

***Rymosia* Winnertz (Diptera: Mycetophilidae), a newly recognised element of wetland faunas, with five species new to Britain and a key to species**

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Edwards (1925, 1941) recognised ten British species of Tuomikoski's (1966) concept of *Rymosia* Winnertz, and Chandler (1977) added *R. armata* Lackschewitz. The genus falls into two broad groups according to the presence or absence of spinose setae beneath segments 3 and 4 of the male fore tarsi, five of the British species possessing these spines while the remainder lack them.

Recent collecting, principally during surveys carried out by pitfall, water and Malaise traps, on upland and wetland sites, has produced much material of *Rymosia*, including *R. britteni* Edwards, *R. armata* Lackschewitz and four species new to the British list (all of them previously undescribed). A fifth addition to the British list (*R. acta* Dziedzicki) from Scottish forest, is also introduced, bringing the total to 16 species. All of these additions lack the tarsal spines and there are few specific characters other than in the genitalia; abdominal markings show some distinctions but are variable. The male genitalia are, however, quite distinct in each case; the females have not been recognised for some species and, where they are known, differences in the ovipositor are not great.

The other four British species with simple male fore tarsi include *R. fasciata* (Meigen), generally common in woods, which has been reared from various soft terrestrial fungi; *R. virens* Dziedzicki and *R. placida* Winnertz, which are less common but widespread woodland species. Little is known of the other species, *R. connexa* Winnertz, but it has been found in wooded and open habitats, including coastal sites (no information on precise habitat) at Blakeney Point, Norfolk and Gibraltar Point, Lincs. The most recent record known to me was from Wykeham, N. Yorks., 5–6.ix.1978 (*P. Q. Winter*, via P. Skidmore) in an open site in the Derwent Valley. It is presumed that all species of the genus develop in soft fungi (*R. virens* and *R. affinis* Winnertz are known to have this habit) but most have not yet been reared.

The distribution so far established for the six wetland species is indicated on the accompanying maps, to demonstrate the differences in their ranges. The habitats from which these species have been recorded may be summarised as follows.

R. armata Lackschewitz (Fig. 1)

Widespread in England and Wales; two known Scottish sites. Wooded and open fen and bog sites: amongst *Carex rostrata*, *C. paniculata*, *Juncus* flushes, acidic basin mires, raised bog. The Sussex and Hants records are from wooded pond margins.

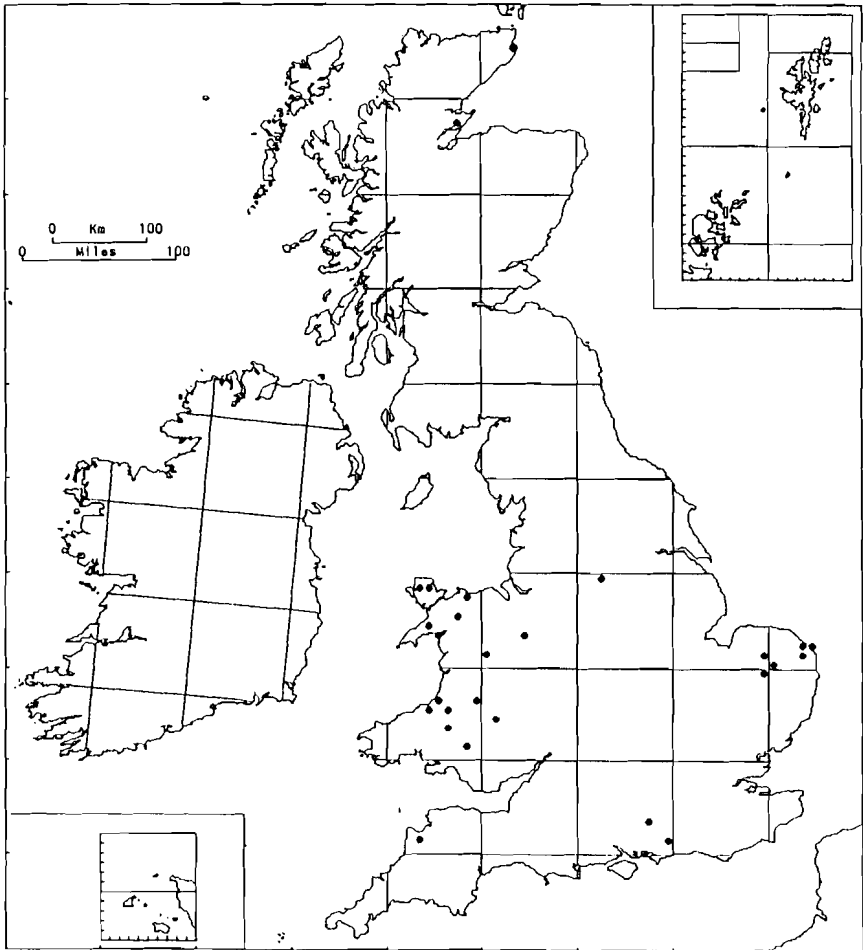


Fig. 1. Map showing distribution in the British Isles of *Rymosia armata* Lackschewitz.

R. coulsoni sp. n. (Fig. 2)

Widespread in Wales and N. England in the following open habitats: upland valley and basin mires, *Juncus* and *Molinia* bogs, *Juncus* flushes, amongst *Sphagnum* and *Eriophorum*, raised bogs.

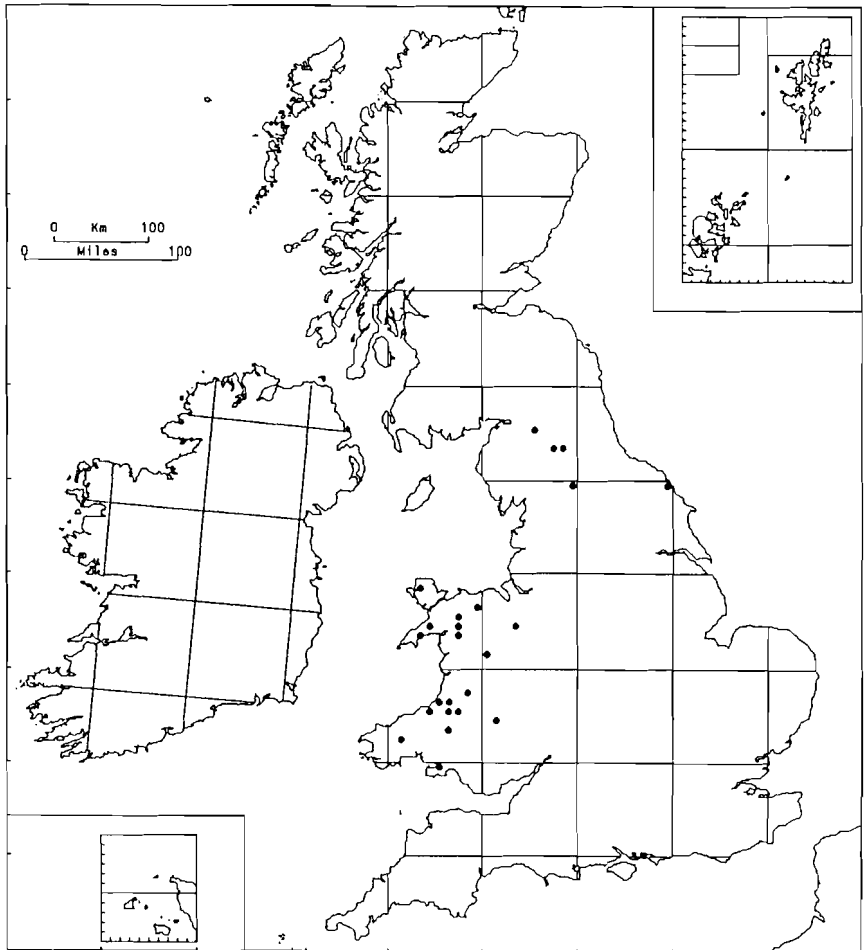


Fig. 2. Map showing distribution in the British Isles of *Rymosia coulsoni* sp. n.

R. speyae sp. n. (Fig. 3A)

Only two sites, both floodplain fens, i.e. *Carex*-dominated fen by Loch Insh in the Spey Valley and Cors Gyfelog by the Afon Dwyfach.

R. thorneae sp. n. (Fig. 3B)

Welsh sites: amongst *Phragmites*, wet *Myrica* flush, *Juncus* and *Molinia* bog and raised bog. Yorkshire site: raised mire.

R. fosteri sp. n. (Fig. 3C)

Open and wooded fen sites: calcareous valley mires in Oxfordshire and East Anglia.

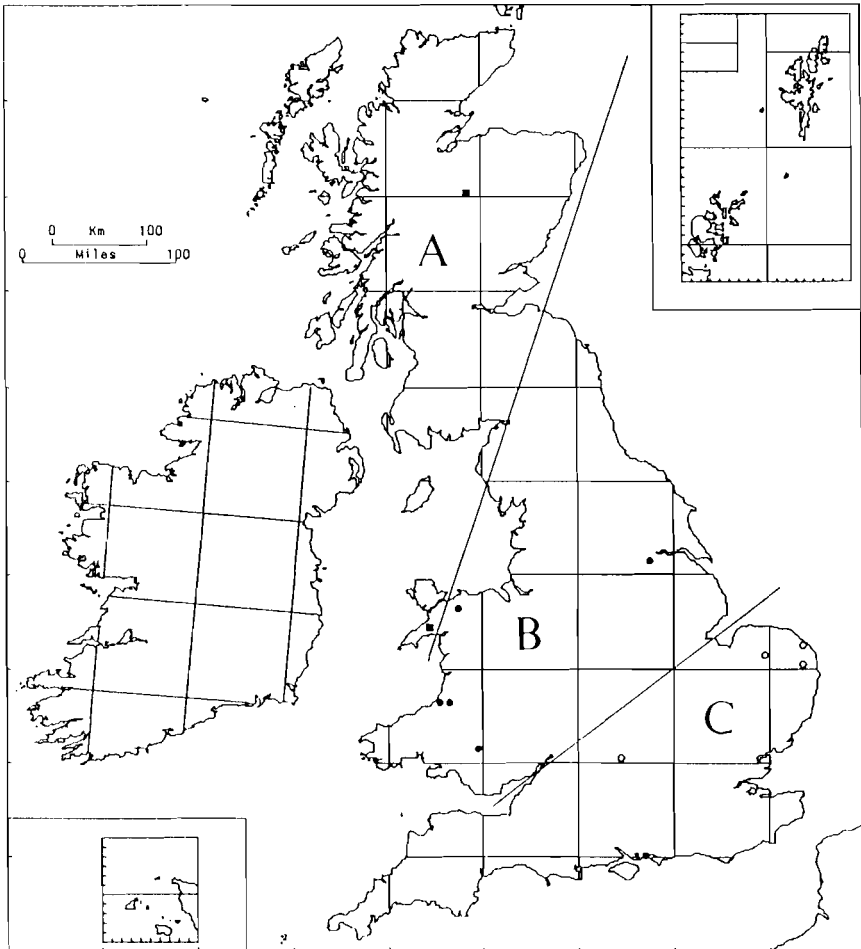


Fig. 3. Map showing distribution in the British Isles of *Rymosia* species: area A (■) *R. speyae* sp. n.; area B (●) *R. thorneae* sp. n.; area C (○) *R. fosteri* sp. n.

R. britteni Edwards (Fig. 4)

Open and wooded fen sites in Oxfordshire and East Anglia; also valley mires on a dry heathland site and by wooded streams in upland areas.

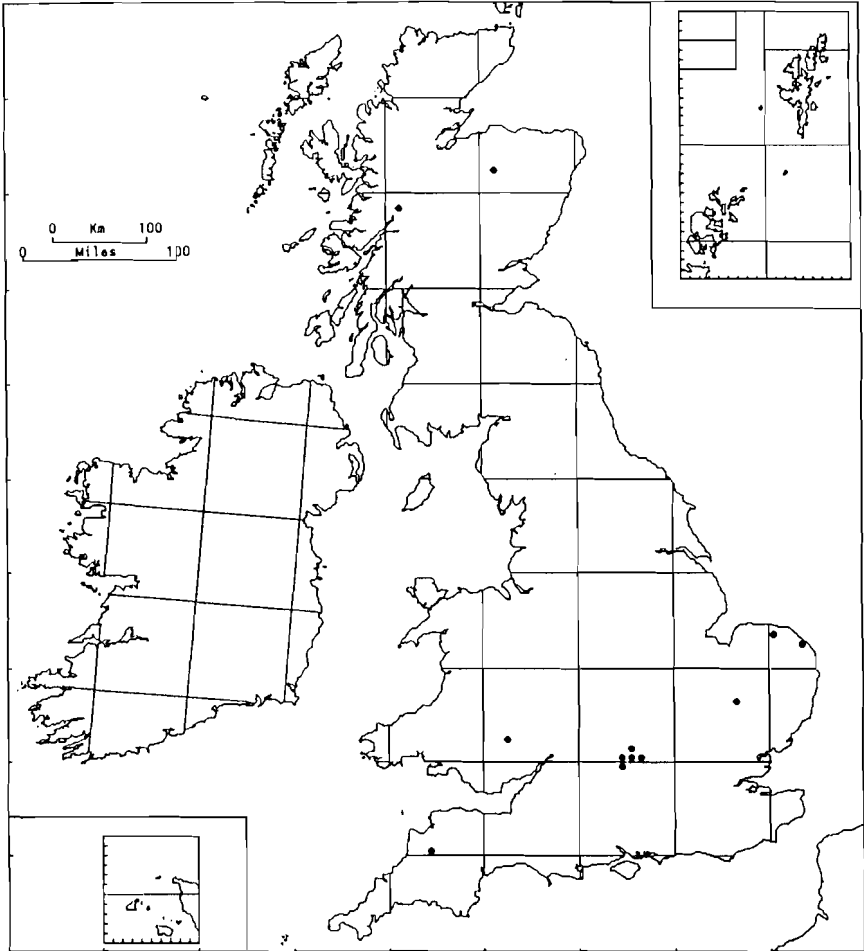


Fig. 4. Map showing distribution in the British Isles of *Rymosia britteni* Edwards.

Key to British species of *Rymosia* Winnertz

This is expanded from Edwards' (1925) key to include the seven species added by Edwards (1941), Chandler (1977) and in the present paper.

- 1 Hind femora with broad brown ring near base; a distinct brown cloud on the wing behind CuA₂. Mesoscutum without discal bristles. [1 strong, 1 weak proepisternal (= propleural) bristle. ♂ front tarsi simple. ♂ tergites 2–5 with progressively broader basal bands; ♀ also with basal lateral yellow patches on tergite 6, 7 all yellow.] *placida* Winnertz
- Hind femora all yellow. No cloud behind CuA₂. Discal (dorsocentral) bristles present although may be small 2
- 2 Discal bristles of mesoscutum very small. [♂ front tarsi simple. Cross-vein r-m 1.5–2.0 × length of stem of median fork. Second proepisternal more than half length of first.] 3
- Discal bristles in dorsocentral rows well developed 4
- 3 Tergites 2–5 (♂), 2–6 (♀) broadly yellow basally, these markings narrowly divided dorsally. [5(–6) posterior setae near tip of hind tibia.] *virens* Dziedzicki
- Tergites 2–5 (♂) with lateral yellow basal markings widely separated dorsally (♀ not seen). [7 posterior setae near tip of hind tibia.] *acta* Dziedzicki
- 4 Hind tibia with irregular patch of close-set posterior bristles near tip. Base of posterior fork well before base of r-m, which is not much longer than stem of median fork. [Second proepisternal weak, less than half first. Tergites 2–4 (♂), 2–5 (♀) with yellow basal bands, emarginate medially. ♂ fore tarsi with spines below segments 3 and 4.] *signatipes* (Wulp)
- Hind tibia with row of 3–6 stronger posterior bristles near tip. Base of posterior fork usually not well before base of r-m which is usually longer than stem of median fork 5
- 5 Male fore tarsi with spines below segments 3 and 4 6
- Male fore tarsi simple. [Cross-vein r-m 1.5–2.0 × stem of median fork.] 9
- 6 Second proepisternal strong, two-thirds length of first. Cross-vein r-m 2.5–3.0 × stem of median fork. Tergites 2–5 (♂), 2–6 (♀) with yellow basal bands narrowed in middle, that on 6 in ♀ very narrow in middle *setiger* Dziedzicki
- Second proepisternal weak or absent. Cross-vein r-m 1.5–2.0 × stem of median fork 7
- 7 Abdomen with distinct yellow basal bands on tergites 2–5 (♂), 2–6 (♀), which extend narrowly onto hind margins of tergites 1–4 (–5 in ♀). [Second proepisternal very weak.] *affinis* Winnertz (= *gracilipes* Dziedzicki)
- Abdomen with less conspicuous markings and hind margins of all tergites dark. [Second proepisternal absent.] 8
- 8 Lateral margins of tergites 2 and 3 (–4) entirely yellowish, this marking extended narrowly along hind margins of 2–3. Coxae clear yellow *bifida* Edwards
- Lateral margins of tergites 2 and 3 dark except at base; 2 and 3 (–4) narrowly yellow on hind margin, 2 and 4 with broader yellow bands basally (a third tergal length) *spinipes* Edwards

- 9 Tergites 2–5 (♂), 2–6 (♀) with complete yellow basal bands. [Second proepisternal weak. Cross-vein r-m nearly twice stem of median fork.] *fasciata* Meigen
 – Tergites with yellow markings strongly emarginate or more usually separated medially 10
- 10 Second proepisternal strong, about half length of first 11
 – Second proepisternal weak or absent 13
- 11 Tergites 1–4 (♂), 1–7 (♀) entirely yellow laterally with narrow dark median dorsal stripe *coulsoni* sp. n.
 – Tergites 2–5 (♂), 2–7 (–8) (♀) with yellow markings but not entirely yellow laterally 12
- 12 Tergite 2 (♂) entirely yellow laterally, basal two-thirds of 3–4 and small yellow basal marking on 5, all broadly separated dorsally; tergites 2–6 (♀) with yellow basal markings on basal two-thirds *armata* Lackschewitz
 – Tergites 2–5 (♂), 2–7 (♀) with yellow markings on basal two-thirds or more, widely separated dorsally *thorneae* sp. n.
- 13 Tergites with well-defined yellow basal markings, strongly emarginate or narrowly separated dorsally 14
 – Tergites with pale markings not well defined 15
- 14 Tergites 2–5 (♂, ♀ not seen) with basal yellow bands, ± narrowly interrupted dorsally. [Only 1 strong proepisternal.] *fosteri* sp. n.
 – Tergites 2–5 (♂), 2–6 (♀) with yellow basal markings occupying half or more of tergites, narrowly separated dorsally. [A second proepisternal but rather weak.] *britteni* Edwards
- 15 Tergites 2–4 mainly yellow laterally, 4 narrowly dark apically, base of 5 sometimes with yellow patch. [Second proepisternal weak, a little less than half first.] *connexa* Winnertz
 – Tergites 2–4 (especially 3) with small indistinct yellow basal lateral patches, less than half length of tergite in length and height. [Only 1 strong proepisternal.] *speyae* sp. n.

***Rymosia signatipes* (Wulp, 1859) nom. rev.**

Mycetophila signatipes Wulp, 1859: 179.

Rymosia truncata Winnertz, 1863: 815.

Rymosia winnertzi Barendrecht, 1938: 46. **Syn. n.**

The name *signatipes* used by Edwards (1925) for this species is restored here. The confusion arose because Dziedzicki (1910) figured Winnertz' type (now lost) of *truncata* and in the same paper figured *signatipes* (Wulp) as a distinct species. Barendrecht (1938) examined Wulp's type and recognised it as agreeing with Dziedzicki's figures of *truncata*, which he placed in synonymy with *signatipes*. Believing Dziedzicki's *signatipes* to be a different species, he proposed the name *winnertzi* for it. Edwards (1941) accepted this conclusion and introduced the name *winnertzi* to the British list. From examination of several British specimens, which I found to agree better with the figures of *truncata* than those of *signatipes*, I

have concluded that the latter represent the same species, depicted with the gonostyli deflected and more exposed than normally apparent in situ. This species is widespread but local in woods in southern England and Wales.

Rymosia armata Lackschewitz, 1937

The original British specimen was from Scotland (Ross) and it was found in a survey of the Caithness 'Flow Country', Killimster, 2.v.1990 (*J. Coulson*). It has also proved frequent in wetland sites in East Anglia and Wales, with some Welsh sites in common with *R. coulsoni* sp. n. Other new records are as follows: **Salop**: ♂, Whixall Moss, 11.x.1936 (*C. H. W. Pugh*, Manchester University Museum). **Devon**: ♂, Powler's Piece, 13.x.1988 (*A. E. Stubbs*). **Sussex**: ♂, Burton Mill Pond, 13.x.1989 (*A. Godfrey*). **Hants**: ♂, Shortheath Common, 24.vi.1990 (*Chandler*). **Yorks**: ♂, Agden Bog, 31.iii.1990 (*A. Godfrey*).

The male genitalia were figured by Chandler (1977), except for the aedeagus and tergite 9 which are figured here (Fig. 5a); the structure of the aedeagal parameres (also shown in Lackschewitz' figures), differing strongly from the new species described here, confirms its identity. The large material examined has enabled the female to be recognised (Fig. 7a).

The Whixall Moss example has the thorax more yellowish (only dark grey dusted on the disc of the dorsum) and abdomen with tergites 2-4 and basal margin of 5 yellow except on the dorsal mid line. Other males have yellow markings more restricted to basal lateral patches on 2-4 (or 5).

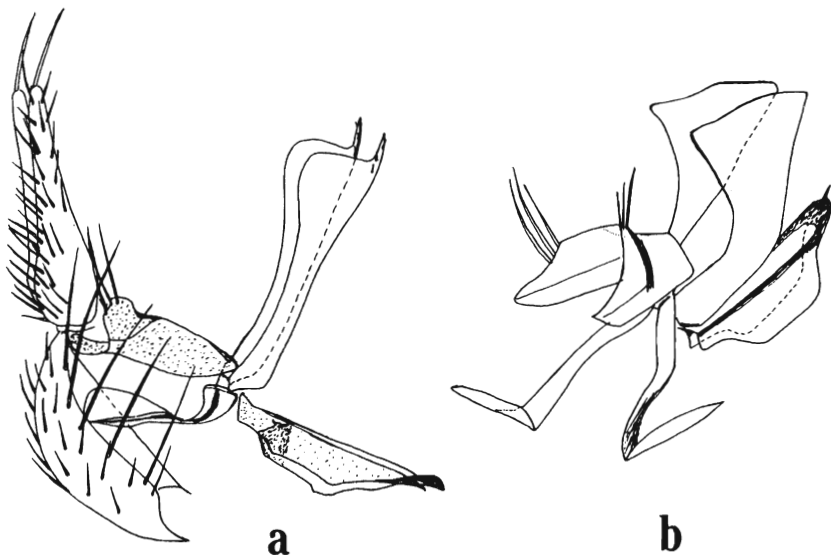


Fig. 5. Male genitalia of *Rymosia* species. a, *R. armata* Lackschewitz, lateral view of tergite 9, cerci, aedeagus and parameres; b, *R. coulsoni* sp. n., lateral view of aedeagus and parameres.

Rymosia coulsoni sp. n.

Male. Head dark brown, grey dusted. Antennae with pedicel and greater part of first flagellar segment yellow, rest brown; flagellar segments more than twice as long as broad. Palpi yellow. Thorax brown, grey dusted, darker on disc of mesoscutum. Chaetotaxy as in *armata*, second proepisternal (propleural) about two-thirds length of strong anterior bristle. Halteres yellow. Legs entirely yellow, with all bristles and setulae dark. Tibiae 2 and 3 with series of weak bristles distributed as in *armata*; mid tibia with close-set rows of a, 3 p-d, 3 p, 3 v, hind tibia with 4 a, 3 d, 5 p near tip, 2 v. Fore metatarsus subequal to its tibia in length or a little shorter. Wings yellowish, more brownish in radial sector. Venation similar to *armata*. Abdomen usually mainly yellow on sides of tergites 1–4 (sometimes 5 also) with narrow dark mid line dorsally, tergites 5–6 (or sometimes only 6) entirely dark, genitalia yellow (Figs 5b, 6) (one male from Bog End has the body entirely dark except for the yellow genitalia). Wing length 2.4–2.8 mm.

Female. Similar in most respects but abdomen more extensively yellow, with only dorsal mid line dark on all tergites. Ovipositor yellow (Fig. 7b). Wing length 2.6–2.9 mm.

MATERIAL EXAMINED

Holotype ♂, **Cumbria:** Bolton Estate, Beldon Bottom, 17.ix.1978 (*J. Coulson*) (deposited in Natural History Museum, London).

Paratypes. **Cumbria:** ♀, locality as holotype, 16.ix.1976; ♂, Moorhouse, Bog End, amongst *Juncus*, 10.v.1977 (*J. Coulson*). **Dyfed** (Cardigan): 1 ♂, Llyn Eiddwen, 30.vii.1987, valley fen; 1 ♂, 2 ♀, locality as last, 8.x.1987, valley fen; 3 ♂, Comin-Esgair-maen, 23.vii.1987, valley fen; 1 ♂, 1 ♀, locality as last, 1.x.1987, valley fen; 1 ♂, 1 ♀, Cors Gorsgoch, 29.vii.1987, basin mire; 3 ♂, as last but valley mire; 1 ♂, 1 ♀ Cors Llyn Farch y Llyn Fanod, 23.vii.1987, basin mire (*P. Holmes, D. Boyce & D. Reed*).

Other material. Many ♂♀ (33 ♂, 14 ♀ retained) from above Welsh localities and 22 other wetland localities: **Cardigan** (Llyn y Gwaith, Figyn Blaen Brefi, Gwaun Garthenor, Cors Caron, Cors Caranod and Cwm Ystwyth). **Pembroke** (Gors Fawr). **Carmarthen** (Cors Bryn Mawr, Cors Farlais). **Anglesey** (Cors Clegyrrog). **Gwynedd** (Merioneth: Trawsfynydd; Caernarfon: Migneint, Llyn Ystumllyn, Cors Graianog, Rhosgyll Fawr, Llyn Pencraig, Cors Geirch). **Powys** (Montgomery) Cors Lawnt, Llyn Coethlyn; Radnor: Rhos Goch). **Clwyd** (Denbigh: Sontley Marsh, Blaen y Wergloedd). **W. Glamorgan** (Cefn Bryn) (all above *Holmes, Boyce & Reed*). **Cumbria:** Cumwhitton (*A. Godfrey*). **N. Yorks:** Chapel Fell; Gunnerside (*J. Coulson*).

Comments. Most material of this species was collected passively, the Coulson examples in pitfall traps and the Welsh material in water traps. It first came to my notice from John Coulson's material but was initially confused with *armata* until the Welsh material became available. The shape of the ventral stylomeres differs from that of *armata* and *speyae* (most obviously in lateral view) but the aedeagal parameres provide the most obvious differences.

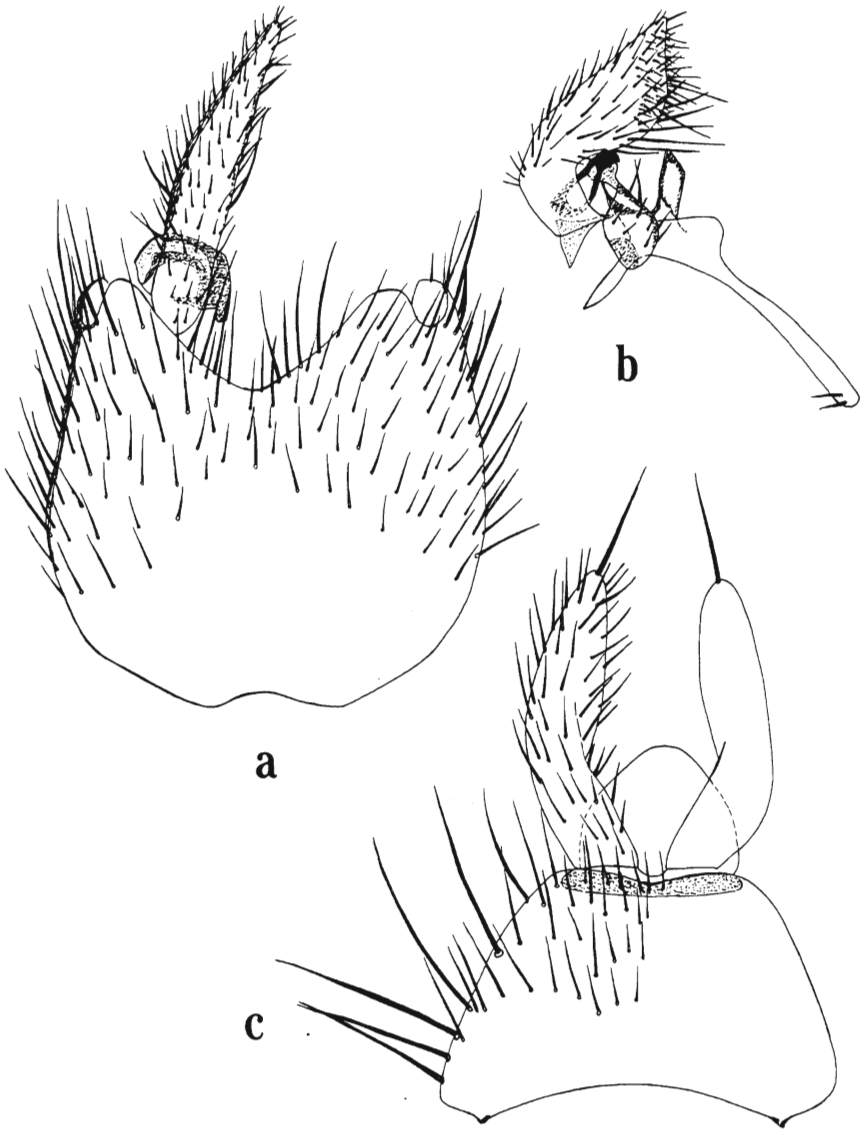


Fig. 6. Male genitalia of *Rymosia coulsoni* sp. n. a, ventral view of gonocoxite and gonostylus; b, external view of right gonostylus; c, dorsal view of tergite 9 and cerci.

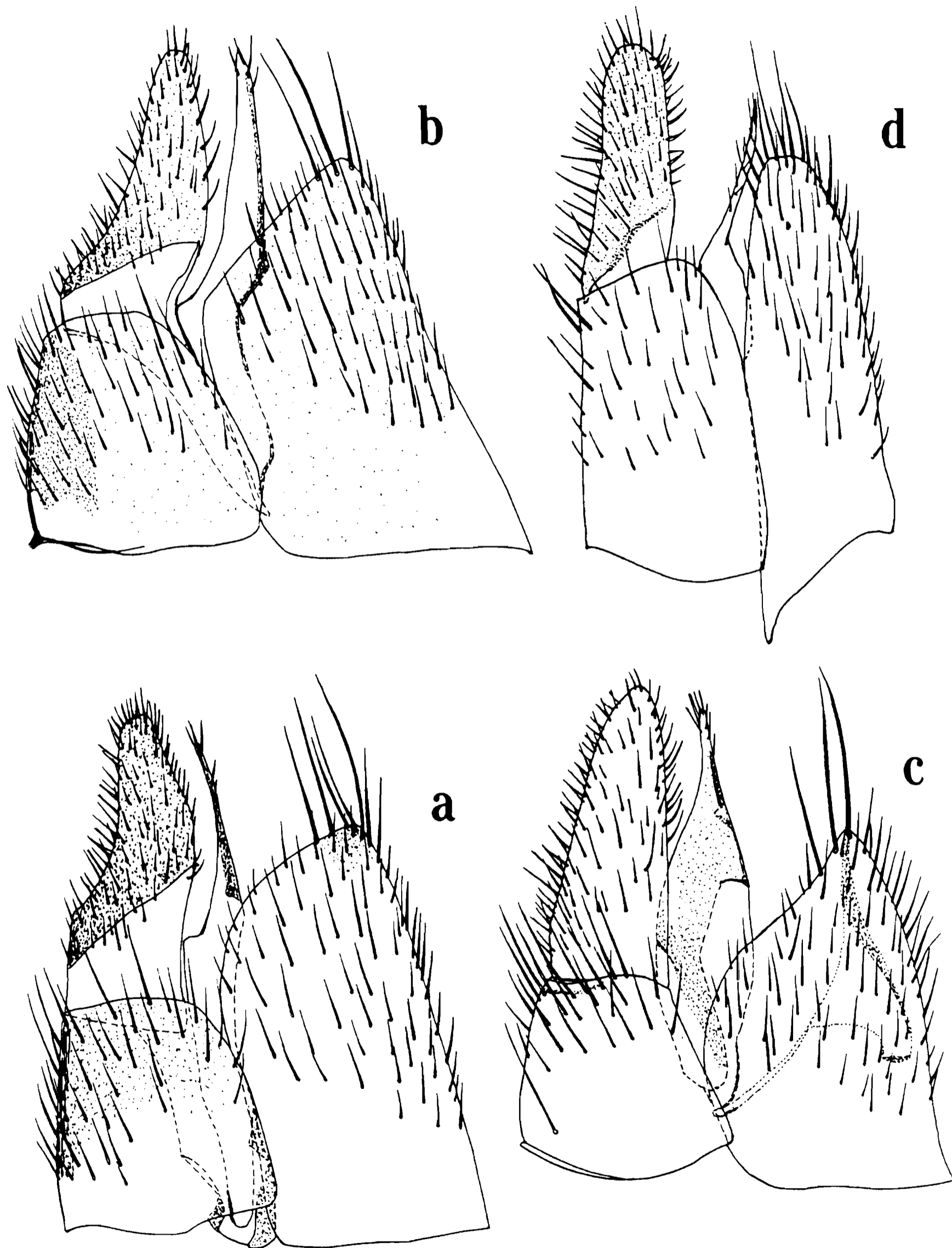


Fig. 7. Ovipositors of *Rymosia* species. a, *R. armata* Lackschewitz; b, *R. coulsoni* sp. n.; c, *R. thorneae* sp. n.; d, *R. britteni* Edwards.

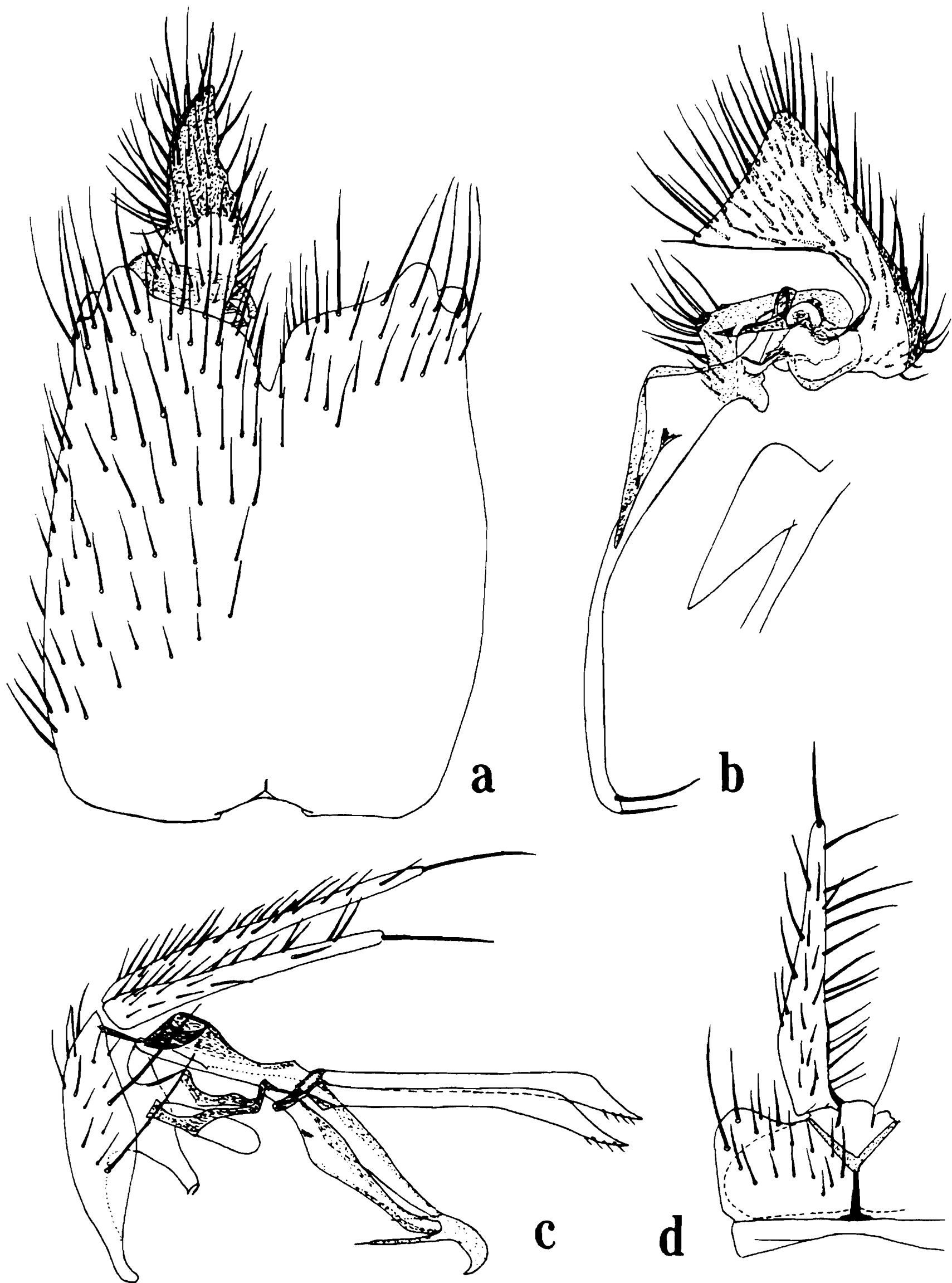


Fig. 8. Male genitalia of *Rymosia speyae* sp. n. a, ventral view of gonocoxite and left gonostylus; b, internal view of right gonostylus, with inset ventral aspect of basal part of internal portion; c, lateral view of tergite 9, cerci, aedeagus and parameres; d, dorsal view of tergite 9 and cercus.

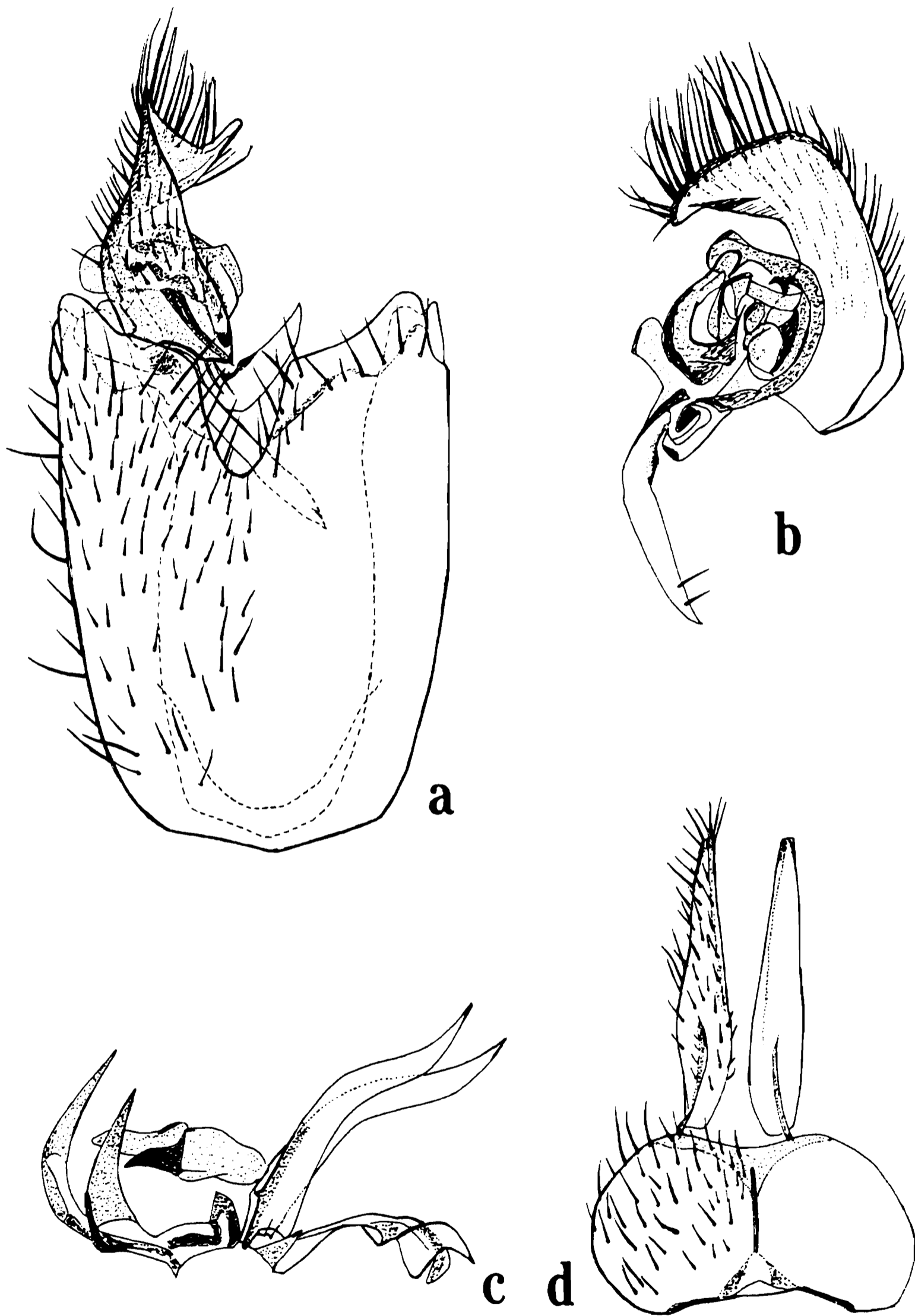


Fig. 9. Male genitalia of *Rymosia sagulata* Plassmann. a, ventral view of gonocoxite and left gonostylus; b, internal view of right gonostylus; c, lateral view of aedeagus and parameres; d, dorsal view of tergite 9 and cerci.

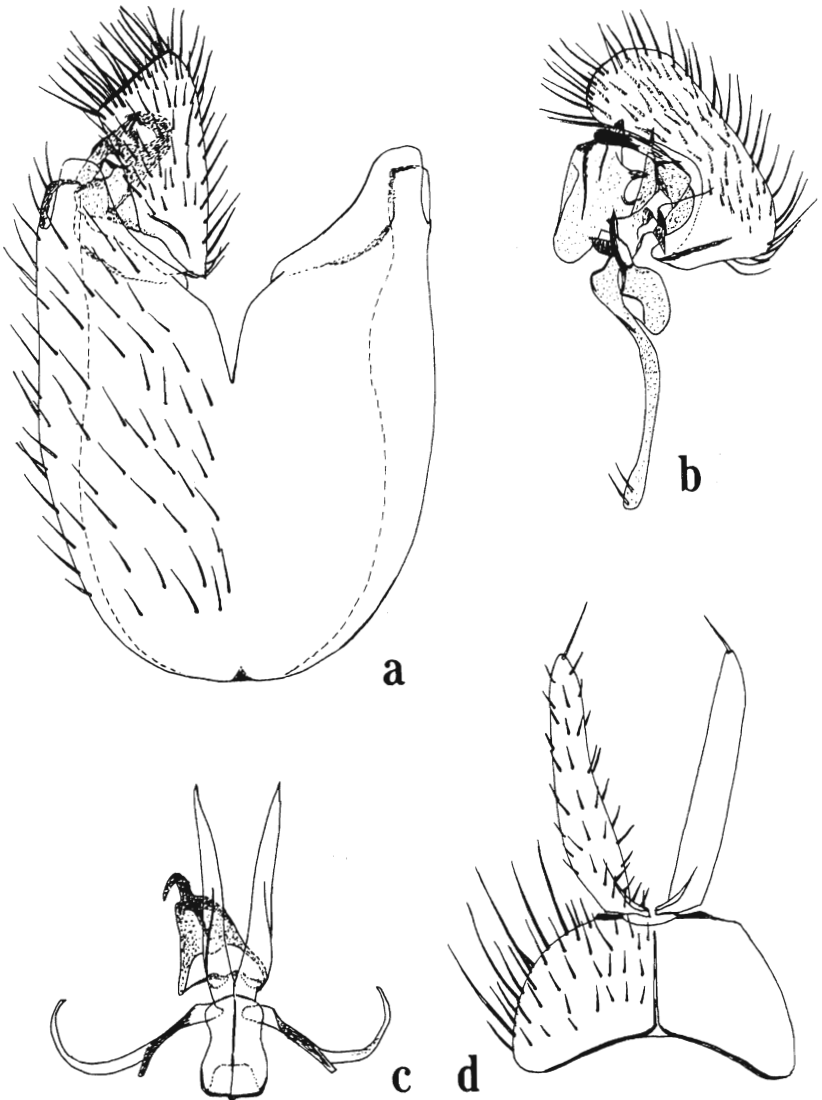


Fig. 10. Male genitalia of *Rymosia guttata* Lundström. a, ventral view of gonocoxite and left gonostylus; b, internal view of right gonostylus; c, dorsal view of aedeagus and parameres; d, dorsal view of tergite 9 and cerci.

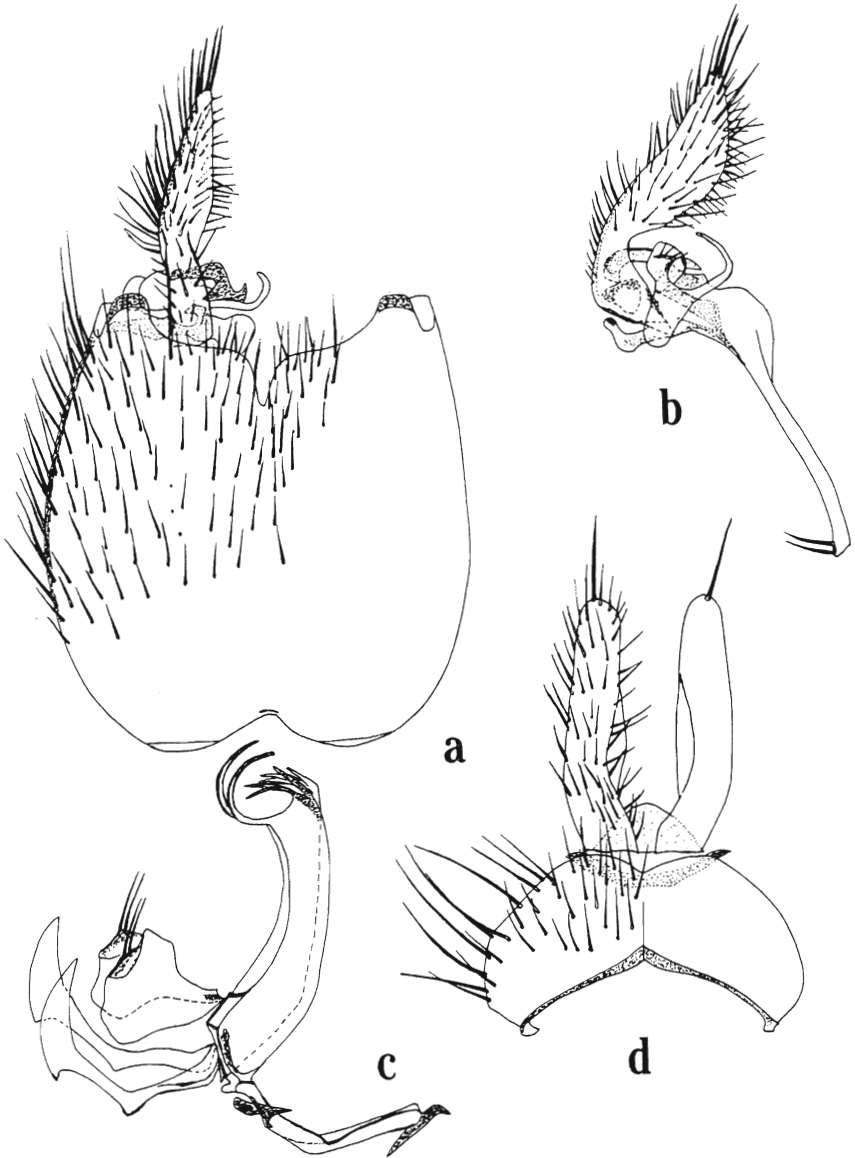


Fig. 11. Male genitalia of *Rymosia thorneae* sp. n. a, ventral view of gonocoxite and gonostylus; b, external view of right gonostylus; c, lateral view of aedeagus and parameres; d, dorsal view of tergite 9 and cerci.

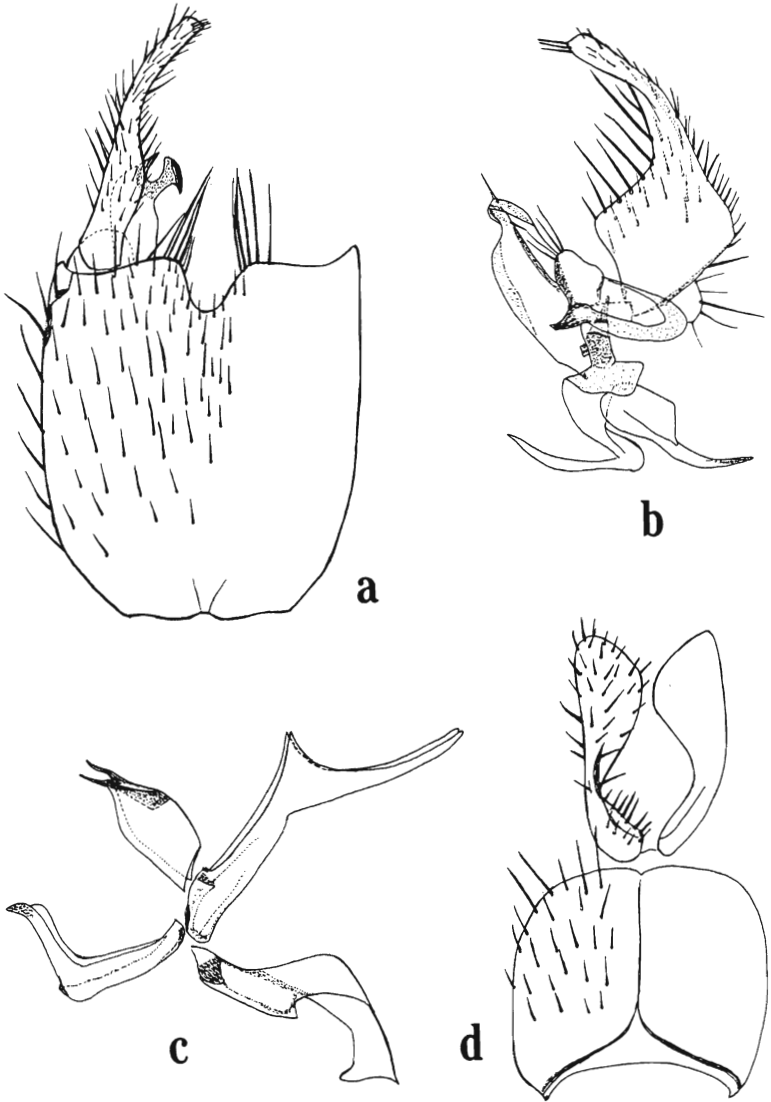


Fig. 12. Male genitalia of *Rymosia caucasia* Plassmann. a, ventral view of gonocoxite and gonostylus; b, internal view of right gonostylus; c, lateral view of aedeagus and parameres; d, dorsal view of tergite 9 and cerci.

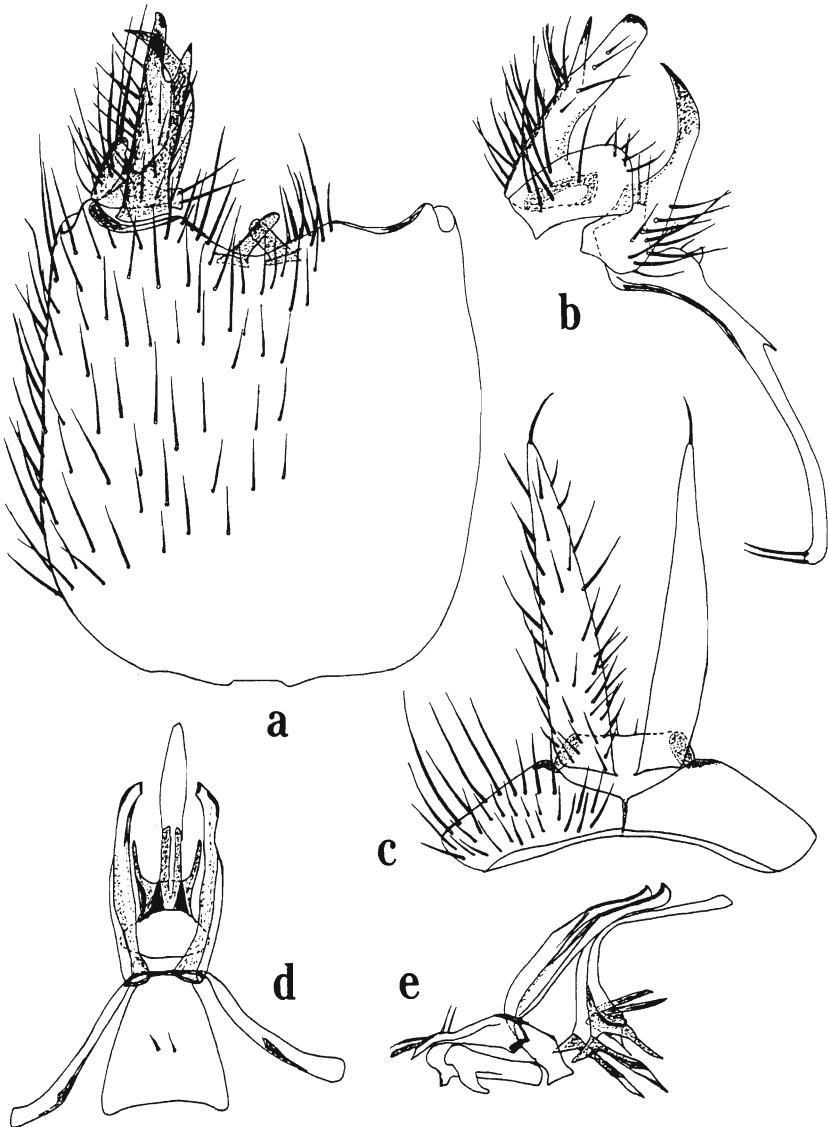


Fig. 13. Male genitalia of *Rymosia fosteri* sp. n. a, ventral view of gonocoxite and gonostylus; b, external view of right gonostylus; c, dorsal view of tergite 9 and cerci; d, dorsal view of aedeagus and parameres; e, lateral view of aedeagus and parameres.

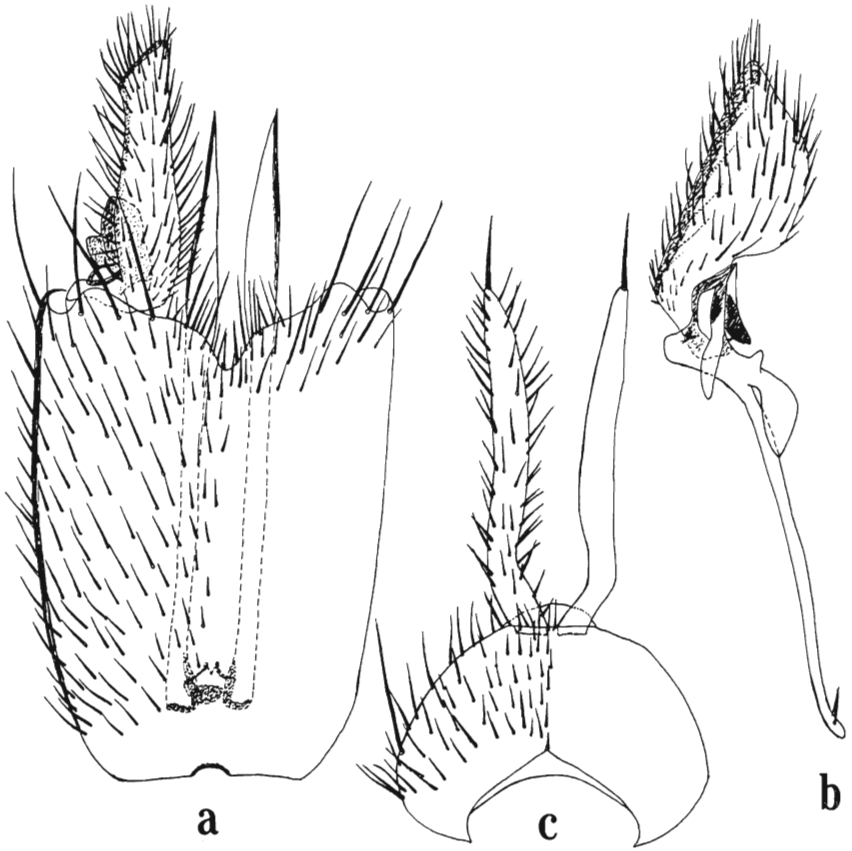


Fig. 14. Male genitalia of *Rymosia acta* Dziedzicki. a, ventral view of gonocoxite and gonostylus, with aedeagus and parameres shown in situ; b, external view of right gonostylus; c, dorsal view of tergite 9 and cerci.

Rymosia speyae sp. n.

Male. Head dark brown, grey dusted. Antennae with pedicel and base of first flagellar segment yellow, rest dark brown, flagellar segments about twice as long as broad. Palpi yellow, brownish apically. Thorax with mesoscutum and scutellum dark brown, grey dusted, only narrowly yellow on fore margin and notopleural area. Prothorax brownish yellow, pleura and mediotergite (post-notum) brownish, grey dusted on disc. Chaetotaxy as *armata*. One long proepisternal (propleural) with a short weak one behind. Halteres yellow. Legs yellow, slightly dusky on tips of tibiae and on tarsi, with all bristles and setulae

wet *Myrica* flush. **Dyfed** (Cardigan): ♂, Cors Caranod, 1.x.1987, *Juncus/Molinia* bog; ♂, Cors Caron, 5.x.1987, raised bog (*Holmes, Boyce & Reed*).

Comments. This species was initially considered to be conspecific with *R. caucasia* Plassmann (1976a), described from a single male collected in the Central Caucasus and later (Plassmann, 1984) recorded from several sites in the Austrian Alps. Examination of the holotype of *R. caucasia* (Senckenberg Museum, Frankfurt am Main) has shown, however, that it is different and the British species must be considered to represent a new species. Genitalia of *caucasia* are figured here for comparison (Fig. 12). It resembles *tristis* Matile (1967) but appears distinct.

Rymosia fosteri sp. n.

Male. Head dark brown, grey dusted. Antennae with scape brownish, pedicel and base of first flagellar segment yellowish, rest darker, flagellar segments little more than twice as long as broad. Palpi yellow. Thorax brown, darker on disc of mesoscutum and other sclerites. One long proepisternal with a weaker one behind. Halteres yellow. Legs entirely yellow. Mid tibia with short close-set a, 3 p-d, 0 p, 1 p-v. Hind tibia with 4 a, 3 d, 4-5 p near tip, 0 v. Fore metatarsus 1.35 × length of its tibia. Wings yellowish grey, cross-vein r-m about 1.5 × stalk of median fork. Abdomen dark brown, tergites 2-5 with ovoid yellow patches on basal half (larger on 3-4) separated by dark area dorsally, 6 and narrow 7 all dark; sternites mainly yellow, 3-5 dark apically, 6-7 all dark. Genitalia yellow, with brown appendages (Fig. 13). Wing length 2.3 mm.

Female. Not recognised.

MATERIAL EXAMINED

Holotype ♂, **Norfolk**: Catfield, 5.vii-12.viii.1988 (water trap, *A. Foster & D. Procter*) (deposited in Natural History Museum, London).

Paratypes. **Norfolk**: ♂, Strumpshaw, 21.viii.-5.ix.1989; ♂ Scarning, 1-15.ix.1988 (water traps, *A. Foster & D. Procter*). **Oxon**: ♂, Lashford Lane, 27.viii.-26.x.1987 (Malaise trap, *K. Porter*).

Comments. *R. fosteri* bears some resemblance in genital structure to *fraudatrix* Dziedzicki (1910) and *spiniforceps* Matile (1963), which also have the ventral stylomeres shallowly bifid apically. Examination of Czech specimens of both these species (figured by Chandler, in press) confirmed that *fosteri* is not conspecific.

R. britteni Edwards, 1925

The holotype of *britteni* (in Natural History Museum London) was found in the Museum window at Oxford (Edwards, 1925, who figured the male genitalia). Edwards (1941) examined a second specimen from the J. J. F. X. King collection (Glasgow University Museum), suggesting that it was from near

