leviter sinuatum. Scutellum apice impunctatum. Hemelytra apicem abdominis attingentia, corio basin segmenti sexti connexivi superante. Segmentum genitale maris medio segmentis tribus præcedentibus unitis subæquilongum. (Pedes postici desunt.)

Long. ♂ 10 mm.

Queensland.

Allied to *N. illuminatus* Dist., but in Distant's species the

head, pronotum, and scutellum seem to be differently sculptured, and there is no annulation to the femora.

LEVENNA, gen. nov.

Caput longitudine latius, leviter convexum, apice rotundatum, marginibus anguste reflexis, ante oculos magnos globosos sinuatis, tylo et jugis æque longis, illo postice elevato, his antice valde approximatis, ocellis majusculis, in linea inter marginem posticum oculorum ducta positis, a linea media capitis quam ab oculis saltem duplo et dimidio longius distantibus, bucculis humilibus, rectis; rostro coxas posticas attingente, articulo secundo duobus apicalibus unitis brevior, tertio quarto longior, tuberculis antenniferis e supero distinguendis, extus spinula porrecta armatis; antennis quadri-articulatis, articulo primo apicem capitis paulum superante, secundo longissimo. Pronotum medio capite parum longius, marginibus lateralibus anticis acutis, leviter explanatis et reflexis, angulis lateralibus haud prominulis, anguste rotundatis, angulis basalibus latissime rotundatis, margine basali recto. Scutellum pone medium leviter sinuatum. Mesosternum carinatum. Orificia metasternalia in rugam mediocrem continuata. Hemelytra apicem abdominis longe superantia, corio apicem abdominis subattingente (♂) vel hoc paullo brevior (♀), margine apicali levissime sinuato, angulo apicali acuto, membrana venis circiter sex instructa, exterioribus tribus furcatis et pone medium vena transversa conjunctis. Alæ apicem abdominis superantes, sed hemelytris paullo breviores. Abdomen hemelytris haud vel vix latius, subtus utrinque prope basin vitta stridulatoria curvata usque ad apicem segmenti tertii pertracta instructum, segmentis quinque primis ventralibus in mare medio valde retractis, quam lateribus fere triplo brevioribus, segmento sexto hujus sexus permagno, præcedentibus unitis medio longior, angulis apicalibus hujus segmenti in mare latissime rotundatis, fere deletis, margine apicali recto, in femina obtusiusculis, margine apicali late arcuato-sinuato, segmento genitali maris latissimo, angulis apicalibus productis, margine basali sub segmento sexto ventrali suboculto, medio processu liguliformi verticaliter recurvo instructo. Pedes longiusculi, femoribus posticis intus spiculis stridulatoriis uniseriatis instructis; tibiis omnibus femoribus subæquilongis, superne sulcatis; tarsis triarticulatis, articulo primo tarsorum posticorum incrassato.

This remarkable genus is to be placed near *Commius* Stål, but is at once distinguished by the four-jointed antennæ, the very long hemelytra, and the enormously developed sixth ventral and genital segments in the male. The considerable length of the hemelytra is probably due to the necessity for preserving the inner parts of the very wide and open male genital segment from injury.

LEVENNA SALAX, sp. n.

Supra niger, sat dense et fortiter punctatus, linea longitudinali media plus minusve distincta verticis, vitta vel linea longitudinali media interdum medio late interrupta pronoti hujusque limbo laterali ab angulis apicalibus ultra medium interdumque etiam margine postico, macula parva ad angulos basales, maculis duabus mediis magnitudine variabilibus fasciæque subapicali scutelli, fascia corii ab angulo apicali interno ad marginem costalem ducta ibique dilatata segmentisque connexivi basi flavis, remote fusco-punctatis, venis membræ præsertim apice sæpe pallescentibus. Alæ fusco-violaceæ. Caput subtus cum rostro et antennis violaceo-nigrum, bucculis sæpeque macula utrinque adjacente flavidis. Pectus violaceo-nigrum, limbo laterali prosterni ab apice ultra medium, carina media et margine laterali mesosterni ac limbo postico metasterni, interdum etiam acetabulis omnibus et prosterno medio, flavis. Abdomen subtus flavo-testaceum, disco medio interdum rufo-piceotincto vel segmento sexto medio macula fusca notato, limbo laterali ventris violaceo, macula quadrata ad angulos basales segmentorum flavida cum disco ventris interdum confluyente signato. Pedes nigro- vel fusco-violacei, femoribus posterioribus interdum basin versus flavescentibus. Caput subtus et pectus remote punctulata, articulo secundo antennarum tertio fere dimidio vel saltem tertia parte longiore, tertio et quarto subæque longis. Pronotum longitudine media fere duplo et dimidio latius, marginibus lateralibus rectis. Abdomen subtus impunctatum, appendicibus duabus internis (lateralibus, Sharp) segmenti genitalis maris longe subulatis.

Long. ♂ 6-7.6 mm., cum membr. 8-9.6 mm. ♀ 7.8 mm., cum membr. 9.8 mm.

Queensland; South Australia (Yorketown).

COMMIUS MINOR, sp. n.

Flavus, capite (exceptis basi subtus, macula triangulari ab hac ad tubercula antennifera ducta bucculisque), maculis duabus magnis transversis triangularibus anticis pronoti, macula magna basali triangulari scutelli medium hujus attingente maculaque ejusdem angusta elongata marginali pone medium, meso- et metasterno medio (carina illius excepta), macula magna pleurarum, maculis quinque ventralibus, una utrinque sublaterali segmenti quarti et quinti et una magna media segmenti sexti, maculaque transversa segmenti genitalis maris violascenti- vel viridi-ceneis, maculis duabus magnis basalibus basi contiguis pronoti fuscis, hemelytris subpurpureo-fuscis, opacis, levissime ænescentibus, corio fascia flava inter angulum apicalem internum et marginem costalem ornato; antennis, rostro pedibusque castaneis, his ænescentibus. Caput vertice medio et pone juga remote subtilissime punctulatum, jugis oblique strigosis, articulo secundo antennarum primo plus

quam dimidio longiore, tertio secundo tertia parte longiore (ceteri desunt). Pronotum medio capiti subæquilongum, remotissime et subtilissime punctulatum, marginibus lateralibus anticis subrectis. Scutellum remotissime et subtilissime, pone medium latera versus fortius punctulatum. Hemelytra apicem abdominis attingentia, clavo et corio remote subtiliter punctulatis, margine apicali hujus exterius levissime sinuato. Pectus remote punctulatum, pleuris medio levibus. Abdomen impunctatum, segmento sexto ventrali maris medio segmentis tribus antecedentibus unitis æquilongo, segmento genitali maris margine apicali segmenti ultimi ventralis paullo latiore, appendicibus internis (lateralibus, Sharp) falciformibus, dilute piceis (in elegante longioribus, nigris).

Long. ♂ 9 mm.

Queensland.

Much smaller than *C. elegans* Don. and differently coloured, with the pronotum much shorter, the hemelytra also shorter, the apical margin of the corium much less sinuate near the apical angle, and the genital segment of the male much broader.

ONCOCORIS OVALIS, sp. n.

Ovalis, livido-testaceus, modice dense sat fortiter nigricanti-punctatus, ventre medio remote punctato, limbo laterali prosterni et ventris impunctato, articulo ultimo rostri, vitta angusta sublaterali paullo curvata dimidii antici pleurarum, macula oblongula ante angulos posticos prosterni, mesosterno medio (carina excepta), macula magna transversa basali ventris, macula media segmenti ejus sexti maculaque parva ad angulum basalem et apicalem segmentorum connexivi et ventris nigrinis. Caput pronoto medio subæquilongum, tylo et jugis æque longis, rostro coxas posticas superante; (antennæ desunt). Pronotum longitudine media duplo et dimidio latius, marginibus lateralibus subrectis, angulis lateralibus levissime eminulis, obtusis. Scutellum maculis quinque minutis basalibus et summo apice impunctatum. Hemelytra apicem abdominis superantia, corio areolis aliquot impunctatis prædito, membrana fusca, venis albo-cinerascentibus. Abdomen hemelytris subæque latum. Pedes maculis punctiformibus nigrinis conspersi, femoribus posticis medium segmenti sexti ventris paulum superantibus, spiculis stridulatoriis fusco-ferrugineis.

Long. ♀ 8 mm.

Queensland.

EURYNANNUS, gen. nov.

Corpus parvum, late breviter rotundato-ovale. Caput planiusculum, dimidio basali partis anteocularis antrorsum admodum angustato, lateribus obtusissimis, convexis, in tubercula antennifera continuo transeuntibus, dimidio ejus apicali parallelo, apice late rotundato et medio levissime inciso, lateribus acutis, jugis tylo longioribus et ante hunc contiguis,

oculis minutis, brevissime stylatis, ocellis perminutis, ab oculis ac linea media capitis subæque longe distantibus, mox pone lineam inter marginem posteriorem oculorum fictam positis, vertice oculo circiter septuplo latiore, tuberculis antenniferis e supero distinguendis, antrorsum convergentibus, apice extus spinuloso-productis; antennis ab oculis et ab apice capitis subæque longe insertis, quinque-articulatis, articulo primo apicem capitis haud attingente, bucculis humilibus, rectis; rostro coxas posticas paullum superante, articulo secundo apicalibus duobus subæquilongis unitis paullo brevior. Pronotum medio capiti subæquilongum, marginibus lateralibus anticis leviter rotundatis, antice leviter sinuatis, margine postico rotundato, angulis lateralibus vix eminulis, obtusis. Scutellum subæque longum ac latum, parte apicali latiuscula, frenis medium scutelli paullum superantibus. Sterna medio sulcata; orificia in rugam longiusculam oblique antrorsum producta. Hemelytra apicem abdominis paullum superantia, margine apicali corii levissime sinuato, membrana paucinervi. Abdomen hemelytris parum latius, subtus prope basin utrinque vitta stridulatoria curvata ad apicem segmenti tertii extensa instructum. Pedes mediocres, femoribus posticis intus spiculis stridulatoriis uniseriatis instructis, tibiis femoribus subæquilongis, supra sulcatis, tarsis triarticulatis.

Easily distinguished from *Oncocoris* by the structure of the head, the very small substylated eyes, and the short and broad body.

EURYNANNUS LIPPUS, sp. n.

Ochraceus, opacus, sat dense ferrugineo-punctatus (disco ventris tamen remotissime punctato), ubique maculis minutis nigris remotissime adpersus, macula parva nigra ad angulos basales et apicales segmentorum abdominalium notatus. Caput longitudine paullo latius, rostro apice nigro; antennis ochraceis, articulo tertio apice et duobus ultimis totis dilute ferrugineis, articulo secundo primo duplo longiore, tertio primo dimidio longiore, quarto secundo subæquilongo, quinto quarto æquilongo vel paullo longiore. Pronotum capite duplo latius. Scutellum mox pone medium levissime sinuatum. Membrana cinerea, maculis minutis nigris remote conspersa. Abdomen (♂) dorso apice arcuato-sinuatum, segmento ventrali sexto apice medio subrecto, latera versus levissime sinuato, medio segmento quinto duplo longiore, segmento genitali perpendiculari, ultra segmentum ultimum abdominale haud producto. Pedes maculis punctiformibus nigris remotissime conspersi, femoribus posticis apicem abdominis attingentibus, spiculis stridulatoriis ferrugineis.

Long. ♂ 5.6 mm., lat. 4.3 mm.

Queensland.



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