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A NEW SPECIES OF *HARPEGNATHOS* JERD., WITH SOME
REMARKS ON THE GENUS, AND THE OTHER KNOWN SPECIES.
(HYM. FORMICIDAE.)

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***Harpegnathos hobbyi* sp.n.**

♀. Black shining, mandibles, front of head, posterior margin of pronotum, insertion of the wings, underside of petiole and apex of gaster reddish. Antennae and legs brownish yellow; base of scapes, coxae, and apex of femora brownish. Whole body clothed with yellow hairs, which are longest on the gaster, especially on the pygidium. Head subquadrate, slightly broader at apex (including eyes) than at base, very rugosely punctured, with raised longitudinal ridges enclosing deep round punctures, except at base where only the round punctures occur; *mandibles* longitudinally striate and punctured; *clypeus* finely longitudinally striate, with some small punctures at sides and base; *frontal carinae* with *lobe* furnished with raised circular ridges; the kidney-shaped *eyes* very large, with numerous facets; *antennal foveae* finely longitudinally striate. *Antennae*: *scape* projecting beyond posterior angles of head by about one-third of its length, *funiculus* with joints 2 and 3 longer than 4-8 individually, last joint equal to the two preceding taken together. *Thorax*: *pronotum*, *mesonotum* and *epinotum* with similar sculpture to that of head, that of the *mesonotum* less strong; *scutellum* with fine raised longitudinal striae, and scattered shallow punctures; *epinotum* with declivity transversely striate above, smooth at base; *petiole* smooth beneath and at sides, *node* with similar sculpture to that of head. *Gaster* shining, first segment finely transversely striate, with larger and smaller scattered punctures, the next three segments with still finer striation and smaller, more scattered punctures; *pygidium* almost smooth and very shining. *Wings* dusky, with two *discoïdal cells*, the lower being very large, two long *cubital cells*, and a long closed *radial cell*; *veins* and *pterostigma* brownish yellow. Length: 17.8 mm., including mandibles; 13.8 without.

Described from one winged female taken on October 22nd, 1932, in Borneo, Sarawak: Mt. Dulit, 4,000 ft. Moss Forest. Native collector, Oxford University Expedition.

Type in Coll. Brit. Mus.

This species comes nearest to *H. venator* Smith and the var. *rugosus* Mayr, but the sculpture is totally different, and the whole insect is shining instead of being opaque.

This is a very interesting discovery and adds to our knowledge of the distribution of the genus. Wheeler (1919) in his paper on the Ants of Borneo does not list any species of *Harpegnathos*.

The genus *Harpegnathos* (1851) was founded by Jerdon for the reception of his species *saltator*, in a catalogue of the species of ants found in Southern India. Moore (1854) in a footnote to an extract from Jerdon's paper wrote: 'This name is too like *Harpognathus* of Wesmael, who used it for a genus of Staphylinidae in 1834. F.M.'

Smith (1858) gave the name *Drepanognathus* to the genus; he quotes Moore's reference and, when giving *Harpegnathos* as a synonym, writes: '*Harpegnathos* Jerdon, 1851 (nec. Wesm. Col. 1834).'

Smith was followed by Mayr (1862, 1865) and Bingham (1903); the latter author, when giving *Harpegnathos* as a synonym, spells it incorrectly as '*Harpegnathus*.'

Forel (1900, 1909) and Emery (1911) correctly use Jerdon's name for the genus, for, as we have just seen, Wesmael's name¹ is spelt differently, and Jerdon's name must stand.

Distribution of the species: India, Ceylon, China, Java, Borneo, Philippines.

Harpegnathos saltator Jerdon (1851).

Jerdon described this species with a blackish-brown head, and gave as localities Malabar, Tellicherry and Mysore.

Smith (1858) gives Jerdon's description in full, and after describing *H. cruentatus* and *H. venator* he writes: 'Whether either of the two species last described is the *saltator* of Jerdon it is impossible to determine satisfactorily; he says "abdomen very long, sting large; head and abdomen blackish-brown; thorax and legs rufous." The abdomen in both of the new species is short.'

Jerdon probably wrote 'abdomen very long' in error, or he may have considered it to be so, as his description of the genus and species otherwise exactly agrees with these insects. This species could not have been *venator*, as that is all black with yellowish legs, and the antennae and sculpture are different.

Forel (1900), when quoting Jerdon's localities for *saltator*, writes: 'Comme cette espèce n'a jamais été retrouvée depuis Jerdon et que cette région est précisément celle d'où l'on reçoit le *H. cruentatus* Sm., j'incline fortement à penser que les deux espèces sont synonymes et que Jerdon aura décrit un exemplaire dont la tête était particulièrement foncée.'

¹ Wesmael's *Harpognathus* (1834) is a synonym of Stephens's *Coryphium* (1832).

There is, however, a specimen in the B.M. collection (ex coll. Donisthorpe) from the Nilgiris with a black head. I have been unable to see any marked differences between this and specimens of *cruentatus*, and there is no doubt that Jerdon described a rare variety of the latter with a blackish head. Nevertheless, Jerdon's name must stand for the typical form, as his *saltator* has seven years' priority over Smith's *cruentatus*.

Harpegnathos saltator Jerd. var. *cruentatus* Smith (1858).

Smith described his species with 'head, thorax and peduncle of the abdomen red,' and gives the habitat as 'Hong Kong.' The type is in the B.M. collection and bears a label, '48.60.' In the Museum register 'No. 60, 1848' stands for a number of insects from Hong Kong presented by J. C. Bowring.

Forel (l.c.) says: 'Je doute par contre de la patrie "Hong Kong" indiquée par Smith qui indique tout à côté Madras pour le *venator*. Tous les *venator* que j'ai reçus venaient du nord et des régions montagneuses, et tous les *cruentatus* du sud et de l'ouest. Smith n'aurait-il pas transposé la patrie des deux espèces?' It is possible that Smith put the wrong labels on the two type specimens.

Forel gives the following localities for *cruentatus*: Poona (*Wroughton*), Kanara (*Bell*), Travancore (*Ferguson*), Ceylon (*Yerbury*, and *Sarasin brothers*).

Bingham (1903) gives Western India, Mysore,² and the localities given by Forel; but he credits Wroughton with Kanara [there is a specimen in the B.M. collection (ex coll. Donisthorpe) labelled 'Kanara (Bell),' but of course Wroughton may have taken it there also], and queries China.

He describes *saltator* with a red head, ignoring Jerdon's description, and gives *cruentatus* Smith as a synonym.

Harpegnathos saltator Jerd. var. *taprobanae* Forel (1909).

Forel describes this insect as a var. of *cruentatus* Smith, from which it differs in having two confluent reddish patches at the base of the gaster in the ♀; these patches in the ♂ separated by a black band: Ceylon, ♀ (*Sarasin brothers*); Ceylon, Bambulla, ♂ (*Bugnion*).

There is a ♂ in the B.M. collection labelled '60.15. E.I.C.' from India.

² Jerdon (l.c.) wrote 'It is also found in the Mysore country as I learn from Mr. Hamilton, a most talented and industrious amateur entomologist.'

Harpegnathos venator Smith (1858).

Smith described this species as having the head, thorax and abdomen black, and says it closely resembles *cruentatus*, but the joints of the antennae are much shorter, the abdomen being granulated and opaque, the base being coarsely punctured.

He gives the habitat as Madras. The type is in the B.M. collection and is labelled '50.105' — Madras (Hamilton).

Forel gives the localities: Dehra Dun (*Smythies*), Khasia Hills, Assam (*Smythies*), Assam (*Lindgren*). Bingham adds: Sikhim (*Möller*), Burma, Maymyo, 3,000 ft. (*Bingham*), and queries Madras. He says that Forel records a mimetic spider, *Sallicus plataloides* Cambr., with this ant; but it was with *cruentatus*, not *venator*.

Harpegnathos venator Smith var. *rugosus* Mayr (1862).

Mayr described this insect, which was a wingless ♀, as 'Schwarz, glanzlos . . . Hinterleib fein fingerhutartig punktirt, Segment 1 etwas fein längsrundlig.' Habitat: Hong Kong (*Novara Expedition*).

He gives a very full and accurate description in the 'Reise Novara' (1865), with very good figures.

Forel writes (1900): 'Mayr a décrit sous le nom de *H. rugosus* une ♀ sans ailes de Hong Kong dont le description correspond à tous égards, même dans les plus fins détails de couleur aux ♀ d'*H. venator* que je possède mais le premier segment de l'abdomen a des rugosités au lieu de fossettes allongées.'

Forel considered it was simply a variety of *venator*, in which, no doubt, he was correct.

There are no females in the B.M. collection, and Emery (1911) unfortunately records Mayr's species as a worker.

There are several specimens (♂♂) in the B.M. collection from Hong Kong. Two with a blue label '61.49' — Hong Kong, J. C. Bowring, one of which is labelled '*rugosus* Mayr.' There is also a specimen labelled '82.114' — George Lewis, Hong Kong, with 'Hopping Ant' written in pencil under the card, and date 14.ii.82. The only differences I can see between Smith's type of *venator* and specimens from Lower Burma (ex coll. Bingham) are that the latter are a little smaller and the punctures on the gaster slightly less elongate.

Harpegnathos venator Smith var. *chapmani* var.n.

In a paper on the Ants of the Philippine Islands, Wheeler and Chapman (1925) record a single specimen of *H. venator* Sm. v. *rugosus* Mayr. It is not stated whether the insect is a ♂ or a ♀.

(The page of Mayr's reference is given as '732,' instead of 723.) They write: 'This single specimen differs from two specimens of *H. venator* Smith from Hong Kong and Assam in the senior author's collection, and from Mayr's description of the subspe. *rugosus* in the colour of the node and hind legs in which the brown colour is replaced by black. The sculpture is that of *rugosus*. Perhaps the Philippine specimen represents a distinct variety.'

I should think it is certainly so, and though the node in *venator* and *rugosus* is not brown, the black hind legs would give it as much right to a varietal name as Forel's *taprobanae*.

The insect was taken at Luzon, Laguna Province, Mount Maquiling (*Baker*).

Harpegnathos macgregori Wheeler and Chapman (1925).

This species is described from a single specimen (♀) taken at Biliran, Philippine Isles (McGregor). It is evidently a large, distinct species, black, with the mandibles, legs, flagellum and dorsal spot on first and second segments of gaster yellow.

Harpegnathos pallipes Smith [*Ponera pallipes* Smith (1858)].

The type of this species is in the B.M. collection. It is a ♂ and the habitat is Java. I consider this to be a species of *Harpegnathos*.

HABITS OF THE SPECIES.

Jerdon (l.c.) writes: 'I have given it the name of *saltator* from its power of making most surprising jumps, which it does when alarmed or disturbed. It is very pugnacious, and bites and stings severely. It makes its nest underground, generally about the roots of some plant. Its society does not consist of many individuals. It appears to feed on insects, which it seizes alive.'

Smith (l.c.) writes: 'Mr. J. C. Bowring informs me that the species has the power of making surprising leaps.' Although Smith gives this for *cruentatus*, it probably should have been for *venator*, as we have seen.

In a note inserted in L'Abeille, George Lewis (1882) writes: 'Il y a peu de jours (14 novembre) j'ai pris à Hong Kong une fourmi qui saute; elle a 5 lignes de long et présente quelque ressemblance avec une *Ponera*; elle saute lorsqu'elle est effrayée; elle s'élève parfois jusqu'à une hauteur 5—6 pouces, jusqu'à ce qu'elle soit fatiguée; alors ses sauts ne dépassent pas 1 pouce; elle est tout-à-fait solitaire.' As we have seen under *H. rugosus* Mayr, this specimen is now in the B.M. collection.

Wroughton (1892), when speaking of *H. cruentatus*, says: 'The single specimen which I have had the luck to find made

leaps of a foot or eighteen inches with perfect ease, exactly like a grasshopper. I had much trouble in securing this specimen, and when I succeeded, I found she could sting better than she could jump.'

Bingham (l.c.) writes: 'Like *Odontomachus*, *Drepanognathus* when startled or disturbed makes the most astonishing leaps, but so far as my observations go, the species of neither of the two genera, unless disturbed or startled, leap as a mode of locomotion.'

Forel (1909) re the var. *taprobanæ*: 'Cette espèce fait des bonds formidables avec sa tête repliée sous le corps et ses longues et curieuses mandibules, comme, du reste, l'autre espèce du genre.'

Forel (1921): 'La tête entière se recourbe sous le corps, se rejetant ensuite en avant, un peu à la manière du thorax de nos insectes d'Europe nommés taupins. Les *Harpegnathos* portent près de la base de leurs grandes mandibules une forte dent triangulaire dirigée obliquement en bas et en partie denticulée elle-même devant. Je pense que cet dent peut servir elle-même de seconde mandibule pour porter la couvée.'

Wheeler (1922) in a very interesting paper on the jumping habits of *Gigantiops* and other leaping ants comments on those of *Harpegnathos*. He refers to the above note by Forel when endeavouring to reconstruct how the latter genus uses its mandibles for jumping, but appears to have overlooked Forel's 1909 observations.

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