

Hemipterological Gleanings.

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The following descriptions and synonymical notes have accumulated in the course of my studies on our North American Hemiptera during the past year or so:

CAPSIDAE.

Phytocoris rufus n. sp.

Closely allied to *mundus* but smaller, more reddish in color and wanting the vestiture of whitish hairs so conspicuous in that species. Length 4 to 4½ mm.

General characters substantially as in *mundus*. Surface almost nude, with a few short scattering hairs only, not distinctly long-pubescent as in the allied form. Notch on the sinistral aspect of the male genital segment rounded, not right angled as in *mundus*, the margin behind this feebly sub-angularly produced.

Color dull rufous becoming dark sanguineous on the head, basal joint of the antennæ and legs; pronotum, outer margin of the elytra and most of the lower surface paler; basal joint of the antennæ and the femora obscurely irrorate with paler, the latter pale at base. Second joint of the antennæ paler with a dusky band before the middle and another at apex. Third and fourth joints blackish, the narrow base of the third pale. Tip of the rostrum black. Hind submargin of the pronotum with a dusky vitta, the extreme edge paler, thus giving the impression that there is a linear depression along this margin. Corium shaded with obscure sanguineous forming an oblique vitta on the disk posteriorly and another parallel along the claval suture. Cuneus entirely sanguineous or sometimes a little paler exteriorly, marked with two dusky points on the inner margin. Membrane deeply infuscated with a pale spot at the apex of the cuneus, the nervures fusco-sanguineous. Tarsi black, the posterior pale at base.

Described from ten examples representing both sexes, taken at Sevenoaks, Florida, on May 1st, 1908, and listed as *Phytocoris sp.* in my report on Florida Hemiptera. (P. 180, No. 139.)

This species is very close to *mundus* but its smaller size, deeper color, the pale posterior margin to the pronotum bordered by dusky, the obscurely banded second antennal joint, colored cuneus, darker membrane, and especially the want of the conspicuous pale pubescence on the upper surface will distinguish it.

Phytocoris vau n. sp.

Aspect of *tibialis* but larger and more elongated: pale greenish-yellow; antennæ, legs, clavus and membrane rufous or rufopiceous. Length 6 mm.

Head small, nearly vertical before. Antennæ slender; basal joint stout, as long as the pronotum, armed with short stiff black hairs; second joint very long, two and one-half times the length of the first; third and fourth together not longer than the second. Pronotum polished, much narrowed anteriorly, the sides feebly arcuated. Elytra long, parallel, minutely sericeous, the corium polished.

Color pale greenish-yellow. Clypeus, cheeks and loræ rufous. Basal joint of the antennæ dark rufous, immaculate; second paler, becoming piceous at apex, marked with a pale ring at base and a broader one beyond the middle; apical joints fuscous, the third narrowly pale at base. Rostrum rufous at base, black beyond the middle. Pronotum and scutellum entirely pale. Clavus rufopiceous, the pale pubescence conspicuous on this dark surface. Corium pale with a rufous vitta at the inner angle connecting the dark color on the clavus with that on the membrane. Cuneus rufous at apex. Membrane fuscous tinged with rufous and minutely irrorate and clouded with whitish on its disk. Beneath pale. Legs almost sanguineous; the tibiæ paler becoming infuscated at apex; tarsi blackish.

Described from one male example taken at Pasadena, California, June 17th, 1909, by Mr. Fordyce Grinnell Jr. This slender species is very distinct by its pale greenish color with rufous antennæ, legs, clavus and inner angle to the corium.

Argyrocoris n. gen.

Closely allied to *Phytocoris*. Head nearly horizontal; the vertex oblong, continued in the plane of the pronotum; moderately convex, without a median sulcus. Eyes oval, nearly vertical, contiguous to the angles of the pronotum; clypeus strongly produced, narrow, compressed. First joint of the antennæ short, scarcely thickened, little longer than the inner margin of the eye; second linear, longer than the head and pronotum together; third more slender and shorter; fourth still more slender and shorter than the first. Pronotum transverse, base and apex truncate, the latter reaching nearly to the outer angles of the eyes; collum entirely wanting; sides nearly straight, scarcely carinate. Scutellum small. Elytra and wings as in *Phytocoris*. Rostrum passing the posterior coxæ. Anterior coxæ elongated. Posterior femora strap-like as in *Phytocoris*. Basal joint of the tarsi not longer than the second. Arolia linear, long and free as in this sub-family.

This genus has the form and aspect of *Phytocoris*, but the entire absence of a pronotal collum, the short basal joint of the antennæ and the strongly compressed and arched clypeus seem to warrant its separation. It has much the aspect of the *Mirinae* but the non-sulcate vertex, elongated anterior coxæ and short basal joint of the tarsi exclude it from that division.

Argyrocoris scurrilis n. sp.

Testaceous white; pronotum with five lines of appressed silvery scales the three median of which are continued over the head. Length 5 mm.

Vertex viewed from above oblong, a little longer than broad between the eyes; clypeus abrupt, narrow, viewed from the side forming a semi-circular plate distinctly wider than the narrow cheeks and loræ. Eyes castaneous. Basal joint of the antennæ surpassing the clypeus by about one-third of its length, attenuated on its immediate base, a little thicker than the second; third about two-thirds the length of the second; fourth short and feeble, not half the length of the third and much thinner, hardly so long as the first. Callousities of the pronotum obsolete. Elytra long, parallel, surpassing the tip of the abdomen by practically the whole length of the membrane. Hind femora much compressed, ligulate, regularly narrowing from near the base.

Color whitish testaceous, clothed with scattering soft white hairs. Pronotum with five slender longitudinal lines of brilliant silvery-white appressed scale-like hairs, the three median of which are continued on the head and are connected behind by a similar line across the base of the scutellum; the pronotal lines more or less distinctly margined with fuscous. Scutellum somewhat infuscated at base, the broad median line and slender margins silvery pubescent. Elytra nearly unicolorous. Membrane white, sparingly marmorate with fuscous beyond the areoles. Legs concolorous, the hind femora with three longitudinal black lines below, which are more or less visible above. Tarsi slightly infuscated, the claws black.

Described from three examples taken at light in the Huachuca Mts., Arizona, in July, by Prof. H. G. Barber.

Eustictus venatorius n. sp.

Closely allied to *grossus* but of a yellowish-testaceous color mottled and dotted with fuscous or black. Length 7—8 mm.

Head as in *grossus*; exerted base polished black with a fulvous spot behind the inner angle of each eye; surface pale clouded with fuscous between the antennæ and more indistinctly on the vertex; cheeks polished black; throat blackish. Antennæ pale closely dotted with black; tip of the second joint and apical one-half of the third whitish; fourth joint black, the extreme tip paler. Pronotum coarsely punctured, variegated, anteriorly mostly black, posteriorly largely pale. Scutellum black; a large

fulvous spot either side of the middle of the convex anterior lobe, and a small one on either side of the base of the tumidly bilobate posterior lobe. Elytra pale blotched with black especially on the clavus and apical disk of the corium; costa pale ending in an elongated black spot. Cuneus pale yellow, black on the inner angle and fuscous at apex. Membrane smoky, its nervures black. Beneath mostly pale, clouded with fuscous along the sides. Femora dotted with fuscous, the tibiæ four times alternated with black. Tarsi and rostrum dusky, the latter attaining the hind edge of the metasternum.

Described from one male and two female specimens taken by me at Hamburg and Gowanda, N. Y., and Crescent City, Fla. Those taken in New York were beaten from hickory trees over which they were prowling, apparently in search of prey.

Genus *Largidea* Uhler, MS.

Allied to *Hadronema*. Head short, nearly vertical, scarcely produced below the line of the gula; cheeks narrow, but little prominent; loræ minute, obscure; vertex ecarinate. Antennæ robust; first joint scarcely attaining the apex of the head; second about as long as the pronotum, much thickened regularly toward its apex; third and fourth short, subequal, and about as long as the first, fusiform, much thinner than the others. Pronotum coarsely punctured, trapeziform, about as long as wide across its base, sides straight, strongly carinate, base broadly rounded over the base of the scutellum; apex about one-half as broad as the base, flat, collar wanting; callousities obscure, bounded behind by an impressed hooked line. Scutellum small, rugose. Elytra finely punctured; the costal margin moderately expanded and curved. Membrane bi-areolate. Wings without a hamus. Legs rather short; tibiæ armed with closeset hairs but without stiff bristles; first joint of the tarsi nearly as long as the apical two united; second short and scarcely distinguished from the third. Arolia wanting. Rostrum just passing the intermediate coxæ. Surface short-pubescent.

This genus seems to be very near to Distant's genus *Fuscus* (Biol. Heter. I, p. 299), but he does not mention the carinate margin of the pronotum which he would almost certainly have done had it been present in his genus. Dr. Reuter mentions this genus under his subfamily Heterotominæ on page 110 of his *Neue Beiträge zur Phylogenie und Systematik der Miriden*, 1910; probably from specimens I had sent to him so determined for me by Dr. Uhler.

Type: *Largidea marginata* n. sp.

Largidea marginata Uhler, MS.

Dark castaneous. Head piceous-black with a rufous spot against the inner margin of the eyes. Second joint of the antennæ sometimes tinged with castaneous. Pronotum rufous; callousities black, the impressed line behind them polished; generally the whole disk behind the callousities is dark castaneous leaving a broad rufous or red margin. Scutellum rufous with a blackish spot on its base. Elytra dark castaneous; the cuneus and sometimes the broad inner margin of the corium rufous. Membrane blackish fuscous; the nervures black. Beneath mostly rufous becoming black on the sternum. Legs nearly black, the femora sometimes rufous beneath.

Described from thirteen examples taken by me on scrub oak at Salida, Colorado, July 24th, 1900. At that time I sent specimens to Dr. Uhler which he determined as *Largidea marginata* Uhler, but the description seems never to have been published.

Genus Ganocapsus n. gen.

Body glabrous, oblong, subelongate; head nearly vertical, more elongated than in *Garganus*, clypeus strongly convex, passing the cheeks by one-half its length, vertex distinctly impressed between the inner angles of the eyes. Antennæ long and slender, attenuated toward the apex; first joint thickest, nearly as long as the pronotum; second joint filiform, not at all thickened. Pronotum longer than in *Garganus*, strongly narrowed anteriorly, and the sides distinctly but not deeply sinuated; surface transversely wrinkled, impunctate, collum distinct. Elytra polished, impunctate, strongly shagreened. Rostrum attaining the hind edge of the metasternum. Posterior femora long, terete, scarcely flattened and but little narrowed to the apex; first tarsal joint not longer than the second; arolia large and divaricate as in the allied genera.

This genus is closely allied to *Garganus* but differs in having the second antennal joint filiform, the head more produced with a longer and more convex clypeus, the vertex more distinctly impressed at base, and the pronotum longer with the sides obviously sinuated.

Type *Ganocapsus filiformis* n. sp.

Ganocapsus filiformis n. sp.

Form of *Garganus fusiformis*. Color pale sanguineous, elytra black, commissural and costal margins and legs pale yellowish. Length, male 5, female 6 mm.

Head nearly vertical, longer than in *Garganus fusiformis*; front convex, polished; clypeus prominent, considerably produced before the loræ. Antennæ slender; first joint cylindrical, as long as the pronotum behind the callousities; second about twice the length of the first, not thickened in either sex; third two-thirds the length of the second and more slender; fourth one-half the length of the third and still thinner. Sides of the pronotum sinuated behind the middle, the callousities distinct. Scutellum proportionately a little longer and more convex than in *fusiformis*. Elytra very minutely and sparingly tomentose.

Color pale sanguineous becoming a little greenish on the abdomen; eyes, basal joint of the antennæ, elytra, tip of the rostrum and oviduct of the female black; apical half of the second antennal joint, third except on its immediate base and the fourth entirely, apex of the tibiæ and the apical joint of the tarsi fuscous; sides of the venter with an obscure fuscous vitta. In the female there is an oblique obscure fuscous cloud next the humeral angles. Legs whitish-testaceous. Commissural and costal margins of the elytra whitish, the later covering most of the cuneus; membrane fuscous-black, the nervures black.

Described from one pair taken at Tuscon, Arizona, August 28th, 1911, by Mr. F. Payne. This species has somewhat the aspect of a *Stenotus* but the short basal joint of the tarsi excludes it from that genus. In Reuter's 1909 key to the genera of the Capsaria it goes directly to genus *Garganus* from which it differs, however, by the characters given above.

Dichrooscytus irroratus n. sp.

Size and aspect of *suspectus* Reut. Head more vertical than in *suspectus*, the basal carina of the vertex but feeble, the surface behind it depressed and continued in a broad indefinite sulcus in the male; surface anteriorly distinctly convex and arcuately striate; clypeus and cheeks prominent and deeply sutured. Antennæ about as in *suspectus*, first joint thicker, slightly longer than the basal width of the vertex, second in both sexes longer than the basal width of the pronotum. Pronotum more narrowed anteriorly and with the sides more oblique than in the allied form. Upper surface sparingly clothed with short pale hairs.

Color yellowish green, sometimes becoming deeper green on the anterior disk of the pronotum and on the abdomen. Scutellum pale sanguineous omitting the basal margin and an oval spot either side at apex; elytra more or less closely irrorate with sanguineous excepting the costal margin, the narrow calloused base and about the apical one-half of the cuneus; extreme tip of the latter sanguineous-brown. Membrane slightly enfumed becoming a deeper brown toward the apex, on the tip of the larger cell and next the apex of the cuneus; the nervures sanguineous or mostly so. Legs pallid becoming a little suffused toward the apex of the tibiæ; the tip of the tarsi and apex of the rostrum blackish. Length to tip of membrane 5 mm.

Described from two males and two females taken by me at Rifle, Colo., July 25th, 1900. About a week earlier I took four examples from the cedars about Manitou, Colo., which differ from the typical form above described in being smaller (4 mm.), in having the base only of the scutellum sanguineous, the nervures of the larger areole of the membrane pale, the base of the cuneus more deeply sanguineous and the antennae a little infuscated at apex. In some individuals the pronotum is washed with reddish. They have the same swollen striate face and probably are not distinct.

Dichrooscytus maculatus n. sp.

Allied to *elegans* but smaller and more strongly marked. Vertex but feebly carinated at base; clypeus and cheeks smaller and less convex than in *elegans*, the eyes when viewed from the side larger and more oblong, reaching almost to the line of the gula. Antennæ longer, the second joint much elongated, one and one-half times the length of the third and fourth united; scutellum narrower and more convex; upper surface with a few pale appressed hairs more conspicuous on the elytra.

Color light greenish yellow more or less tinged with pink, leaving the head, antennæ and rostrum paler; punctures on the pronotum strong, concolorous; eyes black. Elytra marked with an oval fuscous spot at the inner angle of the clavus and a narrow transverse fuscous vitta on the apex of the corium, a little widened toward the costa. Membrane slightly enfumed, with a fuscous cloud across the apex and over the apical one-half of the areoles, the nervures pale, those at the extreme basal angle blackish. In the reddish examples the abdomen and legs are more or less strongly suffused with the same color. Length 3 mm.

Described from two female and four male examples taken by me at Sevenoaks, near Clearwater, Florida, on May 1st, 1908. This pretty little species is near to *elegans* but it has a different aspect on account of its larger eyes and narrower form, and is well distinguished by the more convex scutellum, longer antennæ, shorter clypeus and cheeks and the maculated elytra.

Horcias dislocatus Say.

So far as I can make out all of our eastern forms of *Horcias* belong to one species for which I adopt the name first used by Say. The following fairly well distinguished varieties are represented in my collection:

Var. dislocatus Say. Pale rufo-sanguineous; first two antennal joints, eyes, narrow base of the vertex and apex of the head; two approximate spots on the base of the pronotum, the

scutellum except the median line; clavus, at least within; a wedge-shaped spot on the apex of the corium; membrane, sides of the pectus and abdomen and tips of the tibiæ and tarsi, black.

Var. scutellatus n. var. Like *dislocatus* except that the pronotum and elytra are nearly or quite immaculate and the scutellum is entirely black. Portland, Me., and Brantford, Ct.

Var. goniphorus Say. Differs from *dislocatus* in having the thoracic spots merged, the scutellum entirely black, the elytra broadly black within and the femora and sometimes the base of the tibiæ more or less, black.

Var. affinis Reut. Differs from *dislocatus* in being more fulvo-testaceous in color, in having the pronotal spots larger and the elytra black with two lines along the claval suture, the narrow costa, a line near it and the cuneus except at apex, pale.

Var. marginalis Reut. Black; two divergent vittæ on the vertex against the eyes, narrow costal edge of the elytra and sometimes a line on the base of the cubital nervure and one on the inner angle of the cuneus, the tibiæ except at base and apex and the base of the tarsi, white or whitish.

Var. nigrita Reut. Differs from *marginalis* in having the elytra entirely black except for a pale line on the base of the cubital nervure.

Var. pallipes n. var. Differs from *nigrita* only in having the legs entirely pale or fulvo-testaceous. Hamburg, N. Y. Five examples.

Var. thoracicus n. var. Differs from *nigrita* in having the pronotum rufo-sanguineous with the collum and a vague cloud along the hind border black. Hessville, Ind., collected by A. B. Wolcott.

Lygus tenellus Uhler MS.

Allied to *invitus* and *belfragei* but more uniformly colored. Length 5 mm.

Body more narrowed anteriorly than in *invitus*; covered with a closely appressed pale pubescence. Antennæ longer and more slender than in the allied species and the pronotum longer with a narrower apex and more rounded anterior angles.

Color ferrugino-testaceous becoming whitish on the legs, rostrum and along the middle of the ventral aspect of the whole body. Eyes, tips of the tarsi and rostrum black; apical joints of the antennæ usually slightly

infuscated. Elytra frequently, and sometimes the scutellum, more or less infuscated, at times almost black in the males. In the dark specimens the cuneus is mostly pale. Membrane a little infuscated; usually the apex or a marginal spot about half way beyond the apex of the cuneus is darker. In typical examples there is a fuscous cloud along each side of the body beneath which reaches the margin on the abdomen and shades lighter towards the middle of venter. Stigmata pale. In dark males the abdomen may be entirely blackish-fuscous becoming a little paler along the middle of the venter.

Described from numerous examples of both sexes taken in New York, Massachusetts and Maine. It is a common species throughout the eastern United States and Canada. Many years ago Dr. Uhler determined this species for me as *Lygus tenellus* and Prof. Osborn and Mr. Heidemann have it under the name *Lygus hirticulus* Uhler, MS., but a description of it has never been published under either of these names.

This belongs to a perplexing group of species including *invitus* Say, *belfragei* Reut. and *fasciatus* Reuter. The females are sometimes difficult to distinguish, but their males can readily be separated by the form of the genital pieces. In *invitus* the ventral base of the genital segment is long, sinuated on the side and strongly produced to a subacute point at the middle; in *tenellus* it is shorter and rounded at apex and deeply notched at the side; in *belfragei* it is still shorter and more rounded with the lateral notch more rounded while in *fasciatus* this segment is almost truncated with a broadly rounded median lobe. In *tenellus* the style lying in the sinistral notch of this segment is produced in two parallel subacute equal teeth separated by a narrow deep notch similar in form to one of the teeth; in *invitus* it is produced in one moderately long obtusely conical tooth, from the inner base of which projects an acute incurved tooth forming nearly a right angle with the primary tooth; in *belfragei* this primary or outer tooth is longer and more slender, linear, obtuse at apex and forms an angle of about 135 degrees with the acute incurved inner tooth; in *fasciatus* this primary tooth is still longer and curved somewhat outward so it is parallel with the outer margin of the segment, and the long incurved inner tooth is extended in almost a straight line from the primary tooth, forming an angle of at least 165 degrees.

The antennæ usually present recognizable characters between these species but in immature specimens they are not

to be trusted. In typical *invitus* they are fuscous with the extreme base and apex of the first joint pale; in the pale variety of *invitus* joints three and four and the broad apex of two only are fuscous; in *belfragei* the apex of the second joint is black and the base at least and sometimes nearly the whole of this third joint is pale; in *fasciatus* and *tenellus* the antennæ are pale with the apical two joints more or less infuscated; more in *fasciatus* than in *tenellus*. In the markings of the pronotum and elytra these four species seem to run together; *invitus* when mature nearly always has a broad blackish ray on either side of the pronotum which is sometimes seen in *belfragei* but never in *fasciatus* or *tenellus* so far as my observations go; *belfragei* and *fasciatus* are usually more or less greenish while *invitus* and *tenellus* are, I think, never so when mature. In *belfragei* and *fasciatus* and in the paler forms of *invitus* there is a fuscous fascia across the broadest part of the corium which may extend over the clavus to a greater or less extent. In *tenellus* the elytra are practically unicolorous.

***Tropidosteptes canadensis* n. sp.**

Nearest to *amœnus* var. *palmeri* but darker with the antennæ stouter and black at base. Length 5 mm.

Structurally this species is very near *amoenus*. It differs principally in having the antennæ obviously stouter with the first joint shorter; the pronotum, scutellum and elytra more closely punctured and the rostrum shorter reaching only to the extremity of the intermediate coxæ, whereas in *palmeri* they attain the hind edge of the metasternum.

Color an obscure yellowish testaceous, polished. Clypeus shining black, the tumid cheeks and loræ of a lighter yellowish. Eyes nearly black; basal joint of the antennæ black, the apical dusky. Disk of the pronotum on either side, clavus, narrow costal and broad apical margin of the corium and a discal spot on the base of the scutellum obscure brownish, the latter bisected by a narrow median pale line. Callousities infuscated. Membrane slightly infuscated, its disk, a spot at the apex of the cuneus and another a little beyond it, paler; nervures nearly concolorous, the basal angle with a fuscous mark. Hind femora with two narrow fuscous subapical rings which are nearly obsolete in one specimen. Tip of the rostrum and tarsal claws black.

Described from two female examples taken on white ash by Mr. W. Metcalfe at Ottawa, Ont., August 1st 1904. It is not unlikely that this species may vary in color somewhat as does *amœnus* but the structural characters mentioned above make it certain that it is not a variety of that species. The

black clypeus and basal joint of the antennæ are probably constant characters.

Tropidosteptes tricolor n. sp.

Allied to *amœnus* var. *scutellatus* but larger and still broader; black, head and abdomen rufous, antennæ, legs and cuneus whitish. Length 6 mm.

In its structural characters this species differs from *amoenus* in having the vertex and front broader, the pronotum longer and more narrowed anteriorly with a deeper and more uniform puncturation, the elytra more closely and finely punctured and the whole surface, while polished, closely and quite long pale pubescent. Aside from this it has all the characters of *Tropidosteptes* to which genus it must be referred.

Color piceous-black. Antennæ whitish with the apex of the second joint broadly infuscated. Head rufous with the eyes dark castaneous and the clypeus black. Collum of the pronotum concolorous touched with rufous at the middle; cuneus whitish pellucid; membrane deep fuscous. Rostrum, legs coxæ and trochanters almost white; tarsal claws black; metapleura white between the intermediate and hind coxæ. Abdomen rufous, obscured on the genital segment.

Described from one female specimen taken at Riverton, N. J., June 7th, 1909, by Mr. C. W. Johnson. The black color with pale cuneus gives this species somewhat the aspect of *geminus* but its red head and abdomen, pubescent surface and other structural characters will at once distinguish it.

Tropidosteptes geminus Say.

This species, which was described as a *Capsus* and well characterized by Say, was taken by me at Colden, near Buffalo, N. Y., on June 7th, 1908. I cannot find that it has been recognized by any of our later entomologists. It can readily be distinguished by its polished piceous-black color with whitish legs, basal antennal joint, and base of cuneus. The base and sides of the vertex are yellowish in my specimens.

Tropidosteptes imperialis n. sp.

Form and size of *cardinalis*; elytra mostly deep blue-black; head, pronotum, scutellum and cuneus pale or sanguineous. Length 6 mm.

Head formed as in *cardinalis*; polished, impunctate, the clypeus a little less incurved at apex; base of the vertex slenderly but distinctly carinate. Pronotum more finely punctured than in *cardinalis*, the anterior margin before the callousities impunctate, polished. Scutellum scarcely punctured, minutely transversely wrinkled. Elytra minutely and obscurely punctured.

Antennæ about as in *cardinalis*, the second joint scarcely longer than the pronotum and a little thickened at apex; the third proportionately shorter than in the allied species. Rostrum attaining the intermediate coxæ; first joint much exceeding the gula, broad. Apical tarsal joint subequal to the basal two, the second shortest.

Color: Head and beneath ferrugino-testaceous, more or less tinged with sanguineous especially on the clypeus and propleuræ. Pronotum and scutellum sanguineous, the former touched with black on the hind margins near the humeri and marked with a polished black band on the anterior margin expanded so as to cover the anterior half of the callousities; collar white; posterior margin very slenderly paler. Clavus and corium polished blue-black, the latter with a whitish line on the base of the ulnar nervure and a vague whitish patch on the base of the discal areole. Cuneus sanguineous, edged with pale and tipped with black. Membrane smoky black. Antennæ black, the second joint testaceous from near its base for two-thirds its length. Legs pale marked with piceous black on the femora and basal half of the tibiæ, the apical tarsal joint black, [fore legs wanting]. Rostrum black, the basal joint and incisures mostly pale. Venter and sternal pieces largely black.

Described from one female taken in Lee County, Texas, on April 1st, 1909, by Rev. G. Birkmann and kindly given me by Mr. W. E. Snyder of Beaver Dam, Wisc. A showy species closely allied to *cardinalis* but with finer and more obscure puncturation and different arrangement of colors.

***Pæciloscytus rosaceus* n. sp.**

Rosy-red, more or less varied with pale, callousities blackish. Length $5\frac{1}{2}$ mm.

Head proportionately shorter than in *basalis*; front convex, but obscurely striate; cheeks narrow, attaining the apex of the prominent clypeus; loræ broad, rounded at apex. Pronotum impunctate, rather more truncated behind than in *basalis*; osteolar orifices conspicuously pale. Rostrum just passing the posterior coxæ; first joint of the hind tarsi about one-half the length of the second.

Color bright rosy-red or light sanguineous; borders and middle line of the vertex and front, a few obscure arcs and the loræ pale; apex of the cheeks and the clypeus black. Antennæ dull testaceous becoming obscure toward the apex; base of the first and second joints and sometimes the broad apex of the second black. Pronotum obscurely mottled with paler, sometimes forming obscure rays, the anterior margin pale and the callousities infuscated or black. Median line of the scutellum pale. Elytra sometimes with about three obscure pale longitudinal areas, the thickened margins of the cuneus and a line on the inner angle of the corium cream white. Membrane enfumed, the nervures, an arc parallel to and beyond them and a spot at the apex of the cuneus, pale. Lower surface more or less irrorate or varied with pale, the mesosternum either side of the middle line fuscous. Legs varied with pale and dotted with darker; the knees, tips of the tibiæ and tarsi blackish.

Described from two male and three female examples taken by me at Manitou and Fort Collins, Colorado, in July 1900. This pretty species stands in the collection of the Agricultural College at Fort Collins as *Polymerus rubidus* Uhler, but I cannot find that the species was ever published.

Diaphnidia pellucida Uhler.

Of this species, which seems to be common throughout the Eastern United States and Canada, I have material from New York, Ohio, Massachusetts, District of Columbia, Colorado and California. With me it most frequently occurs on hickory trees and has a most annoying habit of biting sharply should it land where the skin is wet with perspiration. It seems to do this for sustenance and not for protection.

I have not yet been able to locate *Diaphnidia debilis* which would seem to be a little larger and paler than the present species.

Diaphnidia provancheri Burque.

This species, which was described as a *Malacocoris* on page 144 of Provancher's Petite Faune Ent. du Canada, Hemipteres, is very close to *pellucida*, but may readily be distinguished by its having the second antennal joint longer and blackish. I have taken it at Hamburg. Boston and Gowanda in Erie Co., N. Y.; Mr. W. J. Palmer obtained it at Quinze Lake, Quebec, and Prof. A. P. Morse has taken it at Alstead, N. H., all in August and September.

Diaphnidia hamata n. sp.

Closely allied to *pellucida* but more slender and marked with a cloud on the disk of the corium and another in the middle of the membrane; the membranal veins forming a double fuscous hook. Length scant 4 mm. to the tip of the membrane.

Head nearly as in *pellucida*, the vertex a little more convex and the longitudinal sulcus and basal depression nearly obsolete in the male, quite so in the female. Pronotum proportionately longer and narrower anteriorly, the callousities prominent; scutellum and elytra narrower than in the allied species as is the whole insect. Rostrum reaching to just beyond the posterior coxæ. First joint of the antennæ as long as the head, second as long as the apical two together.

Color in dried specimens pale yellowish green, the head, antennæ and pectus more fulvo-testaceous, the apical antennal joint slightly infuscated. Elytra pale greenish-pellucid, more deeply colored along the claval and

apical margins of the corium; margins of the cuneus, especially the outer, and the costal and subcostal nervures of the corium toward their apex thickened and colored; commissural nervure of the clavus with a blackish line at apex and sometimes at base. Nervures of the membrane from near their base to the apex of the smaller areole thick and fuscous, thus forming a double brown hook. On the disk of the corium at its widest part is a wide subcrescentic dusky cloud and a round one occupies the middle of the membrane beyond the areoles. In all my specimens there is a bluish-green mark in the larger areole next the thickened nervure and another on the base of the cuneus which may extend on to its inner margin. Wings pellucid white; tarsi brownish at apex; tip of the rostrum black.

Described from one female and three male examples in only one of which is the pale pubescence, characteristic of the genus, retained. These specimens were all taken at Leona Heights, Alameda Co., California, in August, by Mr. J. C. Bradley. This species has a little the aspect of a *Cyrtopeltis* but the different shape of the head and want of a pronotal collar will at once separate it from that genus.

Diaphnidia capitata n. sp.

Smaller than *pellucida* and distinguished by its black head and fuscous basal joint of the antennæ. Length 3 mm.

Head polished, convex, the median sulcus nearly obsolete. Pronotum proportionately broader than in *pellucida*, the callousities prominent but small. Elytra parallel, scarcely widened apically, surface finely pale-pubescent; rostrum passing the hind coxæ.

Color whitish, tinged with testaceous or greenish in immature specimens. Head piceous-black, the eyes dark castaneous; antennæ a little infuscated at apex; basal joint and apex of the second infuscated in one immature specimen. Rostrum whitish, its apex scarcely darker in my specimens. Elytra diaphanous, the nervures scarcely thickened or pigmented. Membrane iridescent and very slightly enfumed beyond the areoles. Claws concolorous.

Described from three female examples; one taken by me in August 1907 at Lawton's Station, near Buffalo, N. Y., and two from "Psocid Glen" at Johnstown, Fulton Co., N. Y., taken by Mr. C. P. Alexander on August 30th 1910. The small size and black head will at once distinguish this species.

Calocoris uhleri n. n.

In 1895 Dr. Uhler described a *Calocoris tinctus* in Gillette and Baker's Hemiptera of Colorado, p. 34. This name however was used by Distant in 1884 for another species in the same genus so I now change that of Dr. Uhler as above. In the Canadian

Entomologist Vol. xli, page 390, 1909, Kirkaldy substitutes the name *pinicola* for *pinus* of Uhler in this genus, but I have been unable to discover that Uhler ever described such a species. It is possible that Kirkaldy had in mind this preoccupied name *tinctus* but we have no right to assume this to be the case. For the present we must therefore consider *pinicola* a nomen nudum.

Homoptera.

Genus *Cicada*.

Distant in 1904 (Annals & Mag. Nat. Hist., ser. 7, vol. 14, page 426) divides the old genus *Cicada* Linn. as recognized by Latreille, Stal, etc., into two distinct genera, the larger of which he names *Rihana*. He follows Latreille and others in placing *Cicada plebeja* Scopoli as the type of the smaller, for which he retains the name *Cicada* Linn., but *plebeja* was not described until five years after the publication of the tenth edition of the Systema Naturæ and therefore it cannot be taken as the type of this genus. In fact genus *Cicada* as restricted by Distant in his catalogue of the Cicadidæ does not contain a single species included in the Linnean genus *Cicada* of 1758, every species of that genus having been transferred to some other and in most cases having been made the type of such genus. In view of this it becomes necessary to make a new selection and I now propose to name *Cicada tibicen* Linn. as the type of the Linnean genus, thus making it strictly synonymous with *Rihana* Dist. and leaving it practically as recognized by Stal.

Catonia maculifrons n. sp.

Near *impunctata* Fitch but with the elytral nervures white and more distinct and the front with four narrow broken transverse black bands. Length 5 mm.

Vertex and base of the front narrower than in *impunctata*. Front much widened below, the sides strongly arcuated, broadest just below the antennæ. Valve of the male a little broader than long, abruptly rounded at tip; plates surpassing the valve by more than its length, obtusely triangular at apex, considerably exceeded by the narrow tip of the pygofers.

Color yellowish-white; depressed areas of the vertex and the sides of the pronotum behind the eyes black. Front whitish with four narrow transverse black bands, all broken by the white carinæ, the basal three more approximate and represented by mere spots; tip of the clypeus with two minute brown spots representing two larger black marks on the sides below

the lateral carinæ. Cheeks with a black band above and below the base of the antennæ. Antennæ; basal joint large and fulvous yellow, the setæ black. Propleura black below; tegulæ entirely pale. Mesonotum tinged with fulvous and obscurely marked with fuscous on the sides and next the white carinæ; tip white. Elytra brownish hyaline with a few smoky clouds toward the base; the apical one-third mostly infuscated and the costa deeper brown; nervures strong and white, impunctate. Wings smoky hyaline with fuscous nervures. Legs and pectus whitish; abdomen fuscous with the margins narrowly yellowish; the genital pieces white.

Described from one male taken in the Huachuca Mts., Arizona, on July 23d, by Mr. H. G. Barber, to whose kindness I am indebted for the specimen. This species is quite distinct from any other known to me by the six black spots on the base of the front. It seems to have somewhat the aspect of *Plectoderes lineaticollis* Fowler, a species which I inadvertently quoted as *laticollis* in my paper on this genus (Can. Ent. xlii., p. 264, Aug. 1910).

Catonia majusculus n. sp.

Allied to *cara* but longer and narrower. Color pale yellowish tinged with ferruginous, the elytra clouded with brown. Length 7 mm.

Head narrow; vertex scarcely produced before the eyes, nearly square, the carinæ almost obsolete. Front but little wider toward the apex, the carinæ obtuse and strong. Clypeus elongate. Pronotum nearly as long as the vertex, ecarinate. Mesonotum short, the carinæ obvious but not strong. Elytra long, parallel. Last ventral segment of the male deeply quadrangularly excavated, the margin at the middle slightly angularly produced; plates oblong, obtuse at apex, exceeding the obtusely produced angles of the last segment by one-half their length. Pygofers longer than the plates. Valve wanting.

Color pale yellowish ferruginous; the pronotum, tegulæ and legs almost white. Mesonotum ferruginous shading to fuscous anteriorly; sides and apex whitish. Meso- and meta-pleuræ slightly infuscated. Elytra obscure whitish subhyaline, slightly clouded toward the apex; clouded with brown on the basal and commissural margins and at the base of the appendix, the commissural margin twice interrupted with white; corium with indications of two oblique brown vittæ across the middle, the costa darker apically, interrupted on the base of the stigma and at the tips of the apical nervures; short transverse nervures mostly white. Wings somewhat infuscated, with dark nervures.

Described from one male and two female examples taken in the Huachuca Mts., Arizona, on July 28th and 29th, by Mr. H. G. Barber. This obscurely marked species belongs to the section of the genus having the apex of the head smooth and

rounded to the base of the vertex. It agrees with *cara* in coloring but may be distinguished by its elongated form and different marking. The ferruginous mesonotum shading to brown anteriorly and the broad smooth whitish pronotum seem to be constant characters.

Oliarus placitus n. sp.

Allied to *vicarius* and *5-lineatus*. A large elongated species; the females generally marked with a longitudinal fuscous vitta on the elytra. Length, male $9\frac{1}{2}$ mm.; female 11 mm.

Female: Vertex as broad as in *5-lineatus* and as long as in *vicarius*. Front and clypeus together proportionately longer than in *5-lineatus* and less angled at the sides; distinctly broader than in *vicarius*; base of the clypeus distinctly broader and less deeply inserted in the front than in either of the allied species. Pronotal carinæ straighter and more parallel than in *vicarius*. Elytra long and parallel sided; radial and ulnar nervures forked on the same line but farther from the base than the point of union of the claval nervures. In *vicarius* the point of union of the claval nervures is beyond the others while in *5-lineatus* the three are about on a line; stigma still longer than in *vicarius*. Elytral setæ less conspicuous than in the allied species. Hind femora with three equidistant teeth, the basal very minute and placed close to the base.

Color ferruginous-brown or almost castaneous; the sides of the mesonotum darker; meso- and meta-pleuræ and legs paler, the femora darker; anterior and intermediate tibiæ twice banded with brown. Abdomen fuscous, the segments edged with white. Carinæ of the vertex with a median pale spot; those of the face paler, the marginal forming a pale hook either side of the base of the clypeus. Elytra whitish-hyaline, the nervures pale dotted with black; stigma and a longitudinal discal vitta which begins at the base of the antepical areoles, fuscous; the transverse, and the tips of all the apical nervures blackish and bordered with fuscous. Commissure usually with a fuscous vitta to near the apex of the clavus. Generally there are two fuscous marks on the costa near the middle, a mark on the inner branch of the radial vein next the fork, another on the fork of the inner ulnar vein and a similar one opposite to it on the outer fork, and a round spot on the fork of the claval vein. The fuscous vitta on the apex and that on the commissure may be reduced or wanting but the spots on the nervures seem to be constant.

The male is smaller and wants most of the elytral markings but has the four dots on the nervures; and the stigma, the transverse veins, and the tips of the apical are fuscous. The male genital characters in this species are very distinct. The median tooth of this segment is long and broad, roundedly expanded and feebly bilobate at apex where its slender margin is reflexed. Side pieces of the genital segment obtusely triangular, but little surpassing the median tooth. Plates narrow and curved at base, abruptly expanded and almost square beyond the apex of the median lobe.

their inner margins contiguous and their outer angles produced. Pygofers forming a hood over the apex of the plates, armed with a slender tooth dorsally.

Described from one male and ten female examples taken at Spring Creek, Ga., in June 1911, by Mr. J. G. Bradley, and one male taken by me at Ft. Myers, Fla., in May 1908.

***Oliarus slossoni* n. n.**

In 1908 I described in the Proceedings of the Academy of Natural Sciences of Philadelphia (vol. 59, p. 487) an *Oliarus* taken by Mrs. Slosson at Biscayne Bay, Fla., as *O. hyalinus* n. sp.; overlooking the fact that this name was preoccupied for *O. hyalinus* Fieber of Europe. I therefore now rename the species after its discoverer. The unique male type is I think the only specimen I have seen or that has yet been reported. More recently Mrs. Slosson has sent me for study two smaller but closely allied specimens taken by her in Florida, which I at first thought might be females of this species, but more careful study with related material shows that they are undoubtedly new. For this form I now suggest the name:

***Oliarus difficilis* n. sp.**

Smaller than *slossoni* with the vertex broader, the clypeus proportionately shorter, the mesonotum paler between the lateral carinæ and the elytral nervures distinctly punctate. Length 6 mm.

Vertex much narrower than in *slossoni* but still at least one and one-half times longer than broad. Front broad, but proportionately longer with a narrower base than in either *slossoni* or *aridus*, the median carina distinctly but narrowly forked at base while in both of the allied species this fork is as broad as long and is obscure in *aridus* and almost obsolete in *slossoni*. Clypeus scarcely longer than the front, about twice as long in both the allied species; very minutely transversely striate, and viewed from the side or below exhibiting heavy oblique striæ. Pronotum very short. Mesonotum tricarinate. Elytra proportionately a little broader than in *slossoni*, the nervures heavy, evidently but not strongly punctate, the anastomoses heavily infuscated; stigma large as in *aridus*.

Color piceous brown, almost black in places; carinæ of the head and pronotum, margins of the abdominal segments, tegulæ and apex of the mesonotum testaceous; disk of the mesonotum pale castaneous between the lateral carinæ; apex of the front with an indefinite paler spot on either side of the base of the clypeus; clypeus almost fulvous in one example. Mesosternum and pleuræ whitish as in the allied species. Legs brown, becoming paler toward their apex, the incisures pallid. Elytra obviously whitish-hyaline, nervures pale, fusco-punctate, infuscated only on the forks,

transverse veins and at apex; commissural nervure twice alternated with white. Nervures of the wings slender, fuscous. In one example the base of the elytra bears a fuscous cloud as in *slossoni* and *humeralis*.

Described from two females taken at Belleair, Fla., by Mrs. Annie Trumbull Slosson.

Oecleus borealis n. sp.

Closely allied to *obtusus* Ball; black with the carinæ conspicuously fulvous. Length 6 mm.

Head broader than in some of our species, almost semicircular in outline. Vertex rather wide at apex, narrowed to a point at base; viewed from above produced hardly one-half its width before the eyes. Front strongly narrowed at base where the median carina is nearly obsolete. Pronotum deeply subangularly emarginate. Mesonotum distinctly 5-carinate.

Color black; all the carinæ, with the narrow margins of the pronotum, mesonotum and pelural pieces, fulvo-testaceous. Metapleura and base of the abdomen covered by a testaceous band; the base of the genital segments of the same color in the female. Legs pale, lineate or clouded with fuscous. Antennæ black on a narrow pale base. Usually there is a broad fulvous vitta near the lateral angles of the mesonotum. Elytra nearly hyaline, becoming distinctly smoky at apex; nervures strong, the punctures distinct at base and as far as the apical areoles; stigma unusually short and broad, sometimes more elongated. In dark examples the apical nervures are more or less clouded with fuscous and the pale commissure is twice interrupted with fuscous.

Described from numerous examples taken in New York, New Jersey, Florida and Washington. D. C. (Types from N. J. and Fla.) This is the species I have heretofore determined as *decens* Stal, but it is much smaller and darker and certainly must be distinct. *O. obtusus* Ball sometimes has black vittæ between the mesonotal carinæ and is very close to this species, but it has the stigma narrower, the elytral nervures not so heavy and the colors paler.

Oecleus capitulatus n. sp.

Size of *pellucens* Fowler but a little broader with a smaller head and shorter vertex; black, lineate with fulvous on the mesonotum. Length 7 mm.

Head small, little longer than broad, scarcely wider than the greatest distance between the mesonotal carinæ. Vertex nearly linear, surpassing the eyes by less than its own width if viewed vertically from above. Front about as in *pellucens*, the median carina obsolete toward its base. Pronotum deeply subangularly emarginate, rather broadly rounded either side. Mesonotum 5-carinate.

Color black; all the carinæ of the head, pronotum and mesonotum and the edges of the pleural pieces and abdominal segments fulvous; hind edge of the pronotum and tegulæ pallid. Legs fulvo-testaceous; femora lineate and the tibiæ obscurely banded at base and apex with fuscous. Elytra almost pellucid; nervures yellowish, fusco-punctate to their apex; stigma narrow and fuscous, paler posteriorly, preceded by a white node. Nervures of the wings fuscous. Antennæ brown or rufous, the second joint infuscated in the male.

Described from two male and two female examples taken in the Huachuca Mts., Arizona, July 15th, by Mr. H. G. Barber, This is a large dark species with a conspicuously small head.

Oecleus quadrilineatus n. sp.

Allied to *capitulatus* but with a broader vertex, tricarinate mesonotum and narrower elytra with their nervures impunctate beyond the middle. Length, male 5 mm., female 6 mm

Head rather large; vertex distinctly widened anteriorly, especially in the female. Front broader than in *capitulatus*, widening almost from its base, its apex deeply impressed, the median carina obsolete at base. Pronotum deeply but not acutely emarginate, the lateral carinæ conspicuous. Mesonotum with three parallel carinæ. Elytra narrow, the costal areole of equal width from near its base, the costa not broadly arcuated as in *capitulatus*.

Color black, opaque; antennæ and carinæ of the vertex, front, clypeus and pronotum fulvous-yellow; the sides of the pronotum whitish. Mesonotum marked with four equidistant longitudinal fulvous vittæ placed between the concolorous carinæ. Base of the rostrum, lateral carinate edge of the mesopleura and legs yellowish, the latter lineate with fuscous on the femora and touched with the same color on the extreme base and apex of the tibiæ. Metapleura and an irregular area on the base and another on the apex of the venter whitish. Elytra whitish-hyaline; nervures punctate to the antepical areoles, then fuscous to the apex; stigma a little expanded anteriorly; commissure alternated with fuscous at the middle and apex.

Described from one pair taken in the Huachuca Mts., Arizona, in July 1905, by Mr. H. G. Barber. This species may be recognized by the deep black tricarinate mesonotum marked with four conspicuous fulvous vittæ.

Oecleus venosus n. sp.

A stout black species with tricarinate mesonotum, with heavy fusco-punctate elytral nervures and large black stigma. Length 6 mm.

Vertex deeply excavated, almost parallel, a very little wider anteriorly, surpassing the eyes by less than its own width. Front broad opposite the antennæ, regularly narrowed to near the base and to the apex, median carina almost obsolete above the antennæ; clypeus narrow with a strong

median carina. Pronotum deeply angularly emarginate, becoming broad either side, the lateral carinæ placed near the margin of the eyes. Mesonotum with three strong parallel carinæ, the fourth and fifth barely indicated by pale lines. Elytra moderately broad, parallel, the costa straight from near its base.

Color: opaque black; carinæ of the head and mesonotum fulvous, the median carina of the front indicated only by a pale dash between the antennæ. Pronotal margins and carinæ pale; narrow center of the pronotum marked with four whitish points: two approximate behind the vertex and a larger calloused one either side. These pale dots are distinguishable in many of our species, but are more distinct in this. Basal margins and apex of the mesonotum pale. Antennæ black, touched with pale at apex. Base of the rostrum pale. Legs mostly black, the joints and middle of the tibiæ pale. Metapleura and sides of the abdomen whitish. Elytra nearly hyaline; nervures strong, heavily fusco-punctate; at apex and on the base of the apical areoles with a small fuscous cloud. Stigma large, black, covering most of the cell, marked with white before; costal nervure anterior to the stigma slender, pale brown; commissure whitish with two heavy fuscous marks beyond the middle of the clavus.

Described from one female taken at Pasadena, California, June 11th 1910, by Mr. Fordyce Grinnell, Jr. This species is so strongly marked and distinct I do not hesitate to describe it from a single example.

Oecleus pellucens Fowler.

A large fulvous species with small head and linear vertex which is strongly produced before the eyes. Length to tip of closed elytra 7 mm.

Female: Head narrow, subconical, truncate behind. Vertex linear, projecting for two-fifths of its length before the eyes. Front narrow, less widened apically than in our other species; basal one-third almost linear and about twice as wide as the vertex which it meets at somewhat less than a right angle. Pronotum short, at the middle scarcely wider than the vertex; but little expanded laterally. Mesonotum 5-carinate.

Color fulvo-testaceous becoming almost reddish on the mesonotum, clypeus and edges of the pleural pieces. Front and vertex deep black with strong pale carinæ. Clypeus scarcely touched with fuscous either side of the median carina. Antennæ pale. Pronotum testaceous, faintly clouded in the depressions either side. Mesonotum fulvous, marked with black between the carinæ and on the anterior margin. Elytra uniformly whitish-hyaline and faintly smoky; nervures distinct, whitish and regularly punctate to their apex. Stigma long and narrow, brown. Wings with fuscous nervures. Disk of the pleural pieces and abdominal segments mostly black. Legs lineate with black.

I have examined three females of this species taken at Phoenix, Arizona, on May 17th and Sept. 13th, 1902, by Mr. H.

G. Barber. It is distinct by its fulvous color, clear markings, regularly and distinctly punctate nervures, narrow produced vertex, narrow black front and fulvous clypeus.

***Ormenis barberi* n. sp.**

Allied to *septentrionalis* but larger and of a more opaque and yellowish green. Length to tip of closed elytra 12 mm.

Front transverse; apical margin nearly as long as the basal, distinctly roundedly emarginate across the base of the clypeus; lateral elevated margins regularly arcuated; median keel very obtuse but distinct toward the base; surface of the front regularly rounded over to the pronotal margin with no transverse ridge indicating the vertex or barely a trace laterally, deflected almost parallel with the margins. Pronotum as in *septentrionalis*, the carinæ obsolete. Mesonotum flattish with the carinæ nearly obsolete as in the allied species. Elytra shaped as in *septentrionalis* except that they are a little wider basally, the costal area being distinctly less narrowed at base; nervures thicker and more reticulated with the basal areas broader than in *septentrionalis*; apical margin truncated with both angles rounded as in that species; both subapical lines united with the subcostal nervure, the inner sometimes much broken on its basal half, placed a little nearer to the outer than that is from the apical margin.

Color a rather dull yellowish green, the whole upper surface more or less whitish-pruinose; clypeus, lower surface of the body, legs and costal margin pale yellowish tinged more or less with fulvous or even with sanguineous, especially on the tibiæ. Front and sometimes the mesonotum paler or tinged with fulvous. Second antennal joint orange, the seta black. Spines of the posterior tibiæ tipped with black.

Described from five examples, representing both sexes, taken in the Huachuca Mts., Arizona, in July 1905, by Mr. H. G. Barber of New York.

This is a larger and more yellowish species than *septentrionalis*; the front wants the obtuse transverse subbasal carina and has the apex more emarginate and subequal to the base, not straight and distinctly shorter as in *septentrionalis*; the form and venation of the elytra also shows a constant difference as noted. *Ormenis pallescens* Stal is a larger and paler species with longer front and acute inner elytral angles. I take pleasure in naming this species after the enthusiastic Hemipterist whose diligent collecting in the Huachuca Mountains has added a number of interesting species to our fauna.

***Ormenis saucia* n. sp.**

Allied to *perpusilla* Walker. Pale greenish-white with the clypeus and mesonotum fulvous. Length 7–10 mm.

Vertex linear but quite sharply defined. Front at least one-third broader than long at the middle; sides arcuated and below following the line of the clypeus; apex deeply excavated for the rounded base of the clypeus; disk with a broad ill-defined median carina. Carinae and impressed points on the pronotum obsolete or the points sometimes barely distinguished. Mesonotum moderately convex, the carinae obsolete, the disk flattened posteriorly. Elytra twice as long as broad; costal and sutural margins nearly parallel, the former moderately bowed at base; apex truncated, the angles about equally rounded; the two subapical lines parallel but approaching to join the costal nervure, the space between them equal to that between the exterior and the apical margin.

Color pale green or almost white, the paler specimens perhaps not fully developed. Eyes brownish; clypeus and mesonotum brownish- or ruf-fulvous and there is a touch of the same color on the pleurae and tarsi; sides of the clypeus with paler striae and its middle line is usually brownish. Elytra very feebly infuscated at apex.

Described from four examples: one taken at St. George, Utah, by Prof. H. F. Wickham, in July; another taken at Los Vegas, Nevada, in September, by Mr. J. C. Bradley, and two taken at Yerington, Nevada, in July at an altitude of 5000 feet, by J. P. Baumberger, and kindly sent me for study by Mr. C. E. Olsen of Maspeth, L. I. This species may be distinguished by its pale green color, its fulvous or rufescent clypeus and mesonotum, and the broad front.

Aphelonema obscura n. sp.

Allied to *simplex* but smaller and darker in color. Vertex transverse very short, but little broader than the bounding carinae. Front ovate oblong, distinctly narrower than in *simplex*; median carinae feeble; clypeus but moderately incurved, feebly carinate. Pronotum regularly rounded before without the slight angle observable in *simplex*, evenly but obscurely pustulate, median carina obtuse; hind margin but feebly acuated; mesonotum with the smooth median area narrower than in the allied species, the three carinae distinct but not sharp. Elytra in the brachypterous form truncated, reaching to about the middle of the tergum, the nervures reticulated but not conspicuous. Length $2\frac{1}{2}$ mm.

Color luteous brown becoming darker fuscous-brown beneath and on the pustulated portion of the face, pro- and mesonotum, and black on the clypeus, sides of the face and venter; elytra, middle compartment of the mesonotum and front distinctly paler, with a dusky cloud on either side of the latter; apical one-half of the last ventral segment and slender margins of the basal segments paler. Tergum with a double row of incomplete blackish ocellated marks on either side. Legs pale, the femora obscurely lined with fuscous, the tarsal claws black.

Described from two female examples taken at Tipton, Ga., Sept. 8th, 1910, by Mr. J. C. Bradley. The macropterous form

and male are unknown to me. This inconspicuous little species might be considered as a small dark variety of *simplex* were it not for the narrower and distinctly oval front.

In my description of *decoratus* (Proc. Acad. Nat. Sci. Phila., LIX., p. 492,) I inadvertently neglected to give the length which should have been 3 mm.

Genus *Lamenia* Stal.

There has been some controversy as to the proper systematic position of genus *Lamenia*, Stal placing it in the *Derbinæ*. Ashmead in the *Flatinæ* and Kirkaldy in the *Cixiinæ*, the latter claiming that the termination of the claval vein on the commissure excludes it from the *Derbinæ* entirely. A careful study of this and the related genera convinces me that Stal was correct in placing it in the *Derbinæ*. The elytral venation in this subfamily presents a wide variation not only among the genera but in a less degree among the species. In the more typical forms of *Lamenia*, those allied to *vulgaris*, the claval vein certainly attains the commissure before the apex of the clavus but in *uhleri* it can be distinctly traced to the apex and in *Mysidia* and some allied genera both the claval vein and the suture make an abrupt curve to the commissure. I think a more rational classification would distinguish this subfamily and the *Delphacinæ* by their elongated and more or less flattened antennæ, and would connect them with the other Fulgoridæ through *Flatoides* and the allied genera of the *Flatinæ* in which the antennæ have two joints somewhat elongated but scarcely flattened. The *Delphacinæ* with two extended joints and the *Derbinæ* with one I believe are strictly parallel groups following the *Flatinæ*, but unfortunately we cannot so place them in a linear arrangement.

I would, therefore, consider *Lamenia* our most primitive form of the *Derbinæ* as it has the antennæ but slightly enlarged and flattened, the front proportionately broad and the elytral venation simple. It is but a step to *Cenchrea* in which the venation is more characteristic, the antennæ more flattened and the front narrower and more deeply sulcate. *Patara*, *Anotia* and *Amalopota* show still more specialization while in *Otiocerus* we reach the extreme in which the antennæ are split into two or more filaments and the front has disappeared entirely in a foliaceous and deeply sulcate carina. In the South American

and oriental genera the specialization has been more along the line of a complicated venation.

Key to the nearctic species of *Lamenia*.

- Elytra fuscous or black, 1.
- Elytra white clouded with fuscous in the areoles,
 - 6, *maculata*.
- 1. Elytra blackish fuscous; male plates with an apical tooth, 2.
- Elytra pale brownish fuscous; male plates without an apical tooth, 5, *edentula*.
- 2. Head piceous black or mostly so, 3.
- Head fulvous or testaceous, 4.
- 3. Larger (5 mm.); inner margin of the male plates sinuated, 1, *vulgaris*.
- Smaller (4 mm.); inner margin of the male plates rectilinear or with a reëntrant angle more or less pronounced, 2, *obscura*.
- 4. Smaller (4½ mm.); head and pronotum flavo-testaceous, mesonotum piceous; inner margin of the male plates excavated for nearly their whole length, 3, *californica*.
- Larger (5 mm.); head, pronotum and mesonotum fulvo-testaceous; inner margin of the male plates produced, contiguous at their middle only, 4, *præcox*.

1, *Lamenia vulgaris* Fitch.

Catal. Homop. Ins. N. Y. State Cab., p. 47, 1851, (*Pæciloptera?*).

Van Duzee, Can. Ent., xli, p. 381, 1909, (*Lamenia*).

This large northern species has the lateral carinæ of the front marked with pale toward the base and the legs and postpectus are also pale. Sometimes the abdominal segments are touched with orange as mentioned by Dr. Fitch. The pronotum is conically, almost angularly, emarginate behind and there is a distinct carina across the base of the front.

The male plates have their inner margins divergent on their immediate base, then somewhat sinuated to their apex which has an unusually large pale tooth. Last ventral segment of the female triangular with its margins nearly rectilinear. My material in this species represents New York and Kansas only, but I have seen specimens from most of the northeastern states and Canada.

2, **Lamenia obscura** Ball.

Can. Ent. xxxiv, p. 262, 1902.

A widely distributed species differing from *vulgaris* in being smaller, in having the vertex shorter with the frontal carinæ less prominent over the apex of the head, and the hind margin of the pronotum more deeply subangularly emarginate. Usually the carinæ of the head and pronotum are all more or less distinctly pale. The base of the front has a transverse carina in this species but it is less conspicuous than in *vulgaris*. In some males of this species there is a distinct reëntrant angle on the inner margin of the plates but I cannot otherwise distinguish them. In the more typical examples these margins are almost straight and approximate except for a short space at base. The last ventral segment of the female is shorter and more rounded at apex with the sides feebly sinuated near the basal angles.

My material for this species is from Me., Mass., N. Y., N. J., N. C., Fla. and Kansas.

3, **Lamenia californica** Van Duzee.

Can. Ent., xxiii. p. 169, 1891.

This species is about the size of *obscura* but is distinct in having the head, pronotum, pectus and legs pale yellowish testaceous. The inner margins of the male plates are excavated so they meet only at base and tip. The types were from California but Mr. H. G. Barber has recently sent me a specimen taken at Phoenix, Ariz., July 25th, 1902. It probably occurs throughout the hot arid regions west of the Rocky Mts.

4, **Lamenia præcox** n. sp.

Near *vulgaris* but a little smaller with the head, pronotum, mesonotum and pectus fulvo-testaceous. Length $4\frac{1}{2}$ mm.

Vertex broader than in *vulgaris* with the frontal carinæ more prominent over the apex. Front very little contracted at base, median carina nearly obsolete, lateral laminate above. Pronotum a little longer than in the allied species, the anterior and posterior margins parallel, regularly arcuated. Plates of the male meeting only at the middle, strongly retreating to their base and apex, their apical hooks slender and a little curved upward. Color smoky black, pruinose; head, pronotum, mesonotum, entire pectus and edges of the abdominal segments fulvo-testaceous or inclined to ferruginous. Legs pallid becoming greyish or brownish on the tibiæ and anterior femora; apex of the rostrum and tips of the tarsal joints blackish. Transverse veinlets at the base of the apical elytral areoles white.

Described from two male and two female specimens taken in the Huachuca Mts., Ariz., by Mr. H. G. Barber.

5, *Lamenia edentula* n. sp.

Allied to *obscura* but smaller and paler. Testaceous brown tinged with ferruginous on the head and scutellum; wings and elytra at apex somewhat enfumed; eyes and abdomen fuscous brown, the segments of the latter pale margined. When immature these brown parts are more or less rufescent. Legs pallid with the tarsi fuscous at apex; rostrum pale, black at apex. Nervures of the elytra strong, concolorous; the row of short transverse nervures at the base of the apical areoles and the stigmatal, touched with white. In many individuals the basal areoles of the elytra are slightly infuscated bringing the pale nervures into stronger contrast. Nervures of the wings strong and fuscous. Plates of the male subcylindrical, without a trace of the apical tooth found in *vulgaris* and *obscura*; their suture slightly parted at base and presenting a narrower linear apical notch. Length 4mm.

Described from seven specimens, of both sexes, taken at Austell, Ga., August 27th 1910, by Mr. J. C. Bradley. I also took one female at Riverton, N. J., August 17th 1902, which seems to agree in every respect with the Georgia material. So far as the color alone is concerned this might well be considered but an immature form of *obscura* but the specimens I have seen are uniformly smaller, the apex of the tarsi are blackish and the form of the male plates is distinctive.

6, *Lamenia maculata* n. sp.

Most closely allied to *edentula* but more slender with longer elytra. Greyish white, mottled and spotted with fuscous. Length to tip of the elytra 5 mm.

Vertex apparently wanting, the base of the front rounding over to the hind margin of the head, viewed from above not surpassing the eyes; front slightly expanded at apex. Pronotum short, deeply but roundedly emarginate behind. Inner margin of the male plates with a linear excavation almost to their apex, leaving only a blunt tooth before the oblique apical margin, the upper angle of this apical margin produced in a short triangular tooth in place of the long spur-like process found in most of our species.

Color greyish-white; front with a fuscous median vitta which extends over the clypeus and is expanded about an oval white spot on the apex of the front; dorsally this fuscous vitta extends across the pro- and mesonotum; cheeks infuscated and marked with a triangular black spot at their lower angle; antennæ testaceous, infuscated below. Pronotum marked with a black patch behind the eyes; lateral angles of the mesonotum infuscated. Pleural pieces with a fuscous spot superiorly. Legs white, the femora slightly infuscated; tibiæ banded with fuscous at base and apex; tarsi

brown, the posterior mostly white. Adomen blackish edged with white. Elytra infuscated in each of the areoles; nervures strong, white at base, infuscated at apex; wings white with slender fuscous nervures.

Described from one male taken at Trenton, Ont., August 17th 1911, by Mr. J. D. Evans, to whom I am indebted for many interesting Hemiptera from Ontario. The white color of this species with fuscous mottlings will at once distinguish it from any other described form.

On the genera *Delphax* and *Liburnia*.

A consideration of the facts given below convinces me that we must use the name *Liburnia* Stal for the large group of species of which *pellucida* may be taken as the type; that *Delphax* must take *crassicornis* Fabr. as its type and that *clavicornis* is the type of *Asiraca* Latr. Of these three genera the earliest, *Asiraca*, was described by Latreille in 1796 under the name *Cercopis* (Precis, page 91) which he changed to *Asiraca* in the page of addenda at the end of the same volume. Like all the genera in this rare work it was described without mention of species. Two years later Fabricius (Ent. Syst., Suppl., page 511, 1798) redescribes the genus as *Delphax* and on page 522 of the same volume describes two species: 1, *crassicornis* and 2, *clavicornis*. In 1801 Latreille (Hist. Nat. des Crust. et Ins. III, page 259) again describes it as *Asiraca* with species *clavicornis*, *crassicornis* and *longicornis*, which latter, however, he never describes. In another two years Fabricius again characterizes it as *Delphax* (Syst. Rhng. page 83-84, 1803) and adds eight new species while the very next year Latreille (Hist. Nat. des Crust. et Ins., XII, page 316) for a third time describes it as *Asiraca* with nine species and complains that Fabricius in redescribing his genus has unwarrantably changed its name to *Delphax*. However in 1807 (Gen. Crust. et Ins., III, page 167-168) he tries to straighten out the matter by adopting *Delphax* for *pellucida* and its allies and retaining *Asiraca* for *clavicornis* and its allies. This procedure he still further clinches in 1810 (Consid. Genl., page 434) by naming *clavicornis* as the type of *Asiraca* and *striata* (*) as the type of *Delphax*. This would settle the standing of these two genera were it not that by the rules of the International Code *Asiraca* has no standing until 1801, because no species was

* I fail to find this species in the Oshanin Catalogue. Germar in 1818 seems to be the last to record it although it is listed as a *Liburnia* by Stal in 1869.

named when the genus was established, and neither *striata* nor *pellucida* can be taken as the type of *Delphax* as they were not among the original species of that genus. The types of both of these genera, if both are retained, must be taken from the two species originally included in each genus — *crassicornis* and *clavicornis*—and as Latreille has named *clavicornis* as the type of *Asiraca* we get by elimination *crassicornis* as the type of *Delphax*, thus making it synonymus with *Aræopus* Spinola.

We now come to the name *Liburnia*. This was first used by Stal in 1866 (Hemip. Afr., iv, page 179) where he places as its *first* synonym "*Delphax* Auctor" and as a *second* "*Embolophora* Stal". This genus *Embolophora*, which was first described by Stal in 1853 as *Embolophora*, is here placed as section "a" of his new genus *Liburnia* and on this account Kirkaldy uses it to supplant *Liburnia*, and even the conservative Distant employes its type, *monoceros*, as the type of *Liburnia* thus making Stal rename his own genus which I consider unwarranted. The fact is Stal recognized the fact that the *Delphax* of Latreille and later authors was not and could not be the *Delphax* of Fabricius and he was merely giving a new name to that large congeries of species of which *pellucida* may be taken as the type, as is conclusively shown by his naming "*Delphax* Auctor" as its first synonym. His inclusion of *Embolophora monoceros* as the first section and species of *Liburnia* was an unfortunate mistake in the light of the "first species" cult now prevalent, as it is certainly distinct generically from *pellucida* and should be eliminated at once from *Liburnia*. This would leave that genus a large but fairly homogeneous assemblage of species of world-wide distribution.

If we retain *Delphax*, as I think we must, the synonymy will stand:

Delphax Fabr., 1798; type *crassicornis* Fabr.

Synon. *Aræopus* Spinola, 1839.

Asiraca Latr., 1801; type *clavicornis* Fabr. (*Asiraca* has no standing in 1796.)

Embolophora Stal, 1853; type *monoceros* Stal.

Liburnia Stal, 1866; type *striata* Fabr. or *pellucida* Fabr.
With the subfamily name *Delphacineæ*.

Liburnia tuckeri, n. sp.

Closely allied to *detecta* but smaller and with a narrower front. Length $2\frac{1}{2}$ mm.

Macropterous form; Vertex short, transverse, not exceeding the eyes, basal fova about twice broader than long; apical small, triangular, little longer than broad at base. Front linear, a little narrowed between the eyes, its apex but feebly emarginate. Clypeus short. Pronotum broad, scarcely longer than the vertex. All the carinæ prominent. Elytra short with the nervures indistinct toward the base. Genital segment of the male long cylindrical, the aperture but little oblique; plates ligulate, regularly arcuated, nearly in conformity with the aperture of the pygofer. Pygofer of the female short, scarcely exceeding the connexivum, a little narrowed apically.

Color dull whitish testaceous, or a little tinged with yellow on the scutellum and beneath; slender margins of the carinæ on the front and clypeus and sometimes the apical fova of the vertex, eyes, tip of the rostrum, claws, a spot on the metapleura, a point on the apical segment of the connexivum, a cloud on the base of the tergum in the female, blackish. In the male the disk of all the pleural pieces is fuscous and the abdomen is black with the edge of the connexivum and a band near the base of the tergum fulvo-testaceous. The elytra are whitish hyaline in the female with the nervures darker toward the apex and punctate. In the male they are distinctly clouded within and toward the apex, with the nervures punctate and darker in the clouded portions.

Described from one male taken by me at St. Petersburg, Fla., in April, 1908, and a female taken by Mr. E. S. Tucker at Plano, Texas, and kindly sent me for study by Prof. Herbert Osborn. Through an unfortunate mixing of my material I redescribed *Liburnia detecta* as *circumcincta* in my report on Florida Hemiptera.

Genus Cercopis Fabr.

After a careful study of this genus I am forced to the conclusion that *Triecphora sanguinolenta* (Linn.) must be taken as its type. The genus was founded by Fabricius in 1775 (Syst. Ent., page 688) with nine species of which the first, *fenestrata*, is a *Ricania*; of the others *sanguinolenta* is the second, *carnifex* the fourth and *spumaria* the fifth. In his later works Fabricius did not change the genus except by omitting *fenestrata* and adding new forms. Latreille, the next writer to treat of the genus, in 1801 (Hist. Nat. des Crust. et des Ins., III, page 260), gives a description of it and names *spumaria* as an "example". This Kirkaldy considers as naming the genotype and therefore makes *Cercopis* replace *Aphrophora* Germ. on

the assumption that *spumaria* Linn. is the same as *alni* Fallen (= *spumaria* of Germar, the first species and allowably the type of Aphrophora). No further change is made in the genus until 1810 when Latreille (Consid. General, page 434) in giving a list of the genera "avec l'indication de l'espece qui leur sert de type" names *sanguinolenta* Linn. as such type of *Cercopis*. If I rightly understand the International Code the direct naming of the type in 1810 must take precedence over the mere naming of an "example" in 1801. Practically this same view is taken by S. A. Rohwer in his recent paper on the genotypes of the *Tenthredinoidea* (U. S. Dept. of Agric., Bureau of Ent., Technical Series No. 20, part 2, 1911.)

I am unable to discover any justification for Stal's naming *carnifex* as the type of this genus in 1869 (Hemip Fabr., II, page 11) As *sanguinolenta* is the type of *Triecphora* that genus must fall as a synonym of *Cercopis*.

Genus *Monecphora*, A. & S.

I can see nothing to be gained by uniting the four genera of Amyot et Serville, *Tomaspis*, *Triecphora* (= *Cercopis* Fabr.), *Monecphora* and *Sphenorhina* as was done by Stal in 1866, (Hemip. Africana, vol. IV, page 56). While closely related their general facies and distribution are sufficiently distinct and they have as good right to the distinguished as many of the generally accepted genera. It seems to me that a series of species in any of the larger generic groups which separates out from the others in a synoptical key by some clearly defined character is entitled to generic standing if a student wishes to so designate it. In many cases other students would doubtless call such a series a subgenus but in larger plastic groups where Nature absolutely refuses to draw a distinct line of demarcation between the genera we must use such divisions as will most facilitate the determination of our species.

Cercopis (Monecphora) schack Fabr. does not seem to have been recognized by later entomologists. It was described from "America septentrionalis" and may refer to some variety of *Monecphora bicincta* Say.

I cannot follow Ball in uniting *Monecphora inferans* Walk. and *Sphenorhina simulans* Walk. with *bicincta*, they seem to me to represent a distinct species.

Philænus spumarius Auct.

According to Kirkaldy Dr. Horvath has shown that the name *spumarius* must replace *Aphrophora alni* Fallen and the species commonly known as *spumarius* must be called *leucophthalma* Linn. but as I have not seen Horvath's paper and this change does not seem to have been accepted by any of the recent European entomologists it seems best to retain the old nomenclature, for the present at least.

I have been unable to find a mention of *Cicada ænothæ* Scopoli (Ent. Carniola, page 114, 1763), but it appears to be near *Philænus spumarius* variety *lineatus* Fabr. The *ænothæ* of Germar (Mag. d'Ent. iv, page 53, 1821) is a synonym of variety *pallidus* Zett. of this species.

Genus Clastoptera Germar.

Dr. Ball's paper on this genus (Proc. Iowa Acad. Science, III, pages 182 to 194, 1895) is very useful and complete but I cannot accept his synonymy in all cases. Under *obtusa* Say he includes the true *achatina* Germ. as a variety of his subspecies *obtusa*. It may be distinguished by being fulvous anteriorly and fuscous posteriorly with a whitish band across the clypeus. The variety he calls *achatina*, as I know from a specimen determined by him, is mostly fuscous with the vertex and anterior margin of the pronotum narrowly fulvous, the former with a dark line. I propose the name variety *tristis* for this form.

He also includes *testacea* and *pini* Fitch as varieties of his subspecies *osborni* Gill. & Baker. I have seen nothing that agrees with Fitch's description of his *testacea* but his *pini* is certainly the black variety of *proteus* named *nigra* by Ball. Fitch describes *pini* as shining black and but 0.14 inch in length neither of which will apply to any variety of *obtusa*. I prefer to call all these "subspecies" simple varieties.

Clastoptera lineaticollis Stal.

This is certainly a distinct species and not a variety of *obtusa* Say as stated by Dr. Ball.

Clastoptera xanthocephala var. *glauca* n. var.

There are two distinct and fairly constant varieties of this species found throughout the southern states. Dr. Ball lists them as varieties "a" and "b". The former is typical *xanthocephala* Germ. while the latter is a pale glaucous or greyish form for which I now propose the above varietal name.

Clastoptera proteus Fitch.

Dr. Fitch divides this species into four "subspecies", *flavicornis*, *cincticollis*, *maculicollis* and *nigricollis*, but, as pointed out by Dr. Ball, he has selected for characters mere color variations which occur in each of the three varieties of *proteus* and I do not see how we can retain the names for anything, and propose to follow Dr. Ball in dropping them in spite of the law of priority. Ball's division of this species into three subspecies or varieties as I call them (*flava*, *vittata* and *nigra*), seems to be founded on constant and natural characters but I cannot accept his names. The name *flava* seems to be a straight synonym of *saint-cyri* Prov., *vittata* is good, while *nigra* is a synonym of *pini* Fitch. The latter name is also preoccupied by *nigra* Germ. from Brazil (not *atra* as stated by Fitch).

Telamona subfalcata n. sp.

Size and aspect of *compacta* Ball but distinguishable by the acute, almost falcate, posterior angle of the crest and the dotted elytral nervures. Length 9 mm.

Head short, its base strongly sinuated; apical margin of the cheeks deeply sinuated; base of the clypeus deeply inserted in the face, its sutures distinct, regularly rounded; apex arcuated, little produced, the lateral lobes scarcely distinguished. Humeral angles more produced than in *compacta*, subacute. Crest oblong, about twice as long as high; anterior margin sloping regularly from the metopidium, without a sinus at base; superior edge straight and horizontal; posterior vertical or almost overhanging; anterior angle rounded, posterior acute, subfalcate; posterior process acute, attaining the tip of the elytra in the female, nearly so in the male; the sides with about three irregular elevated nervures, the upper subobsolete.

Color testaceous-cinereous, obscurely mottled with brown which color forms a broad band across the hind margin of the crest; dorsal carina irregularly dotted or blotched with black and there is a cluster of similar points on the humeral angles anteriorly. Lower surface of the anterior and intermediate femora and outer face of the tibiæ banded with fuscous or black; apex of the hind femora with a black spot. Elytra coriaceous and punctured at base, the main nervures pale varied with black; apical cloud clearly defined, almost black, covering about two-thirds of the apical cell.

The color of the male is more whitish with the brown band more distinct and on the metopidium is a suggestion of a large brownish annulus which becomes trilobate on the base of the crest. The usual three black points over the eyes seem to be wanting in this species and the round impression at the base of the crest posteriorly is deep and blackish.

Described from three examples: one male taken at Belleair, Fla., by Mrs. Slosson, and two females taken by Mr. J. C. Bradley at St. Simon Isd., Georgia, about May 1st, 1911.

Tettigonia vs. Tettigoniella.

Genus *Tettigonia* (Hemiptera) was founded by Geoffroy in 1762 in his *Hist. Abreg. des Insects*, vol. 1, page 429, where he spells it *Tetigonia*. Spelled with two t's it is preoccupied by the Orthopterous genus *Tettigonia* of Linneus but Kirkaldy claims that the omission of one of the t's makes it valid by the rules of the International Code. Distant, however, has pointed out (*Fauna of British India, Rhyngota* vol. 4, pages 201, 1908,) that this spelling was merely a typographical error as Geoffroy refers to Reaumur (*Memoirs*, vol. 5, page 150, 1740,) where it is spelled with two t's and made to include practically the same insects as does Geoffroy's genus, and in this I believe Distant is right. This genus was recognized by Latreille who includes *Cicada viridis* Linn. which should probably be taken as its type. Jacobi was first to recognize the necessity of renaming the genus and in 1903 (*Zool. Jahresb.* xix, p. 778,) proposes the name *Tettigoniella*, mentioning *viridis* of Linneus which Distant names as the type. Fabricius with his predilection for mixing up the Linnean genera calls this genus *Cicada* and the Cicadidæ of the present day he calls *Tettigonia*.

The following synonymy may make this more clear:

Tettigoniella Jacoby, 1903; Distant, 1908; Van Duzee, 1909.

Tettigonia Reaumur, 1740, (not of Linneus); Geoffroy, 1762 (misspelled Tetigonia); Latreille, 1802; Stal 1869; Oshanin, 1906.

Cicada Fabricius, 1775 etc; Zetterstedt, 1828.

Tetigonia Kirkaldy, 1900.

Xestocephalus Agassizi n. sp.

Closely allied to *tessellatus* but larger and more strongly marked. Pale testaceous irrorated and varied with brown. Vertex and apex of the head dark brown; median line, an oblong apical spot, a line about each lateral compartment of the vertex which forms a large square produced toward the apex and enclosing an ocellus-like spot, an oblique line on each side below the apex, and a spot on each ocellus, whitish. Face brown; a few points on the base of the front and the arcs obscurely paler; margins of the clypeus and the antennal pits piceous. Pronotum transversely wrinkled, evenly mottled on the disk; anterior and lateral margins shading darker and marked with about five larger whitish spots; lateral edges pale. Scutellum whitish at apex; piceous-brown on the basal field where there is a broad pale ray either side of the middle which approach anteriorly. Elytra pale testaceous varied with brown which becomes piceous in places; nervures

largely ivory white alternated with brown, the costal broken by a dark line before the middle, a longer one before the stigma and a shorter one behind it; apex with about five brownish spots, the inner quadrangular, the three middle sometimes coalescing; clavus more finely mottled with the base and apex of the nervures white. Pectoral pieces dark brown or blackish, margined with pale. Legs and venter pale testaceous brown; the posterior tibiæ faintly dotted with brown; tarsi annulated with brown. Last ventral segment of the female broadly obtusely emarginate. Length about 5 mm.

Described from one pair taken on April 20th 1909, at Balaclava, Jamaica, by Mr. A. E. Wright. I have named this species in honor of the late Prof. Alexander Agassiz, Director and Patron of the Museum of Comparative Zoology from which collection these specimens were kindly sent to me for study by the Curator, Mr. Samuel Henshaw. This species resembles *pulicarius* in the markings of the head and *tessellatus* in the variegated elytra. From the latter it differs by its still larger size the less arcuated hind margin of the pronotum, the brown borders of the clypeus, the more approximate pale vittæ on the scutellum and more broken maculation on the elytra.

Eupterix collina Flor.

This pretty tessellated species, marked with three conspicuous black spots on the vertex, is common in Europe but has not heretofore been recorded from this country. I have recently received an example taken by Mr. J. C. Bradley at Palo Alto, California, in September, and a good series taken at Fredonia, N. Y., November 9th 1911, by Mr. C. R. Crosby. It makes an interesting addition to our North American fauna.

ADDITIONAL CAPSIDAE.

Criocoris canadensis n. sp.

Most closely related to *tibialis* Fieb. Black: antennæ of the female fulvous with the first joint and base of the second black. Length 3 mm.

Head produced, conical; as long as its basal width when viewed vertically to its upper surface. Basal joint of the antennæ attaining the tip of the clypeus, much narrowed at base especially in the male. Second joint in the female much thinner; scarcely thickened toward the apex; as long as the pronotum; in the male strongly incrassated, wider than the basal and very slightly narrowed toward its apex; third two-thirds the length of the second; fourth shorter than the third. Whole surface covered with deciduous scale-like appressed white hairs which are easily lost; the upper surface with a few short black hairs.

Color black, somewhat polished, becoming fuscous on the elytra and almost testaceous on the apex of the head, base of the abdomen, and toward the apex of the tibiæ. Antennæ in the female; first joint black, second fulvous, black at base; third testaceous becoming dusky towards its apex; in the male black with the third and fourth fuscous, the third pale at base. Anterior and intermediate tibiæ pale for a short space near their apex; the tarsi soiled white, brownish at tip. Elytra black becoming obscure fuscous on the corium. Membrane faintly smoky with a pale arc exterior to the nervures, more pronounced at the apex of the smaller areole; the cells darker fuscous. Wings almost hyaline, iridescent, the nervures feebly distinguished.

Described from three males and three females taken by Mr. Geo. A. Moore of Montreal at North Hatley and Como, Quebec, and Lachine, Ont., in July and August. The male of this species agrees almost exactly with Reuter's description of his *Strongylotes saliens*, male, and I would not be surprised if his Pennsylvania specimen belonged here; but the female is very distinct in its slender and strongly colored antennæ, and places the species in genus *Criocoris* without a question.

The generic name *Strongylotes* of Reuter is preoccupied as is also the name *Laodamia* substituted for it by Kirkaldy I therefore propose the name **Criocoridae** for this genus which seems to differ from *Criocoris* principally in the form and color of the female antennæ.

Lygus chagnoni Stev.

Mr. Geo. A. Moore of Montreal has very kindly secured for me the type of this species which on careful examination I find to be typical *Lygus pabulinus* Linn. Mr. Stevenson (Can. Ent., vol. 35, p. 214, 1903) compares his new species with *pabulinus* but evidently his *pabulinus* is *belfragei* of Reuter. His name *chagnoni* must therefore fall as a synonym of *pabulinus* Linn.

Phytocoris vanduzei Reuter.

Dr. Reuter thinks, and in this I believe he is right, that my *Dichrooscytus marmoratus* should be transferred to genus *Phytocoris* where it will find itself preoccupied by an European species of the same name. He therefore (Hemipterologische Miscellen, p. 30) renames it *P. vanduzei*. This species is not typical of genus *Phytocoris* but it is probably better placed there than in any other genus.