

A NOTE ON *HEMIANDRUS MONSTROSUS* SALMON
(ORTHOPTERA, STENOPELMATIDAE,
ANOSTOSTOMINAE)

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Since Salmon named and described this species, two more specimens have been found, the latest by the writer. This latest specimen further confirms the normality of the unusual mandibular structure. As fresh occurrences are likely to be noted in the future, the following account is offered as a contribution to our knowledge of the species to date.

Dr. Salmon (1950), recorded the species from a single male. Because of its unique mandibular structure, he named it "*monstrosus*"; furnishing a brief description, accompanied by photographs of the entire insect and the sub-genital plate.

Since then, Mr. E. G. Turbott of the Auckland Museum has recorded another specimen, also a male, which was collected by H. C. Abraham from Orakawa Bay, Bay of Islands, on October 17, 1948.

The present specimen, from which all the figures and descriptions are derived, was collected by the writer on January 31, 1955, in Waipoua Kauri Forest. It was taken about mid-day in full sunlight, moving actively along the extremity of a branch of a low growing bush, a few yards from the road. This is also a male; the female has still to be identified.

The present specimen, preserved in 60 per cent. alcohol, measures 24 mm. long, from vertex to tip of anal cerci. The outstanding feature of the species is the extraordinary process arising from the base of each mandible, and greatly exceeding the mandible proper in length. These processes appear in front view as two long, overlapping, sickle-shaped "jaws" (Figs. 1, 2, 4, 5.). No particular function has yet been ascribed to them, but it is not improbable that they form a sexual character. They are perhaps connected with mating, in a similar way to the reputed function of the enlarged mandibles of certain male lucanid beetles.

Certain malformation features are present. The 3rd segment of the right maxillary palp is divided into two segments. The left maxillary palp, apparently normal, is 5-segmented (Figs. 10, 11).

Both front tarsi show developmental malformation; the two ultimate joints being much reduced, without tarsal claws (Fig. 13). In the legs, only the front coxae carry a spine, though Salmon gives it as a generic character that a spine is borne on first and second coxae. The basal antennal segments also fail to conform to his description (Fig. 1).

Full characters for the genus *Hemiandrus* are given by Salmon (1950) as well as a detailed description of the species from his holotype specimen, which should be consulted.

The following selected details, given for the present specimen, are provided for amplification and comparison.

Colour.—Reddish testaceous above: on vertex, dorsal tergites, outer and upper surfaces of femora, tibiae and tarsi; pitchy on antennae, especially flagellar region, mandible teeth, and tarsal claws apically; pale testaceous below and intersegmentally.

Pubescence.—Fine, short, even, on labrum, anal plate marginally, tarsi dorsally, and apical two segments of palps, slight to evanescent elsewhere.

Setae.—A few, scattered, on maxillary and labial palps; stronger and denser on lacinial inner margins, and on outer faces of glossae and paraglossae; sparsely scattered on tibiae and femora; long, uneven setiform hairs on anal cerci.

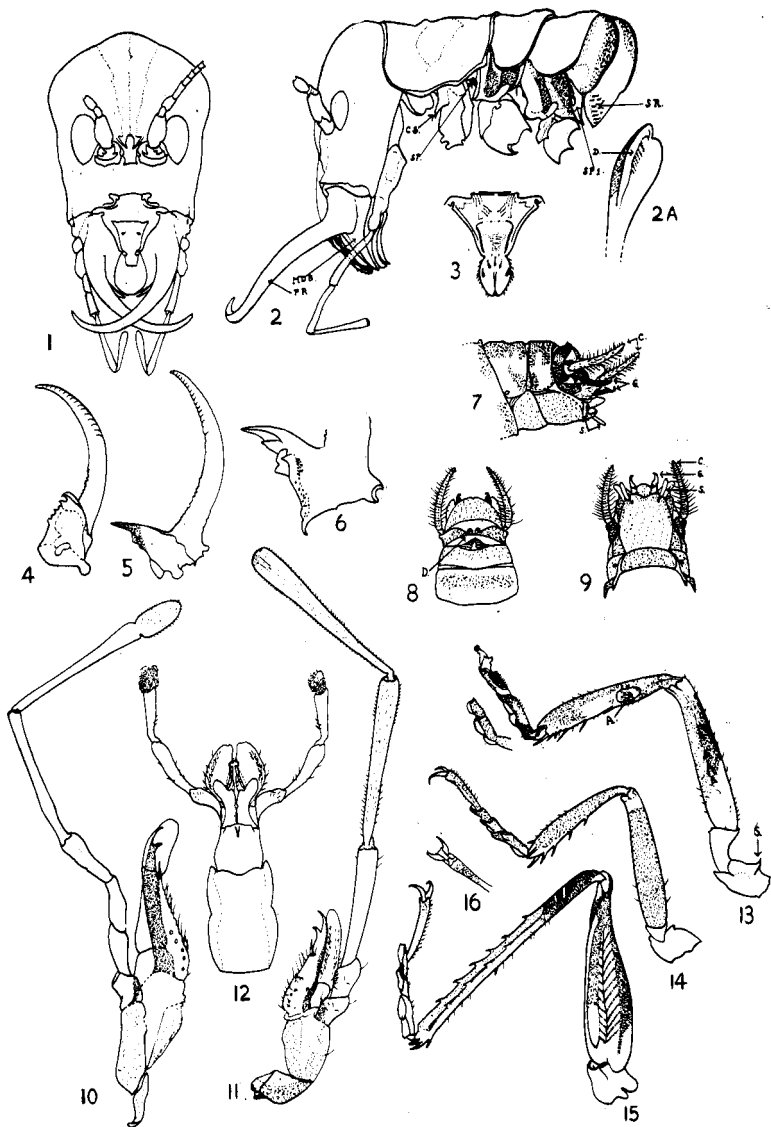
Head.—Vertex slightly domed, wider than pronotum; eyes small, adjacent to outer margin of antennal bases; oval depression between antennal bases indicates position of aborted ocellus; *antennae*: 60 mm. long; basal joint swollen cylindrical, narrowed basally, twice as long as broad; 2nd joint, minute cylindrical, $\frac{1}{3}$ as long as first; 3rd joint, broad and cylindrical, longer than broad and larger than second; 4th joint, longer and narrower than 3rd; succeeding segments progressively shorter (Fig. 1); *clypeus* trapezoidal, narrow anterior apex more or less fused with base of spatulate labrum (Figs. 1, 2).

Maxillae.—Normal (except for malformed palp); galea 2-segmented; normal palp 5-segmented, the three distal joints elongate cylindrical, with terminal sense organ on 5th; (5th joint of right, malformed palp, apically clavate; club incompletely segmented at base, 3rd joint divides into two segments, making a 6-jointed palp; apical sense organ not apparent). (Figs. 10, 11.)

Labium.—Palps 4-segmented, apical joint short, wider than preceding, finely pubescent; glossae small, concave, narrowed apically; paraglossae 2-segmented, apical segment broad (Fig. 12).

Thorax.—Simple, pronotum broad, twice as long as meso- or metanotum (Fig. 2).

Legs.—Short anterior spine on front coxae only; 1st legs longer than 2nd.



FIGS. 1-15: A Note on *Hemiandrus monstrosus* Salmon.

Femora.—Hind, enlarged, typically swollen towards base; all femora spineless. A series of vertical rows of minute denticles on the upper inner margin of the base of the hind femur, contact vertical tiers of minute coronal ridges on the sides of abdominal segment 2, forming the stridulating organ (Fig. 2a).

Tibiae.—1st and 2nd tibiae have a few evenly spaced spines on their lower margins, with strong apical spines; the auditory organ occurs on the inner face of the 1st tibia, towards the base; hind tibiae long, narrow, slightly longer than femora, with a double row of short, widely spaced teeth; the marginal ones larger and curved, tarsal claws curved, simple (Figs. 13, 14, 15, 16).

Abdomen.—Simple, widest at base, rather short, extending back as far as apices of femora; *9th tergite*: Produced in front, medially in six evenly diminishing pairs of sulcate ridges, separate at first, the small anterior pair meeting in a point, the basal pair lying in an emargination of the 9th tergite; *10th tergite*: Strongly emarginate, divided medially; the small area on each side of the division enclosing two small, raised denticles; *subanal plate* (epiproct), slightly notched apically; cerci—as long as subgenital plate, extending beyond it for half their length, covered with long uneven outstanding setiform hairs (Fig. 8).

Genitalia.—Subgenital plate (ninth sternite) slightly longer than broad, widest at middle, apically emarginate; styles slightly more than $\frac{1}{3}$ the length of the subanal plate; gonapophyses apically hooked, with a short, backward pointing, sub-apical barb (Figs. 7, 8, 9).

I wish to thank Mr. E. G. Turbott of Auckland Museum for kindly supplying me with the information given regarding the second specimen found.

REFERENCE

SALMON, J. T. (1950). A revision of the New Zealand wetas. *Rec. Dom. Mus., Wellington*, 1 (8), 124-126.

EXPLANATION OF FIGURES

FIG. 1: Head, from front ($\times 4$).

FIG. 2: Lateral view of head (hypopharynx and labium removed), thorax and first two abdominal segments ($\times 4$). Showing mandible and process (Mdb., pr.) abdominal spiracle I, (sp. 1), stridulating ridges on abdominal segt. 2; and, Fig. 2a, rows of denticles, forming stridulating rasp on hind femur.

FIG. 3: Clypeus and labium, detail ($\times 4$).

FIG. 4: Left mandible, showing teeth and process ($\times 4$).

FIG. 5: Left mandible, and basal process ($\times 4$).

FIG. 6: Right mandible, base ($\times 7$).

FIG. 7: Lateral view of apical abdominal segments, and genitalia ($\times 4$). (Styles, s; cerci, c; gonapophyses, g; podical plates, p.)

FIG. 8: Dorsal view, do. (denticles on sgt. 10-D.) ($\times 4$).

FIG. 9: Ventral view, do. ($\times 4$).

FIG. 10: Right maxilla ($\times 8$). Note sub-clavate palp, and 3rd joint divided into 2 segments.

FIG. 11: Left maxilla ($\times 7$). Note sensory organ on apical segment of palp.

FIG. 12: Labium ($\times 7$). Note concave glossae.

FIG. 13: Right 1st leg—Auditory organ (a), coxal spine (s). ($\times 4$).

FIG. 13a: Basal 2 tarsal joints after treatment with potash ($\times 4$).

FIG. 14: Right 2nd leg ($\times 4$).

FIG. 15: Right 3rd leg ($\times 4$).

FIG. 16: Tarsal claws, dorsal view ($\times 4$).