

years afterwards, the following will be found to correspond with what usually occurs. On one occasion, when examining the forest north of Whangarei harbour, I noticed a *karaka*-tree which had been pierced by insects. I cut it down, and on opening it up found it tenanted by *Lasiorhynchus barbicornis* in all its stages. The larvæ were engaged in the formation of cylindrical drills running in different directions; the pupæ reposed in the attitude described above, *i.e.*, with the head and rostrum (the two conjointly, it will be borne in mind, longer than the body itself) bent along the lower part of the body, in a hole just broad enough to contain the insect, and without external orifice to permit its subsequent egress. I also cut out a few perfect specimens of both sexes; sometimes these had so nearly effected their exit that the extremity of the beak protruded. Of course there can be no doubt that these beetles had themselves eaten their way through, but what filled me with wonder was, how the pupa, on arriving at maturity, had managed to straighten its rostrum so that the mandibles might be employed to effect its release?

The description of the imago appears in my "Manual of the New Zealand Coleoptera."\* Specimens are preserved in the Museum. I now add alcoholic examples of the larvæ and pupæ. With these before him, the student may proceed to the investigation of the question propounded, and if he can solve the problem without acknowledging the wonderful designs of the Almighty, he must be hard indeed to convince.

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ART. XXVIII.—*On the Larva and Pupa of Ceratognathus irroratus.*

By Captain T. BROWN.

[Read before the Auckland Institute, 19th July, 1880.]

*Larva.*

Testaceous, head reddish, mandibles black. In form cylindrical, medially narrowed, underside nearly plane. The head and three following segments, as well as the three ventral ones, are nearly smooth, the others studded with minute spines and numerous hair-like bristles, the legs thickly clothed with shorter rufous bristles.

Composed of thirteen segments; the terminal large, flabby, and uneven, appearing to possess a supplementary anal one, not, however, distinctly defined by any well-marked suture; the head ovate, deflexed, not so broad in its widest part as the next segment, longitudinally impressed on the

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\* "Manual of the New Zealand Coleoptera" (Wellington, 1880), p. 543.

vertex, obsoletely punctate in front; epistome transversal, with five or six transverse impressions; *labrum* narrowed at the base, ciliated at apex; *mandibles* stout, dentate at the extremity; the *antennæ* implanted at the sides near the base of the jaws, tri-articulate, exclusive of the socket, first joint equalling the next two in length, cylindric, the apical almost aciculate; *palpi* four-jointed, basal articulation very large, the others decrease; *eyes* indicated by a small lunate black spot behind each antenna; legs rather long and robust, their three joints becoming smaller, the last terminating in a stout claw.

The three *segments* bearing the legs are, conjointly, scarcely longer than the eleventh, all are more or less perceptibly impressed from side to side, the anterior thoracic segments being considerably wrinkled and uneven. The *spiracles*, though present, cannot be distinguished with accuracy.

Length 6 lines; breadth  $1\frac{1}{2}$  (maximum).

*Pupa.*

Length, 6 lines; breadth, 2– $2\frac{1}{2}$ ; colour, infusate testaceous.

*Head* large, bearing two spine-like protuberances on the vertex, a pair of smaller ones before each eye; *mandibles* large, their form not well defined; the *antennæ* enveloped in a large lunate sac extending backwards to the middle of the prothorax. *Prothorax* transversal, a little uneven, with incrassated lateral margins; a sharp protuberant process forms the posterior angle, another is placed rather in front of the middle at each side; its disc is bi-impressed longitudinally, but obsoletely on the middle, and at each side of the depressions, at base and apex, are placed two tubercle-like spines smaller than those on the head. *Mesothorax* short, obtusely pointed behind, with two protuberances. *Metathorax* canaliculate, bi-tuberculate posteriorly. *Abdomen* composed of eight segments, all finely and irregularly wrinkled; the basal with a transverse row of six tubercles; the others armed at each side with a tubercular process having two claw-like spines at the extremity; each bears a transverse row of small tubercles, the apical segment ending in two robust spines. The *limbs* repose in the usual manner.

I cut my specimens out of a *Coriaria sarmentosa* which they had destroyed. The insect does not, however, restrict itself to that shrub. The imago is described at page 253 of the "Manual of the New Zealand Coleoptera."