

TWO NEW CLAVICORNS FROM THE UNITED STATES.

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There have already been published three papers dealing with the insect inhabitants of the small, round, cream-coloured fungus *Polyporus volvatus* Peck, which grows on dead and dying conifers. Hubbard¹ gave a list of eleven species of beetles found in the fungus on pine trees of the Pacific Coast Range from the Columbia River northward into British Columbia. Hopkins² mentioned that the beetle *Dendroctonus piceaperda* Hopkins was found associated with the same fungus in the spruces of the northeast. Weiss and West³ in their recent paper on fungus insects and their hosts mention this fungus, although they overlook the fact that *Cryptoporus volvatus* Peck and *Polyporus volvatus* Peck are identical and treat the names as representing distinct species. Accordingly, when the writer collected this fungus last summer in the Coast Range near San Francisco and sent it to the National Museum, Mr. H. S. Barber was interested to find in the material sent a new and large species of *Cryptophagus*, a genus not yet recorded as breeding in it. The writer is grateful to him for preserving the beetles and their immature stages and pointing out to her the biological interest attached to the fungus host.

In connection with the description of this beetle, the writer is also describing a related species from Florida that has long been recognized as distinct but never published. Beetles were reared in numbers by Dr. E. A. Schwarz, H. G. Hubbard, and H. S. Barber from the flowers of *Zamia floridana* A. D. C., and there is consequently in the National Museum a large series of the adults as well as the immature stages. The species was labelled in the collection as a new species of *Hapalips* and perhaps distributed to other collections under that name, but it appears to belong rather to *Pharaxonotha*.

¹Can. Edt., vol. 24, 1892, p. 250.

²Bull. 28, n. s., U. S. D. A. Bur. Ent., 1901, p. 23.

³Proc. Biol. Soc. Wash., vol. 33, 1920, p. 33.

Cryptophagus maximus, new species.

Large (4 mm.), elongate, slightly convex, shining, reddish brown with short, moderately dense, but fine and recumbent, yellowish pubescence and coarse punctation. Head coarsely punctate both above and below, and especially pubescent over frons; eyes moderately small; no trace of median or transverse sutures on frons; a triangular projection below antennæ and in front of eyes, ending in a sharp point on either side of maxillary palpi, the latter well-developed. Antennæ about one-third

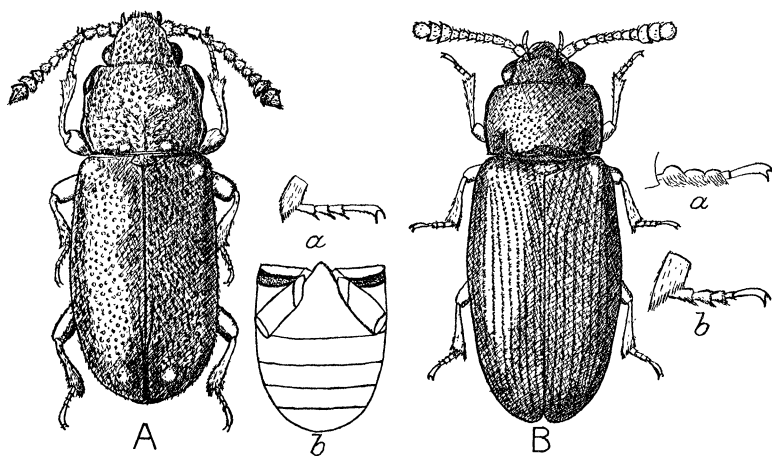


Fig. 1.—A. *Cryptophagus maximus*, (a) male hind tarsus, (b) ventral surface showing trochanters and abdominal segments. B. *Pharaxonotha zamiae*, (a) male (?) anterior tarsus, (b) hind tarsus.

length of beetle with loose 3-jointed club, the last two segments of club being approximately same width, slightly wider than first joint of club, and markedly wider than preceding segments; first antennal segment large, globose, second one-third smaller, third longer than any other except first. Prothorax somewhat wider than long with thickened lateral and basal margins; lateral margin at apical angle considerably thickened and reflexed forming an obliquely truncate apex, the sides narrowing and becoming subparallel behind, and again a little below middle projecting to form a subacute nodule, from this thickened nodule side nar-

rowing to base and with a sharp corner at basal angle; pronotum slightly convex with flattened disc, two slight callosities smoother and less punctate on either side and slightly in advance of middle of disc, and at base two other small knobby callosities, also polished and impunctate, these more closely set; a transverse basal groove extending from near margin and slightly deeper at outer ends thus forming a fovea on either side, the basal groove interrupted at middle. Surface of pronotum coarsely and densely punctate with flat shining interspaces, and somewhat pubescent. Scutellum broad and short, rounded at base, finely punctate and pubescent. Elytra convex, elongate, subparallel, wider than prothorax with small rounded humeri and depression within; punctation dense, coarse, shallow; surface shining and with light, short pubescence; sutural margin wide and distinct. Near apex of each elytron a small polished callosity, frequently paler in color, these callosities not as apparent in male but still quite discernible. Body beneath shining, covered with short, dense pubescence and densely punctate, the punctures on metasternum coarse and becoming confluent, on abdomen much finer and denser. First abdominal segment nearly equal in length to second and third together, the second, third and fourth gradually diminishing in length. Femora attached obliquely to trochanters, the latter small and elongate. Tarsi 5-jointed except the hind tarsi of male, these 4-jointed. Each segment of tarsus with long, sharply pointed tuft of hair beneath, the segments slender and not lobed.

Length: 3.6-4.2 mm. Width 1.3-1.5 mm.

Type: Cat. No. 40795, U. S. N. M. Three ♀♀ and one ♂ paratypes.

Type locality: Mt. Vision, alt. about 150 meters, Inverness (on Tomales Bay), Marin County California.

Food plant: In fungus (*Polyporus volvatus* Peck) growing on fallen pine tree, collected 7 August, 1927, by D. H. Blake.

The sexual differences are quite apparent. The males have 4-jointed hind tarsi, and show a slight concavity in the last three ventral segments, which in the females are full and rounded. One of the two males is markedly shorter and broader in proportion

The fungus (*Polyporus volvatus* Peck) was collected 7 August and sent directly to Washington where five adults and two pupæ were taken from the material.

This species is much larger than any other species of *Cryptophagus* known in this country. Nearly all the North American species, except a few little known ones from Alaska, have been included in a table of species by Casey, and none measures more than 2.9 mm., only three-fourths as long as *C. maximus*. In addition, the species is not as conspicuously pubescent as usual in the genus, and has none of the longer, suberect hairs characteristic of many species of *Cryptophagus*. There is no species in the Casey collection that is closely related to this one. *C. boulderanus*, while large, is quite conspicuously pubescent, and *C. valens*, another large species, is quite unlike it in color and pubescence.

Pharaxonotha zamiaë, new species.

Elongate oblong-oval, shining, castaneous, very inconspicuously and sparsely pubescent, appearing glabrous except under a high magnification, pronotum with impressed line at lateral fifth extending from base about one-third length of pronotum. Head subtriangular with clypeus anteriorly truncate but as seen from above rounded; frons depressed with a depressed line extending obliquely to side margin in front of antennal socket; eyes large; head coarsely and very densely punctate. Antennæ about one-fourth length of beetle, club 3-jointed and twice as wide as preceding segments, the two segments preceding club slightly enlarged. Prothorax transverse, with narrow darker margins on all sides; lateral margin arcuate anteriorly and posteriorly but nearly straight medially; a deep, margined, longitudinal, somewhat curved sulcus on either side at lateral fifth extending forward nearly one-third length of pronotum and ending abruptly, these sulci connected at base by a transverse groove widening considerably in middle of base of pronotum. Punctuation coarse and dense but not as dense as on head, pubescence very fine and inconspicuous. Scutellum small, rounded, indistinctly punctate. Elytra a little wider than prothorax with

sides subparallel, widest before middle and with well-rounded apex; narrowly margined, basal margin very distinct; humeri with a tiny notch at outer angle; striæ consisting of rows of coarse punctures, the first row converging from angle of scutellum to suture and joining suture at basal fifth, remaining striæ becoming less convergent and more parallel to suture; between these coarse rows of punctures on the interspaces another indistinct and sparsely placed series, all punctures bearing very inconspicuous short pale recumbent hairs only visible under high powered lens. Body beneath shining, punctate, more coarsely on metasternum, and with fine, short pubescence. First ventral segment about twice as long as second, second, third and fourth gradually decreasing in length, last wider and well rounded. Legs slender, rather short, tibiæ gradually dilated to apex, tarsi pentamerous, first three segments of tarsi very pubescent, the fourth segment being short, narrow and inconspicuous. Anterior tarsi of males (?) dilated and even more pubescent.

Length: 2.6-3.8 mm. Width 1-1.4 mm.

Type: Cat. No. 40796, U. S. N. M. 73 paratypes.

Type locality: Homestead, Florida.

Other localities: Larkins, Haw Creek, Crescent City, Biscayne, Naranja, Punta Gorda, Lake Worth, Miami, all in Florida.

Food plant: Reared from flowers of *Zamia floridana* A. DC. by E. A. Schwarz.

The type of the genus, *Pharaxonotha kirshi*, now known from Texas, Mexico, and Central America, was described by Reitter in 1875, having been found in drugs sent to Silesia from Mexico. The generic name suggests the character that differentiates this from allied genera,—the short, deep, impressed lines at the base of the prothorax. *Hapalips sculpticollis* Champ. also has impressed lines on the prothorax, and Grouvelle⁴ in writing of *H. sculpticollis* states that he has not included this species in his table because he believes it ought to be put in another genus. *H. sculpticollis*, the only known specimen of which is before me, differs from the present species by having much longer impressions on the pronotum, very deep basally and connected by

⁴Memoirs Entomologiques 2, 1919, p. 91.

a deep, broad, transverse impression, and in the elytral sculpture, the interspaces being convex and appearing as ridges. The general shape of this beetle is also quite different. *Pharaxonotha kirshi* is a slightly larger, more elongate species, and is usually darker in colouring and more polished, being very shiny. In describing the genus *Pharaxonotha* in the volume of the Fauna of British India dealing with the Erotylidæ, Mr. Arrow states that the genus forms a link with the Cryptophagidæ, but that the stridulatory files and thoracic foveæ associate it with the Languriidæ. In both *P. kirshi* and *P. zamiæ* faint traces of these longitudinal lines behind the occipital line are to be found. Dr. A. G. Böving has shown me his unpublished drawings of the larvæ of *Languria* and the *Pharaxonotha* here described. The mouthparts of both are very similar and somewhat unlike the Cryptophagidæ. In some other respects *Pharaxonotha* is more like the Cryptophagidæ, and in the number of its ocelli it is like neither *Languria* nor the Cryptophagidæ.



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