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SARCOPHAGIDÆ OF NEW ENGLAND, III, *SARCOFAHRTIA RAVINIA*, NEW GENUS AND NEW SPECIES.

BY R. R. PARKER.

Sarcofahrtia Gen. nov.

Genotype: *Sarcofahrtia ravinia* sp. nov.

(♂ and ♀.) Rows of frontal bristles not extending below base of vitta and parallel to its sides, except that last one or two pairs may be slightly divergent, uppermost frontal bristle in male not stronger than those immediately beneath and not strongly directed backward, front much broader in females; gena without a row of hairs, hair-like bristles or bristles near lower eye orbit (vestiture sparse and minute in type species); vestiture of back of head black throughout. Epaulets light colored (brownish and light yellowish or only yellowish) vestiture of tibiæ short; three pairs posterior dorsocentrals; two notopleurals; apical bristles absent;¹ lower sternopleura with bristles only. Sides of second and third ventral plates in the male overlapped by ventral edges of corresponding nota (usually the second, third and fourth in females). First genital segment (notum) of male consisting of the fused sixth and seventh abdominal segments (nota) and "hump-backed" in profile (Fig. 3).

¹ In the Sarcophagidæ of New England, I (Proc. Boston Soc. Nat. Hist., V. 35, No. 1, p. 25), the writer defined apical bristles as a "pair of bristles inserted at the apex of the scutellum, sometimes crossing and usually weaker than those next to them laterally." It is his opinion that in this group of flies, it is best to consider the terminal bristles of the scutellum as apical only when they are weaker than the next lateral pair. The designation of apical is sometimes a matter of slight difference in position and its significance seems lost unless the above idea is adhered to. The most posterior pair in this genus (*Sarcofahrtia*) are much the strongest and the designation "apical" as of possible application would be a matter of personal fancy, but by the definition given above there is no possibility of misunderstanding, especially when it is desired to refer to their presence or absence. This fact is mentioned because Villeneuve has described a genus *Blasoziphella* in which he notes that the "apical" bristles are the longest (Annales Musei Nationalis Hungarici, Vol. 10, p. 613, 1912).

This genus is of particular interest because of its apparent relationship to other Sarcophagid genera. This relationship is indicated in the generic and specific names of the type species. The following paragraphs bring out the main points of resemblance.

Sarcofahrtia and *Wohlfahrtia*. Vestiture of back of head black throughout, epaulets brownish and light yellowish or only yellowish, three posterior dorsocentrals; two notopleurals; apical bristles absent; lower sternopleurals with bristles only; abdomen of male almost elliptical; sides of second and third ventral plates (usually second, third and fourth in females) overlapped by ventral edges of corresponding nota; first genital segment of male "humpbacked" as seen in profile and consisting of the sixth and seventh abdominal segments (nota) fused; fourth ventral plate of male without lamellæ; spiracles of abdominal nota on each side in a straight longitudinal line parallel to long axis of abdomen.

The lack of a row of hairs, hair-like bristles or bristles on the gena near the lower eye orbit is also similar to the species of *Wohlfahrtia* studied, though in the latter genus the gena is often entirely naked. The membrane connecting the notum of the first genital segment to the abdomen in the male is very short in both genera; this is radically different from the condition which exists in most species of *Sarcophaga* in which the genital segments can often be pulled well out from the end of the abdomen. The character of the vestigial remnant of the ventral plate of the sixth abdominal segment is the same as that noted for *Wohlfahrtia* (Parker, l. c., p. 18).

Sarcofahrtia and *Ravinia*. Rows of frontal bristles parallel to sides of vitta except that lower one or two pairs may diverge slightly (in *Sarcofahrtia* do not extend below base of vitta and only in a few species of *Ravinia*); epaulets brownish and light yellowish or only yellowish; vestiture of all tibiæ short; apical bristles absent; lower sternopleura with bristles only; base of forceps without upward flap-like extensions.

The general appearance of the head, viewed from in front, is strikingly alike in *Sarcofahrtia ravinia*, *Ravinia communis* R. Parker, *R. peniculata* R. Parker and *R. hæmatodes* Meigen. This is emphasized in the males by the fact that the sides of the frontal vitta are noticeably "drawn" toward each other at the base, and in both sexes by the sharp delineation of the vitta. The forceps prongs

in *Sarcophartia* are spread as in *Ravinia* and particularly resemble those of *R. latisetosa* R. Parker. The parts of the penis are readily homologized with those of *Ravinia*, especially *R. communis*. The whole structure, however, is not so similar to that of this species of *Ravinia* as are those of *Wohlfahrtia opaca* (Coquillett) and *W. chittendeni* (Coquillett).

The comparison given above is based on the following species: *Sarcophartia ravinia*, *Wohlfahrtia opaca*, *W. chittendeni*, *Ravinia communis*, *R. peniculata*, *R. latisetosa*, *R. quadrisetosa* (Coquillett), *R. hæmatodes* Meigen, *R. xanthopyga* (Van der Wulp) (?) and several undescribed species of this genus.

The resemblance of *Sarcophartia* to *Sarcophaga* is merely one of general appearance. Some characters are similar to those of *Agria* and *Sarcophagula*.

The comparison of these genera seems worth while and illustrates the fact previously suggested by the writer concerning generic characters among such patently closely related genera as many of those of this group (Parker, l. c., p. 32). This suggestion may be briefly summed up by saying that the diagnostic value of any particular generic character is not to be found in that character of itself, but is due to the particular set or group of other characters with which it is associated. One might almost say of this group that one character alone is not generic, and that it becomes so only when associated with others that limit its application.

It is doubtful if all possible characters have been included in the generic description. Among those of doubtful rank may be mentioned, palpi dull orange; uppermost pair of frontals in female not noticeably, if at all, farther apart than preceding pairs (they are farther apart in other genera discussed, except *Agria*).

Sarcophartia ravinia sp. nov. (Fig. 1, page 137.)

(♂ and ♀.) Second and third antennal segments pinkish orange (usually, not habitually); palpi dull orange; hairs fringing calypters dark at bend, anterior face of posterior femur with two rows of bristles only, a lower and an upper; posterior surface of middle tibia of male with a single bristle on the middle line distal to the center (two others are present in females, but are more proximal and close to the median dorsal ridge); submesotibial bristle absent in male. Forceps of male with prongs spread from near base (*Ra-*

vinia-like). First genital segment (notum) of female not divided into two lateral lips.

(♂.) Length, 7 to 11 mm.

HEAD: Viewed from side parafrontals and genæ with dark reflections. Breadth of front at its narrowest part about three-sevenths eye width; cheek height about one-fourth that of eye. Front prominent; frontal vitta at its narrowest part usually greater than twice the width of each parafrontal, its sides drawn in at base and converging backward in a slight curve. Second and third antennal segments pinkish orange; third one and one-fourth to one and one-half times length of second; arista shortly plumose to beyond middle, hairs on lower side continuing farthest outward. Palpi, dull orange. *Chaetotaxy*. Lateral verticles absent, virbrissæ inserted on line of oral margin.

THORAX: Metanotum clothed with short, reclinate bristles. Hairs covering anterior spiracle usually dark above, light toward base of spiracle, or base of hairs dark and tips light; those of anterior margin of posterior spiracle may be dark below and light above or almost entirely light colored; those of spiracular cover very light and often tinged with brown centrally at base.

WINGS: Bend of fourth vein essentially a right angle; anterior cross-vein slightly more basal than end of first longitudinal; third vein with bristles near its base that may extend more than half way to anterior cross vein; costal spine short; section III of costa at least equal to section V; fifth vein continued beyond junction with posterior cross-vein; alulæ fringed with hair; calypters whitish: but posterior one is often more or less smoky, margin with dark hairs at bend at least, otherwise the fringe white.

LEGS: Dark; vestiture short, except under side of coxæ, trochanter with a distinct apical spine: femur more or less spindle shaped; anterior face with two rows of bristles only, an upper and a lower; posterior face with a ventral row of slender bristles that are at least as long as those of lower row of anterior face, well differentiated centrally and extending distally to beyond middle of femur: tibia with a single bristle on anterior face (besides those close to median dorsal ridge) just distal of the middle and nearest the lower side: tarsus slightly shorter than tibia. Anterior and posterior ventral rows of bristles of middle femur developed on proximal half only or thereabouts, distal portion of posterior row

is represented by a short "comb;" submesotibial bristle absent; posterior surface of tibia with a single bristle, this on its middle line on distal half (no bristles on this surface near median dorsal ridge). Ventral surface of anterior coxa with two irregular rows of bristles, one at each side: tibia with a single bristle on posterior surface distal to center and on middle line. *Chaetotaxy*. The two posterior pairs of anterior dorsocentrals are scarcely, if at all, weaker than the two anterior pairs of postsuturals, one or two weaker and sometimes inconspicuous pairs anterior to these; acrostichals absent; inner presuturals absent: three pairs posterior dorsocentrals, last somewhat the strongest; prescutellar acrostichals present; usually four sternopleurals, sometimes two, three or five; subnotopleurals slender, but distinct.

ABDOMEN: Outline almost elliptical; nota clothed above with short reclinate bristles, beneath with longer almost erect hair. Vestiture of the three ventral plates practically of same length and not short. Spiracles of nota on each side in a straight line, the rows parallel to longitudinal axis of abdomen and to each other. Fourth segment may or may not be wholly or in part of same color as genital segments. *Chaetotaxy*. Second segment with weak, inconspicuous, decumbent marginal bristles; third with two, only occasionally with weaker ones between these and laterals, latter become more slender ventrally but extend well toward ventral plate, fourth with complete row ending ventrally at forward turn of margin.

GENITAL SEGMENTS: Large, protuberant, filling entire opening of fourth segment and notum fits them closely; dull orange, sometimes yellowish pollinose: first, much larger than second; normally with two rows of bristles, first just anterior to line of fusion of sixth and seventh nota, second on posterior margin, either row may be absent, when both are present those of marginal row the weaker; vestiture sparse and only on posterior half of sixth notum, an irregular line of minute bristles anterior to first row of bristles; in profile showing a more or less distinct "hump:" second, in normal position directly beneath first, and appears discoidal (when segments are pulled out is more triangular in profile); vestiture sparse, scarcely longer than that at first. Forceps (rarely exposed); small, base without upward flap-like extensions, prongs attenuated, tips darkened and bent slightly forward but not approaching each other.

GENITALIA: Fourth ventral plate same color as genital segments, without lamellæ, almost naked. Accessory plates seem to be linear processes from second segment that extend forward from near base of forceps and then turn inward and downward. Anterior claspers stubby, ends bent forward and slightly expanded; posterior claspers slender, hooked forward at tips, often retracted within second segment and not visible. For structure of penis see Fig. 6.

Females differ from males in following important characters.

HEAD: Breadth of front at its narrowest part about equal to eye width, cheek height two sevenths to one third of eye. Just below ocellar triangle frontal vitta fully twice as wide as each parafrontal, much broader than in male, its sides parallel and distinctly delineated to posterior extremity of the triangle. Third antennal segment broader and thicker than in male and prominently marked with sensory organs. *Chaetotaxy.* Last pair of frontals (stronger than preceding pairs and directed backward and outward) on same transverse line as greater ocellars.

WINGS: Bend of fourth vein slightly acute; costal spine slightly stronger than in male.

LEGS: Ventral row of bristles of posterior face of hind femur confined to proximal half; tarsus fully as long as tibia. "Comb" absent on middle femur; posterior face of tibia with two additional bristles that are near median dorsal ridge, submesotibial bristle present. *Chaetotaxy.* That of mesonotum somewhat more reclinate.

ABDOMEN: Oval in outline, clothed throughout with short reclinate bristles. *Chaetotaxy.* Marginals of second segment even less conspicuous than in male; laterals of second and third segments extend to ventral plate but are short and decumbent.

GENITAL SEGMENTS: Not protuberant. Fifth ventral plate wider than fourth and of same color as genital nota. Fifth notum (first genital segment) not divided into lateral lips, narrow, fringed with bristles; spiracles scarcely visible (concealed by fourth notum), well below center. Notum and sternum of second genital segment prominent.

Described from nine male and two female specimens.

Type: Massachusetts Agricultural College, Amherst, Mass., male and female. *Paratypes:* United States National Museum, Wash-

ington, D. C., one male, one female; Gypsy Moth Laboratory, Melrose Highlands, Mass., four males; collection of H. E. Smith, one male; collection of R. R. Parker, two males.

Range: New England. Massachusetts: Lunenburg (R. T. Webber), North Andover (D. C. Clemons), Melrose Highlands (D. C. Clemons), Wareham (Dr. Franklin). New Hampshire:

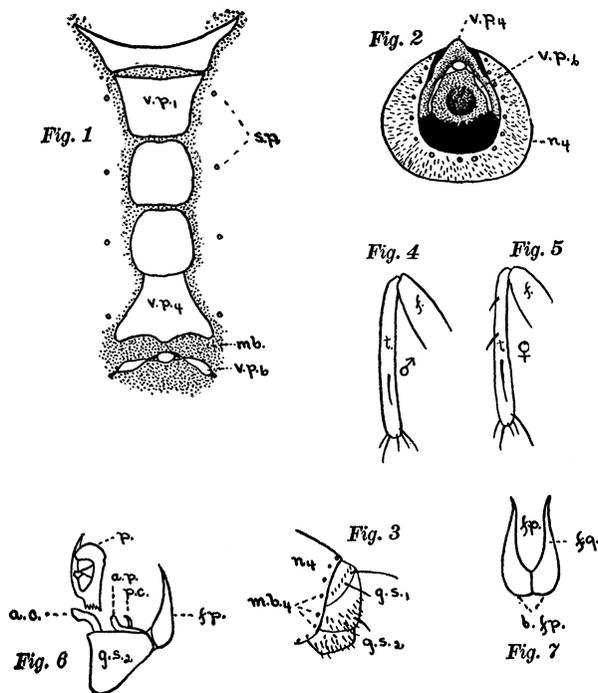


Fig. 1. *Sarcophartia ravinia* (For explanation, see p. 138.)

Franconia (Mrs. Slosson). Connecticut: Hamden (B. H. Walden). Inclusive dates of capture, May 20 and August 20.

The most important points for discussion have been considered following the generic description. The following may also be noted. The most distal bristles of the lower row of the anterior face of the third femur in males is not habitually the strongest as in most species of *Sarcophaga*; as a rule there are other stronger bristles in this row. The rows of bristles on the first genital segment are very inconstant; the first row may be lacking, may consist of two stout bristles at the center or there may be an additional

pair lateral to these (four in all); the bristles of the marginal row are more slender and may also be lacking. Both rows were not absent in any specimen examined by the writer. The connection membrane between the genital segments has less play than in most species of *Sarcophaga* and is scarcely discernible. The accessory plates somewhat resemble these of the tsetse flies as regards their apparent position. Due to the fact that the ventral edges of the third and fourth abdominal nota overlap the third and fourth central plates these are not plainly visible as in the genus *Sarcophaga*.

The writer is indebted to the United States National Museum, to Mr. A. F. Burgess of the Gypsy Moth Laboratory at Melrose Highlands, Mass., to Prof. H. T. Fernald of the Massachusetts Agricultural College at Amherst, and to Mr. H. E. Smith of the Bureau of Entomology Laboratory at West Springfield, Mass., for the loan of material.

EXPLANATION OF FIGURE 1. *Sarcofahrtia ravinia* sp. nov.

- Fig. 1. Showing character of ventral plates, of sixth ventral plate (sternum) and position of spiracles; the sixth ventral plate pulled out of normal position.
- Fig. 2. End of abdomen with hypopygium removed and showing normal position of sixth ventral plate (membrane folded back and sixth plate lies above fourth taxonomic plate).
- Fig. 3. Profile view of end of abdomen with genital segments in their normal position. Note line of fusion of sixth and seventh abdominal nota and the two rows of bristles.
- Fig. 4. Posterior surface of middle tibia of male showing one bristle.
- Fig. 5. Posterior surface of middle tibia of female showing two bristles in addition to the one found in the male.
- Fig. 6. Profile view of second genital segment, forceps, penis and claspers.
- Fig. 7. Posterior view of forceps. Note base without upward flap-like extensions and the spread forceps prongs (*Ravinia* like).

ABBREVIATIONS.

- a.c. = anterior claspers.
 a.p. = accessory plate.
 b.fp. = base of forceps.
 f. = femur.
 fg. = forceps prong.
 fp. = forceps.
 g_1 and g_2 = first and second genital segments.
 n_4 = fourth notum.
 n_4^m = marginal bristles of fourth notum.
 mb. = membrane.
 p. = penis.
 p.c. = posterior claspers.
 sp. = spiracles.
 t. = tibia.
 $v.p._1$, $v.p._4$, $v.p._6$ = first, fourth and sixth ventral plates.

 TAXONOMIC NOTES ON AGATHINÆ (HYMENOPTERA-BRACONIDÆ).

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A NEW DEFINITION OF CRASSOMICRODUS ASHMEAD.

A study of the type of *Microdus fulvescens* Cresson, designated by Ashmead as type of his genus *Crassomicrodus* (Proc. U. S. Nat. Mus., vol. 23, p. 128, 1900), reveals the fact that in this species the hind wings have no closed discoidal cell and the longer spurs of the posterior tibiæ are decidedly less than one half of the length of the metatarsi. These are the characters upon which Ashmead based his genus and by which he separated it from *Epimicrodus*. The designated type of the latter genus is *Microdus diversus* Cresson, undoubtedly, as Mr. Viereck has already pointed out, a misprint for *divisus* Cresson, since Mr. Cresson never described a *Microdus* under the name *diversus*. Moreover *divisus* agrees well with most of the characters assigned by Ashmead to the genus *Epimicrodus*.



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