

less apparent from the outset of their formation. As I have already said, however, growth proceeds with the greatest slowness; it follows therefore that during the time which elapses before the next moult the part in process of growth barely forms a minute projection from 1 to 2 millim. in length. It is covered by a thin protective cuticle of a brown colour, moulding itself exactly upon the rudiment of the limb, which up to the present shows no separation into joints. It is only after the next moult that the limb, beginning to be of appreciable length, will show any distinct traces of division into tarsal joints. The growth is so slow that it is only after two or even three moults that the mutilated limb is completed and becomes serviceable to the insect*.

It is interesting to compare the slowness of the growth of parts in process of regeneration after artificial removal, as well as that—much less marked nevertheless—of limbs intended to replace those removed by self-mutilation, among Phasmidæ with the marvellous rapidity of such growth which has been found among the Mantidæ and Blattidæ. Whilst among the latter limbs regenerated after self- or artificial mutilation may begin to be of use to the insect immediately after the next moult, in the Phasmidæ limbs in course of regeneration cannot become useful until after the second or third moult. I have noted that the same holds good for the Orthoptera saltatoria.

LXVII.—*New Species of the Coleopterous Genus Prionocalus from Ecuador and Peru.* By CHAS. O. WATERHOUSE, V.P.E.S.

THE British Museum has recently received a few specimens of Longicorns of the genus *Prionocalus*. One I refer with a slight doubt to *P. cacicus*, White, but in the type the tubercle

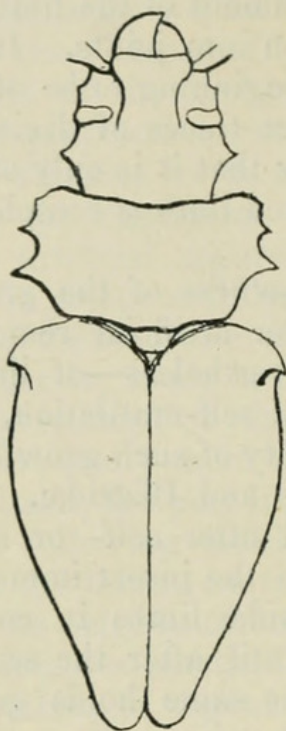
* In the most perfectly regenerated limbs there is a tetramerous tarsus. I have nevertheless obtained after cuts made upon the third joint of the tarsus:—

1. A pentamerous tarsus with incompletely separated joints.
2. A pentamerous tarsus as perfect as the normal one.
3. A bent and monstrous tarsus of six incompletely separated joints.

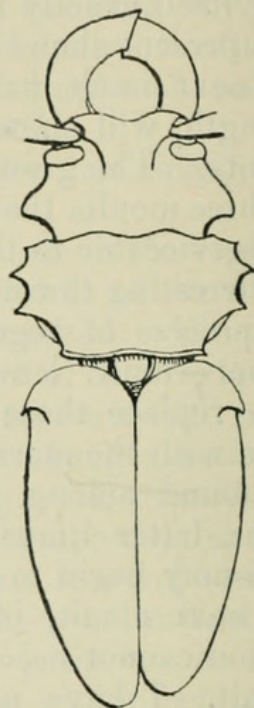
But these are rare exceptions to the rule. Tetramery after regeneration has been determined among the Phasmidæ not only in the four genera I quoted in my previous papers, but also in *Anchiale*, *Acanthoderus*, *Lophus*, *Diapheromera*, and probably in *Cyphocrania*, *Diura*, and *Bacteria mexicana*, the total number of species of Orthoptera cursoria in which tetramery has been determined being thus twenty-five.

behind the eye is more directed backwards than in the specimen just received. The other three species appear to be undescribed.

The accompanying camera-sketches will assist in the determination of these three species and *P. Güntheri*, Gahan.



Prionocalus Simonsi.



Prionocalus Whitei.

Prionocalus Simonsi, sp. n.

Niger, supra rugosus, sat nitidus; elytris apicem versus angustatis, elongato-triangularibus, basi vermiculoso-rugulosis, apice piceo-tinctis, subtilius rugosis, minus nitidis; antennis (basi excepta) tibiisque piceis, tarsis rufo-piceis. ♂.

Long. 38-47 mm.

Hab. Ecuador, in wood west of Cuença, 2600 m., May 1899 (*P. O. Simons*).

This species closely resembles *P. atys*, White, in form, colour, and sculpture, but is at once distinguished by the posterior angles of the thorax being slightly rounded instead of acute and slightly projecting, as they are in *P. atys*. The head is coarsely and closely rugose, with a short, not very acute, conical tubercle behind the eye. The mandibles are shorter than the head. The thorax is less rugose than the head, and the space on each side of the disk, although rather closely punctured, is smoother. The elytra are one-third

longer than broad, much narrowed towards the apex, vermiculate-rugose at the base, the sides and apex (which are impressed) with much finer rugose sculpture; the apex of each elytron is rounded. The femora are more or less pitchy, the tibiæ almost entirely so, the tarsi rather paler.

Prionocalus Whitei, sp. n.

Anthracinus, nitidus, supra rugosus; capite post oculos tuberculo magno, conico, obtuso armato; mandibulis falcatis; antennis corpore paulo longioribus; thoracis lateribus dentibus tribus acutis instructis, angulis posticis acutis porrectis; elytris ovalibus, postice arcuatim angustatis, apicibus singulatim rotundatis; palpis, tibiis tarsisque rufo-piceis. ♂.

Long. 50 mm.

Hab. Ecuador, Porvenir, March 1899 (*P. O. Simons*).

This species has the jet-black colour of *P. Buckleyi* and *P. iphis*, but differs from both these in having the elytra separately rounded at the apex, as in *P. cacticus* &c. It differs from *P. cacticus*, *atys*, *Simonsi*, and *Güntheri* in having the sculpture of the elytra almost uniform throughout, as in *P. Buckleyi*, and the apices are not flattened. The head is very coarsely and closely rugose. The mandibles as long as the head, falcate. The tubercle behind the eyes is thicker and larger and more obtuse at its apex than in any other species known to me. The thorax is vermiculate-rugose, almost as in the elytra; the sides have three nearly equidistant acute teeth, the anterior one much smaller and less prominent. The elytra are rather more than a third longer than broad (19×26 millim.), uniformly vermiculate-rugulose, as in *P. Buckleyi*; the sides gently arcuate (not rectilinear in any part). The antennæ are black and reach rather beyond the apex of the elytra.

Prionocalus uniformis, sp. n.

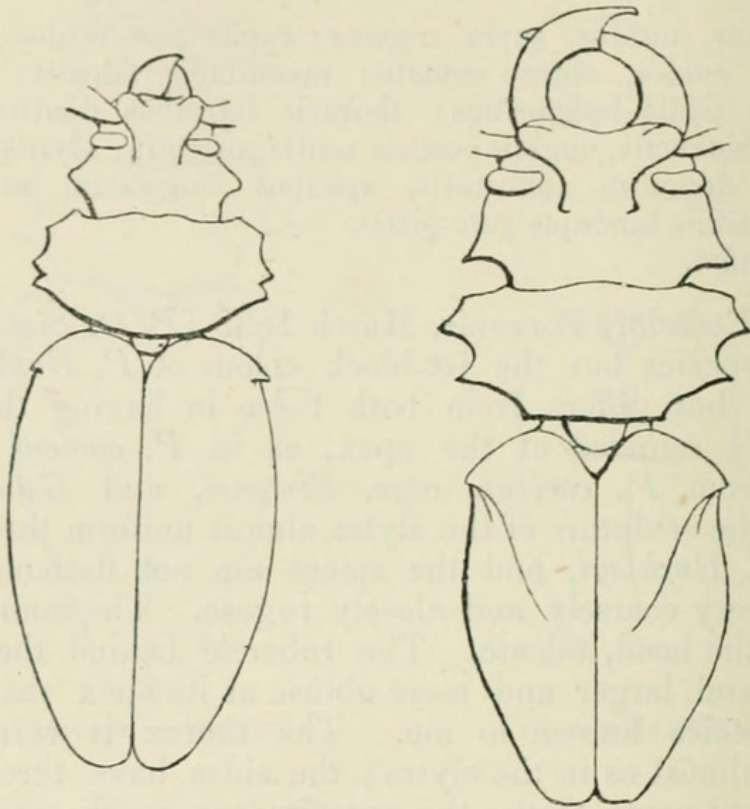
Niger, rugosus, sat nitidus; thorace lateribus dentibus duobus armatis, angulis posticis rotundatis; elytris convexis, fortiter rugosis, humeris dente parvo acuto armatis, lateribus leviter arcuatis; antennis apicem versus tibiisque plus minusve piceis; palpis tarsisque rufo-piceis. ♂.

Long. 36-47 mm.

Hab. Peru, "at upper timber line, 3000 m., Nov." (*P. O. Simons*).

This species is unlike any known to me, and from its form

and convex elytra might be mistaken for a female. It differs from all in having the posterior angles of the thorax completely rounded off. It is most nearly allied to *P. iphis*, White, but has more ample elytra. The palpi have the apical joint unusually enlarged. The head has the tubercle at the side short and conical, not very acute. The thorax is rugose,

*Prionocalus uniformis.**Prionocalus Güntheri.*

but has two smooth spots on the front margin and another above each posterior angle. The sides are impressed and the margin is furnished with two rather small approximate triangular teeth just before the middle, and in front of these there is a slight angular prominence; behind the lateral teeth the thorax is obliquely narrowed, and there is no trace of any tooth at the hind angles. The elytra are nearly as wide as the thorax, convex, evenly and very coarsely rugose all over (each with two slightly indicated raised lines), not much narrowed towards the apex. The humeral angle is furnished with a very small acute tooth. The sides are evenly and gently arcuate. The apices are rounded, but there is a slight indication of the sutural angle.

The smaller example has the teeth at the sides of the thorax rather more prominent and acute than in the large specimen.



Waterhouse, Charles Owen. 1900. "LXVII.—New species of the Coleopterous genus *Prionocalus* from Ecuador and Peru." *The Annals and magazine of natural history; zoology, botany, and geology* 5, 503–506.

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