narrow, indistinct annulus to about one third the member, yellow; the dark area of the front and middle tibia usually brown, that of the hind tibia blackish to black; tarsi whitish on first two segments, becoming brownish apically. Halteres yellow, knobs somewhat darker. Wings almost uniformly brownish, stigma and veins dark brown.

Abdomen except genitalia black, tending toward brownish or yellowish on the sternum, especially toward apex of abdomen, in some specimens; first four terga densely black pollinose except laterally on all segments and subbasally and subapically on the fourth; pollinose areas with short black tomentum; sides and venter sparsely punctured, with scattered whitish to yellowish hairs. Genitalia yellow.

Length, 6-6.5 mm.

**Male.**—Eyes broadly contiguous. Frontal triangle silvery-pollinose on orbits; median area depressed. Flagellum shorter in proportion, antennal ratio being 8:6:15:34. Black mesonotal stripes, especially median one, not so clearly defined as in female. Pile of pleura more extensively whitish. Coloration of legs similar to that of female, but yellowish areas more extensive, the middle tibia being almost entirely yellow. Wings but lightly infuscated. The specimen may be slightly teneral.

**Holotype.**—Female, Espiritu Santo Island, New Hebrides, August 1943 (W. Bauer), in the California Academy of Sciences.


**Paratypes.**—3 females, same data as holotype.

**Remarks.**—This form is probably only subspecifically distinct from the one from the Solomon Islands that I have tentatively identified (James, 1948, p. 212) as *S. bugabris* (Walker). The coloration of the legs and of the mesonotal tomentum in the male of the Solomon Islands form is as I have described them for the female of *australis*; the female of the Solomon Islands form has whitish rather than golden mesonotal tomentum, and the legs are darker, the femora being predominantly black or blackish. It is probable that the Solomon Islands forms *australis*, *bugabris*, and *diphysoides* Walker are all subspecies of one species, *diphysoides* holding priority. A more thorough investigation requiring considerable material from New Guinea, the Moluccas, and nearby areas will be necessary to clarify the status of these forms.

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Genus *Lophoteles* Loew


**Lophoteles cheesmanae**, n. sp.

**Male.**—Eyes broadly contiguous. Head black; frontal triangle and face with dense silvery tomentum; occiput and vertex shining, with scattered black hairs. First and second antennal segments pale yellow, each with a few black hairs at apex above; flagellum pale yellow, brownish above; style including hairs wholly black. Proboscis brownish with concolorous hairs.

Thorax wholly black, at most brownish-black on the humeri and on parts of the pleura. Mesonotum granular with brassy-yellow tomentum laterally also with blackish tomentum, which appears from the dorsal view as black-tomentose margins, the yellow tomentum in these areas appearing from lateral view; scutellum black-haired; a prominent white-tomentose area on the hind part of the mesepimeron and extending on to the sternum and a patch of brownish-yellow hairs on the pteropleuron. Legs pale yellow; apical third to half of each femur and sometimes apices of tarsi more brightly yellow. Wings slightly infumated; stigma deep brown; a more diffused brownish area extending from stigma across discal cell and broadly bordering vein Cu toward wing base; venation typical. Halteres blackish, the stalk somewhat paler.

Abdomen wholly black; first four terga, except laterally, granular; sides of these terga, all of fifth and venter more shining; hair of terga black, appressed, that of venter black and yellowish intermixed. Genitalia black, with yellow hairs.

Length, 4 mm.

**Female.**—Front at narrowest slightly under one-fourth head width, shining, with only very scattered hairs. Silvery-tomentose areas of face extending in the form of two projections, contiguous with each eye, onto lower third of front; these projections each rounded above and widely separated, leaving the median half of the front, between them, glossy. Occipital orbits developed above, though narrow. Brassy tomentum of mesonotum extending over most of scutellum. Ovipositor slender, yellow. Otherwise as described in the male.

**Holotype.**—Male, Anaitym, New Hebrides, October 1930 (L. E. Cheesman), B. M. 1931-127, in the British Museum (Natural History).
ENTOMOLOGY. — The Stratiomyidae, including both sexes metallic blue or green; maximum width of anal cell but little greater.

Lophoteles plumula Loew

Two males, Segond Channel, Espiritu Santo, New Hebrides, July 9 and August 10, 1944 (J. Laflon), are tentatively referred to this species. They agree with Kertész's description except that the appressed hairs of the abdominal terga are black; the lateral erect hairs, as well as those of the venter, are, however, pale. These specimens are more slender than the males of the preceding species; the antenna except the style is wholly yellow, with yellow hairs on the first two segments; the pale tomentum of the mesonotum extends onto the scutellum; and the halteres are but slightly influseated.

Genus Evaza Walker

Evaza fulviventris Bigot

This species may be added to the Solomon Islands list on the basis of a male, Bougainville Island, 1944 (A. B. Gurney), which apparently belongs here. The scutellum has only one pair of spines, the middle pair being missing and without trace of scars, but this seems to be an abnormality. The side spines are in the normal position. Otherwise, the specimen checks with specimens from New Guinea and with Bigot's description.

In my key to the Solomon Islands Stratiomyidae (James, 1948, pp. 187–191) this species runs to couplet 29, but may be distinguished from other Solomon Islands Evaza by the wholly black thoracic tomentum, the reddish-yellow legs (except the hind tibiae largely blackish), and the partially (female) to almost wholly (male) reddish-yellow abdomen.

LITERATURE CITED
Bezzi, Mario. Diptera Brachycera and Athericeria of the Fiji Islands. 1928.

ENTOMOLOGY. — New species of Nearctic Rhycaphila (Trichoptera, Rhycaphilidae).1 Herbert H. Ross, Illinois State Natural History Survey. (Communicated by C. W. Sabrosky.)

The four new species of Trichoptera described in this paper are from the western montane region. One of them, Rhycaphila willamettia, is an addition to the remarkably large list of species in the genus that seem to be isolated survivors of divergent and distinctive phylectic lines.

The close structural similarity and the known distribution of R. tucula and R. alberta suggest very strongly that they were formed from isolated populations during the last glacial advance. R. alberta is known only from the Uintah and Rocky Mountain ranges, distributed from Utah and central Colorado to middle Alberta. R. tucula occurs in the Cascade Range from Oregon to southern British Columbia, with a single known collection from the eastern ranges, in Yellowstone National Park. It is interesting to speculate that the two species arose during early Eldoran time through isolation of similar populations at points far south of their present habitats. If this is true, the slight overlap of present distribution would indicate a northward movement to areas where the various mountain ranges are close together and intermingling occurs.

1 Received April 25, 1950.
Genus Rhacophila Pictet

Rhacophila tucula, n. sp.

This species is a close relative of alberta Banks, differing most obviously in the proportions of the apical segments of the claspers; in tucula most of the brushlike dorsal portion of the apical segment extends beyond the end of the basal segment (Fig. 7), whereas in alberta (Fig. 6) this portion extends only a short distance beyond the end of the basal segment. In addition, the lateral arm of the aedeagus in tucula ends in a brush of dense setae (Fig. 2), and in alberta this region is expanded into a broad lobe bearing a fairly even pecten of stouter curved spines, beyond which the arm narrows again and bears a single long spine (Fig. 1).

Male.—Length from front of head to end of the folded wings, 12 mm. Color various shades of brown, darkest on the dorsum, the antennae, palps, and legs yellowish brown, the wings light brown and completely irrorate with a spotlike and barlike medium brown pattern. General structure typical for genus. Genitalia as in Fig. 7. Ninth segment short and annular except for the excavations to receive the bases of the claspers. Tenth tergite with dorsal sclerite narrow and humped, ending in a short, sharp projection; lateral sclerites only lightly sclerotized and ovate at apex; mesal sclerites ovate and projecting a short distance beyond lateral sclerites. Clasper with very long basal segment, which is nearly parallel-sided; apical segment much shorter, boot-shaped, with an angular heel and a moderately produced toe; mesal side of clasper bearing (1) a large sclerotized tendon which arises from the basal segment and joins the dorsal connective of the aedeagus, and (2) a pair of cushionlike areas of black spicules on the apical segment, as shown in Fig. 7A. Aedeagus consisting of a horseshoe-shaped dorsal connective, a short tubular base ending in a crenulate extensile apex, and arising from this is a pair of long, slender lateral arms and a mesal style containing the penis; the lateral arms bear a long comb of short spines which extend along the apical third of each arm (Fig. 2).

Female.—Size, color, and general structure as for male. Eighth segment (Fig. 3) with apex of venter produced and arcuate, apex of dorsum also produced, but more narrowly so, the segment considerably narrowed dorsoventrally toward apex. Spermathecae (Fig. 5) consisting of a somewhat bulbous, vasiiform base and a long, slender, flattened apex, which is membranous ventrally and dorsally has a pair of lateral sclerotized bands extending from the middle of the process to and around the apex.


Allotype.—Female, same data.


Types in the collection of the Illinois Natural History Survey except the specimens from Spirit Lake, which are in the collection of D. G. Denning.

Rhacophila alberta Banks


This species and tucula are very closely related. Figs. 1, 4, and 6 illustrate the diagnostic characters of the male genitalia and the female spermathecae. This latter structure differs from that of tucula chiefly in that the dorsal sclerotized bands do not reach the tip of the elongate apical portion.

The ranges of alberta and tucula are very interesting. Records for alberta are available from Banff, Alberta (type of alberta); Tolland and Silverton, Colo.; Uintah Mountains, Utah; and Snowy Range Mountains, Albany County, Wyo. (type of mirus). Comparison of these localities with those for tucula indicates that alberta is apparently restricted to the eastern montane region of the West, whereas tucula appears to be the dominant species of the group in the western ranges. The ranges of the two species overlap, at least in Wyoming, and subsequent collecting may demonstrate that this occurs over a fairly wide area.

Rhacophila willametta, n. sp.

This species is probably most closely related to perla Ross but differs markedly from it in the shape of every structure, especially the short,

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