

broad on a little broad, very long, shorter than postocular part of head; eye and long snout, 2½ times in length of head, equal to interorbital width and exceeding preorbital depth; mouth, extending to below anterior border of eye; teeth rather small, 10 or 12 scales, 50 to 66 in outer series of upper jaw; a series of scales on the cheek, width of scaly part equal to or a little less than diameter of eye. Gill-rakers short, the largest half 9 on lower part of anterior arch. Dorsal XIV 11-12; spines equal from the eighth, a little less than ½ length of head, longest soft rays ½ to ¾ length of head. Anal III-6; third spine ½ to ¾ length of head. Pectoral as long as or a little longer than head, extending to vertical of origin of anal. Ventral produced into a long filament, extending beyond origin of anal. Caudal truncate. Caudal peduncle much deeper than long. Scales cycloid, 29-35; lateral lines 12-15. Brownish, young with five indistinct darker cross-bars, and a large dark brown blotch below the last rays of the spinous dorsal; a black opercular spot; small light spots on the dorsal and caudal. Total length 150 mm.

Two specimens from the Oribal River at Chitole, Portuguese Guinea, obtained by Dr. W. J. Anseorge in 1910. Apparently nearly related to *P. dorsalis*, Pellegr.

Pelmatochromis multiocellatus.

Depth of body equal to length of head, which is 2½ times in total length. Head 2½ times as long as broad; snout as long as broad, with slightly convex upper profile, 1½ times as long as eye, which is 4 times in length of head, equals interorbital width, and slightly exceeds preorbital depth; mouth rather large, extending to below anterior border of eye; 2 series of teeth, outer rather large, 50 in upper jaw; 4 series of scales on the cheek, width of scaly part equal to diameter of eye. Gill-rakers very short, 9 on lower part of anterior arch. Dorsal XVI 10; spines increasing in length to the last, which measures ¾ length of head; longest soft ray about ¾ length of head. Anal III 9; third spine stronger but a little shorter than last dorsal. Pectoral ¾ length of head, not reaching vertical of origin of anal. Ventral reaching vent. Caudal rounded. Caudal peduncle a little longer than deep. Scales strongly denticulate, 32-34; lateral lines 21. Brown above, whitish beneath; a blackish opercular spot; a blackish bar below anterior third of eye; dorsal and caudal fins with very numerous small ocellar spots forming single series between the rays; anal fin with a few large ocelli. Total length 120 mm.

A single specimen from the Cameroons River, Angola, obtained by Dr. W. J. Anseorge in 1910.
Closely allied to *P. dorsalis*, Bigr.

Pelmatochromis anseorgei.

Depth of body 2½ to 3 times in total length, length of head 2½ times. Head twice as long as broad; snout rounded, with convex upper profile, broader than long, as long as eye, which is 3½ times in length of head, equals interorbital width, and exceeds preorbital depth; mouth moderate, extending to between nostril and eye, teeth in 3 or 4 series, outer rather large, 50 to 66 in upper jaw, 3 or 4 series of scales on the cheek, width of scaly part less than diameter of eye. Gill-rakers short, 9 or 10 on lower part of anterior arch. Dorsal XV 9-10; spines gradually increasing in length to the last, which measures nearly ¾ length of head; median soft rays produced, as long as head. Anal III 7-8; third spine a little shorter than last dorsal. Pectoral ¾ length of head, not reaching vertical of origin of anal. Ventral reaching origin of anal or beyond. Caudal rounded. Caudal peduncle much deeper than long. Scales cycloid, 28-29 to 31; lateral lines 12-15. Dark brown, with four blackish vertical bars on the side; blackish spots may be present on the back, alternating with the bars; a black opercular spot; fins dark grey, posterior part of dorsal and anal, and greater part of caudal with numerous small dark and light spots. Total length 85 mm.

Two specimens from the Lower Niger, presented by Mr. J. Paul Arnold (*cf.* his article in *Wochenschr. Ag.-Terr.* 1913, no. 37, p. 661, fig.). Connects *P. arnoldi*, Bigr., with *P. anseorgei*, Bigr.

LX.—*Undescribed Species of Cichlidae*.

By W. L. DISTANT.

The principal material for the present short paper is a small collection of *Cichlidae* made by Mr. Horace Brown at Cue, N.W. Australia, and forwarded to me by my friend Mr. Walter W. Froggatt of the Entomological Branch, of the Department of Agriculture, Sydney, N.S.W. The types of these new species are all in the British Museum.

Pogona nigerina, sp. n.

Head, pronotum, and mesonotum ochraceous, lateral and

posterior margin of pronotum with two large spots to front and a small spot on lateral margin of ocellar castaneous; base of the ocellar area with a small purved black spot to apex and a small brownish spot to base; the central and subcentral areas of pronotum with the fissures, a posterior lateral ocellar area, a mesonotum, and the obconical area of mesonotum with a longitudinal line; arrow-shaped spots on lateral and subcentral areas; a central vein; a small spot on each side of the mesonotum; a small ocellar spot with black margins; abdomen above less grayish pilose; tegmina with a black apical area more or less hyaline, a pale spot in radial area, another below it in fourth ulnar area, an irregular pale fovea crossing of the transverse veins at apices of veins, and pale brown spots at apices of veins to apical areas; wings brownish ochraceous, darkening towards the hyaline outer margin; head (including eyes) only a little more than two-thirds the width of base of mesonotum; pronotal lateral margins angularly emarginated, the angular apices only about reaching base of tegmina; basal cells; costal membrane of a little broader than costal area; face broad, moderately tumid, profoundly longitudinally sulcate and laterally strongly transversely striate; rostrum reaching base of abdomen; tibiae and tarsi more or less castaneous, posterior tibiae strongly spinose; opercula in male short, transversely oblique, well separated internally, apical margins truncately rounded, not passing base of abdomen.

Long, excl. tegm., δ 25 mm.; exp. tegm. 76 mm.

Hab. N. Nigeria; Zangera and Kano (Dr. W. B. Johnson, Brit. Mus.).

Allied to *P. nerei*, Dist.

Cryptomypana exalbida.

Cryptomypana exalbida, Dist. Mon. Orient. Cicad. p. 92, t. xiii, f. 12, a, b (1891); id. Faun. Brit. Ind., Rhynch. iii, p. 86 (1896).

My knowledge of this species was confined to eight female specimens derived from Sikhim and Nilgiri Hills. Mr. E. Green has now presented us with a male specimen from Ceylon, which enables the characters of that sex to be described.

♀. Opercula ochraceous, a little longer than broad, centrally moderately overlapping, their apices extending to posterior margin of the second abdominal segment, outer

margins nearly straight, apices narrowed and obtusely rounded, inner margins oblique.

Long, excl. tegm., 28 mm.; exp. tegm. 106 mm.

Hab. Ceylon; Odenchuddan (Green).

Abria nerei, sp. n.

Body above black, palely pilose; ocelli red; a large spot occupying each lateral area of the pronotum dull dark ochraceous; the margins of two central anterior spots and the whole of two elongate spots—one of which occupies each lateral marginal area—to the mesonotum castaneous; abdomen somewhat longly palely pilose; face black, the transverse ridges more or less castaneous; sternum thickly palely pilose; legs ochraceous, more or less streaked with black; abdomen black, strongly palely pilose on each lateral area, an ochraceous spot on each side of apical segment; tegmina and wings hyaline; tegmina with the venation mostly black, the costal membrane ochraceous, the upper apical cell and the bases of the second, third, and fourth apical cells piceous or black; wings with the venation ochraceous, the margins of the abdominal area brownish ochraceous; head (including eyes) about as broad as base of mesonotum, head with front subprominent, in breadth about equal to length of lateral margins of vertex, vertex longer than front; face convexly prominent, central longitudinal sulcation narrow, transverse striations distinct; rostrum about reaching posterior coxae; opercula transverse, apically rounded, not meeting internally nor passing base of abdomen; tegmina with transverse vein at base of second apical area oblique.

Long, excl. tegm., δ 22 mm.; exp. tegm. 58 mm.

Hab. N.W. Australia, Cue (H. W. Brown, type in Brit. Mus.).

Parnakalla magna, sp. n.

Head black, palely pilose; pronotum and mesonotum dark castaneous, palely pilose; a central longitudinal line and extreme posterior margin to pronotum narrowly pale dull ochraceous, subposterior margin black; mesonotum with two small, somewhat obscure, dark obconical spots at anterior margin; abdomen dark castaneous, palely pilose, posterior segmental margins dull ochraceous; sternum thickly, longly, palely pilose; an ochraceous line between face and eyes; legs dull ochraceous; tegmina and wings hyaline; tegmina with the veins mostly piceous, costal membrane and postcostal area piceous, inwardly ochraceous, a black fascia crossing bases of first, second, third, and fourth apical areas; wings with the veins paler than those of tegmina; vertex with two distinct longitudinal ridges between the ocelli, head

all along as pronotum, including eyes about as wide as base of mesonotum; face prominent, lateral transverse striations distinct, not centrally longitudinal; of very obviously much anterior portion strongly spined beneath; tegmina long and slender, more than three times longer than broad; opercula small and transverse, centrally meeting.

Long., excl. tegm., ♂ 14 mm.; exp. tegm. 45 mm.

Hab. N.W. Australia; Que (H. W. Brown, type Brit. Mus.).

Diemeris rubra, sp. n.

Body above black, pale pilose; lateral margins of vertex, sulcation between the ocelli, two discal longitudinal, angulated spots to mesonotum, basal area of cruciform elevation, and posterior segmental margins olivaceous brown; body beneath and legs dull dark ochraceous; face (excluding to coxae and femora, apex of rostrum, annulations to tibiae, longitudinal, macular fascia to same black; tegmina pale, shining, bronzy brown with scattered small testaceous costal membrane dark testaceous, a black spot with testaceous margins in the fourth ulnar area, and a large black spot crossing bases of first, second, and third apical areas; wings hyaline with testaceous and ochraceous mottlings; head (including eyes) a little narrower than base of mesonotum, strongly sulcated between the ocelli; pronotum centrally longitudinally sulcated; tympana entirely exposed; opercula in male transverse, nearly reaching base of first abdominal segment, posterior margins rounded; rostrum reaching the intermediate coxae; tegmina almost half as broad as long, basal cell about twice as long as broad.

Long., excl. tegm., ♂ 18 mm.; exp. tegm. 41 mm.

Hab. Australia, Southern N.S.W., Cooma (Dr. Rickes, type Brit. Mus.).

The only other at present known species of this genus is from Tasmania.

PARAGUDANGA, gen. nov.

Head (including eyes) about as wide as base of mesonotum, the front broad, depressed, broader than long, almost continuous with lateral margins of vertex, about as long as vertex, pronotum about as long as head, its lateral margins nearly straight but rounded anteriorly, its posterior angles moderately amplified, mesonotum (including cruciform elevation) as long as head and pronotum together; abdo-

undescribed Species of Cicadidae.

men in male longer than space between spot of head and base of cruciform elevation; tympana entirely exposed; opercula in male short, transverse, widely angulated, not extending beyond basal segment of abdomen; rostrum reaching the intermediate coxae; tegmina semitransparent, three times longer than greatest breadth, basal margin apically arched not gibbous, basal cell about twice as long as broad, apical areas eight; wings with six apical areas; anterior femora not prominently spined beneath.

Allied to *Gudanga*, Dist., but with the head (including eyes) not narrower than base of mesonotum, mesonotum (including cruciform elevation) as long as head and pronotum together, rostrum only reaching intermediate coxae, tegmina three times longer than broad, &c.

Paragudanga browni, sp. n.

Head, pronotum, and mesonotum black; pronotum with narrow anterior and posterior margins, a narrow central longitudinal line, and two central spots near base olivaceous brown; mesonotum with the margins of two central obconical spots and the basal cruciform elevation olivaceous brown; abdomen above testaceous, the base, a central longitudinal fascia, and the lateral margins (narrowly) black; sternum black, pale pilose; lateral and apical margins of face, discal suffusions, and coxae ochraceous; abdomen beneath ochraceous, a central longitudinal fascia and the lateral margins (narrowly) black; legs black, streaked with ochraceous; tegmina pale fuscous brown, the veins and costal membrane ochraceous, the veins margined with dark fuscous brown; wings sanguineous, nearly apical hind and posterior margin pale fuscous brown; vertex distinctly sulcated between the ocelli; face broadly, centrally, longitudinally sulcate, the margins of the sulcation sinuous; opercula broader than long, their apices roundly truncate; other structural characters as in generic diagnosis.

Long., excl. tegm., ♂ 20 mm.; exp. tegm. 41 mm.

Hab. N.W. Australia, Que (H. W. Brown, type Brit. Mus.).

Melampsalta euensis, sp. n.

Body and legs virescent; ocelli red; eyes castaneous; tegmina and wings hyaline, the venation virescent, extreme bases of both tegmina and wings ochraceous; vertex longer than front, longitudinally incised between the ocelli; face moderately globose, central longitudinal sulcation narrow, the transverse striations not strongly pronounced; rostrum reaching the intermediate coxae; tegmina nearly three times

as long as the eye; apex of the lower alar area and lower vein to anal vein distinct; veins of discal area equal to two-thirds the length of basal cell.

Long. excl. tegm., ♀ 13 mm.; exp. tegm., 60 mm.

Hab. N. W. Australia, Que (H. W. Brown, type in Brit. Mus.).

Head black; antennae black; pronotum, gaster, face and vertex and legs ochraceous; ocelli ochraceous; pronotum brownish ochraceous; anterior margin of the central longitudinal fascia and the posterior margin of the mesonotum brownish ochraceous, with six black spots; the two central obconical and fused, on each side of these a small triangular spot and a long fasciate spot near each lateral margin; a small round black spot in front of each anterior angle of the cruciform elevation; abdomen above black, the posterior margins of the segments broadly ochraceous; body beneath and legs ochraceous, central area of face and the ridges, cheeks, and a longitudinal line to femora black; vertex longer than front, sulcate between ocelli; face longitudinally sulcate for two-thirds its length, transverse ridges fine but distinct; rostrum reaching the intermediate coxae; tegmina bases of both ochraceous; tegmina about two and a half times as long as broad, upper vein to lower alar area and lower vein to radial area fused for a space about half the length of basal cell.

Long. excl. tegm., ♀ 16 mm.; exp. tegm., 45 mm.

Hab. N. W. Australia, Que (H. W. Brown, type in Brit. Mus.).

Kobonga froggati, sp. n.

Head black, ocelli red, base of front with three small ochraceous spots, vertex with a small ochraceous spot between the ocelli; pronotum castaneous, the anterior margin (narrowly), the posterior margin (broadly), and a central narrow longitudinal fascia bright ochraceous, the lateral margins, subanterior and subposterior margins, and margins of the central pale fascia black; mesonotum castaneous, four obconical spots (the two central shortest and the lateral spots very long), and the area of the basal cruciform elevation black; metasternal margins ochraceous; abdomen above black, posterior segmental margins ochraceous; body beneath black, broad lateral margins to face, coxae and trochanters (more or less), femora beneath, two longitudinal fasciae, and margins of anal appendage ochraceous; tegmina and wings hyaline, tegmina with the venation and costal membrane

castaneous; postcostal margin apical and inner margins narrowly fuscous, bases of first, second, and third apical areas imbricated; wings with narrow brown margins as in tegmina, the venation pale castaneous; anal areas to tegmina about half as long as an apical area; rostrum reaching the intermediate coxae; face broad, narrowly centrally sulcate, the transverse ridges acute; anterior femora strongly spined beneath.

Long. excl. tegm., ♀ 51 mm.; exp. tegm., 86 mm.

Hab. N. W. Australia, Que (H. W. Brown, type in Brit. Mus.).

LXI.—Four new Species of Apidae (*Hymenoptera*), with Notes on other Species. By THEOPHIL MEADE-WALDO, M.A.

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In the following paper four new species of Apidae (subfam. Megachilinae) are described. The most interesting addition is *Thaumalosoma turneri*, which brings the number of species in this curious genus up to three, all described from the male sex. Three species of *Megachile* are also described from Tropical Africa. A number of notes on various species and points in synonymy which have arisen at various times are published now for the first time.

All types are in the British Museum, except where stated to the contrary.

THAUMALOSOMA, F. Sm.

Thaumalosoma turneri, sp. n.

♂. Niger, punctatus; antennis infra mandibularque flavis; capite, thorace pedibusque plerumque albidopilosus; abdominis segmentis 1-3 fasciis apicalibus interruptis albidis; abdominis segmentis 4-6 plerumque ferrugineis, segmento sexto apice dentibus parvis instructo; alis hyalinis.

Long. 7 mm.

♂. Black; antennae beneath (except the spatulate thirteenth joint) and mandibles yellowish; anterior legs on the inner side, tergites 4 and 5 apically, both tergite and sternite 6 wholly red ferruginous. Face and clypeus covered with a long and dense, postorbis with a sparser, whitish pile; anterior margin of prothorax with two small spots of pale pubescence; pleura and surface of truncation of median segment somewhat densely clothed with pale pubescence. Abdomen