

Taschenberg ('Naturgesch. d. wirbellosen Thiere,' 1865), describes the following *Muscidae* as injurious to cereals:—*Chlorops tenuipus*, *C. strigula*, Fabr., *C. lineata*, *C. nasuta*, *C. (Oscinis) Cereris*,* *Oscinis Frit*, *O. pusilla*, and *Siphonella pumilionis*.

Lastly, in the 'Bulletin de la Société impériale des Naturalistes de Moscou' for 1880, No. 3, p. 126, is contained an interesting memoir by Prof. K. Lindeman, upon "Zwei neue dem getreide schädliche Insekten Russlands," namely, 1, *Eurytoma hordei* of Walsh, the larvæ of which produces dilatations on the stems of rye (hence known under the name of the knot-worm); and 2, *Cecidomyia cerealis*, the larva of which appears to be identical with the insect known in North America under the name of the joint-worm.

EXPLANATION OF PLATE XXII.

Fig. 2. *Oscinis avenæ*, Bjerkander, magnified.

2a. Natural size of ditto.

2b. Head of ditto, seen sideways.

2c. Parts of mouth, highly magnified, showing the clavate setose palpi, the acute horny tongue, and the large bilobed lip.

2d. Parts of mouth, highly magnified, displayed by vertical pressure.

2e. Mouth and antenna of ditto, magnified, seen partially sideways.

3. An oat with the outer scales removed.

3a. Ditto, with the inner scales opened, showing the withered plumose style (a), and the empty shell of the *Oscinis* pupa (b).

* *Osc. Cereris*, Fallén, *op. cit.*, p. 5. "*Nigra nitida*; fronte, pectore, scutelloque albis, pedibus testaceis."

Another species is described by Fallén under the name of *Osc. messoria*, *op. cit.*, p. 5, which is evidently connected with cereal plants:—"Nigra, nitida, capite albo, pectore flavo vario, genubus tarsisque testaceis. Hab. In agris demissis Scanæ sat frequens."

XXXIX. Descriptions of new species belonging to the Homopterous family Cicadidae. By W. L. DISTANT.

[Read December 7th, 1881.]

THE following descriptions are offered to the Society, anticipatory of a future monographic revision of the *Cicadidæ*, a family which has perhaps been the more neglected owing to the involved nature of the work in which the fine collection of these insects contained in the British Museum were described. This, therefore, renders an examination of Walker's types indispensable, and, from the nature of that author's descriptions, it is questionable whether without such comparison any work could be effected without being more or less surcharged with synonymy. As regards the last subject, I have incorporated none of my collected notes here, preferring to publish them subsequently in a more complete form.

In the descriptive nomenclature which I have here adopted, and which I have followed and similarly explained when treating the Central American fauna (*Biol. Centr. Am. Rhynch. Hom.*, p. 1, 1881), the following should perhaps be clearly stated.

For the venation of the tegmina I have followed Stål, but differ from that author in the use of the term "scutellum," which in my opinion is the "mesonotum," and in which view I am supported by Burmeister and Westwood. The "scutellum," as used by Germar, apparently equals the "metathoracic cross" of Uhler, and is considered here, in agreement with Burmeister, and, as may be proved by easy dissection, as part of the mesonotum, and is here alluded to as the "basal cruciform elevation" of the same. I have also followed Westwood in the numeration of the abdominal segments, of which six are acknowledged, the basal one being described as first and the apical one as sixth.

Of the species here described, three are Neotropical, three Ethiopian, thirteen Oriental, one Palearctic, one Australian, and one from the Pacific region.

Zammara columbia, n. s.

Body above dull testaceous, variegated with fuscous and pale markings. Head dull greenish, with a transverse fuscous fascia between eyes, enclosing ocelli; eyes ochraceous. Pronotum with the lateral and posterior margins, and a central narrow longitudinal fascia, ochraceous; base of the last somewhat dilated and bordered with fuscous; lateral margins with a large irregular spot near anterior margin; extreme edge behind angle and an irregular spot near posterior margin dull testaceous. Mesonotum with two obconical and contiguous spots reaching midway from anterior margin, bordered outwardly with ochraceous, and with their inner two-thirds fuscous; on each side of these, and immediately adjoining, is a dentate fuscous spot bordered with ochraceous; lateral margins greenish, with the extreme edge luteous. Abdomen with the posterior segmental margins fuscous. The head and thorax above is sparingly clothed with yellow, the abdomen with hoary pilosity. Body beneath paler, sternum greenish, abdomen testaceous; lateral margins of prosternum marked with fuscous as above. Coxæ and femora greenish; trochanters, bases and apices of femora beneath, fuscous; tibiæ pale testaceous, with the bases and apices of fore and intermediate tibiæ and tarsi and bases of posterior tibiæ fuscous. Rostrum pale testaceous, with the apex fuscous. Tegmina pale ochraceous hyaline; with the veins, costal membrane, and costal area, dull testaceous or greenish, and the following fuscous spots: one at end of clavus, another at the end of radial area, and a series situated on inner and outer margins of apical areas; outer margin of clavus fuscous. Head between eyes less than half the width of pronotum, with a distinct narrow, central, longitudinal sulcation between ocelli; face moderately convex, obscurely striate on lateral margins, and sulcated at apex, its width about equal to its distance from outer margin of eyes. Lateral margins of pronotum considerably amplified, and subacutely angulated. Tympana greenish, dull testaceous inwardly, large, prominent, with the dorsal lateral margins reflexed; opercula small, rounded, not meeting in front; rostrum just passing posterior coxæ, and terminating between opercula. Abdomen very broad, and somewhat flat-

belonging to the Homopterous family Cicadidae. 629

tened; tarsi three-jointed. Long. 28 mm. Exp. tegm. 91 mm.

Hab. Colombia; Medellín.

This species is nearest allied to *Z. nigriplaga*, Walk., from which it differs by the narrower and less expanded pronotum, the three-jointed tarsi, &c.

Odotopæa jamaicensis, n. s.

♂. Body pale greenish, varied with black markings, and sparingly pilose. Head with the anterior and posterior margins of front, a spot on each side above insertion of antennæ, and a broken transverse fascia across vertex between eyes enclosing ocelli, black. Pronotum with an oblong spot near centre of anterior margin; a central J-shaped spot on front of posterior margin; an oblique fascia behind eyes, between which and centre is a small and slightly curved fascia, and lateral margins, narrowly inwardly and broadly outwardly, black. Mesonotum with two large but short obconical fasciæ on anterior margin, which are followed by a smaller one on each side, and a long straight oblique fascia near lateral margins, a J-shaped spot on disk, which has a small round spot near each basal angle, and a small transverse fascia on each side of cruciform basal elevation, black. Posterior margin of metanotum black. Abdomen above with the anterior segmental margins black. Body beneath with the upper and posterior-lateral margins, and central longitudinal fascia to face, lateral pronotal angles, and a transverse fascia in front of intermediate coxæ, black; abdomen testaceous; posterior segmental margins green; discal anterior segmental margins and anal appendage black. Tegmina and wings hyaline. Tegmina with basal two-thirds of venation ochraceous, remainder fuscous. Anastomoses, apices, and a subapical spot to longitudinal veins of apical areas, broadly fuscous; costal membrane greenish, with two fuscous spots near base; claval area fuscous. Wings with the venation somewhat alternately ochraceous and fuscous, more broadly fuscous near inner margin. The body is broad and robust; abdomen gradually narrowing to apex; latitude between outer margin of eyes and width of pronotum at base equal. Lateral pronotal margins broadly produced

and angulated. Tympana prominent and ovate; opercula wide, reaching centre of first abdominal segment, narrowed and obtusely rounded, but not meeting inwardly. Rostrum just passing posterior coxæ, with the apex pitchy. Face broad, moderately tumid, coarsely transversely striate, and with a deep central longitudinal sulcation. Long. 23 mm. Exp. tegm. 70 mm.

Hab. Jamaica.

Allied to *O. dilatata*, Fabr., especially to the variety *suffusa*, Walk., but differs from that species by having the ulna veins very widely separated at base, the costal membrane much broader, tympana broader and not sinuated on upper inner margin, and the shorter and gradually attenuated abdomen.

Pecilopsaltria leopardina, n. s.

♀. Head piceous, front somewhat paler, two spots on lateral margins in front of eyes, and eyes ochraceous. Pronotum ochraceous, with a few scattered spots on disk, and borders of dilated lateral margins, black. Mesonotum castaneous, with four somewhat obconical spots on anterior margin, of which the central two are the smallest, and a large central spot on disk black. Cruciform elevation at base of mesonotum ochraceous. Abdomen piceous, with the apical margins of abdominal segments and apex of anal appendage ochraceous. Body beneath piceous; lateral margins broadly ashy grey; basal joint of rostrum, opercula, apical margins of abdominal segments, and anal appendage, ochraceous. Legs castaneous; posterior tibiae ochraceous; some irregular spots on coxæ; bases and apices of tibiae and tarsi piceous. Tegmina with the basal third opaque; remainder pale hyaline; the opaque portion consists of a broad central cretaceous fascia, margined outwardly and inwardly with piceous. A broken central waved fascia across centre of tegmina, widest on costal margin, anastomoses broadly, and a double series of submarginal spots placed on longitudinal veins, piceous. Wings, excepting outer margin, opaque, piceous, with a broad central cretaceous fascia extending about half-way across from anterior margin. Outer margin pale hyaline. Head, including outer margins of eyes, considerably broader than base of mesonotum; lateral

margins of pronotum widely and acutely dilated; the anterior margins rounded, the posterior more acute; rostrum reaching posterior coxæ; face globose, strongly and transversely striate, and deeply and longitudinally sulcated. Long. 28 mm. Exp. tegm. 83 mm.

Hab. East Africa, near Zanzibar.

Allied to *P. quadraticollis*, Butl., from which it at once differs by the semi-opaque tegmina and wings. The tegmina and wings in pattern have considerable affinity to *P. subrufa*, Walk., an Indian species.

Platyleura inquinata, n. s.

♀. Body castaneous; mesonotum dark castaneous. Head with the frontal margin, a spot above insertion of antennæ, area of ocelli, a transverse fascia on inner side of anterior margin of eyes, and two small longitudinal fasciæ at base between ocelli and eyes, black. Pronotum with two transverse fasciæ, commencing behind eyes and carried obliquely to disk, where they are thickened, but do not meet; between these and inner sides of lateral margins two other straight oblique fasciæ, inner border of dilated lateral margins, and a somewhat indistinct central quadrate spot on inner side of posterior margin, black. Mesonotum with two obscure obconical spots at base, and some other indistinct markings, black. Anterior dorsal segmental margins fuscous; anal appendage above black. Anterior margin of face, a spot on coxæ and trochanters, apices of femora, tibiae (excepting base), tarsi, and apex of rostrum, fuscous. Tegmina creamy, opaque, irregularly spotted and shaded with fuscous, with irregular hyaline spots, of which the following are the most conspicuous: one near the end of radial area, two occupying the centres of the two upper ulnar areas, one a little before centre of third ulnar area, a smaller one near apex of fourth ulnar area, an irregular elongate series (mostly confluent) on apical areas, which are largest on the sixth area, and absent on the seventh, and a large elongate spot on outer margin at end of clavus; veins castaneous; costal membrane and area fuscous. Wings ochraceous; apical third castaneous, basal third much suffused with castaneous, anal margin pale fuscous, outer margin creamy, hyaline near anal margin, and castaneous at

centre. Face globose, transversely and coarsely striate, with a deep central longitudinal sulcation. Head, including eyes, equal in width to base of mesonotum. Lateral margins of pronotum much amplified, and subacutely angulated; posterior margins transversely striated. Rostrum almost reaching apical margin of third abdominal segment. Body more or less clothed with pale pilosity. Long. 28 mm. Exp. tegm. 81 mm.

Hab. E. Africa, Nyassa (Cotterell).

This species belongs to the *limbata* group of the genus.

Platypleura cerea, n. s.

♀. Body ochraceous and sparingly pilose. Head with the ocellar area, on each side of this a small curved fascia pointing towards eyes and inner frontal margin, black. Pronotum with a central longitudinal fascia, bordered on each side with an oblique fascia in shape of the letter W, black. Mesonotum with four obconical basal spots, of which the central two are the largest; on each side of these a straight oblique fascia, a small central longitudinal fascia on disk, and a large lunate spot near centre of posterior margin, black. Abdomen above with basal margins of segments and anal appendage black. Central sulcation of face, a transverse spot at insertion of antennæ, apex of rostrum, and apices of tarsi, pitchy. Tegmina pale hyaline; basal third ochraceous, opaque, and pilose, with the following fuscous markings: two spots on costal membrane, one at base, three in radial area, a spot occupying the base of each of the three upper ulnar areas, a large elongate spot near middle of fourth, and a narrow linear one reaching apex of fifth ulnar area, a basal claval streak, anastomoses, and a submarginal series of smaller spots, placed in pairs on the veins, the inner being the largest. Besides these, on the hyaline portion, are a number of irregular, somewhat indistinct, pale fuscous spots. Wings pale hyaline; nervures ochraceous; basal half fuscous; outer margin of this fuscous area sublunate. Face globose, with a longitudinal sulcation, and strongly and transversely striate. Head, including eyes, about equal in width to base of mesonotum. Lateral margins of pronotum amplified, and subacutely angu-

lated. Rostrum just passing posterior coxæ. Long. 22 to 25 mm. Exp. tegm. 69 to 74 mm.

Hab. W. Africa, Calabar.

This species is allied to *P. strumosa*, Fabr., from which it is easily separated by the basal half of the wings being fuscous. The markings of the pronotum and tegmina are also distinct, but I am unable to compare the opercula, as the four specimens which I possess are all females.

Leptopsaltria pryeri, n. s.

♂. Body above pale testaceous; head with the frontal margin pitchy; the area of the ocelli black; the posterior margin also narrowly black. Pronotum with a central longitudinal sulcation, the edges of which are raised, commencing on anterior margin, but not extending through more than half the pronotal length, on each side of which are two oblique and very distinct striæ; lateral and posterior margins ochraceous. Mesonotum with two obconical spots on anterior margin, the edges of which are black. Abdomen with a distinct transverse sulcation at the segmental sutures. Body beneath unicolorous; opercula pale inwardly, narrowly bordered with black; four large dark castaneous tubercles placed in pairs near posterior margins of second and third abdominal segments. Tegmina and wings very pale transparent ochraceous; tegmina with the transverse veins at the bases of second, third, and fifth apical areas infuscated, and a submarginal series of pale fuscous spots situated near the apices of the longitudinal veins; basal area pale ochraceous; claval area pale testaceous; wings pale testaceous at base. The face is large and tumid, with a somewhat faint longitudinal sulcation, but strongly transversely striated; rostrum with the apex pitchy, and passing posterior coxæ; opercula situated somewhat widely apart, the posterior margins oblique, with the lateral angles rounded, and reaching about centre of second abdominal segment; anterior femora with two large and prominent spines. Long. 26 mm. Exp. tegm. 82 mm.

Hab. North Borneo (*Pryer*).

This species is allied to *L. guttularis*, Walk., of which the type is a female, but Stål describes the male,

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compared with *L. tuberosa*, Sign., as having the opercula "minus longe producta." In specimens of *L. tuberosa*, in my own collection, the opercula are short, reaching in the base of the second abdominal segment, whilst in *L. pygmaea* they are much more elongated, and attain in length to the middle of that segment.

Dundubia radha, n. s.

♂. Body above pale castaneous. Head with the area of the ocelli black. Pronotum with the lateral and posterior margins, and a very narrow anterior margin, ochraceous; the last is inwardly margined with two small transverse linear black spots, and the posterior margin has also a very narrow discal inner border of the same colour. Mesonotum with a large central obconical spot on anterior margin, with a very indistinct central line, and with the lateral borders black, outwardly margined with ochraceous; five indistinct black basal spots, three within the anterior angle of the cruciform elevation, and one on each side of the same. Abdomen rather darker in colour, with the segmental sutures pitchy. Under side of the body concolorous; opercula dull ochraceous. Tegmina and wings pale hyaline; tegmina with the costal membrane and claval area dull ochraceous; wings with the base narrowly of the same colour. The body is very elongated; the head, including eyes, a little narrower than base of pronotum; the face is prominently convex, faintly longitudinally sulcated, and transversely striated; the rostrum reaches the middle of the posterior coxæ; the opercula are very long, reaching the penultimate abdominal segment; they are suddenly narrowed on first abdominal segment, and then gradually widened and rounded on each side, the maximum width being at junction of second and third abdominal segments, from whence they are gradually narrowed to apex, which is obtusely rounded. Long. 53 mm. Exp. tegm. 124 mm.

Hab. Madras Presidency; Masuri Hills.

This species is allied to *D. mannifera*, from which it differs by the much broader head, attenuated apices of the opercula, and its much larger size. In superficial appearance it bears a strong affinity to the genus *Cosmopsaltria*.

Dundubia tripuransura, n. s.

♂. Head, pronotum and mesonotum ochraceous. Head: front with a triangular black spot near base, and transverse black striae which do not meet in the centre; vertex with two large oblique and irregular black fasciae on disk, and a large irregular black spot on inner margin of eyes. Pronotum with two central longitudinal black fasciae, and three oblique black striae on each side, the outer one submarginal and somewhat rounded. Mesonotum with a large central clavate spot, of which the apex terminates on anterior margin, bordered on each side by a subconical spot, followed by a small triangular one, and a wide submarginal fascia, black. Abdomen dull sanguineous, with a series of discal segmental black fasciae (these are much larger in some specimens and subconfluent), and a lateral segmental row of irregular black spots. Body beneath with the sternum ochraceous, covered with greyish pubescence. Abdomen dull sanguineous; opercula pale sanguineous; legs ochraceous. Tegmina and wings pale hyaline. Front very prominent and convex; head, including eyes, narrower than base of pronotum, subequal to mesonotum in width. Opercula subtriangular, well separated at base, gradually becoming more divergent, and narrowing to apex, which is obtuse, and almost reaches apex of fourth abdominal segment. Anterior femora armed with three spines; two moderately large and ochraceous; apical one small and black. Posterior tibiae with three black spines on inner side near apex, and two smaller and wider apart on margin. Long. 33 mm. Exp. tegm. 85 mm.

Hab. Assam.

This species is allied to *D. vibrans*, Walk., from which it structurally differs by the long and subtriangular opercula. The abdomen is also broader, the tegmina unspotted, and the sanguineous colour of the abdomen and opercula are also somewhat peculiar and distinct.

Dundubia nagarasingua, n. s.

♂. Body above castaneous. Head with centre of front and an oblique fascia on each side of ocelli

ochraceous. Pronotum with a central fascia and lateral and posterior margins ochraceous. Mesonotum with two anterior central obconical spots denoted by black margins; margins of basal cruciform elevation ochraceous. Abdomen with the basal half sparingly clothed with greyish pile, the apical half much more densely so, and with a broad lateral fascia of greyish pile on each side. Body beneath, with the sternum, legs and opercula, pale ochraceous; abdomen pale castaneous. Tegmina and wings pale hyaline; costal membrane of tegmina ochraceous. Head broad, including eyes subequal in width to base of pronotum, and wider than mesonotum; the face is very tumid, the centre longitudinally sulcated for half the length, and sides transversely striated; rostrum reaching apex of posterior coxæ; opercula long, reaching base of last abdominal segment, narrowest and with the edges concave from base to commencement of second abdominal segment, from which they are somewhat suddenly widened with the edges convex; apex somewhat narrower and rounded. Anterior femora with two long ochraceous spines; posterior tibiae with two long black spines, somewhat close together on inner margin near apex, and two much wider apart on outer margin. Long. 34 mm. Exp. tegm. 95 mm.

Hab. N.W. Burmah.

I am somewhat at a loss for a closely-allied species with which to compare *D. nagarasingna*, but its distinct colour and markings, and shape and length of the opercula, should sufficiently distinguish it.

Cosmopsaltria sita, n. s.

♂. Head: front with a central fascia furcate anteriorly, and an oblique spot on each side at the base; vertex with a large triangular spot enclosing ocelli, and an irregular longitudinal fascia near inner margin of eyes, black. Pronotum with two central longitudinal fasciæ joined and rounded near posterior margin, widened and angulated near anterior margin; on each side of these is a small discal waved line, and two oblique fasciæ near lateral margins (the outer one submarginal and rounded), black. Mesonotum with a central longitudinal fascia; on each side of this a clavate, smaller and suboblique fascia, followed by two linear

spots on anterior margin, and a discal waved irregular fascia on each side. Abdomen with the segments (excluding first) more or less piceous at base, and with a lateral segmental row of piceous spots. Body beneath ochraceous and unicolorous. Tegmina and wings pale hyaline; tegmina with the venation of basal half ochraceous, and apical half fuscous; transverse veins at base of second and third apical areas broadly infuscated; transverse veins at base of first and second ulnar areas fuscous, ochraceous at junction. The head, including eyes, is considerably narrower than base of pronotum; the face is only moderately convex, sulcated from beyond the middle, the sides distinctly striated (the face has also an oblong spot bordered with black at base, and the upper striations are also of that colour). The opercula reach the third abdominal segment; they are moderately truncate outwardly, widened and angulated inwardly (but not meeting) on first abdominal segment, and then diverging and narrowing to apex, which is obtuse and rounded; the inner margin is slightly convex. Rostrum reaching a little beyond posterior coxæ. Anterior femora with two strong spines. Long. 24 mm. Exp. tegm. 73 mm.

Hab. S. India or Bombay?

This and the two following species are somewhat difficult to separate from the genus *Dundubia*, save and except by the length of the rostrum. They also resemble the *Vibrans* group of that genus.

Cosmopsaltria durga, n. s.

♂. Head, pronotum and mesonotum dull ochraceous. Head with the following black markings: an irregular spot on front; a large central fascia on vertex, reaching from anterior to posterior margins, produced on each side in front, and enclosing ocelli; a curved fascia a little before inner margin of eyes, and a subtriangular spot on apex of lateral margin. Pronotum with the ante or margin (narrow), a central longitudinal fascia, bordered with black on each side, and a biangulated fascia on each lateral margin, pale ochraceous; two narrow oblique fasciæ on each side, a narrow longitudinal fascia on each side of disk, inner posterior, and inner and outer lateral margins, black. Mesonotum with a clavate central longitudinal

fascia, bounded on each side by a shorter, broader, and much angulated one, followed by an elongated spot, and by a sublateral broad fascia, broken near anterior margin, two rounded spots near base, and two smaller ones on anterior branches of cruciform elevation at base. Abdomen pale castaneous, disk piceous, gradually widening from base to apex, where it is wholly black. Under side of body ochraceous and unspotted; a black spot on inner margin of eyes, anterior tibiae and tarsi, apices of intermediate tibiae and tarsi, and apex of rostrum, piceous. Opercula pale greenish. Tegmina and wings pale hyaline, transverse veins at bases of second and third apical areas, infuscated. Face broadly sulcated in centre, and transversely striated (many of the striae black); rostrum passing posterior coxæ, and reaching inner angles of opercula. Opercula reaching second abdominal segment, the outer margins subparallel with lateral abdominal margins, hipped and widest (but not meeting) near bases of femora, from thence diverging and gradually narrowing to apex, which is obtusely angulated. Anterior femora with two long and prominent teeth, and a shorter one near apex. Posterior tibiae with three inner and two outer long marginal spines. Abdomen broad, apex obtuse. Long. 33 mm. Exp. tegm. 98 mm.

Hab. Assam.

This species, in size and markings (excluding the spotted tegmina), much resembles *Dundubia tripurasura*, Dist. The less produced frontal portion of the head and the length of the rostrum, however, have forced me to place it in the genus *Cosmopsaltria*.

Cosmopsaltria mongolica, n. s.

♂. Body above ochraceous; head with the black markings as in *C. durga*; pronotum with two central longitudinal fasciae placed close together, narrowed, rounded, and meeting on posterior margin, more separated and widened on anterior margin, on each side of these a curved fascia followed by two oblique ones. Mesonotum marked and spotted as in *C. durga*. Abdomen with a series of transverse, irregular, discal, dull, castaneous fasciae, becoming confluent, and occupying the whole of apex, and a lateral segmental series of irregular-shaped spots of the same colour. Body beneath pale

ochraceous, a large spot on inner margin of eyes, apical margins of face and apex of rostrum, piceous. Tegmina and wings pale hyaline. Face not prominently convex, with the disk sulcated and the margins strongly striated. Rostrum passing posterior coxæ, about reaching inner angles of opercula; opercula reaching third abdominal segment, with the outer margins parallel with lateral margins of abdomen for half their length, then becoming convex, and again narrowed to apex, widened inwardly, but not meeting at apex of first abdominal segment, and then narrowed and divergent to apex, which is broad and rounded. Posterior tibiae with two long spines on inner and outer margins. Long. 31 mm. Exp. tegm. 82 mm.

Hab. North China.

Closed allied to *C. durga*, Dist., but smaller, the tegmina unspotted, the face much less convex, the opercula longer, with their apices broadened and rounded. The abdomen narrowed towards apex, and the number of spines to posterior tibiae different.

Cosmopsaltria abdulla, n. s.

♂. Body above castaneous, more or less covered with greyish pubescence and pilosity. Head with the vertex somewhat sparingly pilose, and the area of the ocelli a little infuscated. Pronotum sparingly pubescent, with a central X-shaped space denoted by striae, followed by two oblique striae, the outer one submarginal and slightly curved, lateral and posterior margins densely pubescent. Mesonotum with two faintly indicated obovate spots on anterior margin, sparingly pubescent, the lateral margins and region of the cruciform basal elevation much more densely pubescent. Abdomen sparingly pubescent, but much more densely so on disk and lateral margins. Under side of body ochraceous; anterior and intermediate femora with the bases and apices fuscos, the central portion pale ochraceous. Anterior tibiae castaneous, and tarsi pitchy; intermediate tibiae pale staneous, with the base narrowly and the apex broad piceous. Posterior legs pale castaneous. Apices of femora, bases and apices of tibiae dark castaneous. Tegmina and wings pale hyaline; tegmina with the costal membrane and basal area castaneous, claval area pitchy, transverse veins at bases of

second, third, and fifth apical areas infuscated, and a submarginal series of small fuscous spots at apices of longitudinal veins; wings with anterior claval margin and a curved basal streak, dark castaneous. The face is very swollen and convex beneath, longitudinally sulcated and transversely striated; the rostrum just extends beyond base of femora; the opercula reach the base of the fourth abdominal segment; the outer margins are deeply narrowed and concave near base; they then become slightly convex and directed upwards along the lateral abdominal margins; the inner margins are also narrowed near base, and then become slightly convex to apex, which is broad and rounded; these opercula are very wide apart at base, and are confined to the lateral side of the under surface of the abdomen. Long. 46 mm. Exp. tegm. 116 to 122 mm.

Hab. Singapore; Penang.

This is a large and distinct species of *Cosmopsaltria*, which I have placed near *C. doryca*, Boisd., from which it differs by its larger size, more spotted tegmina, and different size and structure of the opercula, &c.

NOTE.—Of four specimens in my collection only one (here described) possesses the greyish pubescence above, which evidently is easily obliterated or worn away.

Cosmopsaltria oopaga, n. s.

Head dull ochraceous. Posterior lateral margins of front black; two basal ocelli surrounded with black, which extends to posterior margin. Pro- and mesonotums pale olivaceous; the first with a central longitudinal ochraceous fascia, bordered with black, which is widest anteriorly, and rounded with the black lines continuous posteriorly. Mesonotum with two obconical spots, bordered with black on anterior margin, followed by a small black spot and an anterior lateral fascia; a curved basal fascia and a small spot on each frontal side of cruciform elevation of the same colour. Abdomen dull ochraceous, inclining to olivaceous, with the lateral side sparingly covered with greyish pubescence, and with an indistinct lateral segmental row of fuscous spots. Underside of body pale ochraceous or olivaceous. Tegmina and wings pale hyaline. The body is broad and somewhat depressed, the abdomen narrowing at apex.

The head, including eyes, is narrower than base of pronotum, and but little wider than mesonotum. The rostrum about reaches the apex of the first abdominal segment. The opercula, which almost reach the apex of the fourth abdominal segment, are situated on lateral side of abdomen, much wider apart at base than at apex. They are concavely narrowed on each side near base, and are then widened and convex on each side to apex, which is broad and rounded, the extreme apex being on outer margin. The face is swollen, with a curved black fascia at base, and a central longitudinal sulcation; it is profoundly transversely striated, the interstices being very broad. Long. 39 mm. Exp. tegm. 96 mm.

Hab. Burmah.

This species is allied to *C. doryca*, Boisd., but the body is much broader, the tegmina unspotted, and the shape of the opercula more like those of *C. abdulla*, Dist.

Cosmopsaltria operculissima, n. s.

♂. Body above castaneous. Head with lateral margins of front, lateral margins of vertex, area of ocelli, and an irregular spot between ocelli and eyes, black. Pronotum with two central, longitudinal, slightly curved black fasciæ, concave externally, a small curved fascia on each side of disk, and the oblique striæ also black. Mesonotum very dark castaneous, with two obconical spots on anterior margin, denoted by black margins, and with some very indistinct darker shadings on lateral sides of disk. Cruciform elevation at base pale castaneous. Abdomen somewhat darker on disk and near lateral margins. Body beneath much paler, and clothed with ochraceous pubescence; face castaneous, with the centre black; opercula ochraceous, with a broad subapical fuscous band, both above and below. Tegmina and wings pale hyaline; veins, costal membrane, basal area, and claval margin of tegmina, castaneous. Abdomen very short, less than length from front of head to base of mesonotum; head broad, including eyes, equal to width of pronotum at base; opercula a very large, about reaching apex of abdomen, and sitting on each side of apical lateral margins; they are narrow, and situated wide apart at base, narrowed and concave on each side about basal abdominal segment, and then broadly widened and convex on each

side, particularly so inwardly, where they considerably overlap on disk of abdomen. Apices broad, and somewhat angularly rounded. Face with a broad central sulcation, and the sides strongly and transversely striated. Rostrum about reaching posterior coxæ. Long. 24 mill. Exp. tegm. 78 mill.

Hab. North Borneo (*Pryer*).

The great size of the opercula, compared with the abdomen, distinguishes this species from others of the genus, and, as far as my experience extends, renders it unique in that respect.

Pomponia bindusara, n. s.

♂. Body above pale ochraceous; head with lateral margins of front bordered with black stræ, and with two contiguous black spots on disk; two oblique stræ on lateral margins of vertex and area of ocelli black. Pronotum with two central longitudinal fasciæ, narrowed, joined, and rounded on posterior margin, widely divergent and terminating on anterior margin, a small curved fascia on each side of disk, and oblique stræ also black. Mesonotum with a central fascia, a shorter and more oblique one on each side, followed by an elongate spot on anterior margin, and a long, somewhat broken, submarginal fascia, black; two rounded spots in front of cruciform elevation, and two smaller ones on anterior branches of the same also black. Abdomen somewhat thickly covered with pale pubescence, with a series of discal segmental markings, two large spots near lateral margins of third and fourth segments, and a lateral segmental row of small spots, black. Underside of body pale ochraceous. Apical disk of abdomen black. Tegmina and wings pale hyaline; transverse veins, at bases of second and third apical areas, slightly infuscated. Face convex. Apical two-thirds with a narrow central sulcation, transversely striated, the stræ black near centre. Rostrum slightly passing posterior coxæ, its apex black. Opercula small; posterior margins obtusely angulated, and reaching base of first abdominal segment, widened and obtusely angulated, but not meeting inwardly. Posterior tibiæ with three inner and two outer marginal spines. Anterior femora with two long and prominent spines. Long. 30 mm. Exp. tegm. 87 mm.

Hab. Tenasserim.

This species, on its upper surface, bears a great resemblance to *Diandubia vibrans*, Walk., and to *Cosmopsaltria sita*, Dist. Many of these Indian species, belonging to the genera *Diandubia*, *Cosmopsaltria*, and *Pomponia*, have a common facies in colour and markings, which is probably due to mimetic resemblance.

Pomponia kama, n. s.

♀. Head, pronotum and mesonotum greenish. Head with the lateral sides of the front black; vertex with two transverse lines on lateral margins, somewhat connected inwardly by a short oblique fascia and area of ocelli, from which proceed two narrow fasciæ to posterior margin, black. Pronotum with a central black clavate fascia, of which the centre is ochraceous, widest and much angulated at anterior margin, narrowest and somewhat acutely pointed on posterior margin; an arcuated narrow fascia on each side of disk; oblique stræ pale fuscous; lateral submarginal stræ black, and an oblique fuscous spot on lateral margins; posterior margin narrowly edged with black. Mesonotum with two large obconical spots margined with black, and a large Λ fascia in front of anterior angles of basal cruciform elevation. Tympana pale greenish, fuscous anteriorly, and bright cretaceous-white near lateral margins. Abdomen castaneous; lateral margins of basal segment bright cretaceous-white. Body beneath with the head, sternum, and opercula greenish; abdomen castaneous. Legs greenish; apices of tibiæ and tarsi and tarsal claws black. Tegmina pale fuscous hyaline; anastomoses and apices of lateral veins at margin broadly infuscated, and a blackish spot near termination of radial vein. Wings pale hyaline. Face broad and convex, the centre blackish, and with a central longitudinal impression, and transverse striations. Rostrum with the apex black, and just passing posterior coxæ. Opercula very short, not reaching base of first abdominal segment. Abdomen beneath deeply sulcated at lateral margins; the disk somewhat gibbous. Head, including eyes, narrower than base of pronotum, about equal to base of mesonotum. Long. 18 mm. Exp. tegm. 66 mm.

Hab. North India, Darjeeling.

Allied to *P. transversa*, Walk., but much smaller, abdomen narrower and more linear, head broader in comparison with pronotum, and colour different, &c.

Pomponia madhava, n. s.

♂. Body pale greenish; abdomen with a lateral row of three large oblong spots, only denoted by their darker green margins, occupying the lateral sides of the first three segments; segmental incisures narrowly dark greenish. Ocelli red; eyes fuscous. Mesonotum with two very faint obconical spots. Body beneath pale greenish; legs and rostrum pale ochraceous. Tegmina and wings pale hyaline; the first with the costal membrane and veins pale greenish. The head, including eyes, is narrower than the base of pronotum; the face is broad and convex, with a broad central longitudinal impression and strong transverse striations; the opercula are small, not reaching apex of metasternum; the second and third abdominal segments beneath are rounded, produced, and pointed anteriorly; the rostrum reaches posterior coxæ. Long. 22 mm. Exp. tegm. 55 mm.

Hab. Assam.

Allied to *P. tigroides*, Walk., from which it differs by its being pale greenish and unicolorous, the tegmina broader, with the costal margin irregularly curved and not deflexed at termination of radial vein, and also in having both the second and third abdominal segments beneath rounded, produced, and pointed anteriorly.

Psaltoda aurora, n. s.

♂. Head black; vertex with a spot at anterior lateral margins; two transverse spots on each side of disk, near anterior and posterior margins; ocelli and eyes ochraceous. Pronotum dull, obscure ochraceous, with two central longitudinal black fasciæ, more separated, and widest apart at anterior margin, much closer together near posterior margin, where they are joined to a broad basal fascia of the same colour; an obscure arcuated fascia on each side of disk, and oblique striæ also black. Posterior and lateral margins bright ochraceous, narrowly edged with black. Mesonotum dark, obscure ochraceous, with two central

obconical spots, on each side of which is a much longer and more angulated spot, and a large broad spot, elongated and narrowly pointed anteriorly, situated in front of cruciform elevation, black; cruciform basal elevation bright ochraceous, with the anterior branches black. Scutellum black. Abdomen orange-yellow; first abdominal segment with centre of basal margin and lateral sides of apical margin black. Body beneath bright ochraceous; face, anterior margins of head, inner margins of eyes, anterior and intermediate tibiae and tarsi and base of metasternum, black. Femora ochraceous, streaked with black. Rostrum pitchy, ochraceous towards base. Tegmina pale hyaline; veins fuscous, ochraceous towards base; costal membrane bright ochraceous; transverse veins at bases of second and third apical areas infuscated. Wings pale hyaline; veins fuscous and ochraceous. The face is long, broad, and very convex, with a narrow central sulcation and strong transverse striations; the rostrum reaches posterior coxæ. The opercula are broad, produced, angulated, and slightly overlapping inferiorly, subtruncate outwardly, rounded posteriorly, and not reaching anterior margins of tympana. Long. 48 mm. Exp. tegm. 120 mm.

Hab. Australia, Rockhampton. (Coll. Dist. Mus. Goddefroy).

This species differs from *P. mærens*, Germ., not only by its large size and brighter and different coloration, but also by the broader and more convex face, somewhat shorter rostrum, longer and not apically compressed abdomen, &c. It is also allied to *P. argentata*, Germ., a species which, from the description of Germar, and specimens thus labelled in the British Museum (these were seen under this name by Stål, when he critically examined the collection), appears to be very closely allied to *P. mærens*.

Cicada kuruduadua, n. s.

♂. Head, pronotum and mesonotum pale ochraceous, tinged with green. Head: front green, with two central black spots; vertex ochraceous, with a broad, basal, transverse, black fascia. Pronotum with a central fascia, an irregular transverse basal patch on disk, and lateral and posterior margins, greenish; oblique striæ fuscous,

forming two distinct fuscous spots on each side of central fascia. Mesonotum with two central fasciæ, narrow at commencement on anterior margin, and thickened and curved inwards at termination on disk, followed by two contiguous spots, a sublateral fascia much curved inwardly at apex, and two rounded spots in front of basal cruciform elevation, black. Cruciform elevation and abdomen castaneous, the last sparingly pilose. Body beneath ochraceous; face green, irregularly bordered with black on each side; coxæ and legs tinged with greenish; lateral margins of sternum and opercula broadly castaneous-white. Tegmina and wings pale hyaline; tegmina with the costal membrane and basal portion of venation green; wings with the base very narrowly pale ochraceous. Face not centrally sulcated; sides transversely striated. Rostrum passing the intermediate coxæ. Opercula about reaching the base of second abdominal segment, outwardly truncate, posteriorly somewhat angularly rounded, slightly overlapping along inner margins. Anterior femora armed with two strong spines. Long. 33 mm. Exp. tegm. 100 mm.

Hab. Fiji Islands. Mus. Goddefroy, Coll. Dist.

This is a very beautifully marked and distinct species of the genus. I am unacquainted at present with any near ally. I possess a female specimen (possibly discoloured), in which the head and pronotum are very dark and dull ochraceous, the mesonotum castaneous, and the abdomen blackish. The usual green markings of the tegmina are also castaneous in this specimen.

Tibicen aurengzebe, n. s.

♂. Body above dull dark ochraceous. Head with the front margined anteriorly by two narrow black striæ; ocelli narrowly margined with black; eyes pale ochraceous. Pronotum with a central longitudinal sulcation, bordered with a small fuscous spot on each side, at anterior margin, starting from a wide, transverse, and somewhat raised base, on the centre of which is a fuscous spot; oblique striæ narrowly fuscous; lateral anterior and posterior margins much paler. Mesonotum with two short obconical central fuscous spots, and a large sublateral and somewhat broken fascia of the same

colour on each side. Abdomen with the posterior segmental margins narrowly and obscurely paler. Body beneath concolorous; centre of face, metasternum, disk, and apex of abdomen, fuscous. Legs concolorous; femora streaked with fuscous; bases and apices of tibiæ, and apical joints of tarsi, also fuscous. Tegmina and wings pale hyaline and talc-like; tegmina with costal and basal half of venation ochraceous, remainder fuscous; transverse veins at bases of second and third apical areas infuscated. Width of head, between outer margins of eyes, rather less than that of pronotum at base; pronotum a little more than twice as broad as long; face with the base much elevated, somewhat narrowing to apex, distinctly longitudinally sulcated, and strongly transversely striate. Rostrum about reaching posterior coxæ, with the apex pitchy; opercula slender, curved inwardly, but not meeting at base or apex. Long. 18 mm. Exp. tegm. 48 mm.

Hab. Bombay Presidency.

Carineta oberthürri, n. s.

♂. Head, pronotum and mesonotum greenish; abdomen dull reddish. Head with the front margined anteriorly with several dark transverse striæ, their edges raised; vertex somewhat reddish in front of eyes; the ocelli very pale luteous; the eyes greenish. Pronotum with a central green longitudinal fascia, not reaching anterior or posterior margins, widened and truncated anteriorly, rounded posteriorly; a curved fascia on each lateral margin, and two rounded spots near centre of base, black. Mesonotum with two faint contiguous central spots, on each side of which is a large but very obscure fascia; basal cruciform elevation and frenum reddish. Body beneath with the sternum greenish, and the abdomen reddish; coxæ and femora greenish; tibiæ and tarsi reddish. Tegmina and wings pale hyaline; tegmina with the venation and costal membrane and area greenish; the anterior edge of costal membrane and claval margin fuscous. The width of the head between the eyes is equal to the length of the head and pronotum taken together, but much narrower than pronotum at base, where it is more than twice broader than long. The face is very convex, and much produced at base, with a wide, central longitudinal sulcation, and strong

transverse striations. The rostrum just passes the intermediate coxæ. The opercula have the apices narrowed and much curved inwardly, but not meeting. Long. 28 mm. Exp. tegm. 75 mm.

Hab. Amazons, Ega (*M. de Mathan*). Colls. Oberthur and Distant.

This species, in general size and venation of tegmina, is allied to *C. socia*, Uhler, from which it differs by the long produced head, very different colour and markings, &c.

PROCEEDINGS

OF THE

ENTOMOLOGICAL SOCIETY OF LONDON

FOR THE YEAR 1881.

February 2, 1881.

H. T. STANTON, Esq., F.R.S., &c., President, in the chair.

Donations to the Library were announced, and thanks voted to the respective donors.

The President made some prefatory remarks, thanking the Society for electing him to that office. He nominated Sir John Lubbock, Bart., Mr. R. Meldola, and Mr. W. L. Distant as Vice-Presidents for the ensuing year.

Election of Members.

Mr. Alfred Lloyd, F.C.S. (Dome House, Upper Bognor), and Mr. Theodore Wood (5, Selwyn Terrace, Jasper Road, Upper Norwood), were balloted for and elected Ordinary Members of the Society.

Exhibitions, &c.

Mr. O. Salvin exhibited two large boxes of Insects of all Orders, collected on the Altos and Pacific coast of Guatemala by Mr. Chaumion. These had but just arrived, and had not yet been critically examined.

Mr. W. A. Forbes exhibited a curious filamentous growth upon a leaf from New Britain, due to the presence of one of the *Coccidæ*; also the larva of one of the *Blattidæ* from Pernambuco, North Brazil, which was remarkable for its superficial resemblance to an Isopod crustacean. These larvæ were common under the bark of trees in damp woods.

Mr. R. M'Lachlan exhibited two examples of the fungoid parasites of insects. Firstly, a *Sphaeria* (*Cordyceps*) attacking a larva from South America,

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