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XIII. *Contributions to a Knowledge of the Rhynchota.*

By W. L. DISTANT.

[Read November 21st, 1900.]

PLATE IX.

I.

EASTERN CERCOPIDÆ.

Cosmoscarta and *Phymatostetha* are two closely allied genera belonging to the Fam. *Cercopidæ*. In distribution they are Oriental and Australian, being found in and throughout British India, the Malay Peninsula, Malayan Archipelago, Northern Australia, and many of the Pacific Islands. They just enter the Palæarctic region in China, but as far as I am aware are absent from Japan.

Some few years ago, Mr. Doherty, the well-known and accomplished collector, made a natural history expedition throughout India, Burma, Tenasserim, the Malay Peninsula, and many islands of the Malayan Archipelago. With few exceptions his Rhynchotal collections passed into my hands, and a very large number of species belonging to these two genera have remained—owing to one cause and another—unworked to the present time, the new species being now described. I have at the same time gone over the fine collection in the British Museum, and described the nondescripts which have accumulated there during the last few years. Our national collection of these insects is unsurpassed, its chief treasures being the large number of species collected by Mr. Wallace in his memorable visit to the Malayan Archipelago, and originally described by the late Mr. Walker under the genus *Cercopis*. Dr. Butler subsequently revised this work and re-arranged the species—describing many new ones—under the genera proposed for their reception by Dr. Stål, viz. *Cosmoscarta* and *Phymatostetha*. The Museum since that time has received many acquisitions, notably the Indian collection of the late Mr. Atkinson, including the types of the species he had described. Outside our own country, Stål added most

to our knowledge of these insects, and recently Breddin has contributed to the same.

The latest enumeration of the species is still that of Butler, compiled in 1874 ("Cistula Entomologica," vol. i.). He there included 104 species of *Cosmoscarta* and 22 species of *Phymatostetha*. An approximate estimate would now point to the known species being some 163 species of *Cosmoscarta*, and 28 species of *Phymatostetha*, but it is absolutely certain that our knowledge is still very incomplete, and that the time has scarcely arrived for the formation of a systematic catalogue.

The arrangement of the species is still a matter for individual opinion. Structural, differential, and sectional characters are to be found in the size, shape, and surface of the pronotum and in the conformation of the face, while sternal characters have been used by some describers. Other workers have only, or chiefly, used the tegmina, the colour and markings on which have been employed in a similar manner to the process which obtains in the study of the wings in Lepidoptera. In an evolutionary sense there is much to commend this view, partial as it is from an entomological standpoint. I believe—with diffidence—that the tegmina in *Cosmoscarta* and *Phymatostetha* exhibit in their markings characters of the greatest phylogenetic value, and that they may be used according to the biological method of to-day, which seeks to establish affinities rather than to accentuate differences. I have in the arrangement of my species seen traces of an unicolorous beginning, gradually breaking up into spots, again coalescing in stripes, but I have no theory to formulate, for the process might be reversed. An evolutionist need not be a sectarian, nor need biological suggestions be mistaken for philosophical dogmas.

Genus COSMOSCARTA.

Cosmoscarta, Stål, Ofv. Vet.-Ak. Förh., 1870, p. 718.

Cosmoscarta maura, sp. n.

Body and tegmina piceous; lateral and posterior margins of pronotum, femora, bases of posterior tibiæ, and a small broken discoidal spot to tegmina, ochraceous; wings smoky hyaline.

Pronotum with the lateral margins distinctly reflexed, its surface rugulose and coarsely punctate, its lateral angles subangulately rounded; posterior tibiæ with two strong outer spines, one at apex

and the other at about one-third from apex; face laterally striate and moderately compressed.

Long. excl. tegm. 10 millim. Exp. tegm. 29 millim.

Habitat. BATCHIAN (Doherty—Coll. Dist.).

Cosmoscarta butleri, sp. n.

Head, pronotum, and prosternum brilliant metallic indigo-blue; abdomen, meso- and metasternum, coxæ, and legs sanguineous; tegmina shining piceous with an olivaceous reflection; wings smoky hyaline; abdomen beneath with a central and two lateral series of black spots.

Pronotum very faintly and finely punctate and obscurely pilose, its lateral margins reflexed, and with a central carinate line extending for about half its length from apex, and with two prominent foveate impressions on its anterior area; face compressed and transversely striate; posterior tibiæ with a long and prominent spine about one-third from apex.

Long. excl. tegm. 16 millim. Exp. tegm. 42 millim.

Habitat. MALAY PENINSULA, Perak (Doherty—Coll. Dist.).

Allied to *C. funeralis*, Butl.

Cosmoscarta sulukensis, sp. n.

Body and legs pale sanguineous; tegmina with about basal half sanguineous containing a large broad recurved black fasciate spot on disk, and a prominent black claval streak; about posterior half of tegmina black containing two large ochraceous spots—one from costal margin outwardly curved, the other tri-angulated nearly reaching inner margin, the apical area brownish-black; wings pale brownish hyaline.

Pronotum with the lateral margins reflexed, a central carinate line not reaching base, and with two foveate impressions on anterior area, its surface very finely punctate and obscurely pilose; face compressed and transversely striate; posterior tibiæ with a strong spine at about one-third from apex.

Long. excl. tegm. 18 millim. Exp. tegm. 43 millim.

Habitat. SULU ISLANDS (Coll. Dist.).

The nearest allied species in my collection is *C. miranda*, Butl.

Cosmoscarta obiensis, sp. n.

Head, pronotum, scutellum, base and apex of abdomen, body beneath and legs ochraceous; abdomen above, mesosternum, and large lateral marginal spots to abdomen beneath, pitchy-black; tegmina black, the base and a much sinuated transverse fascia about centre, ochraceous, two small luteous spots at about one-fourth from apex—the largest near costa, the smaller below centre of disk, apical margin broadly pale brownish; wings pale brownish-hyaline.

Pronotum very finely and thickly punctate, with two foveate impressions near anterior margin, and an elongate foveate impression near each lateral angle, lateral margins reflexed, posterior margin subtruncate, and with a distinct central longitudinal carination; face distinctly centrally sulcate, and very strongly transversely striate; posterior tibiæ with a moderate sized spine at about one-third from apex.

Long. excl. tegm. 14 to 15 millim. Exp. tegm. 32 millim.

Habitat. MALAY ARCHIPELAGO, Obi Island (van Renesse, van Dovenborg—Brit. Mus.).

Somewhat allied to *C. miranda*, Butl. In one specimen all the markings to the tegmina are luteous.

Cosmoscarta naiteara, sp. n. (Plate IX, fig. 1.)

Head, face, pronotum, scutellum, anterior femora, and bases of anterior and posterior tibiæ ochraceous; two small spots at base of head and inner margins of eyes, two rounded spots on anterior area of pronotum, apical area of scutellum—sometimes its whole surface—body and legs bluish-black; lateral margins of sternum ochraceous; tegmina piceous, the basal third ochraceous with the veins and a transverse spot on discoidal area piceous, a broken inwardly directed macular ochraceous fascia at about one-third from apex; wings smoky hyaline.

Var. a. Tegmina with the basal ochraceous area only indicated by outer spots.

Var. b. Tegmina nearly wholly ochraceous, apical fourth and two or three discal spots only piceous.

Pronotum gibbous, the lateral and posterior margins reflexed, its surface thickly and finely punctate; face globular only slightly compressed; posterior tibiæ with a strong spine at about one-third from apex which is more obscurely spined.

Long. excl. tegm. 15 to 17 millim. Exp. tegm. 40 to 48 millim.

Habitat. BRIT. INDIA, Utakamand (Atkinson Coll.—Brit. Mus.), Malabar (Coll. Dist.).

Cosmoscarta relata, sp. n.

Head, pronotum, face and lateral margins of prosternum, dull ochraceous; two duplex spots near anterior margins of pronotum, scutellum, abdomen, body beneath and legs dark indigo-blue; anterior legs (excluding femoral bases), and the intermediate tibiæ brownish-ochraceous; tegmina black; a broken claval basal fascia connected with a much angulated transverse fascia crossing tegmina before middle, a basal costal fascia, a discal spot a little beyond base, and an angulated transverse fascia about one-third from apex, which does not reach costal margin, reddish-ochraceous; wings smoky hyaline, strongly sanguineous at base and costal area.

Pronotum finely wrinkled and thickly and finely punctate, margins thickened and reflexed, posterior margin subtruncate; face narrowly centrally sulcate, strongly transversely striate; posterior tibiæ with a strong spine a little beyond middle.

Long. excl. tegm. 15 millim. Exp. tegm. 40 millim.

Habitat. BRITISH INDIA, Kawar (Atkinson Coll.—Brit. Mus.).

Allied to *C. naiteara*, Dist.

Cosmoscarta roborea, sp. n. (Plate IX, fig. 2.)

Head, pronotum, scutellum, and sternum shining pitchy-black; abdomen bluish-black; legs castaneous; a large frontal spot to head—extending from between eyes,—lateral margins of pronotum, connected by a transverse fascia between the lateral angles, ochraceous; tegmina pale piceous with an elongate discoidal spot, two spots beneath its near inner margin—the uppermost small, the second curved and elongate—and an inwardly curved transverse fascia crossing tegmina about one-third from apex, ochraceous; wings smoky hyaline.

The pronotum is centrally gibbous with a slender central carination, the lateral margins not prominently reflexed but levigate, the remaining surface rugulose and coarsely punctate; posterior tibiæ with a strong and prominent spine about one-third from apex, and another smaller one at apex.

Long. excl. tegm. 13 to 14 millim. Exp. tegm. 33 to 36 millim.

Habitat. MALAY PENINSULA, Perak (Doherty); SUM-
ATRA (Forbes—Coll. Dist.); BORNEO, Pankalan Ampat
(Shelford—Coll. Dist. and Sarawak Mus.).

Cosmoscarta solivaga, sp. n. (Plate IX, fig. 3.)

Head, pronotum, scutellum, body beneath and legs shining pitchy-black; abdomen purplish-black; pronotum with the lateral and basal margins—the last very broadly—and a central fascia continued throughout head, where it is broadest, ochraceous; the central fascia is marked with two small lateral piceous spots on disk; tegmina pale ochraceous, base narrowly piceous and with a paler piceous suffusion on costal area for about one-third from apex; wings very pale ochraceous, narrowly piceous at base.

The pronotum is centrally gibbous with the lateral margins distinctly reflexed and somewhat laminately produced, with a slender central carination, and its surface subrugulose and coarsely punctate; posterior tibiae with a very prominent spine at about one-third from apex, and a shorter spine at apex.

Long. excl. tegm. 14 millim. Exp. tegm. 36 millim.

Habitat. BORNEO, Kuching (Shelford—Coll. Dist. and Sarawak Mus.).

Apparently allied to *C. eli*, Bredd.

Cosmoscarta chersonesia, sp. n. (Plate IX, fig. 4.)

Body piceous; legs castaneous; a subquadrate spot to head; a discal transverse series of three rounded spots to pronotum, and the lateral margins of scutellum ochraceous; tegmina ochraceous with three elongate spots in claval area, two large spots on disk with a smaller one beneath the outermost, a small lineate spot at about centre of costal margin and the apical fourth of tegmina piceous; wings smoky hyaline with about basal half—not reaching posterior margin—roseate.

Pronotum convexly gibbous, the lateral margins moderately reflexed, its surface very finely and obscurely punctate; face much compressed; posterior legs mutilated.

Long. excl. tegm. 14 millim. Exp. tegm. 35 millim.

Habitat. MALAY PENINSULA, Perak (Doherty—Coll. Dist.).

Cosmoscarta mandaru, sp. n. (Plate IX, fig. 5.)

Body piceous; legs ochraceous, anterior and intermediate tibiae castaneous; pronotum with the lateral margins narrowly and the posterior margin very broadly ochraceous; tegmina reddish-ochraceous, with the base, costal margin—narrowly, a subquadrate spot about centre of costal area, a small spot at about centre of inner margin, and about apical fourth of tegmina piceous; wings smoky hyaline.

Pronotum subrugulose, thickly and finely punctate, its lateral margins moderately reflexed; face somewhat compressed; posterior tibiæ with a prominent spine about one-third from apex.

Long. excl. tegm. 14 millim. Exp. tegm. 32 millim.

Habitat. CELEBES (Coll. Dist.).

Somewhat allied to *C. sulcata*, Walk., from which it differs by the ochraceously margined pronotum, etc.

Cosmoscarta militaris, sp. n.

Head, pronotum, scutellum, face, and lateral margins to prosternum, sanguineous; legs castaneous, anterior femora reddish; abdomen above piceous, beneath dark castaneous; pronotum with a short transverse piceous fascia near anterior margin; tegmina sanguineous with rather less than the apical half black; wings pale smoky hyaline.

Pronotum thickly and finely punctate, lateral margins strongly reflexed, posterior margin subtruncate, two foveate impressions near anterior margin, an elongate foveate impression near the lateral angles, and with a distinct central carination which is transformed to a sulcation on posterior area; face with a central impunctate fascia, not sulcated, lateral transverse ridges strong; posterior tibiæ with a very strong spine a little beyond middle.

Long. excl. tegm. 13 millim. Exp. tegm. 35 millim.

Habitat. NEW GUINEA, Charles Lewis Mt. (van Renesse, van Dovenborg—Brit. Mus.).

In markings of tegmina allied to *C. tetragona*, Walk.

Cosmoscarta auratilis, sp. n.

Pronotum black; head, lateral and posterior margins of pronotum, scutellum, and lateral margins of posternum, ochraceous; abdomen above and body beneath fuscous; legs pale brownish; tegmina bright golden-yellow with rather less than the apical half black; wings pale smoky hyaline.

Pronotum thickly and finely punctate, with a faint central carination, lateral margins prominently reflexed, with two foveate impressions near anterior margin, and an elongate foveate impression near the lateral angles; face with its central area ochraceous, impunctate, and non-sulcate, the transverse ridges strong; posterior tibiæ with a very short spine near base, and a robust spine at about one-third from apex.

Long. excl. tegm. 10 millim. Exp. tegm. 30 millim.

Habitat. NEW GUINEA, Charles Lewis Mt. (van Renesse, van Dovenborg—Brit. Mus.).

Cosmoscarta whiteheadi, sp. n.

Head, pronotum, scutellum, lateral margins of sternum, anterior legs, intermediate tibiæ and tarsi, apices of posterior tibiæ and the tarsi, and apex of abdomen, pale bright castaneous; abdomen, body beneath and legs black; tegmina black, costal and apical margins—the first most distinct near base—castaneous; the base, a small discal spot and two small spots—one above the other—before the reticulated apical area, sanguineous; wings pale smoky hyaline.

Var. Tegmina with two or three small discal spots, and two subcostal spots, one above the discal, the other above the subapical spots.

Pronotum very finely wrinkled, and thickly and finely punctate, with a central carination, two foveate impressions near anterior margin, and two more elongate ones behind the lateral angles, the lateral margins reflexed, the posterior margin truncate; face with a broad central sulcation, the transverse striation moderately prominent; posterior tibiæ with a short spine near base and a long spine a little beyond middle.

Long. excl. tegm. 12 millim. Exp. tegm. 35 millim.

Habitat. PHILIPPINE ISLANDS, Luzon, Cape Engano (Whitehead—Brit. Mus.).

Allied in its varietal forms to *C. sexmaculata*, Stål, from which the colour of the pronotum will, apart from other characters, at once separate it.

Cosmoscarta consociata, sp. n.

Head, pronotum, face, legs, and posterior margin of mesonotum castaneous; scutellum, abdomen and body beneath black; lateral margins of prosternum brownish-ochraceous; tegmina black; posterior margin of clavus for more than half its length, a discal spot about one-third from base, a transverse fascia much attenuated interiorly—at base of reticulated apical area, and the costal margin, ochraceous or reddish-ochraceous; wings pale fuscous hyaline.

Pronotum finely wrinkled and punctate, with a central carination, two foveate impressions near anterior margin and an elongate impression near each lateral angle, margins moderately reflexed, posterior margin concavely sinuate; face centrally ochraceous but

not sulcate, transverse striations profound; posterior tibiae with a strong spine a little beyond middle.

Long. excl. tegm. 13 to 14 millim. Exp. tegm. 30 to 32 millim.

Habitat. PHILIPPINE ISLANDS, Albay (Whitehead—Brit. Mus.).

Somewhat allied to the preceding species *C. whiteheadi*, but apart from distinct markings differing fundamentally by the concave posterior margin of the pronotum.

Cosmoscarta demonstrata, sp. n. (Plate IX, fig. 6.)

Ochraceous; metanotum, base of abdomen above, meso- and metasternum, basal areas of the first, second and third abdominal segments beneath and three large marginal spots on each side, a transverse fascia to tegmina beyond middle preceded by a discoidal spot, black; wings pale hyaline, roseate at base.

Pronotum very broad and convex, the lateral margins and lateral angles distinctly convex, its surface finely wrinkled and obscurely punctate; face strongly compressed; posterior tibiae with a strong spine about one-third from apex.

Long. excl. tegm. 17 millim. Exp. tegm. 48 millim.

Habitat. BORNEO, Matang Mt. 3200 ft. (Shelford—Sarawak Mus. and Coll. Dist.).

Cosmoscarta mandarina, sp. n. (Plate IX, fig. 7.)

Head, pronotum, scutellum and sternum bluish-black; legs dull reddish, the tarsi and anterior and intermediate tibiae piceous; abdomen sanguineous, its base above and a segmental series of transverse fasciae and lateral spots beneath, bluish-black; tegmina piceous, sanguineous at base and with two transverse ochraceous fasciae—one at one-third, the second at two-thirds from base—ochraceous; wings smoky hyaline, sanguineous at base.

The pronotum is gibbous with a distinct and somewhat acute foveation on each lateral area, its posterior margin is concavely sinuate, and its margins distinctly reflexed, its surface is thickly and finely punctate, with a distinct central carination; the face is compressed with a broad central non-sulcated levigate fasciate area, its lateral areas deeply striate; posterior tibiae with a moderate spine at about one-third from apex.

Long. excl. tegm. 14 to 15 millim. Exp. tegm. 29 millim.

Habitat. WEST CHINA, Omei (Coll. Dist.).

Cosmoscarta macgillivrayi, sp. n.

Head, pronotum, scutellum, pro- and mesosternum, and abdomen beneath dark indigo-blue; abdomen beneath with the posterior segmental margins and the apical area ochraceous; two basal lateral fasciæ to scutellum and abdomen above reddish-ochraceous, the last with the discal areas of the second, third, fourth, and fifth segments fuscous; legs fuscous, coxæ, anterior femora—excluding apices—bases of anterior and posterior femora, reddish-ochraceous; tegmina ochraceous, about apical half of clavus, costal margin, central discoidal and apical areas black; a subcostal basal streak, about basal half of clavus, and two angulated transverse fasciæ—the inner not reaching costal margin, the outermost—about one-third from apex—completely crossing, dull sanguineous; wings pale smoky hyaline.

Pronotum obscurely wrinkled and very finely punctate, with a central carination, two foveate impressions near anterior margin, and two deeper longitudinal ones behind the lateral angles, the lateral margins reflexed, the posterior margin truncate; face somewhat obscurely centrally sulcate, the transverse striations moderate; posterior tibiæ with a very small spine near base, and a long spine at about one-third from apex.

Long. excl. tegm. 13 to 15 millim. Exp. tegm. 29 to 32 millim.

Habitat. ? (Macgillivray—voyage H.M.S. *Herald*—Brit. Mus.).

No precise habitats are to be found connected with the insects collected during this voyage. The species I have here described is allied to *C. mandarina*, Dist., from China, and it is most probably a Chinese species. The *Herald* made some stay at Hong-kong.

Cosmoscarta tennanti, sp. n.

Head, pronotum, scutellum, face, and lateral margins of prosteronum, ochraceous; abdomen above and body beneath bluish-black; legs and apex of abdomen castaneous; tegmina with about basal third ochraceous, remaining area bluish-black, piceous towards apex; at about two-thirds from base are two ochraceous spots one above the other, the uppermost larger and prominently notched.

Pronotum very finely and obscurely punctate, with a central carination which is much more prominent anteriorly, margins moderately reflexed; face moderately compressed, transversely striate, centrally sulcate; posterior tibiæ with a strong spine about one-third from apex.

Long. excl. tegm. 11 millim. Exp. tegm. 28 millim.

Habitat. CEYLON (Coll. Dist.).

Cosmoscarta raja, sp. n.

Head and pronotum indigo-blue, lateral margins of the pronotum reddish-ochraceous; scutellum and abdomen above sanguineous; body beneath and legs sanguineous, anterior and intermediate tarsi piceous; tegmina sanguineous, apical third piceous, sanguineous portion marked with six piceous spots,—three oblique near base, followed by a discal irregularly rounded spot, an outer oblique spot from costa, and a larger spot connected with the posterior margin; wings fuscous hyaline.

Pronotum finely punctate, the lateral margins moderately reflexed, the posterior margin slightly concavely sinuate; face bluish-black above, sanguineous beneath; posterior tibiæ with a strong spine about one-third from apex and a short but distinct spine at apex.

Long. excl. tegm. 9 to 10 millim. Exp. tegm. 22 millim.

Habitat. BRIT. INDIA, Upper Assam, Margherita (Doherty—Coll. Dist.).

Cosmoscarta ophir, sp. n. (Plate IX, fig. 8.)

Head, pronotum, scutellum, and margins of prosternum bluish-black; abdomen and body beneath and legs ochraceous; tegmina ochraceous, costal and apical areas—broadly—a discoidal transverse oblique spot connected with costal area, claval margins and apical fourth of tegmina bluish-black, the last with the venation reticulate and ochraceous; wings smoky hyaline.

Pronotum globose, very finely punctate, its margins moderately reflexed, somewhat foveate behind each lateral angle and with a distinct slender central carination; face moderately compressed and laterally strongly carinate; posterior tibiæ with a strong spine about one-third from apex.

Long. excl. tegm. 10 millim. Exp. tegm. 30 millim.

Habitat. MALAY PENINSULA, Perak (Ridley—Brit. Mus., Doherty—Coll. Dist.), Singapore (Ridley—Brit. Mus.); SIAM (Flower—Brit. Mus.).

There is a variety of this species in which the dark costal area of the tegmina is very narrow, and the basal ochraceous area possesses two oblique series of small spots.

Cosmoscarta scabra, sp. n.

Head, pronotum, scutellum and sternum dark dull castaneous; lateral margins of sternum, abdomen, and legs reddish-ochraceous; tegmina ochraceous, the apical area densely reticulate and margined with piceous, a small basal discocellular spot, followed by an angulated series of four or five small spots, and again by a slender angulated maculate fascia—crossing tegmina about centre—piceous; wings smoky hyaline.

Head, pronotum, and scutellum coarsely rugose, the pronotum truncate at base and with its lateral margins reflexed; face broadly centrally sulcate; posterior tibiæ with a strong spine at about one-third from apex.

Long. excl. tegm. 14 millim. Exp. tegm. 38 millim.

Habitat. MALAY PENINSULA, Perak (Doherty—Coll. Dist.).

This species belongs to the group represented by *C. guttata*, St. F. and S., *C. bipars*, Walk., and *C. ophir*, Dist., from all of which it differs by the strongly rugose pronotum.

Cosmoscarta horsfieldi, sp. n.

Head, pronotum, scutellum, apex of abdomen, and lateral margins of prosternum shining metallic bluish-black; ocelli prominent and luteous; sternum brownish, abdomen and legs ochraceous; abdomen beneath with four series of bluish-black spots; tegmina ochraceous, the apical third blackish and widely ochraceously tessellate, base of costal margin and about ten scattered discal spots, blackish.

Tegmina elongate; pronotum small, very obscurely punctate; acutely, elongately and profoundly foveate near the lateral angles, with a distinct central carination, the lateral margins subampliate and strongly reflexed, its posterior margin truncate; face compressed, subangulate; posterior tibiæ with a strong spine at about one-third from apex.

Long. excl. tegm. 8 millim. Exp. tegm. 21 millim.

Habitat. JAVA (Horsfield Coll.—Brit. Mus.).

This species belongs to the group represented by *C. guttata*, St. F. and S., and *C. ophir*, Dist. From all these it differs by the elongate tegmina, the small pronotum, and also by the apical portion of the tegmina, in which the reticulated areas are very large and cell-like.

Cosmoscarta ignifera, sp. n.

Head, pronotum, and scutellum deep dark olivaceous, body beneath and abdomen above bluish-black; basal areas of the abdominal segments above and legs brownish; tarsi piceous; head with a central frontal ochraceous spot extending over base of face; tegmina brownish-ochraceous with seven pale ochraceous spots, two one above the other near base, two similarly placed about one-third from apex, the other three situate between the two series; wings smoky hyaline more or less roseate at base.

Pronotum deeply foveate on each lateral area, its posterior margin subacutely sinuate, its lateral margins slightly reflexed, its surface obscurely and finely punctate, with a posterior central carination; scutellum broadly and deeply foveate at base; face compressed and somewhat angulate at apex; posterior tibiæ with a very long spine about one-third from apex.

Long. excl. tegm. 10 millim. Exp. tegm. 29 millim.

Habitat. BORNEO, Kuching (Shelford—Coll. Dist. and Sarawak Museum).

Apart from markings, the structure of this species is very peculiar.

Cosmoscarta menaca, sp. n.

Ochraceous; metanotum, fourth and fifth abdominal segments above and sometimes the base of the third, sternum and basal areas of the segments beneath, piceous; lateral margins of prosternum piceous; tegmina ochraceous, apical fourth densely reticulated, with five black spots—two in clavus and three discal—sometimes with appearance of a sixth before reticulated area, and again sometimes with only one in claval area.

Pronotum dilated on each side, the lateral angles rounded, the posterior margin truncate, the margins reflexed and with a distinct central carination, its surface is very finely wrinkled and punctate; face very prominent and compressed; posterior tibiæ spined at about one-third from apex.

Long. excl. tegm. 15 to 16 millim. Exp. tegm. 40 to 42 millim.

Habitat. BRITISH INDIA, Assam (Atkinson Coll.—Brit. Mus.), North Khasia Hills (Chennell—Coll. Dist.); DINDING ISLE (Ridley—Brit. Mus.); BORNEO, Matang Mt., 3200 ft. (Shelford—Sarawak Mus. and Coll. Dist.).

Allied to *C. octopunctata*, Amyot, but differing by the less produced and non-foveate lateral areas of the pronotum.

Cosmoscarta castanea, sp. n.

Head, pronotum, scutellum, sternum and legs pale castaneous; abdomen violaceous brown; tegmina pale castaneous with two narrow transverse ochraceous fasciæ,—the first a little curved about one-fourth from base, the second more slender and broken about one-third from apex; wings pale brownish.

Pronotum thickly and finely punctate, with an obscure central carination, two foveate impressions near anterior margin, and an elongate impression behind each lateral angle, margins reflexed, posterior margin concavely sinuate; face shortly and moderately sulcate, moderately transversely striate; posterior tibiæ with a very short spine near base, and a long spine at about one-third from apex.

Long. excl. tegm. 13 millim. Exp. tegm. 40 millim.

Habitat. BRITISH INDIA, Naga Hills (Capt. Butler, in Atkinson Coll.—Brit. Mus.).

Cosmoscarta nagasana, sp. n.

Body bluish-black; apex of abdomen, coxæ, and legs dull reddish; tibiæ and tarsi piceous; eyes luteous; tegmina piceous with two transverse luteous fasciæ—the first broadest at about one-fourth from base, the second at about one-third from apex; wings smoky hyaline.

Pronotum finely punctate with two large transverse foveæ near anterior margin, and a smaller foveate impression near each lateral angle, posterior margin truncate, lateral angles reflexed; scutellum transversely foveate at base; posterior tibiæ with a strong spine at about one-third from apex.

Long. excl. tegm. 12 millim. Exp. tegm. 28 millim.

Habitat. BRITISH INDIA, Naga Hills (Doherty—Coll. Dist.).

Allied to *C. bivittata*, St. F. and S., but much smaller, colour of legs different, etc.

Cosmoscarta montana, sp. n.

Head, pronotum and sternum bluish-black, scutellum, abdomen and legs ochraceous, abdomen above with the basal segmental margins narrowly piceous; tegmina black with about basal fifth and a transverse fascia a little beyond centre luteous; wings pale smoky hyaline.

Pronotum very finely and obscurely punctate; strongly foveate on each side of anterior area and more narrowly so near each lateral

angle, posterior margin truncate ; posterior tibiæ with a strong spine at about one-third from apex.

Long. excl. tegm. 9 millim. Exp. tegm. 25 to 26 millim.

Habitat. BRIT. INDIA, Naga Hills (Doherty—Coll. Dist.). Allied to the preceding species *C. nagasana*, Dist.

Cosmoscarta metallica, sp. n.

Body dark indigo-blue ; apex of abdomen, coxæ and femora coral-red ; tibiæ and tarsi fuscous ; apical margins of abdominal segments beneath dull reddish ; tegmina bluish-black with two irregularly-shaped sanguineous transverse fasciæ, one about one-third from base, the other about one-third from apex,—both these fasciæ are much angulated and slender towards inner margin, the innermost connected with base by a slender longitudinal fascia ; wings smoky hyaline.

The pronotum is thickly and finely punctate, strongly foveate on each side near anterior margin and more narrowly so near each lateral angle, the lateral margins reflexed ; face strongly prominent ; posterior tibiæ with a long spine at about one-third from apex.

Var. Tegmina with the transverse fasciæ luteous, not sanguineous. Long. excl. tegm. 11 millim. Exp. tegm. 26 millim.

Habitat. BURMA, Ruby Mines (Doherty—Coll. Dist.).

Cosmoscarta sanguinolenta, sp. n.

Head, pronotum, scutellum, body beneath and legs, reddish-ochraceous ; abdomen above sanguineous ; tegmina pale brownish-ochraceous, with the base and two transverse fasciæ sanguineous,—these fasciæ are slightly curved outwardly and situate one at about one-third from base and the other at about one-third from apex ; apical area strongly reticulate ; wings pale hyaline with the basal area sanguineous.

Pronotum finely and obscurely punctate, foveate on each side near anterior margin and more elongately so near each lateral angle, lateral margins reflexed, posterior margin subtruncate ; face strongly globose ; posterior tibiæ with a strong spine at about one-third from apex.

Long. excl. tegm. 11 millim. Exp. tegm. 29 millim.

Habitat. CHINA (Coll. Dist.).

I have no more precise locality for this species than the elastic and unsatisfactory one of "China." It is allied to *C. irresoluta*, Walk.

Cosmoscarta turaja, sp. n.

Body black, abdomen bluish-black ; pronotum with the lateral and posterior margins—broadly—, scutellum with the lateral margins—very narrowly—, prosternal margins—broadly—, and anterior and intermediate legs—excluding tarsi—reddish-ochraceous ; posterior legs very dark castaneous ; tegmina black, with a narrow basal area, a transverse fascia before middle—completely crossing tegmina and clavus—, and a large fasciate spot about one-third before apex—extending from near costa to about centre of tegmina—reddish-ochraceous ; wings fuscous hyaline.

Pronotum thickly and finely punctate with an obscure central carination, its lateral and posterior margins reflexed and its posterior margin slightly concavely sinuate ; posterior tibiæ with a moderate sized spine at about one-third from apex.

Long. excl. tegm. 17 millim. Exp. tegm. 43 millim.

Hab. CELEBES (Doherty—Coll. Dist.).

Allied to *C. daphne*, Stål.

Cosmoscarta thoracica, sp. n.

Head black ; pronotum ochraceous, its anterior margin—broadly—the lateral margins—narrowly—and a very broad fascia between the lateral angles—sometimes divided centrally and not quite reaching the lateral angles—black ; scutellum ochraceous, black at base ; abdomen, body beneath and legs ochraceous ; basal area of face, lateral margins of prosternum, and apex of abdomen black ; tegmina black, with three transverse ochraceous fasciæ,—one at base, one about one-third from base, and the other at about one-third from apex ; wings very pale smoky hyaline.

Pronotum thickly and finely punctate, with two foveate impressions near anterior margin and a narrower elongate one near each lateral angle, the lateral margins strongly reflexed, the posterior margins subtruncate ; face with a broad central impunctate impression, the transverse striations moderate ; posterior tibiæ with a very short spine near base, and a long spine a little beyond middle.

Long. excl. tegm. 9 millim. Exp. tegm. 18 to 19 millim.

Hab. BRITISH INDIA, Trivandrum (Atkinson Coll.—Brit. Mus.).

A species to be located near *C. decisa*, Walk.

Cosmoscarta putamara, sp. n.

Head, pronotum, and scutellum very dark olivaceous ; lateral and posterior margins of pronotum, lateral margins and apex of scutellum,

abdomen, body beneath and legs, reddish-ochraceous; tegmina reddish-ochraceous, a discal spot about one-third from base and the apical third, black; wings smoky hyaline.

Pronotum somewhat coarsely and thickly punctate, with two foveate impressions near anterior margin and a more elongate impression near each lateral angle, margins distinctly reflexed, posterior margin very slightly concavely sinuate; posterior tibiae with a long distinct spine about one-third from apex.

Long. excl. tegm. 10 millim. Exp. tegm. 23 millim.

Hab. BRITISH INDIA, Malabar (Coll. Dist.).

Allied to *C. affinis*, Atkins.

Cosmoscarta nilgirensis, sp. n.

Head, pronotum, and scutellum dark castaneous; abdomen, body beneath and legs dull reddish; tegmina pale castaneous; wings smoky hyaline.

Head, pronotum, scutellum and tegmina distinctly closely pilose; pronotum strongly foveate in each anterior lateral area, its lateral margins somewhat laminate, scarcely reflexed, its surface finely punctate, its posterior margin subtruncate; face very broadly sulcate centrally, with its sides deeply transversely striate; posterior tibiae with a very strong spine about one-third from apex.

Long. excl. tegm. 7 millim. Exp. tegm. 24 millim.

Habitat. BRITISH INDIA, Nilgiri Hills (Coll. Dist.).

Allied to *C. borealis*, Dist.

SYNONYMICAL NOTES.

Cosmoscarta fuscipennis.

Cercopis fuscipennis, St. Fargeau et Serville, Enc. Méth., x, p. 605, n. 6 (1827).

Cosmoscarta lurida, Atkins., Journ. Asiat. Soc. Beng., lvii, p. 335 (1889).

Cosmoscarta inexacta.

Cercopis inexacta, Walk., Journ. Linn. Soc., vol. x, p. 280, n. 301 (1887).

Cosmoscarta aganippe, Breddin, Abh. Senckenb. Ges., xxv, p. 185, tab. ix, figs. 16, 17 (1900).

The pronotum in Walker's type is dark castaneous, thus agreeing with the description given by Breddin of "*var. c.*"

of his species. The claval spot also given in his figures is that of *C. inexacta*.

Cosmoscarta fervescens.

Cosmoscarta fervescens, Butl., Cist. Ent., vol. i, p. 252, n. 31, pl. viii, fig. 13 (1874).

Var. *Cosmoscarta inexacta*, Breddin (*nec* Walk.), Abh. Senckenb. Ges., xxv, p. 184, tab. ix, fig. 15 (1900).

In Breddin's figure the two basal spots are smaller, the claval one especially, than in the typical species of Butler.

Cosmoscarta discrepans.

Cercopis discrepans, Walk., Journ. Linn. Soc., Zool., vol. i, p. 95, n. 57 (1857).

Cercopis obtusa, Walk., *loc. cit.*, x, p. 287, n. 325 (1867).

Cercopis cæruleicollis, Leth., Ann. Mus. Civ. Genov. (2), vi, p. 469 (1888).

Cosmoscarta fulviceps.

Cercopis fulviceps, Dall., Trans. Ent. Soc. Lond., 1850, p. 10, n. 8.

Cercopis nigripennis, Walk., (*nec* Fabr.), List Hom. Ins., iii, p. 653, n. 11 (1851).

Cosmoscarta megamera, Butl., Cist. Ent., vol. i, p. 246, pl. viii, fig. 3 (1874).

Cosmoscarta dimidiata.

Cercopis dimidiata, Dall., Trans. Ent. Soc. Lond., 1850, p. 11, n. 9.

Cercopis undata, Walk., List Hom. Ins., iii, p. 659, n. 33 (1851); Stål, Ofv. Vet.-Ak. Förh., 1865, p. 148, n. 8.

Cosmoscarta inconspicua.

Phymatostetha inconspicua, Butl., Cist. Ent., vol. i, p. 267, n. 6 (1874).

Posterior tibiæ with a single strong spine at about one-third from apex.

C. taprobanensis, Atkins., is allied to this species.

Cosmoscarta cynthia.

Tomaspis cynthia, Stål, Ofv. Vet.-Ak. Förh., p. 150, n. 1 (1865).

Phymatostetha cynthia, Butl., Cist. Ent., vol. i, p. 269, n. 14 (1874).

Stål (Ofv. Vet.-Ak. Förh., 1870, p. 721) gives this species as belonging to his genus *Phymatostetha*, but apparently inadvertently. I possess a specimen from Borneo exactly agreeing with Stål's description, but which is undoubtedly a *Cosmoscarta*.

Cosmoscarta affinis.

Callitettix affinis, Atkins., Journ. As. Soc. Bengal, lvii, (2), p. 336 (1889).

Atkinson omitted to describe the pronotum of his type specimen as having the lateral margins testaceous-red; in all the other specimens I have examined both the lateral and posterior margins are of that colour.

Cosmoscarta trimacula.

Monecphora trimacula, Walk., List Hom. Ins., iii, p. 682, n. 24 (1851).

Habitat. EAST INDIA (*sic*).

Lateral margins of the pronotum narrowly ochraceous.

Cosmoscarta callizona.

Cercopis semicineta (nomen bis lectum), Walk., Journ. Linn. Soc., vol. x, p. 285, n. 317 (1867).

Cosmoscarta callizona, Butl., Cist. Ent., vol. i, p. 256 (1874).

Cosmoscarta cyane, Bredd., Abh. Senckenb. Ges., xxv, p. 183, tab. ix, fig. 13 (1900).

Genus PHYMATOSTETHA.

Phymatostetha, Stål, Ofv. Vet.-Ak. Förh., 1870, p. 721.

Phymatostetha nangla, sp. n. (Plate IX, fig. 9.)

Head and pronotum sanguineous; basal margin of head and two curved central fasciæ to pronotum—united at base and angulated each side near lateral angles piceous; scutellum piceous; abdomen above dark indigo-blue; body beneath and legs piceous; face and lateral

margins of prosternum sanguineous; tegmina piceous, with the following sanguineous markings:—a basal claval elongate spot with a smaller costal spot above it, a transverse fascia about one-third from base and three subapical spots; apical margin dull ochraceous; wings smoky hyaline.

Pronotum very finely wrinkled and more finely punctate; lateral margins reflexed; face sulcated on its posterior half; posterior legs mutilated.

Long. excl. tegm. 17 millim. Exp. tegm. 45 millim.

Habitat. BRITISH INDIA, Naga Hills (Doherty—Coll. Dist.).

A species allied to *P. dorsivitta*, Walk.

Phymatostetha flavo-picta, sp. n.

Head dull red, broadly black at base between the eyes; pronotum black, anterior and lateral margins and a central fascia dull red; scutellum black; abdomen above testaceous, the base, apex, and spiracular spots black; body beneath and legs black; face, lateral margins of prosternum, coxæ, trochanters, extreme bases of femora, posterior tibiæ and tarsi and apices of anterior tibiæ, extreme lateral margins of abdomen, and subapical area dull red; tegmina black with a broad basal and a short subcostal basal fascia, a transverse slightly waved fascia before middle, a very strongly waved and curved fascia about one-third from apex, and a subapical discal spot, dull red, apical margin brownish-ochraceous; wings pale smoky hyaline.

Tegmina thickly and very finely pilose; posterior margin of the pronotum concavely sinuate; posterior tibiæ with a well-developed spine a short distance from base, and a longer spine at about one-fourth before apex; face broad, not sulcated.

Long. excl. tegm. 13 millim. Exp. tegm. 30 to 32 millim.

Habitat. PHILIPPINE ISLANDS, Luzon (Whitehead—Brit. Mus.).

Head and pronotum in pattern resembling those of *P. dubitabilis*, Walk., markings of tegmina resembling those of *P. varia*, Walk.

Phymatostetha sema, sp. n. (Plate IX, fig. 10.)

Head, pronotum and scutellum piceous; about apical half of head, lateral and anterior margins of pronotum, three elongate discal spots to pronotum—the central one longest—and the central area of scutellum reddish-ochraceous; abdomen above black, lateral spots

and apex sanguineous; body beneath and legs piceous; coxal spots, bases and apices of femora, tarsi excluding apices, and a broad central area to posterior tibiæ dull reddish; face and lateral margins of prosternum reddish-ochraceous; tegmina dull brownish-ochraceous, with eight ochraceous spots, of which two are basal—claval and discocellular—three in transverse series about one-third from base, two about two-thirds from base, and one subapical; apical margin paler; wings smoky hyaline, narrowly purplish-red at base.

Pronotum finely wrinkled and obscurely punctate, lateral margins reflexed; face finely longitudinally sulcate; posterior tibiæ with a strong spine near base and a longer spine about centre.

Long. excl. tegm. 17 millim. Exp. tegm. 42 millim.

Habitat. BRITISH INDIA, Naga Hills (Doherty—Coll. Dist.).

Phymatostetha rengma. (Plate IX, fig. 11.)

Head, pronotum, and scutellum ochraceous; basal area of head, two large anterior spots to pronotum, base and apex of scutellum piceous; body beneath and legs piceous; face and lateral margins of prosternum ochraceous; abdomen above purplish-black, apex and lateral margins ochraceous; tegmina piceous, their apical margins much paler, a claval fascia connected with the costa and an inner costal spot, two discal and a subapical spot ochraceous; wings smoky hyaline.

Pronotum finely wrinkled and somewhat coarsely punctate, the black spots subfoveate, the lateral margins reflexed; face finely and obscurely centrally sulcate; posterior tibiæ with a strong spine near base and a longer spine about centre.

Long. excl. tegm. 16 millim. Exp. tegm. 40 millim.

Habitat. BRITISH INDIA, Naga Hills (Doherty—Coll. Dist.).

Phymatostetha karenia, sp. n. (Plate IX, fig. 12.)

Head reddish-ochraceous narrowly piceous at base; pronotum pale luteous; scutellum, abdomen above, body beneath and legs bluish-black or piceous; face reddish-ochraceous; margins of prosternum and two spots near anterior coxæ, luteous; tegmina piceous, their apical margins ochraceous, with four luteous spots—two about one-third from base, and two about one-third from apex; wings pale piceous and subhyaline.

Pronotum thickly and finely punctate, with an obscure central

carination, its lateral margins reflexed; posterior tibiæ with a strong spine near base, and a larger spine a little beyond centre.

Long. excl. tegm. 15 to 16 millim. Exp. tegm. 35 to 43 millim.

Habitat. BURMA, Hsipaw (L. de Niceville—Brit. Mus.), Karen Hil's (Doherty—Coll. Dist.).

Phymatostetha bracteata, sp. n.

Head, pronotum, scutellum, and body beneath pitchy-black; abdomen above dark indigo-blue; legs dark castaneous; a broad central longitudinal fascia to head and a transverse discal series of four rounded spots to pronotum, ochraceous; tegmina brownish-ochraceous; wings pale brownish-hyaline.

Pronotum somewhat coarsely punctate and subrugulose, with a central longitudinal carination, its lateral margins reflexed, its posterior margin concavely sinuate; face broad, not sulcate, with two distinct tubercles at apex; posterior femora with a short spine near base and a very strong spine at about one-third from apex.

Long. excl. tegm. 12 millim. Exp. tegm. 32 millim.

Habitat. NORTH BORNEO (Atkinson Coll.—Brit. Mus.).
A species without any at present known near ally.

SYNONYMICAL NOTES.

Phymatostetha stâlii.

Phymatostetha stâlii, Butl., Cist. Ent., vol. i, p. 267, n. 7 (1874).

Cosmoscarta sikkimensis, Atkins., Journ. As. Soc. Beng., 1888, p. 335.

Cercopis punctifascia, Walk., Journ. Linn. Soc., vol. x, p. 228, n. 326 (1867).

Phymatostetha punctifascia, Butl., Cist. Ent., vol. i, p. 266, n. 2 (1874).

This species belongs to the Subfam. APHROPHORINÆ.

II.

RHYNCHOTA OF CENTRAL AMERICA.

Since I completed my contribution on the Heteroptera to the "Biologia Centrali Americana" in 1893, other species from that large and interesting region have been received, and principally from my friend Prof. P. Biolley in Costa Rica. Some of these were new species and are here described, and I have also added references to species described elsewhere since I completed my allotted task, so as to bring up to date our knowledge of the Central American fauna. I have also added the descriptions of some Homoptera in the families which Canon Fowler has undertaken to describe, and which he has—so far as his material was available—brought to a termination in the same pages. I hope from time to time as material arrives to supplement the vast information already contained in the "Biologia Centrali Americana," which has already secured the position of the greatest faunistic work yet published.

HETEROPTERA.

Family PENTATOMIDÆ.

Subfamily SCUTELLERINÆ.

Orsilochus bajulans, sp. n.

Ochraceous ; head, antennæ, two anterior discal stripes to pronotum connected anteriorly and with a small spot on each side, basal angles of the scutellum, a transverse spot on disk, and the whole apical third, head beneath, rostrum, a central fascia to sternum, and the abdomen castaneous.

Head hirsute, the apex of the central lobe moderately projecting ; antennæ pilose, the second and third joints subequal in length, fourth and fifth also subequal, incrassate and moderately spatulate ; apex of scutellun subtruncate.

Long. 8 millim.

Habitat. COSTA RICA, San José, 1161 m. (P. Biolley).

Subfamily *CYDNINÆ*.*Scaptocoris talpa*.

Scaptocoris talpa, Champ., Ent. Month. Mag., ser. 2, vol. xi, p. 256 (1900).

Habitat. GUATEMALA, Capetillo (Rodriguez).

In some introductory notes to his description Mr. Champion refers to "two species standing under the name *S. castaneus*, Perty, in the British Museum, one of them, from South America, being no doubt correctly named." These specimens are all from South America, the identifications being by Dallas originally, and subsequently by Walker, who added specimens collected by Bates. There are certainly more than one species thus included, but as neither Mr. Champion nor myself can with certainty distinguish the typical *S. castaneus*, Perty, the specimens are left in the national collection as arranged by Dallas and Walker till further knowledge is obtainable, a course I venture to think wise under the circumstances.

Ectinopus opacus, sp. n.

Closely allied to *E. holomelas*, Burm., from which it differs by its opaque coloration, the antennæ and rostrum pale castaneous, the membrane dark brownish-ochraceous with the basal and other margins distinctly paler.

In structure the apex of the scutellum is distinctly narrower and more acutely angulate and the discal punctures are also more profound.

Long. 14 millim. Exp. pronot. ang. $6\frac{1}{2}$ to 7 millim.

Habitat. COSTA RICA, Helechales (H. Pittier).

Subfamily *PENTATOMINÆ*.*Lincus discessus*, sp. n.

Piceous or very dark castaneous; bases (narrowly) of the antennal joints, apices of pronotal angles, and a discal spot on corium, ochraceous; rostrum and legs pale castaneous.

Head strongly excavated between the projecting lateral lobes; antennæ with the second and third and fourth and fifth joints almost subequal in length; pronotum and scutellum rugulose, apex of scutellum with the apical margins piceous and the extreme apex

ochraceous; connexivum piceous with very faint and obscure ochraceous markings.

Long. ♀ 11 millim. Exp. pronot. ang. 5 millim.

Habitat. COSTA RICA, Bruschi (Talamanca), Atlantic Slopes (H. Pittier).

Allied to *L. rufospilotus*, Westw., from which it differs by having the anterior angles of the pronotum shorter and broader, by the narrower and more elongate body, narrower apex of the scutellum, etc.

Brochymena cuspidata, sp. n.

Brownish-ochraceous, head, pronotum, and base of scutellum darkest; apical two-thirds of scutellum pale ochraceous, sparingly, coarsely and darkly punctate, with an obscure small dark spot on each lateral margin about one-third from apex which is marked with an elongate spot; corium ochraceous much marked and mottled with brownish and with a small discal ochraceous spot; membrane greyish spotted and mottled with brownish; body beneath and legs ochraceous; head beneath, sternal margins, punctures and irregular lateral spots to abdomen, femora excluding bases and a spot near apex, tibiæ with three annulations above and two beneath, piceous; rostrum reaching the third abdominal segment, with its apex black; antennæ piceous with the base of apical joint pale luteous.

Head with the lateral lobes very slightly longer than the central; pronotum with the lateral margins armed with some very stout prominent spines, the lateral angles acutely produced; base of scutellum gibbous and with a central carinate elevation; margins of abdomen strongly produced, the connexivum spotted and punctured with piceous; membrane extending considerably beyond the apex of the abdomen.

Long. ♀ 16 millim; exp. pronot. ang. 8 millim.; max. abd. lat. 10 millim.

Habitat. COSTA RICA, San José, 1161 m. (P. Biolley).

A species at once recognized by the acutely spined lateral angles of the pronotum.

Padæus bovillus, sp. n.

Dark castaneous-brown, thickly and coarsely punctate; pronotum and scutellum rugulose; body beneath and legs ochraceous, legs spotted with black; antennæ piceous, inner margin of basal joint and bases of third and fourth joints luteous; (apical joint mutilated).

Pronotal angles produced in stout, slightly ascending spines, with their apices slightly recurved ; scutellum with some small ochraceous spots at basal margin.

Long. 11 millim. Exp. pronot. ang. $8\frac{1}{2}$ millim.

Habitat. COSTA RICA, Tuis, Atlantic Slopes (P. Biolley).

A species in pronotal structure resembling a highly developed *Sibaria armata*, Dall.

Murgantia bifasciata.

Pentatoma bifasciata, Herr.-Schäff., Wanz. Ins., iii, p. 96, f. 321 (1836).

Pentatoma bifasciata, Westw. in Hope Cat., i, p. 37 (1837).

Strachia bifasciata, Dall., List Hem., i, p. 263, 17 (1851).

Murgantia bifasciata, Stål, En. Hem., ii, p. 37, 2 (1872).

Habitat. COSTA RICA, Tuis, Atlantic Slopes, 650 m. (P. Biolley); BRAZIL.

Family COREIDÆ.

Subfamily MICTINÆ.

Melucha biolleyi.

Melucha biolleyi, Dist., Ann. and Mag. Nat. Hist., ser. 7, vol. vi, p. 374 (1900).

Habitat. COSTA RICA, Turrialba, Atlantic Slopes (P. Biolley).

Mozena alata.

Mozena alata, Dist., Ann. and Mag. Nat. Hist., ser. 7, vol. vi, p. 375 (1900).

Habitat. COSTA RICA, Tuis, Atlantic Slopes (P. Biolley).

Bardistus superbus.

Bardistus superbus, Dist., Ann. and Mag. Nat. Hist., ser. 7, vol. ii, p. 135 (1898).

Habitat. COSTA RICA, Guaitil de Pirris, Pacific Coast (P. Biolley).

Subfamily ACANTHOCEPHALINÆ.

Acanthocephala pittieri.

Acanthocephala pittieri, Montand, Ann. Soc. Ent. Fr., 1895,
p. 7, pl. 1, f. 2.

Habitat. COSTA RICA.

Subfamily COREINÆ.

Division ANISOSCELARIA.

Leptoglossus oppositus.

Anisoscelis oppositus, Say, New Harm. Ind. Dec. 1831;
Comp. Writ., i, p. 327, 3 (1859).

Anisoscelis tibialis, Herr.-Schäff., Wanz. Ins., vii, p. 12
(1844).

Leptoglossus oppositus, Stål, En. Hem., i, p. 163, 11
(1870).

Habitat. MEXICO, Orizaba (Coll. Dist.); NORTH
AMERICA, Georgia, Texas (Mus. Holm.).

Division COREARIA.

Anasa perfusa, sp. n.

Ochraceous, somewhat thickly punctured with black; head ochraceous, impunctate, with two central fasciæ and the lateral margins black, the ocelli red; pronotum with a central levigate line, the anterior area impunctate, more or less clothed with short black hairs, and with two prominent central black spots, the lateral areas impunctate, with a black submarginal line not reaching the anterior margin; scutellum with a prominent black spot near the basal angles which with the apex are levigate; corium with two-thirds of its lateral margin from base levigate ochraceous; membrane cupreous; connexivum ochraceous with small black spots at the incisures; body beneath ochraceous tinged with purplish; rostrum, a central spot to head and one behind eyes, two rounded and a lineate spot on each side of prosternum, an anterior marginal line and two rounded spots on each side of mesosternum, a spot on each side of metasternum, bases of coxæ, two central fasciæ to mesosternum, two central spots on second and third abdominal segments, lateral spots on the fourth, fifth and sixth segments, and the stigmata black; a sublateral series of abdominal spots and the lateral margins to sternum and abdomen

ochraceous, the last with black spots at the apices of the incisures ; legs dark castaneous.

Antennæ dark castaneous, basal joints hirsute, much thicker and a little shorter than the second joint—remaining joints mutilated—scutellum transversely rugulose ; rostrum not quite reaching the intermediate coxæ.

Long. 15 millim. Exp. pronot. ang. 5 millim.

Habitat. COSTA RICA, San José, 1161 m. (P. Biolley).

Allied to *A. andresii*, Guér., but shorter, broader, differently marked, etc.

Paryphes perpictus, sp. n.

Head, pronotum and scutellum dark ochraceous ; corium black, its outer margin—narrowly—and its posterior margin and claval margin—broadly—ochraceous ; membrane black ; body beneath and legs shining olivaceous-green, head and lateral margins of sternum dark ochraceous ; lateral margins of abdomen and posterior segmental margins luteous.

The pronotal angles are expanded but directed upwardly, their margins broadly rounded with the edges crenulate ; the antennæ are piceous with the first, second and third joints almost subequal in length with the fourth a little longest ; rostrum reaching the intermediate coxæ.

Long. 22 millim. Exp. pronot. ang. 7 millim.

Habitat. COSTA RICA, Sipurio (Talamanca), Atlantic Slopes (H. Pittier).

Family PYRRHOCORIDÆ.

Theraneis oleosa, sp. n.

Luteous ; head, antennæ, anterior lobe of pronotum, and basal margin of posterior lobe, scutellum, inner margin of clavus, a large rounded fasciate spot at centre of corium, membrane, sternum, rostrum, legs, a large submacular lateral fascia and last three segments of the abdomen—excluding the lateral margins—black ; the lateral margins of the anterior pronotal lobe and the angles of the posterior lobe luteous.

Antennæ with the first and fourth joints longest and subequal in length, second and third shortest, second longer than third ; above sparingly but coarsely punctate ; posterior lobe of pronotum moderately gibbous ; head distinctly excavated between the eyes.

Long. 11 millim.

Habitat. COSTA RICA, Mokri (Talamanca), Atlantic Slopes (H. Pittier).

HOMOPTERA.

Family CERCOPIDÆ.

Sphenorhina biolleyi, sp. n.

Head, pronotum, body beneath and legs, piceous; ocelli, lateral and posterior margins of pronotum, lateral margins and apex of scutellum, tegmina, lateral margins of sternum, and posterior margins of metasternum, reddish-ochraceous; tegmina with an apical cluster of about eleven or twelve black spots visible both above and beneath; wings smoky hyaline.

Head transversely foveate between the eyes; pronotum thickly and coarsely punctate; tegmina very finely but thickly greyishly pilose; face produced beneath into an angulated point with a central linear carination.

Long. cum. tegm. 10 millim.

Habitat. COSTA RICA, La Laguna (Chemin de Carrillo), Atlantic Slopes, 1000 m. (P. Biolley).

Allied to *S. plagiata*, Dist.

Sphenorhina quota, sp. n.

Head—above and beneath—thorax, scutellum, tegmina, and lateral margins of sternum pale dull sanguineous; body beneath and legs piceous; tegmina with the lateral and apical margins somewhat paler and brighter, and with three reddish-ochraceous spots—one in basal and two in the apical area.

Head transversely foveate in front of eyes; pronotum with the lateral margins reflexed and with two calli on the anterior area, its surface thickly and coarsely punctate; tegmina finely but thickly greyishly pilose; face beneath produced in a well-developed apically angulated point.

Long. cum. tegm. 13 millim.

Habitat. COSTA RICA, La Laguna (Chemin de Carrillo), Atlantic Slopes, 1000 m. (P. Biolley).

Allied to *S. perfecta*, Walk.

Sphenorhina perfecta.

Sphenorhina perfecta, Walk., Ins. Saund., p. 90 (1858).¹

Habitat. COSTA RICA, Las Delicias (St. Clara), Atlantic Slopes, 250 m. (P. Biolley); ¹SOUTH AMERICA (*sic*).

Sphenorhina costaricensis.

Sphenorhina costaricensis, Dist., Ent. Month. Mag., xvi, p. 61 (1879).

Tomaspis quatuordecim-notata, Fowler, Biol. Centr. Amer. Homop., ii, p. 177, tab. xi, fig. 5 (1897).

Tomaspis costaricensis, Fowler, *loc. cit.*, p. 206 (1898).

Family MEMBRACIDÆ.

Adippe maculata.

Adippe maculata, Dist., Ent. Month. Mag., xvi, p. 11 (1879).

Habitat. COSTA RICA, Irazu, 6000 to 7000 feet (Rogers); La Laguna (Chemin de Carrillo), Atlantic Slopes (Biolley).

Canon Fowler has identified and figured a specimen as belonging to my species, and has then indulged in some criticism on my description. This is unfortunate, as two specimens forwarded to me by Prof. Biolley exactly correspond with the description I gave of the Costa Rican type, examined by Fowler and pronounced a "poor example." He also writes, "Mr. Distant is also wrong with regard to the tegmina which he describes as 'black, with a large hyaline spot a little before the apex;' they are large and hyaline, etc." I am happy to be in a position to affirm the correctness of my description of the tegmina, and I feel little doubt as to the specimen figured by Fowler not being even a variety of the species, the description of which, I regret, has apparently given him so much dissatisfaction.

Adippe hæretica, sp. n.

Adippe maculata, Fowler (*nec* Dist.), Biol. Centr. Amer., Rhyn. Hom., vol. ii, p. 134, tab. viii, figs. 15, 15a (1896).

Habitat. NICARAGUA, Chontales (Janson); PANAMA, Volcan de Chiriqui, 2500 to 6000 feet (Champion).

Polyglypta godmani.

Polyglypta godmani, Dist., Ent. Month. Mag., xvi, p. 11 (1879).

Polyglypta costata, Fowler (part.), Biol. Centr. Amer., Rhyn. Hom., vol. ii, p. 122, 1 (1896).

Habitat. COSTA RICA, Irazu, 6000 to 7000 feet (Rogers); San José, 1161 m. (Biolley).

Hyphinoe proclivis, sp. n.

Ochraceous, thickly and coarsely punctured. Apices of the humeral horns continued in a broad lateral fascia to the humeral margins, apex of pronotum and the tegmina dark castaneous or black. Legs ochraceous, tibiæ sulcated and pilose. The humeral horns are well developed, their apices obtuse and moderately directed upwardly; the lateral pronotal margins are narrowly levigate and pale ochraceous; the apex of the pronotum about reaches the apex of tegmina.

Long. cum. tegm. 14 millim. Exp. pronot. ang. 8 millim.

Habitat. COSTA RICA, Bruschi (Talamanca), Atlantic Slopes (H. Pittier).

Allied to *H. cornuta*, Dist., but differing by the longer pronotum, the more diverging humeral horns, the absence of the spots to pronotum, etc.

Hyphinoe thoracata, sp. n.

Ochraceous; the area between the humeral horns, the dorsal area and apex to the pronotum, and a lateral fascia from the apices of the humeral horns to the humeral margins, dark castaneous or black; tegmina and legs brownish-ochraceous.

Anterior and discal area of pronotum somewhat thickly and finely punctate, lateral areas of pronotum much more coarsely and sparingly punctate; humeral angles robust, scarcely directed upwards or forwards; apex of pronotum not reaching apex of tegmina.

Long. pronot. 12 millim. Long. cum. tegm. 14 millim. Exp. pronot. ang. $7\frac{1}{2}$ millim.

Habitat. COSTA RICA, Guaitil de Pirris, Pacific Slopes (P. Biolley).

A species also allied to *H. cornuta*, Dist., and the preceding species.

III.

HETEROPTERA FROM BORNEO.

In addition to the species of *Cercopidæ* described in the first part of this paper, I also received, amongst some other specimens sent to me for identification from the Sarawak Museum, the following nondescripts.

HETEROPTERA.

Family PENTATOMIDÆ.

Subfamily ASOPINÆ.

Platynopus borneensis, sp.

Bright shining metallic olivaceous-green ; anterior lateral margins, and two small central spots to anterior area of pronotum, a large spot near each basal angle and the apex (broadly) of the scutellum, a small obscure spot at apex of corium, and a large spot on each lateral margin of membrane, ochraceous ; eyes, antennæ, pronotal spines and membrane piceous ; corium purplish-brown with its lateral margins olivaceous ; body beneath and legs ochraceous, the marginal areas olivaceous, containing a segmental series of ochraceous spots ; abdominal segments with some broken transverse castaneous fasciæ.

Antennæ with the second joint about equal in length to the third, fourth and fifth longest and subequal ; head coarsely punctate and transversely wrinkled, its lateral margins distinctly reflexed ; pronotum sparingly and very coarsely punctate, the lateral angles longly and acutely produced, their apices slightly recurved ; scutellum excluding the levigate spots coarsely but sparingly punctate ; corium thickly and finely punctate ; membrane extending considerably beyond the apex of the abdomen.

Long. 12 to 14 millim. Exp. pronot. ang. 8 to 9 millim.

Habitat. BORNEO, S. E. Districts (Doherty—Coll. Dist.) ; Pampat (Shelford—Sarawak Mus.).

Allied to *P. lætus*, Walk., and differing structurally by the apices of the pronotal spines which are not notched as in Walker's species.

Subfamily TESSARATOMINÆ.

Pygoplatys montanus, sp. n.

Brownish-ochraceous ; head, anterior area and spines to pronotum and connexivum pale castaneous ; antennæ, body beneath and legs pale ochraceous, stigmatal spots distinctly darker.

Body broad, oblong, scarcely narrowed at apex ; antennæ stout, second joint slightly longer than the third, third and fourth subequal in length, fourth with the basal area fuscous ; head wrinkled and coarsely punctate ; pronotum sparingly but very coarsely punctate from the area of the pronotal angles to apex, posterior area finely and obscurely punctate, lateral angles robust, very coarsely punctate,

directed a little forwardly; scutellum sparingly punctate, its apex sulcate; corium very thickly and finely punctate; connexivum projecting beyond corium from about one-third of its base, very coarsely punctate, its apex angularly truncate.

Long. 22 millim. Exp. pronot. angl. 15 millim.

Habitat. BORNEO, Matang Mt., 3200 feet (Shelford—Sarawak Mus. and Coll. Dist.).

The colour of the legs and antennæ is a superficial character by which to distinguish this species.

Family COREIDÆ.

Subfamily DALADERINÆ.

Dalader shelfordi, sp. n.

Brownish-ochraceous; antennæ stramineous, the basal joint and dilated portion of the third joint piceous; femora dark castaneous, tibiæ and tarsi stramineous; membrane cupreous, piceous at base.

Antennæ with the basal joint a little longer than the second, third joint convexly dilated on each side from a little beyond base. General shape and form of *D. planiventris*, Westw., pronotal angles narrower, colour of legs and antennæ very distinct.

Long. 24 millim. Exp. pronot. angl. 10 millim.

Habitat. BORNEO, Kuching (Shelford—Sarawak Mus. and Coll. Dist.).

EXPLANATION OF PLATE IX.

[See explanation facing the PLATE.]

DECEMBER 24, 1900.

EXPLANATION OF PLATE IX.

Illustrating Mr. W. L. Distant's "Contributions to a Knowledge of the Rhynchota."

- Fig. 1. *Cosmoscarta naiteara*, sp. n.
2. " *roborea*, sp. n.
3. " *solivaga*, sp. n.
4. " *chersonesia*, sp. n.
5. " *mandaru*, sp. n.
6. " *demonstrata*, sp. n.
7. " *mandarina*, sp. n.
8. " *ophir*, sp. n.
9. *Phymatostetha nangla*, sp. n.
10. " *sema*, sp. n.
11. " *rengma*, sp. n.
12. " *karenia*, sp. n.



Horace Knight del. et lith.

Mintern Bros. Chromo.

New Eastern Cercopidæ.