

AMERICAN MUSEUM NOVITATES

Number 75

May 11, 1923

59.57.54(729.5)

A PRELIMINARY REPORT ON THE HEMIPTERA-HETEROPTERA OF PORTO RICO COLLECTED BY THE AMERICAN MUSEUM OF NATURAL HISTORY

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During the years of 1914 and 1915 The American Museum of Natural History, in conjunction with the New York Academy of Science and the Insular Government of Porto Rico, making a survey of the natural resources of the island, sent several entomologists to collect insects and to gather all the data possible concerning this particular fauna. This report may be considered a preliminary report upon the Hemiptera-Heteroptera gathered together during these several expeditions to the Island. The types are in the American Museum.

Catorhintha borinquensis, new species

Sordid yellowish gray closely punctate with ferrugineous. Lateral margins and middle longitudinal line of the pronotum, apex of the scutellum and three obscure stripes posteriorly on the head pale yellowish-gray; connexivum alternated with ferrugineous and pale yellow; abdomen dorsally fuscous with a large, indefinite pale area in the center; beneath stramineous, punctate on head, pleura and sides of venter with ferrugineous, with a round black spot on the sides of each pleurite; legs pale, tinted with rufous.

Head above the base of each antenna provided with a very sharp spine; dorsal surface of head coarsely and somewhat closely punctate with ferrugineous, with a median pale fascia extending from base to the middle and a shorter fascia extending forward from the base between each ocellus and the eye; ocelli red surrounded by a smooth black patch. Antennæ with the first segment shorter than the head, second segment a trifle longer than the third, fourth segment one-third longer than the third, basal segment finely granulate, ferrugineous, second and third segments pale, rufous at their apices, apical segment pale at base and apex. Apex of the rostrum reaching to the middle of the intermediate coxæ or just a trifle beyond the meso-metasternal suture. Pronotum rather coarsely punctate with ferrugineous, with a conspicuous longitudinal median stripe and lateral margins pale. Scutellum closely punctate, the apex smooth and pale, towards the basal angle stunted with red. Corium coarsely punctate, without the usual calloused pale spot opposite the apex of the commissure. Connexival segments pale at base, mottled with ferrugineous apically. Length, 10-11 mm.

TYPE.—Male; Coamo Springs, VI 1915. Eleven paratypes.

Related to *C. guttula* Fabricius but a little larger and more coarsely punctate and more ferrugineous. The spines of the head are quite long

and very acute. The rufous coloration of the antennæ, legs and ventral parts is often quite pronounced.

Jadera rubrofusca, new species

Disk of pronotum and hemielytra rufofuscous, the latter narrowly pale and obscurely spotted with fuscous. Head entirely, broad lateral margins and median carina of pronotum, the scutellum, the abdomen above and below and in part the pleura bright red. Antennæ, rostrum, and legs fuscous. Membrane pale fuliginous, obsoletely spotted and often paler at base.

Head sanguineous, very sparsely granulate, almost smooth; ocelli set almost as far apart as the distance of each from the eye; second segment of the antenna a little longer than the third, fourth about as long as the second; rostrum reaching to the apex of the second abdominal segment. Pronotum sparsely set with setigerous granules, median carina very distinct. Scutellum red, impunctate. Hemielytra sparsely beset with setigerous granules, narrowly pale bordered and there spotted with fuscous. Pleurites obsoletely granulate, rufous, unspotted; anterior and posterior margins of propleuron, posterior margins of meso- and metapleuron and the acetabulæ shaded with fuscous. Venter red indistinctly granulate. Length, 11 mm.

TYPE.—Male; Aibonito, VI 1915. Twenty-two paratypes; Cayey, V; Aibonito, VI; Manati, VI; Adjuntas, VI; Ensenada, VI 1915.

Closely related to *sanguinolenta* but a little smaller and narrower than that species. Besides the color differences noted, the head is anteriorly more acuminate, the ocelli placed closer together and the head and pronotum much more sparsely beset with setigerous granules; the red border on the lateral margin of the pronotum is wider and the pleurites are not spotted with fuscous; the membrane is darker and obsoletely spotted.

Lygæus albonotatus, new species

Black, sparsely grayish tomentose, with a large triangular orange area at base and the outer apical margin of corium white; membrane black, with an elongate white patch along the outer margin. Beneath black, with the bucculæ, anterior margin of the prosternum, the acetabulæ narrowly, pale; outer angle of the metapleuron orange; odoriferous orifices black.

Head entirely black impunctate, slightly transverse, margin before eyes almost straight; antenniferous tubercles invisible from above; antennæ black, basal segment about one-half as long as second, this a trifle longer than third, fourth a little longer than the second; bucculæ very slightly elevated, the lower edges level, not quite reaching the base of the head; apex of the rostrum reaching to middle of the posterior coxæ. Pronotum entirely black, almost impunctate, very shallowly impressed before the middle; each cicatrix forming a narrow, shining, crescentic impression which reaches nearly to the lateral margin; lateral margins very slightly concavely arcuated about the middle. Scutellum entirely black, impunctate; longi-

tudinal carina behind the premedian transverse carina broad and not sharply delimited. Clavus black, impunctate. Corium impunctate with the lateral margin lightly rounded, the two margins converging posteriorly; apex of the corium not reaching the middle point of the membrane; the two discal veins much more evident on the ochraceous area, this ochraceous area extending nearly to the middle of the corium; the outer two-thirds of the apical margin occupied by a conspicuous whitish or pale yellow fascia. Membrane jet black, extending a little beyond the apex of the abdomen; veins very obscure, with a very conspicuous elongate, oval white patch midway along the outer margin, not pale margined posteriorly. Beneath with a few obsolete punctures anteriorly on the prosternum; posterior margin of the metapleuron strongly, sinuate in the middle. Venter entirely black, with short pile. Length, $3\frac{1}{2}$ mm.

Described from a single male from Mona Island, II 1914.

This is one of the smallest members of the genus, even smaller than *dallasii*, which I place in the subgenus *Melanocoryphus* because of the lack of a red or pale spot on the vertex of the head. I cannot find that it is related to any other described member of the genus.

Lygæus (?Melanostethus) coccineus, new species

Black, very sparsely grayish tomentose; middle area of corium, abdomen above and below except posteriorly, coccineous; membrane dilute lacteus with a fuscous spot on the basal middle; head with a red spot on the vertex; anterior lateral angles of the second to fifth and the sixth segment above and below black.

Head impunctate, about as long as wide, apex reaching to the middle of basal segment of the antennæ; antenniferous tubercles visible from above; lateral margins of the head not sinuate before the position of the antenniferous tubercles; vertex of the head with a dark red spot; antennæ black, second segment about four times as long as first, third segment two-thirds as long as the second, fourth segment about as long as the second; bucculæ short very little elevated, reaching to the middle line of the eyes. Rostrum black, apex reaching to posterior margin of second abdominal segment, second and third segments subequal. Pronotum black, obsoletely punctate, behind the middle with a transverse, obtuse ridge which does not reach the lateral margins on each side; running anteriorly forward from this is a short obscure, obtuse, median ridge which does not reach the anterior margin, surface shallowly depressed either side of this and more deeply depressed behind the transverse ridge; lateral margin of the pronotum almost straight; cicatrices narrow, oblique, separated at their inner extremities by the short longitudinal ridge. Scutellum black, with the usual transverse subbasal ridge and apical carina. Clavus black, this gradually widening posteriorly, finely wrinkled. Central disk of the corium coccineous or dark carmine red, inner claval margin narrowly and broad lateral margin expanded posteriorly, black, narrow apical margin also red; whole surface finely wrinkled; the two longitudinal veins strongly elevated; costal region distinctly rounded beyond the middle, apex reaching to posterior margin of the fourth abdominal segment. Membrane dilute lacteous, veins concolorous, with a fuscous spot on the basal middle; not reaching apex of the abdomen. Abdomen coccineous, narrow edge of connexivum and sixth segment, black. Head, sternum and legs black. Venter

coccineous with anterior lateral margins of segments two to five, disk posteriorly and all of sixth segment, black. Length, $6\frac{1}{2}$ -8 mm.

Described from two males and three females from San Juan, II 1914.

This does not fall into any of the recognized subgenera occurring in the Western Hemisphere but apparently should be placed in *Melanostethus* erected by Stal to include *L. marginatus* Thunberg from the Cape of Good Hope. In fact, this species answers very well to Stal's short characterization of Thunberg's species, but it seems to me unlikely that the species could have been introduced into the West Indies.

***Pachygrontha parvula*, new species**

Head longer than wide with an obscure pale streak in the middle towards base and a small pale spot without each ocellus; rather closely and coarsely punctate; tylus projecting well beyond jugæ; antenniferous tubercles outwardly acute. Antennæ with the first three segments pale, fourth segment missing; basal segment rather strongly clavate towards apex only, a little shorter than second and third taken together, second segment one-third longer than third; ventral surface broadly ferrugineous. Pronotum only a little longer than wide, much less than half the length of the corium, evenly and coarsely punctate with ferrugineous with a conspicuous caloused median longitudinal line continuous throughout; a smooth ferrugineous area either side of this on the central disk; just within the humeral angles provided with a smooth ferrugineous knob-like elevation; the lateral margins not straight but strongly concavely arcuate behind the middle, the edge pale, rather sharply carinate and narrowly subreflexed. Scutellum with a conspicuous median elevated ridge, continuous with central carina of the pronotum; elsewhere ferrugineous, coarsely punctate. Clavus with two distinct rows and apically with an incomplete row of close-set strong punctures. Corium pale stramineous, sparingly punctate with ferrugineous in three series between the veins; middle of apical margin and apex of the corium with a dark castaneous spot, the latter less conspicuous. Membrane with an obscure infuscated median streak. Beneath, pale ferrugineous, tomentose, propleuron and edge of the venter somewhat paler. Legs pale sordid yellow, speckled with ferrugineous, the incrassate fore femora ferrugineous beneath, armed with four stout black-tipped teeth between each of which is a shorter tooth. Length, $4\frac{1}{2}$ mm.

Described from a single male from Mona Island, II 1914.

Somewhat related to *P. bimaculata* Distant but, besides being smaller with different markings, the antennal segments differ in relative length, etc.

***Orthæa ferruginosa*, new species**

Ferrugineous; head, anterior lobe of pronotum and scutellum dark castaneous; posterior lobe of pronotum and hemelytra pale ochraceous, punctate and maculate with ferrugineous; antennæ, legs and rostrum stramineous, banded with ferrugineous or fuscous as hereafter described; beneath castaneous.

Head a trifle longer and scarcely narrower than the anterior lobe of the pronotum, dark castaneous, apex of tylus reddish; coated with fine golden hairs; abruptly con-

tracted just behind eyes; apex extending to just beyond the middle of the basal segment of the antennæ; ocelli red. Antennæ stramineous, apex of 1st, 2nd, 3rd, and all of 4th fusco-ferrugineous; 2nd segment one-third longer than basal, 3rd segment about one-third shorter than 2nd, 4th a little shorter than 2nd. Head beneath castaneous, finely punctate. Rostrum stramineous, basal segment about one-third longer than basal segment of antenna; apex extending to end of intermediate coxæ. Pronotum strongly constricted behind the middle, anterior lobe castaneous, considerably narrower than and not quite twice as long as the posterior lobe, finely and sparsely punctate and provided with a few long pale hairs; posterior lobe ferrugineous, more closely punctate, with a smooth ochraceous spot either side of the middle and another more narrow, elongate one on the humeral tubercles. Scutellum uniformly castaneous, rather coarsely punctate along the sides, with an abbreviated premedian transverse, smooth ridge followed by a median longitudinal, smooth carina which reaches the concolorous apex. Hemelytra ochraceous, sparingly punctate with ferrugineous and marked with three rather obscure fascia as follows: a small round subbasal spot, a broad post-median costal fascia fading out inwardly and a triangular apical fascia; with an irregular smooth pale area close to and opposite to the apex of commissure; another small pale area on the costal margin just before the apical fascia; costal margins lightly convexly arcuate before the middle. Membrane fuscous, irrorate, with sordid ochraceous, veins for the most part and a small triangular spot at apex pale. Sternum and venter castaneous, the posterior margin of the metapleuron paler ferrugineous. Venter finely pilose. Legs stramineous with basal half of incrassate fore femur pale castaneous; second and third femora with a narrow preapical ring and apices of all tibiæ and tarsi narrowly, fuscous. Incrassate fore femur armed along the outer two-thirds with several strong teeth interspersed with a few smaller ones. Anterior tibia slightly curved. Length, $4\frac{1}{2}$ mm.

TYPE.—Male; Mayaguez, VII 1914. Paratypes: two females, Maricao, VII 1914; one female, Adjuntas, VI 1915; and two females, San Lorenzo, Santo Domingo, VI 1915.

Very closely related to *servillei* Guerin but, besides being smaller, the legs are differently colored and marked and the terminal segment of the antenna is entirely fuscous.

***Euryophthalmus obovatus*, new species**

Narrowly obovate, widest across apex of commissure. Finely pilose. Color piceous-black, extreme base of antennæ, bucculæ, narrow anterior margin and posterior third of pronotum, clavus in part, corium except inner apical part, connexivum, lateral margins of the venter, trochanters, femora and extreme base of tibia, bright red. Membrane pale, black at base.

Head subshining black, with very sparse covering of golden-yellow hairs and fine black pile; impunctate, finely transversely rugulose; eyes strongly projecting; beneath except for bucculæ shining black, with fine sparsely scattered silvery hairs. Rostrum black with the first three segments almost equal, the fourth about two-thirds as long as the third. Antennæ black with extreme apex of antenniferous tubercles and base of first segment reddish; terminal segment subequal in length to the basal one. Pronotum shining black, a little wider than long, provided with fine black hairs;

anterior margin very narrowly red followed by a coarsely punctate sunken area; transverse anterior lobe smooth, shining with a transverse sunken pit-like depression placed nearer to the lateral than the median line; posterior lobe lightly depressed anteriorly, a little longer than the anterior one, set off anteriorly by a series of rather close-set coarse punctures followed by scattered coarse punctures, which are black anteriorly on the smooth, broad, red fascia which occupies more than half of the posterior lobe and extending between the two humeral margins; lateral margins very slightly arcuated near the middle. Scutellum black, sparsely but distinctly punctate, without fine coating of decumbent hairs; plainly wider than long. Hemelytra red with clavus coarsely and closely punctate and smudged with black inwardly. Corium red, sparsely punctate with black between the median vein and claval suture; with a single row of regular punctures along the claval suture; inner area posterior to middle smudged with black; costal margins strongly rounded, widest across apex of the commissure, from whence more strongly converging. Membrane sordid lactose, broadly black at base, apex not reaching end of the abdomen, extending a trifle upon the base of the sixth segment. Tergum black; entire connexivum above and below to just beyond the line of the spiracles, red. Below with the sternum and venter shining black with sparse and scattered coating of fine silvery-white hairs and fine black pile. Propleura posteriorly coarsely punctate. Trochanters, femora and extreme base of the tibia red, remainder black; anterior femora only, armed with two or three small spines. Length, 11–12 mm. Width across corium, 5 mm.

TYPE.—Male; San Lorenzo, Santo Domingo. Paratypes: female, Udnato, Porto Rico; three males and six females, San Lorenzo, Santo Domingo.

***Atheas pallidus*, new species**

Whitish; head pale ferrugineous, pronotum anteriorly on either side of median carina and the disk exclusive of triangular posterior part, sternum and venter pale ferrugineous; discoidal area of hemelytra apically and post-median spot of the membrane obscurely embrowned; legs stramineous.

Head without evident projecting spines; antenniferous tubercles blunt not at all prominent, the lateral spines depressed, reduced to a pale ruga running along the inner margin of the eyes; space between these smooth, pale ferrugineous. Antennae long and slender, lightly embrowned, apical segment fuscous except at extreme base, apical part of third paler; slightly incrassate, cylindrical basal segment twice as long as the second which is constricted at base and twice as long as wide; third segment very long, not incrassate at base or apex, over three times as long as first and second taken together; apical segment finely hairy almost as long as first and second taken together, slender at base gradually widening to one-fourth way from apex thence more abruptly tapering. Anterior margin of pronotum twice sinuate, in the middle forming a very obtuse angle; paranota pale hyaline rather widely reflexed and furnished with a single row of 10 to 11 areolæ, the outer margin straight between the anterior and posterior abruptly rounded terminations; anterior part of pronotum somewhat elevated, pale hyaline, distinctly areolate, more strongly elevated and compressed at the anterior termination of the median carina, posteriorly to this on either side of median carina with a transverse, smooth, pale ferrugineous depression; pale lateral carina slender but distinct, running back from the center of this depression; pale median carina, slender but very distinctly elevated, continuous from base to

apex; rounded disk between these carina smooth pale ferruginous and pruinose; the triangular prolongation rather acute, distinctly areolate. Hemelytra narrow elongate, semicircularly rounded behind, the outer margins almost parallel, very gently rounded, lightly contracted opposite the middle of the membrane; costal margin with two distinct regular rows of subquadrate areoles to just beyond the middle of membrane, thence furnished with a single row posteriorly; subcostal area with a single row of areolæ on the basal half, apically with two rows; discoidal area extending to just beyond the middle of hemelytra, about four times as long as wide, the areoles very evident, about the size and character of those of the posterior prolongation of the pronotum, posteriorly embrowned. Membrane reaching far beyond the apex of the abdomen, provided with numerous distinct areoles, these gradually enlarging in size towards apex, a little behind middle with an obscure embrowned area. Beneath, sternum and venter pale ferruginous, pruinose; sternal laminæ of the rostral groove white, contiguous on the mesosternum. Coxæ and remainder of the legs stramineous, extreme apices of the tibiæ and tarsi infuscated. Wings fuliginous, apices visible below, reaching past middle point of exposed part of membrane. Length, 3 mm; width, $\frac{3}{4}$ mm.

Described from several examples from Areceibo, VII 1914.

This is not related to any other described species of *Atheas*. The pallid aspect, absence of spines of head, long antennæ with contiguous basal segments, contiguous mesosternal rostral laminæ are some of its most evident characters.

***Ploiariodes barberi*, new species**

W. L. McATEE AND J. R. MALLOCH¹

MALE.—Head with white pruinosity in front of eyes and a white line from base of each antenna, which connects with another that runs diagonally from lower hind margin of eye to upper occiput; faint lines of pruinosity on lower sides of pronotum in front and on pleura, and posterior and lateral margins, and lateral and dorsal carinæ of pronotum white. Abdominal spiracles white; venter mottled, each sternite with a large round bare spot on each side on hind margin. Antennæ and legs with narrow annulations, a subapical one on each femur and on first segment of antenna broader. Dark areas on fore wings profusely areolate with minute pale dots; apices of hind wings fuscous with white reticulations.

Pronotum without median tubercle on hind margin; submedian dorsal carinæ as sharp as the lateral ones, but little curved; mesonotal and metanotal thorns absent in type, the one at base of abdomen distinct. Apical abdominal sternite not deeply excavated at tip. Fore femur with very weak ventral spinules. Stigma normal, cross-vein closing apex of discal cell on its anterior half straight, the other one curved. Length (without wings), 3 mm.

HOLOTYPE.—Tallaboa, near Ponce, Porto Rico, July 23, 1914, H. G. Barber.

Named in honor of the collector. This is one of the most distinct species known to us. The submedian dorsal pronotal carinæ are not

¹This description was kindly drawn up by Messrs. McAtee and Malloch; the species should be credited to them.

sharp in any other species, and the only other which has the dark areas of the fore wings with minute hyaline dots is *P. parshleyi* Bergroth.¹

GORPIS Stal

This genus, established in 1859 by Stal for *cribraticollis* from Ceylon, has a rather wide distribution through the Ethiopian, Oriental and Australian faunal realms but has not hitherto been reported from either the Neotropical or Nearctic realms. Reuter in the *Annales Soc. Entomol. de Belgique*, LIII, 1909, pp. 423-430, gives an extended characterization of the genus *Gorpis* and treats of the seven known species.

Gorpis neotropicalis, new species

Sordid yellow-white; antennæ, dorsum of head in part, scutellum posteriorly, streak on clavus posteriorly and also along inner and apical margin of corium, rostrum, apices of all femora, base and apex of all tibiæ, dilute red.

Head smooth, shining, plainly pilose below and with a few scattered long hairs above; space between the eyes subequal to that of diameter of eye itself; ocelli not discernible, sides of tylus longitudinal streak on the vertex and a V-shaped fascia running back from the center of the eyes to base, dilute red. Antennæ finely pilose, irrorate with red on the two basal segments, basal segment about as long as head and the anterior lobe of the pronotum taken together, apex slightly incrassate, two-thirds as long as second; third segment one-third shorter than first; fourth segment over one-half, nearly two-thirds as long as third segment. Rostrum finely pilose, with short, thick basal segment, second segment one-third longer than third, fourth less than one-half the length of third. Pronotum dull, non-pilose, obtusely constricted behind middle, with the anterior lobe exclusive of collar a trifle longer than posterior lobe; disk of both lobes impunctate, with a few coarse punctures along the sides posterior to the transverse stricture; anterior lobe with a faint median sulcus; humeral angles unarmed, provided with an elongated rounded prominence; posterior-margin evenly arcuated, not straight before the base of scutellum. Scutellum impunctate, slender, transversely depressed before the middle; disk behind this somewhat swollen, dilute red; apex depressed, very acute. Hemielytra dull, obsolete wrinkled; clavus posteriorly dilute reddish; corium with costal margin from close to base narrowly expanded; inwardly streaked with dilute red close to and along apical half of clavus extending to beyond base of membrane, another similar streak along the inner margin of corium next to the membrane which does not quite reach the apex of corium; apex of corium reaching back as far as apex of the abdomen. Membrane pale, reaching well beyond apex of abdomen. Wings reaching apex of abdomen. Legs long and slender with long pile; fore femora slightly incrassate, almost straight, provided above with a few scattered long hairs and below densely clothed with numerous spinules interspersed with slender bristles and hairs; fore tibiæ curved at base, gently curved apically from middle, inwardly serrate, serrations tipped with downwardly curved setæ; towards apex rather abruptly expanded and armed inwardly with a

¹1922, *Notulæ Entomologicae*, II, p. 79.

stout, curved spine or process extending beyond apex of tibia. Propleuron coarsely punctate; mesopleuron smooth, broadly whitish pruinose except along outer margin. Venter smooth, shining; genital segment of male finely pilose, provided on either side with an upwardly directed, curved and somewhat twisted acute genital hook, curving toward median line. Length, 12 mm.

TYPE.—Male; Aibonito, VII 1914. Paratypes: three males and three females, Aibonito, VII 1914 and one female, Adjuntas, VI 1915.

This species seems to be somewhat closely related to *cribraticollis* Stal, described from Ceylon. The disk of the pronotum is not closely punctate; the ocelli are not discernible; the anterior femora are scarcely curved and the posterior margin of the pronotum is evenly arcuate. In fact, some of the characters would seem to throw this out of the genus *Gorpis* as characterized by Stal and Reuter and yet, as most of the characters agree, I hesitate to establish a new genus for it. The reddish maculations are subject to considerable variation and some specimens are almost entirely devoid of red.

***Hydrometra consimilis*, new species**

Color, similar to *H. martini*, brownish-fuscous with a pale median line on the pronotum; two basal segments of the antennæ, rostrum, and legs, brown. Head, with antecular part twice as long as the postocular, from a little before middle gradually widened to the base of the antenniferous tubercles; strongly impressed or sulcate between the eyes; postocular part gradually widening posteriorly, widest just before the pronotum, furnished with a seta on either side before a basal transverse pale fascia and with four setæ anteriorly on the antecular expanded part. Antenna with incrassate basal segment extending about one-fourth its length beyond apex of the head, second segment lightly incrassate at apex almost twice as long as basal, third segment long, over three times as long as second, fourth a little over twice as long as second, about one-third shorter than third; third and fourth segments fuscous. Rostrum brown reaching well beyond middle point of postocular part of head; middle region of head below pale brown. Pronotum dark brown more or less infuscated with a median longitudinal pale line, also bordered with a pale line along the lateral edge; posteriorly on either side with a somewhat elongate subtubercular prominence placed on a line above the posterior coxæ. Hemelytra dull lactose with fuscous nervures and with a brown streak running through almost the entire length of the corium; apex of membrane reaching the middle of fifth abdominal segment. Genital segment much as in *martini*, furnished dorsally with a prominent terminal spine which is not porrect but slightly inclined upwards. Beneath with sternum and venter in the central longitudinal region, pale brown; venter laterally fuscous, somewhat pruinose; close to base of sixth segment furnished on either side with a deflexed, short, broad flattened process, these set rather close together, and concave along their free edges. Legs deep brown, apex of hind femora about reaching end of the abdomen. Length, 9½ mm.

TYPE.—Macropterous male, Coama Springs, VII 1914.

Closely related to *H. martini* Say but the antecular part of the head is relatively longer and strongly impressed between the eyes; the relative lengths of the antennal segments is different, the spine of the genital segment is upwardly inclined and the flattened basal processes of the sixth abdominal are more evident, but perhaps retractile. Both *australis* Say and *naiades* Kirkaldy are closely allied species, but neither is the head nor the second segment of the antenna more dilated apically than in *martini*. The relative lengths of the antennal segments as well as the size precludes the possibility of this being Kirkaldy's species. *H. caraiba* Guerin is a much larger species with rostrum not extending beyond the eyes.

***Plea punctifer*, new species**

Pale yellowish-gray; closely and rather coarsely punctate, the punctures on the posterior part of the corium brown; apex of the head and rostrum fuscous; middle stripe on the vertex in front and the scutellum more pale testaceous yellow; inner line of clavus next to scutellum and claval suture narrowly but lightly infuscated. Claval suture distinct.

Head with closely and evenly set clean-cut punctures except on the median testaceous stripe, where they are more sparse; no indication of a median line or carina; width between the eyes about two and one-half times as great as its length, inner orbits of the eyes parallel from close to base. Pronotum somewhat shining, unicolorous, closely punctate, more coarsely so on the anterior half, posteriorly with punctures more shallow and larger, appearing rimmed but not reticulate, set with fine decumbent hairs; the lateral margins not at all parallel, very lightly concave before the somewhat more prominent humeral angles which protrude well beyond the line of eyes; posterior margin before base of scutellum straight. Scutellum a trifle wider than long, shining testaceous-yellow, coarsely punctate along the sides, more sparsely so on the disk; acuminate at apex and there finely, transversely rugulose. Hemelytra subshining with the claval suture very distinct; closely and coarsely punctate, the punctures posteriorly on the corium faintly brownish. Seen from the side, the dorsal outline is gently rounded from the posterior third of pronotum to a little beyond apex of commissure, whence it is abruptly declivous; posteriorly its plane is almost perpendicular; the greatest dorso-ventral diameter being about the middle point of the commissure. Sternum and venter fuscous. Legs pale testaceous-yellow, with the coxæ, trochanters and base of the femora fuscous; anterior tarsus about one-half the length of the fore tibia, the two segments subequal; tarsal claws more than one-half the length of a tarsal segment; middle femur provided with close-set slender spines or bristles towards base; apex of middle trochanter armed with two short spines; hind tarsus including claws three-fourths as long as hind tibia. Length, $2\frac{1}{2}$ mm. Width, 1 mm.

TYPE AND SINGLE PARATYPE.—Arecibo, VII 1914.

This is considerably larger and relatively broader than *P. striola*, differently punctured, with the arch of the back less rounded and more

abruptly declivous behind. Unlike all specimens of *striola* which I have seen, the claval suture is very distinct. Mr. Roland F. Hussey has suggested to me that possibly this may be present in full-winged forms only. Professor Drake has kindly allowed me to examine a paratype of his *harnedi* from Mississippi, which is much more shining and strongly marked with fuscous with the punctures not so closely set especially on the corium, besides being relatively narrower. I have not been able to differentiate the sexes.

Plea puella, new species

Smaller than *P. striola*, somewhat shining. Color pale cinereous, on the corium rather closely punctate with fuscous, clouded with brown at apex of clavus and corium; pronotum posteriorly reticulate; head pale yellow-gray with a brown streak in the middle.

Head shining, finely and sparsely punctate along the sides, impunctate in the center of the disk; not quite twice as wide between the eyes as long; across the eyes plainly narrower than diameter of pronotum posteriorly. Pronotum with the anterior fifth smooth with a row of punctures along the anterior margin; this smooth area followed by a series of coarse punctures, posterior two-thirds reticulate; humeral margin projecting beyond line of eyes and somewhat elevated within. Scutellum shining testaceous-yellow, a little longer than wide, with scattered brown punctures. Clavus and corium furnished with rather close-set brown punctures, on the latter more closely set and shallower posteriorly, with a single row of coarse punctures along the costal edge; clouded with fuscous posteriorly on the clavus and corium. Viewed from the side with the dorsal outline from base of scutellum greatly flattened, very lightly arcuated and subparallel to costal margin, abruptly declivous from a little behind apex of commissure. Sternum and venter fuscous. Legs testaceous-yellow; coxæ fuscous. Length, $1\frac{1}{2}$ mm. Width, $\frac{3}{4}$ mm.

TYPE AND TWENTY-NINE PARATYPES.—Arecibo, VII 1914. One paratype: Guadeloupe.

This species is considerably smaller than the preceding and about three-fourths the size of *striola*. From the latter it may be distinguished by differences in coloration and punctuation with relatively longer scutellum and less rounded dorsally. As suggested by Kirkaldy in 1904, Champion's *striola* is very probably distinct from that species.

GENERAL LIST

In addition to the above, the following species were found in Porto Rico. The detailed distribution of these species, together with notes concerning them, will be given in the full report.

SCUTELLERIDÆ

Pachycoris fabricii Linnæus
Diolcus boscii Fabricius
Augocoris sexpunctatus Fabricius

CYDNIIDÆ

Corimelæna (Eucoria) minuta Uhler
Æthus indentatus Uhler
Amnestus subferrugineus Westwood
Amnestus pusio Stal

PENTATOMIDÆ

Mormidea angustata Stal
Mormidea sordidula Stal
Solubea pugnax Fabricius
Euschistus crenator Fabricius
Proxys victor Fabricius
Thyanta perditor Fabricius
Thyanta casta Stal
Thyanta antiquensis Westwood
Loxa flavicollis Drury
Fecelia minor Vollenhoven
Nezara viridula Linnæus
Acrosternum marginatum Palisot de
 Beauvois
Piezodorus guildingi Westwood
Piezodorus tinctus Distant
Arvelius albopunctatus DeGeer
Edessa species
Edessa bifida Say
Alcæorrhynchus phymatophora Palisot
 de Beauvois
Podisus sagitta Fabricius
Piezosternum subulatum Thunberg

COREIDÆ

Leptoglossus balteatus Linnæus
Leptoglossus stigma Herbst
Leptoglossus gonagra Fabricius
Phthia picta Drury
Phthia lunata Fabricius
Corecoris fusca Thunberg
Corecoris batatas Fabricius
Chariesterus gracilicornis Stal
Margus obscurator Fabricius
Catorhintha guttula Fabricius
Anasa scorbutica Fabricius
Zicca tæniola Dallas
Sphictyrtus whitei Guerin

Leptocoris filiformis Fabricius
Hyalmenus longispinus Stal
Megalotomus rufipes Westwood
Harmostes serratus Fabricius
Exogenus extensus Distant
Corizus hyalinus Fabricius
Corizus sidæ Fabricius
Jadera sanguinolenta Fabricius

NEIDIDÆ

Jalysus spinosus Say

LYGÆIDÆ

Oncopeltus fasciatus Dallas
Oncopeltus aulicus Fabricius
Lygæus (Melanocoryphus) collaris
 Fabricius
Lygæus (Ochrostomus) pulchellus
 Fabricius
Ortholomus jamaicensis Dallas
 (= *Nysius providus* Uhler, in part)
Nysius ericæ Schilling
 (? = *Nysius scutellatus* Dallas)
Nysius basalis Dallas
 (? = *Nysius inæqualis* Uhler)
Cymoninus (Ninus) notabilis Distant
Ischnorhynchus championi Distant
Cymus virescens Fabricius
 (= *Cymus breviceps* Stal)
Blissus leucopterus Say
Geocoris lividipennis Stal
Ninyas deficiens Lethierry
 (= *Ninyas strabo* Distant)
Ligyrocoris abdominalis Guerin
Paromius longulus Dallas
Orthæa bilobata Say
Orthæa vincta Say
Ptochiomera minima Guerin
Ozophora burmeisteri Guerin
Ozophora concava Distant

PYRRHOCORIDÆ

Dysdercus andreæ Linnæus
Dysdercus sanguinarius Stal
 (= *D. jamaicensis* Walker)

TINGIDÆ

Corythucha gossypi Fabricius
Corythaica moncha Stal

Corythaica carinata Uhler
Leptodictya bambusæ Drake
Teleonemia proluxa Stal

PHYMATIDÆ

Phymata marginata Fabricius
Macrocephalus crassimanus Fabricius
Macrocephalus leucographus Westwood
Macrocephalus pulchellus Westwood

REDUVIIDÆ

Ploiariodes rubromaculata Blackburn
Ploiariodes armata Champion
Ploiaria gundlachi Dohrn
Zelus longipes Linnæus
 (? = *Z. rubidus* Lepeletier and
 Serville)
Zelus subimpressus Stal
Heza pulchripes Stal

MESOVELIIDÆ

Mesovelgia mulsanti Buch. White

NABIDÆ

Pagasa fusca Stein
Nabis sordidus Reuter
Nabis signatus Uhler
Carthasis minor Reuter
 (? = *C. rufo-notatus* Champion)

ANTHOCORIDÆ

Piezostethus sordidus Reuter

Macrotracheliella laevis Champion
Triphleps insidiosus Say

GERRIDÆ

Gerris (Limnotrechus) cariniventris
 Champion
Tenagomonus (Limnogonus) guerini
 Lethierry and Severin
Rheumatobates imitator Uhler

VELIIDÆ

Microvelia pulchella Westwood
Microvelia capitata Guerin
Rhagovelia tayloriella Kirkaldy

SALDIDÆ

Saldula pallipes Fabricius
Micranthia humilis Say
Micranthia species

NOTONECTIDÆ

Notonecta undulata Say
Buenoa species

NAUCORIDÆ

Pelocoris femoratus Palisot de Beauvois

NEPIDÆ

Ranatra species

BELOSTOMATIDÆ

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Belostoma boscii Lepeletier and Serville

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