

AQUATIC RHYNCHOTA FROM THE SOUTHERN SHAN STATES.

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The water-bugs collected by Drs. N. Annandale and F. H. Gravely in the Southern Shan States include many novelties and are of great interest on account of the unexplored state of the region in which the collection was made.

Although the families Hebridae, Pelogonidae and Naucoridae are unrepresented and only one species of Belostomatidae and two of Nepidae have been obtained, the remaining families are fairly represented. Of the thirty-three species listed below seven belong to the genus *Gerris* (Hydrometridae), three to the genus *Micronecta* (Corixidae), two each to the genera *Microvelia* (Hydrometridae), *Enithares*, *Anisops*, *Plea* (Notonectidae) and *Corixa* (Corixidae), and one each to *Mesovelia*, *Velia*, *Perittopus*, *Ptilomera*, *Onychotrechus*, *Ventidius*, *Metrocoris*, *Naboandelus*, *Nacebus* (Hydrometridae), *Ranatra*, *Cercotmetus* (Nepidae), *Sphaerodema* (Belostomatidae) and *Nychia* (Notonectidae).

This is probably by no means a complete list of the Aquatic Rhynchota of the Southern Shan States, as further research may discover many more known as well as new forms.

From the Inlé Lake itself one species of *Microvelia*, five of *Gerris*, one of *Naboandelus*, one of *Nacebus*, one of *Ranatra*, one of *Sphaerodema*, one of *Enithares*, one of *Nychia*, two of *Plea* and one of *Micronecta* were obtained.

Amongst the most striking forms may be mentioned the beautiful *Velia Y-alba* and a new species of *Nychia*, a genus which is very scarce in the Oriental Region. The species of *Plea* too are very interesting.

In order to render this enumeration as convenient as possible for reference, I have followed the arrangement adopted by Mr. Distant in his volumes of the *Fauna of British India, Rhynchota*.

Fam. HYDROMETRIDAE.

Mesovelia mulsanti, Buch. White.
Velia Y-alba, sp. nov.
Microvelia diluta, Dist.
Microvelia burmanica, sp. nov.
Perittopus breddini, Kirk.
Gerris anadyomene, Kirk.
Gerris nepalensis, Dist.
Gerris fossarum (Fabr.)
Gerris nitida (Mayr.).
Gerris tristan, Kirk.
Gerris paludum, Fabr.
Gerris spinolae, Leth. and Sev.
Ptilomera laticaudata (Hardw.)
Onychotrechus lyra, sp. nov.
Ventidius distantii, sp. nov.
Metrocoris nigrofasciatus, Dist.
Naboandelus signatus, Dist.
Nacebus dux, Dist.

Fam. NEPIDAE.

Ranatra varipes, Stal.
Cercotmetus pilipes (Dall.)

Fam. BELOSTOMATIDAE.

Sphaerodema rusticum (Fabr.)

Fam. NOTONECTIDAE.

Enithares templetoni (Kirby).
Enithares intha, sp. nov.
Anisops niveus, Fabr.
Anisops sardea, Herr.-Schaff.
Nychia infuscata, sp. nov.
Plea quinquenotata, sp. nov.
Plea areolata, sp. nov.

Fam. CORIXIDAE.

Corixa unicolor, sp. nov.
Corixa septemlineata, sp. nov.
Micronecta substriata, sp. nov.
Micronecta soror, sp. nov.
Micronecta fulva, sp. nov.

Family HYDROMETRIDAE.

Subfamily MESOVELIINAE.

Mesovelia mulsanti, Buch.-White.

Mesovelia mulsanti, Distant, *Faun. Brit. Ind., Rhyn.* II, 1904, p. 169; *id. ibid.*, V (Appendix), 1910, p. 137.

A number of specimens in various stages of development from the marginal zone of the Inlé Lake, Yawngwe State, 2—3-iii-1917.

A very widely distributed Oriental species, occurring also in North and Central America and in the Antilles.

Subfamily VELIINAE.

Velia Y-alba, sp. nov.

(Plate VIII, fig. 1.)

Described from a single pinned specimen from the marginal zone of the Inlé Lake at Fort Stedman, Yawngwe State, 28-ii-1917.

Head reddish-brown with a central, longitudinal, pale, impressed, smooth line on disk; antennae hairy, ochraceous, the basal joint stout, curved, with sub-basal, submedial and apical fuscous annulations; second joint a little shorter than first, broadly banded with fuscous a little beyond base and at apex; third joint slender, subequal in length to second and fourth, almost entirely fuscous except at base, where it is pale; 4th joint slender, with basal and apical fuscous annulations; eyes black, deeply faceted, the facets appearing silvery in certain lights. Pronotum reddish-brown, the posterior area much darker, almost black and thickly covered with shallow punctures and short black hairs. On the anterior area there are two submarginal, bluish-grey, longitudinal fasciae widening posteriorly and extending from near the anterior lateral angles to a little beyond the junction of the anterior and posterior lobes; sides of pronotum distinctly subangulate, the posterior angle rounded. Elytra dark brown with a large irregularly rectangular patch at basal angle, narrowed towards base, a small oblong one at about middle of inner margin and a reversed Y-shaped mark at apex, dull white. Dr. Annandale informs me that when the insect was alive these marks were of a bluish-grey tint. Underside light yellowish-brown, the prosternum and the mesopleura darker, a lateral series of silvery grey spots outwardly margined with black, extending from the prosternum to the sixth ventral segment, a suffusion of red on the underside of the connexivum and on the fifth, sixth and seventh ventral abdominal segments. Legs hairy, luteous, annulated with dark fuscous; coxae and femora marked with red on the underside; hind femora incrassated.

Rostrum ochraceous, with a broad, longitudinal, black band below.

Length 6 millim.

Type No. 7109/H. I. in the collection of the Zoological Survey of India.

***Microvelia diluta*, Dist.**

Microvelia diluta, Distant, *Faun. Brit. Ind., Rhyn.* V (Appendix), 1910, p. 139.

I have identified this species with some doubt. All the specimens that were collected were preserved in alcohol, and in this state the markings, especially those on the elytra, appear more distinct than those in pinned specimens, in which they have a tendency to fade or become discoloured. In the alcohol specimens there is a distinct interruption in the ochraceous band at the anterior margin of the pronotum, whereas in the pinned specimens in the collection of the Zoological Survey of India this band appears to be entire, and is also figured as such by Distant in his description of the species. Furthermore, the colour of the antennal joints and that of the underside seem to vary to a very marked degree in the specimens in alcohol.

A large number of specimens, in all stages of development, were taken on the surface of a small puddle at the foot of Elephant Hill, near Yawngwe, 17-ii-1917, and two specimens from the surface of the marginal zone of the Inlé Lake, 2—3-iii-1917. This species has been recorded from Calcutta and Rajshahi in the Province of Bengal.

***Microvelia burmanica*, sp. nov.**

(Plate VIII, fig. 2.)

A single specimen (preserved in alcohol) of this species was obtained on a small stream at Hsamonghkam (Thamakan) 4,000—4,500 feet, Southern Shan States, 13—14-ii-1917, and a few from the Taung-gya Valley, Yawngwe State, ca. 3,500 ft., 2-iii-1917.

I cannot identify this species with any described form. It resembles *M. albomaculata* most closely, but the position of the spots on the elytra is a little different, the relative length of the antennal joints and the colour of the legs, antennae and the underside are also different.

I have compared the Shan specimens with some specimens of *M. albomaculata* identified by Distant. The length he gives in his description of the latter is 2 mm., but the specimens he has identified are considerably smaller. The Shan specimens, though actually much larger than those of *M. albomaculata*, measure only 2 mm. in length.

In general colouration this species is very like *M. albomaculata*. A series of small deep black spots is situated within the marginal pubescent fascia near the inner margin of each eye, and there is a longitudinal, impressed, black line on the disk of the head not continued to the base or apex. The antennae are hairy, brownish ochraceous; the greater part of the basal joint posteriorly is much paler; the first joint is stout, curved outwards, longer than the second which is the shortest joint; second joint stout at apex and tapering at base; the third joint is slender, long, a little longer than the first; the fourth joint is very long, slender, about as long as the second and third together; eyes black.

The pronotum is as in *M. albomaculata*, except that there is a distinct, deep black, discal, longitudinal line extending from the anterior fascia to a little beyond the middle.

Hemelytra dull fuscous black with numerous greyish-white spots : a very large spot interrupted with fuscous occupies nearly the whole of the clavus ; corium with a small and a large basal marginal spot ; a large, centrally infuscate spot near inner margin, a smaller one near outer margin ; an elongate irregular subapical membranal spot, and a smaller elongate spot at inner angle. Body beneath black. Legs hairy, brownish ochraceous, darker towards the apices of the femora, tibiae and tarsi.

Length 1.9—2 millim.

In addition to the Shan specimens I have examined a number obtained by Dr. Gravely on the road from Thingannyinaung to Myawadi, Tenasserim, *ca.* 900 ft., 24—26-xi-1911.

Type No. 7106/H. I. in the collection of the Zoological Survey of India.

Perittopus breddini, Kirk.

Perittopus breddini, Bergroth, *Wien. Ent. Zeit.* XXV, p. 16.

There seems to be some doubt about the identity of this species. The genus was originally described from an apterous form by Fieber, in a very vague manner. Later on Kirkaldy defined it more fully and made *P. breddini*, a Javanese species, the type of the genus, the description being taken from an apterous form also. Bergroth described a macropterous form and placed it in this species. The only Burmese form as yet recorded, *P. rufus*, Distant, was described from an apterous insect. Dr. N. Annandale,¹ however, described a winged form from a small tributary of the Rangoon River, Burma, as that of *P. rufus*. The specimens from the Shan States, which are all winged, agree with the one described by Dr. Annandale as well as with Bergroth's description of *P. breddini* from Java, and apterous specimens from Sukli, east side of the Dawna hills, *ca.* 2,100 ft., Burma, agree with apterous specimens in the collection identified by Distant. Among those from Sukli there are also some winged forms which are exactly similar to the Shan ones. It seems probable that these all belong to one species, and as *P. breddini* was described before *P. rufus*, the Shan specimens must be placed under the former name.

A number of adult specimens were obtained from a small pool in the bed of a dry stream at He-Ho, *ca.* 3,800 ft., Yawngghwe State, 7—9-iii-1917 ; three specimens in the Taung-gya Valley, *ca.* 3,500 ft., 2-iii-1917, and six from Fort Stedman, *ca.* 3,500 ft., Yawngghwe State, 3-iii-1917. The species is common on small pools in streamlets in the State of Yawngghwe and also in the Dawna hills. The genus appears to be practically confined to a habitat of this kind.

Subfamily *GERRINAE*.

Gerris anadyomene, Kirk.

Gerris anadyomene, Distant, *Faun. Brit. Ind. Rhyn.*, II, p. 177.

A number of specimens in various stages of development from a pool at the western foot of Pagoda Hill, He-Ho, *ca.* 3,800 ft., Yawngghwe State (7—9-iii-1917).

¹ *Rec. Ind. Mus.* VI, p. 112 (1912).

This species was originally described from Pundaluoya, Ceylon, and it has also been recorded from the Philippine Islands. It has not, however, hitherto been found in Continental India.

Gerris nepalensis, Dist.

Gerris nepalensis, Distant, *Faun. Brit. Ind., Rhyn.* V (Appendix), p. 143.

Several specimens, both pinned and in alcohol, from various localities as detailed below :—

Swamp at the head of the Inlé Lake, Yawngwe State, 20-ii-1917.

Marginal zone of the Inlé Lake at Fort Stedman, Yawngwe State, 28-ii-1917 and 2—3-iii-1917.

Canal, Than-taung, west side of the Inlé Lake, Yawngwe State, 28-ii-1917.

Hsamonghkam (Thamakan), 4,000-4,500 ft., 13—14-ii-1917.

This appears to be a very common and widely distributed species. Specimens from various localities in Nepal, the United Provinces and from Kawkareik, Tenasserim, are in the collection of the Zoological Survey of India.

Gerris fossarum (Fabr.)

Gerris fossarum, Distant, *Faun. Brit. Ind., Rhyn.* II, p. 178 ; *id. ibid.*, V (Appendix), p. 142.

This species was rather common on the lake itself and several specimens were obtained on the 2—3-iii-1917. Some also were got in the canal at Than-taung, Yawngwe State, 28-ii-1917.

It has been previously recorded from Bombay and Bengal in India, and from Malacca, the Philippines, China and Australia.

Gerris nitida (Mayr.)

Gerris nitida, Distant, *Faun. Brit. Ind., Rhyn.* II, p. 178 ; *id. ibid.*, V (Appendix), p. 142.

Two specimens from the marginal zone of the Inlé Lake, 2—3-iii-1917 and one from the edge of the Inlé Lake at Fort Stedman, Yawngwe State, 28-ii-1917.

This species is found nearly all over India, Burma and Ceylon.

Gerris tristan, Kirk.

Gerris tristan, Distant, *Faun. Brit. Ind., Rhyn.* II, p. 179 ; *id. ibid.*, V (Appendix), p. 144.

Seven specimens from the marginal zone of the Inlé Lake, Yawngwe State, 2—3-iii-1917.

Originally described from Ceylon, but now known to occur in India and Burma also.

Gerris paludum, Fab.

Gerris paludum, Distant, *Faun. Brit. Ind., Rhyn.* II, p. 180.

Two pinned macropterous specimens from the canal at Than-taung, Yawngwe State, 28-ii-1917, and two in alcohol from a small stream, Hsamonghkam (Thamakan), 4,000-4,500 ft., 13—14-ii-1917.

I think I have identified this species correctly. The description given by Distant is very meagre. Douglas and Scott in their "British Hemiptera" have, however, given a more detailed description with which the specimens agree fairly well.

The only other example in the collection of the Zoological Survey has abbreviated elytra; it was taken in Palestine and was determined by Horvath.

***Gerris spinolae*, Leth. and Sev.**

Of this very abundant species only a few specimens were obtained, *viz.*, two specimens from a swamp at the head of the Inlé Lake, Yawngwe State, 20-ii-1917; two from the canal at Than-taung, Yawngwe State, 28-ii-1917, and eight from the Inlé Lake, Yawngwe State, 3,000 ft., 18—28-ii-1917

***Ptilomera laticaudata* (Hardw.)**

Ptilomera laticaudata, Distant, *Faun. Brit. Ind., Rhyn.* II, p. 185.

Six specimens from Taung-gya Valley, Yawngwe State, *ca.* 3,500 ft., 2-iii-1917; two specimens from Than-taung, Yawngwe State, *ca.* 3,000 ft., 28-ii-1917. "Not uncommon on jungle streams in Burma, the Malay Peninsula and Siam; markedly gregarious. N. A."

***Onychotrechus lyra*, sp. nov.**

(Plate VIII., fig. 3.)

Described from one pinned and several alcohol specimens from the Taung-gya Valley, Yawngwe State, *ca.* 3,500 ft., 2-iii-1917.

Ochraceous with numerous black markings which are sometimes more or less reduced or almost absent. Most of these markings are densely covered with fine greenish pubescence. Head with the apex black (seen from beneath), with a silvery white pubescent spot on each side; a large V-shaped mark on disk of vertex, a small marginal spot on each side before eyes and a slightly curved fascia on the posterior area near the inner margin of each eye, black.

Pronotum with four black spots or marks; two discal, which are largest and converge on the anterior margin, and two smaller, lateral, submarginal, touching the anterior margin.

Mesonotum very large, more than twice as long as the pronotum. A large harp-shaped mark on disk, anteriorly clothed with greenish and posteriorly with bluish-grey pubescence; on each side of this is a lateral curved line extending from the anterior margin to about the middle of disk, a short broad band connects this with another curved line, the inner part of which extends to the base of the mesonotum, with the outer portion reaching the region of the intermediate acetabula. Abdomen blackish above, the three apical segments medially ochraceous. Connexivum marked with ochraceous.

Antennae piceous, basal joint ochraceous. Legs ochraceous, tarsi black.

Propleura with a black spot almost touching the lateral spot on the pronotum. Mesopleura with a black impressed line, silvery pubescent, slightly sinuate anteriorly, not reaching the posterior margin. All the acetabula with a silvery pubescent black spot at base.

Sternum pale ochraceous with scanty silvery pubescence; a central and two lateral black lines, the central line extending from the prosternum to the apical segment of the abdomen, the lateral lines from the front acetabula to near the intermediate acetabula.

Length 4.25 millim.

Type No. 7124/H. I. in the collection of the Zoological Survey of India.

Ventidius distanti, sp. nov.

(Plate VIII, fig. 4.)

Described from several specimens in alcohol, from the top of the gorge of the He-Ho River, Yawngwe State, ca. 3,500 ft., 7-iii-1917.

Apterous form.—Head black with a large patch at base, and a transverse fascia at apex of face yellowish ochraceous; eyes silvery grey, with a black patch on the disk; antennae black, basal half of first joint yellowish.

Pronotum very short, black, a narrow ochraceous waved fascia at basal margin, anterior margin slightly concave, posterior margin almost straight. Mesonotum large, about as long as its greatest breadth, covered with decumbent hairs, disk obliquely striate on anterior area, ochraceous, with two broad lateral black fasciae curved inwards anteriorly and meeting narrowly on anterior margin, each extended posteriorly to meet a curved fascia on the intermediate acetabula; a large subtriangular patch at centre of posterior margin; the posterior lateral angles narrowly dull black.

Metanotum dull black with a small ochraceous spot near each basal angle.

Abdomen above dull white, the basal segment, a spot at lateral margin of each segment and the apical segment black.

Underside pale ochraceous; legs black, base of anterior femora ochraceous.

Length 3 millim.

Type No. 7125/H. I. in the collection of the Zoological Survey of India.

Metrocoris nigrofasciatus, Dist.

Metrocoris nigrofasciatus, Distant, *Faun. Brit. Ind., Rhyn.* V (Appendix), p. 159.

Several specimens from foot of Elephant Hill near Yawngwe, 17-ii-1917, and 6-iii-1917.

A few from a pool at the western foot of Pagoda Hill, He-Ho, 3,800 ft., Yawngwe State, 9-iii-1917. Four specimens from a small stream near Fort Stedman, Yawngwe State, ca. 3,500 ft., 3-iii-1917.

A somewhat variable species with a wide distribution having been recorded from the base of the Western Himalayas, Lower Burma, the Malay Peninsula and Siam. It probably also occurs in the Eastern Himalayas and Assam.

Naboandelus signatus, Dist.

Naboandelus signatus, Distant, *Faun. Brit. Ind., Rhyn.* V (Appendix), p. 164.

Several specimens from the marginal zone of the Inlé Lake, Yawngwe State, 28-ii-1917, 2—3-iii-1917

Two specimens from a swamp at the head of the Inlé Lake 20, 28-ii-1917, and six from the canal at Than-taung, west side of the Inlé Lake, Yawngwe State, 28-ii-1917.

This species was first found in the Calcutta tanks. It is possible that it may be found throughout India and Burma.

Nacebus dux, Dist.

Nacebus dux, Distant, *Faun. Brit. Ind., Rhyn.* V (Appendix), p. 165.

Three specimens preserved in alcohol from the marginal zone of the Inlé Lake, Yawngwe State, 2—3-iii-1917.

This species has been recorded from Calcutta and Mudon, Amherst District, Tenasserim.

Family NEPIDAE.

Ranatra varipes, Stal.

Ranatra varipes, Distant, *Faun. Brit. Ind., Rhyn.* V (Appendix), p. 316.

One specimen from swamp at edge of the Inlé Lake, Yawngwe State (24-ii-1917), preserved in alcohol.

Most of these bugs do not retain their natural colouration when preserved dry and colour markings are not very reliable when descriptions are made from dried specimens. This specimen, however, agrees with the structural characters given by Distant in his description of the species.

It is very widely distributed and has been recorded from Nepal, Bengal, Ceylon and Burma.

Cercotmetus pilipes (Dall.).

Cercotmetus pilipes, Distant, *Faun. Brit. Ind., Rhyn.* III, p. 23.

One specimen, preserved in alcohol, from the He-Ho Marsh, Yawngwe State, 8—9-iii-1917.

This species was originally described from Bhutan and does not appear to have been recorded from elsewhere.

Family BELOSTOMATIDAE.

Sphaerodema rusticum (Fabr.)

Sphaerodema rusticum, Distant, *Faun. Brit. Ind., Rhyn.* III, p. 36.

Two specimens from the Inlé Lake, Yawngwe State, 2—3-iii-1917 ; one specimen from the river at Yawngwe, 6-iii-1917 ; one from the edge of the Inlé Lake at Fort Stedman, Yawngwe State, 28-ii-1917, and one specimen from the canal at Than-taung, west side of the Inlé Lake, Yawngwe State, 28-ii-1917.

A very common and widely distributed species, having been recorded by Distant from India, Burma, Ceylon, Siam, Malay Peninsula, Sumatra, Java, Philippines, China and Australia.

Family NOTONECTIDAE.

Enithares templetoni (Kirby).

Enithares templetoni, Distant, *Faun. Brit. Ind., Rhyn.* III, p. 43.

One adult and two immature specimens from a small stream above Fort Stedman, Yawngwe State, ca. 3,500 ft., 3-iii-1917

This species appears to have a fairly wide range, occurring in Bombay, Ceylon and the Siamese Malay States.

Enithares intha, sp. nov.

(Plate VIII, fig. 5.)

Two specimens from the marginal zone of the Inlé Lake at Fort Stedman, Yawngwe State, 28-ii-1917, 2—3-iii-1917.

Head varying in colour from pale stramineous to pale ochraceous, sometimes tinged with light green; eyes dark castaneous or black.

Pronotum and elytra stramineous; the former foveately excavated, anterior angles distinctly blackish; sternum blackish. Extreme base of corium fuscous.

Legs stramineous, with the underside of the fore and hind tibiae and hind tarsi black at apex.

Head short, its vertex longer than its greatest breadth at apex, about equal in length to the pronotum; its lateral margins convex and slightly attenuate towards base; breadth at apex more than the width of the hind margin of the eye.

Pronotum more than twice as broad as length in middle. Scutellum much broader at base than long. Corium about as long as head, pronotum and scutellum together. Posterior tibia about two-thirds longer than posterior tarsus. Smaller than *Enithares indica*, from which it differs by the total absence of any dark markings on the upperside, as well as in proportion of head and pronotum.

Length 8—8.25 mm.

Type No. 7137/H. I. in the collection of the Zoological Survey of India.

Anisops niveus, Fab.

Anisops niveus, Distant, *Faun. Brit. Ind., Rhyn.* III, p. 46.

Several specimens from a large muddy pool without weeds, He-Ho, 3,800 ft., Yawngwe State, 8-iii-1917

If I have identified this species correctly, it is a very variable one, as among the specimens in alcohol there are some with various black

marks on the pronotum and elytra, and others entirely devoid of any dark markings.

A. niveus has a very wide distribution.

Anisops sardea, Herr.-Schaff.

Anisops sardea, Distant, *Faun. Brit. Ind., Rhyn.* III, p. 45.

A single female specimen from He-Ho, ca. 3,800 ft., Yawnghwe State, 7—9-iii-1917.

I have identified this species from its size. In all other respects it is almost indistinguishable from *A. fieberi*, Kirk.

Nychia infuscata, sp. nov.

(Plate VIII, figs. 6, 6a.)

A number of specimens preserved in alcohol, from the marginal zone of the Inlé Lake, Yawnghwe State, 2—3-iii-1917.

This genus has not hitherto been recorded from continental India. Kirkaldy, however, records it from Ceylon. My description is taken from specimens in alcohol.

Head pale greenish, eyes light purplish. Pronotum white, with a lateral fuscous spot at each hind angle. Scutellum white. Elytra whitish, transparent; corium white, next to the embolium a broad longitudinal band extending the whole length and a short discal one (sometimes almost absent) united with the other at base, extending to a little before the middle of the corium, fuscous; the latter apically dull white. Embolium yellowish-white, the outer margin dark fuscous. Antennae pale white; second joint clothed with black hairs, fourth joint with silvery hairs and with a fine black longitudinal line below.

Clypeus fuscous brown, apical third of rostrum black.

Sternum pale ochraceous, sides and the acetabula covered with long, fine, black hairs.

Underside of abdomen pale ochraceous, with a distinct, central, longitudinal carination which does not extend to the base of the abdomen, clothed on each side with long, black hairs, which are also present on the lateral margins of the ventral abdominal segments. Hairs on the sides and apex of the abdomen long and silvery.

Legs pale yellowish-white; front and intermediate coxae and femora marked with dark fuscous; posterior femora with fine longitudinal fuscous lines; posterior tibiae with a black longitudinal line below, fringed with long black hairs; posterior tarsi also fringed with long black hairs; anterior and intermediate tarsi outwardly fringed with fine long white silky hairs; posterior tibiae and tarsi nearly subequal in length, posterior femora extending beyond apex of abdomen.

In some specimens there is a small black spot near the middle of the inner margin of each elytron. Structural characters as those of the genus.

Length 4—5 mm.

Type No. 7098/H. I. in the collection of the Zoological Survey of India.

***Plea quinquenotata*, sp. nov.¹**

(Plate VIII, figs. 7, 7a.)

One specimen from the edge of the Inlé Lake at Fort Stedman, Yawnglwe State, 28-ii-1917.

Dull greyish-white; head with a central, longitudinal, yellowish fascia extending from base to about the middle of the facial region, wider posteriorly than anteriorly; eyes purplish-red; head densely punctured.

Pronotum greyish-white, densely punctured; posterior lateral area slightly fuscous; five small black spots above, situated two a little behind anterior margin on disk, one near each lateral angle and one at the middle of the basal margin.

Scutellum yellowish, sparingly punctured. Elytra densely punctured with brown; clavus with the punctures darker near the base and apex; corium greyish-white with a transverse fuscous band near middle and a large fuscous patch on its posterior third.

Legs pale ochraceous, extreme apices of femora and tibiae annulated with black.

Underside dark brown or black.

Length 1.5 millim.

Type No. 7145/H. I. in the collection of the Zoological Survey of India.

***Plea areolata*, sp. nov.**

(Plate VIII, figs. 8, 8a.)

One specimen from the top of the gorge of the He-Ho River, ca. 3,500 ft., 7-iii-1917, and two from the marginal zone of the Inlé Lake, Yawnglwe State, 2—3-iii-1917.

Head pale ochraceous with three dark brown spots, one central, longitudinal, rectangular, the others rounded and placed obliquely, one on each side and above the central spot; vertex sparingly punctured, disk impunctate; eyes black.

Pronotum fuscous, with the anterior margin brown and the anterior area and three lines (one broad, central, longitudinal, not reaching posterior margin and two indistinct lateral, oblique), pale ochraceous; the central line is laevigate; anterior area of pronotum almost impunctate, with a single line of punctures on anterior margin, the greater part of the posterior area with very deep black punctures which under a high power of the microscope appear like areola or deep pits, each pit with a short stiff hair. Scutellum yellowish-grey, dark along the basal margin, sparingly punctured.

Clavus and corium greyish-white with numerous deep black punctures, apex of clavus slightly fuscous.

Underside black or fuscous; the legs ochraceous, posterior tibiae with a series of fairly long spines beneath, and with a long stiff hair

¹ In the figure of this species the artist has raised each part of the insect in profile in order to show the markings more distinctly. Figure 7a gives a side view of the insect.

arising from the base and extending beyond middle, visible only from below.

Length 2.25 mm.

Type No. 7146/H. I. in the collection of the Zoological Survey of India.

Family CORIXIDAE.

Corixa unicolor, sp. nov.

(Plate VIII, fig. 10 ; pl. IX, fig. 2.)

Two specimens from He-Ho, ca. 3,800 ft., Yawngwe State, 7—9-iii-1917, in a large muddy pool without weeds.

Moderately elongate, greatest breadth about half the length, pronotum without fasciae ; the hemelytra not mottled with piceous.

Head smooth, ochraceous, with a brownish patch at base which is emarginate anteriorly, basal margin darker, length equal to breadth between eyes, a distinct tubercle at centre of basal margin, inner margins of eyes discally subparallel, converging slightly on the facial area, eyes greyish-black, large, subtriangular, extending posteriorly over the lateral angles of the pronotum, a few punctures on disk of vertex.

Pronotum pitchy black, its length in middle about half its breadth, very minutely punctured, shining, subcordate ; lateral angles rounded anteriorly, acutely pointed posteriorly ; anterior margin sinuate in the centre, posterior margin rounded, a faint, short, medial carina on disk.

Elytra light brown, densely punctured and covered with short stiff hairs ; subcostal area opaque, dusky grey, hairy.

Sternum pale ochraceous.

Abdomen beneath yellowish. Legs testaceous. Clypeus transversely striate and with a faint medial longitudinal carina.

Palae large, with a fringe of long hairs externally and with a row of fine, closely-set teeth on the underside.

Length 6.5—7 millim.

Type No. 7143/H. I. in the collection of the Zoological Survey of India.

Corixa septemlineata, sp. nov.

(Plate VIII, fig. 9 ; pl. IX, fig. 1.)

One specimen from foot of Elephant Hill near Yawngwe, 17-ii-1917, preserved in alcohol.

This species differs from all other allied species in the pronotum having seven distinct, regular, pale ochraceous fasciae on the disk. The lateral margins of the face are oblique. The pronotum is slightly broader than its medial length. The species is a slender one more than twice as long as its greatest breadth.

Length 4.5 millim.

Type No. 7099/H, I, in the collection of the Zoological Survey of India.

Micronecta substriata, sp. nov.

(Plate VIII, fig. 11 ; pl. IX, fig. 3.)

Five specimens from Fort Stedman, *ca.* 3,000 ft., Yawnghwe State, 24-ii-1917

Head pale ochraceous, with a brownish tubercle at centre of basal margin ; pronotum and scutellum pitchy black (in pinned specimen) : elytra olivaceous grey with irregular fasciate, fuscous lines and spots, which are situated as follows :—Clavus with a long submarginal broken fascia and indistinct fasciæ near its scutellar margins ; corium with discal irregular fasciæ converging basally and apically ; a small linear spot on inner margin, three elongate spots on costal margin, one sub-basal, one medial and one subapical, and a large subtriangular patch at the inner angle of the right elytron.

Elytra densely and minutely punctured, each puncture bearing a minute stiff hair.

Head broader than long ; shorter than pronotum ; longer in the middle than at the margins near the eyes ; posterior margin slightly concave.

Pronotum large ; in the middle about half as long as broad ; lateral margins about one-third the width of the hind margin of the eye ; anterior and posterior margins strongly convex. Underside very pale ochraceous.

Length 2.75 millim.

Type No. 7149/H. I. in the collection of the Zoological Survey of India.

Micronecta soror, sp. nov.

(Plate VIII, fig. 12 ; pl. IX, fig. 4.)

One specimen from Fort Stedman, *ca.* 3,000ft., Yawnghwe State, 24-ii-1917.

Head about as long as space between eyes at base, longer in the middle than at the margins near eyes ; ochraceous with a very pale brownish patch on disk of vertex and a line of the same colour within the margin of each eye ; a distinct tubercle at the centre of the hind margin of the head ; eyes black.

Pronotum short, about a quarter as long as broad ; anterior and posterior margins slightly convex ; lateral margins almost nothing, about a quarter the width of the hind margin of the eye ; olivaceous brown with a central black, transverse fascia not reaching the lateral margins.

The markings on the elytra are nearly the same as those of the preceding species, except that the apex of the corium is broadly margined with fuscous and the discal markings are more united.

Posterior tarsi with a distinct black line above.

Length 2.5 millim.

Type No. 7150/H. I. in the collection of the Zoological Survey of India.

***Micronecta fulva*, sp. nov.**

(Plate VIII, fig. 13 ; pl. IX, fig. 5.)

Three specimens from under floating islands, Inlé Lake, Yawnghwe State, 19-ii-1917.

The description has been taken from two specimens in spirit as the third specimen, which had been pinned, has shrunk.

Head, scutellum, anterior margin of clavus, legs and underside dull yellowish-white. A small angulate mark at middle of hind margin of head, fuscous ; eyes black.

Head longer than space at base between eyes.

Pronotum fulvous, with the anterior margin narrowly fuscous ; subtriangular, the anterior margin broadly rounded, posterior margin almost straight ; about half as long as broad ; lateral angles about a third of the width of the hind margin of the eye.

Scutellum with a short transverse discal streak and the apex broadly fuscous. Clavus excluding anterior margin fuscous. Corium fulvous with some dashes of fuscous on disk.

Length 2.25 millim.

Type No. 7155/H. I. in the collection of the Zoological Survey of India.