

## A new genus and new species of Phoridae (Diptera) from Poland

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### Phoridae, *Poloniphora*, new genus, *Megaselia*, *Phora*, new species, Poland

**Abstract.** One new genus and seven new species of Phoridae (Diptera) are described from Białowieża Forest in Poland, namely *Poloniphora* Disney & Durska gen. n. with the species *P. bialoviensis* Disney sp. n., *Megaselia henrydisneyi* Durska sp. n., *M. joannae* Disney sp. n., *M. marekdurskii* Disney sp. n., *M. teresamajewskae* Disney sp. n., *M. trojani* Disney sp. n., *Phora michali* Disney sp. n., The new genus shows affinity with Australasian genera, *Beckerina* Malloch and Eocene fossils erroneously assigned to *Megaselia* in the past.

### INTRODUCTION

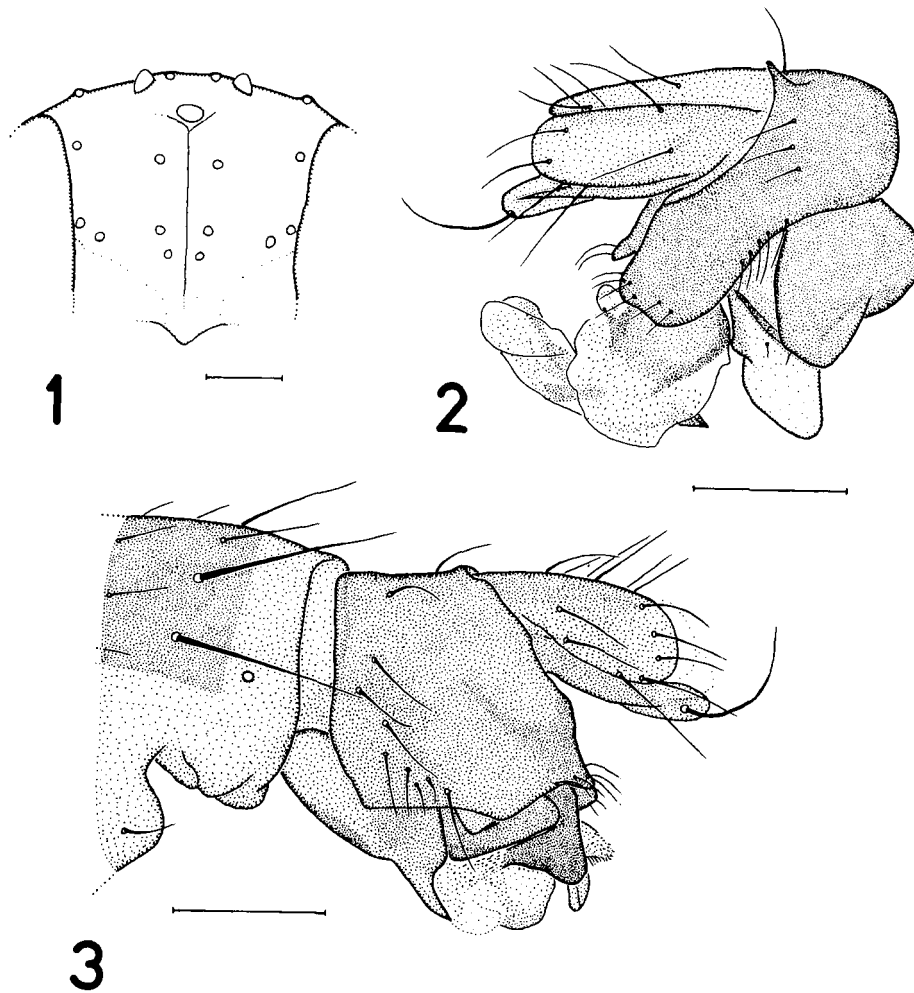
The ancient forests of Białowieża in Poland have a rich fauna of Phoridae, with different species prevailing in the different successional stages (Durska, 1996). However, in that study, some specimens were not identified beyond the genus because of the limits of current taxonomic knowledge. In this paper we report on some of these problem specimens and we describe a new genus and seven new species below. In addition we report the following additions to the Polish List: *Megaselia albocingulata* (Strobl), *M. aquilonia* Schmitz, *M. brevior* (Schmitz) and *Veruanus oldenbergi* (Schmitz).

#### *Megaselia henrydisneyi* Durska, sp. n.

**DIAGNOSIS.** Microtrichia of frons dense, labella without dense fields of short spines below, palps yellowish brown, antials closer to anterolateral bristles than to upper supra-antennals, four robust supra-antennals but lower pair shorter and weaker; mesopleuron with hairs, scutellum with an anterior pair of hairs and a posterior pair of bristles, three bristles on notopleuron; abdominal tergites brown with bristles at rear of 6 longer and more robust than any on hypopygium, latter with anal tube longer than midline length of dorsal face of epandrium, longest hairs of cerci longer than any on epandrium, hairs at tip of proctiger more robust than either, left lobe of hypandrium developed and with short hairs below; hairs below basal half of hind femur shorter than those of anteroventral row of outer half, hind tibia with about a dozen differentiated posterodorsal hairs and spines of apical comb of posterior face simple, near-dorsal longitudinal hair palisade extends almost two-thirds of length of mid tibia, ventral face of fore basitarsus with several rows of hairs reduced to short blunt spinules, all five fore tarsal segments with a posterodorsal hair palisade, femora of all legs brown; wing with membrane lightly tinged grey and veins yellowish brown, subcosta free at tip, a minute hair at base of vein 3, with 3–4 (usually 4)

bristles on axillary ridge, costa almost half wing length, costal cilia long; haltere knob brown.

MALE. Frons brown with 38–50 hairs, fine but dense microtrichia (i.e. dull) and bristles disposed as in Fig. 1. Frons distinctly broader than long (high). Both pairs of supra-antennals robust, with upper pair being about 1.2× as long as the lower pair. With 3–4 bristles on jowl and likewise on cheek, those of the latter being shorter and weaker. Third antennal segment subglobose, brown and with pre-apical brown arista. The latter with first segment about 2.8× as long as greatest breadth; the first and second segments being sub-equal in length but the swollen basal section of segment 3 being a little longer. Palps pale brownish yellow with four shorter and two more robust and longer bristles apically, and a



Figs 1–3: *Megaselia henrydisneyi*, male. 1– frons, with bristles represented by basal sockets only; 2 – right face of hypopygium, with penis complex extruded; 3 – left face of hypopygium, with penis complex retracted. Scales: 0.1 mm.

few shorter hairs below. Proboscis with pale brownish yellow labrum and labella. The maximum breadth of labrum slightly less than greatest breadth of third antennal segment. Labella with only a few short, scattered, colourless spines below. Thorax brown to almost black on top. Mesopleuron with 6–13 hairs. Notopleuron with three bristles. Humeral bristle a little longer and stronger than the longest bristle on lower half of propleuron and a little weaker than the middle notopleural bristle. Rest of scutum with an intra-alar and post-alar bristle each side, but with no differentiated pre-scutellar dorsocentral bristle. Scutellum with a posterior pair of bristles and an anterior pair of short fine hairs, which are shorter and weaker than those at rear of scutum. Abdominal tergites 1–6 brown, with short sparse hairs except for a few longer ones posterolaterally on 2 and the longer, stronger hairs at rear of 6 (Fig. 3). Tergite 2 is clearly longer than any of rest of tergites. Venter greyish brown, with hairs below segments 3–6. Hypopygium as in Figs 2–3. Legs generally brown with the femora being darker and the fore tibia and the tarsi tending to be more yellowish. Fore tarsus a little swollen, the basitarsus being about 4× as long as greatest breadth, and the ratios of the segments being about 2.7 : 1.3 : 1.1 : 0.9 : 1. Posterodorsal hair palisades on all five fore tarsal segments. Ventral face of fore basitarsus with somewhat irregular rows of small spinules, 3–4 rows for most of length but up to six rows in middle. Near-dorsal longitudinal hair palisade of mid tibia extends almost two-thirds of length. Hairs below basal half of hind femur shorter than those of anteroventral row of outer half. Hind tibia with 12–15 differentiated posterodorsal hairs. Spines of apical comb of posterior face all simple. Wings 1.65–1.90 mm long. Costal index 0.45–0.50. Costal ratios 2.55–3.36 : 1.28–2.45 : 1. Costal cilia of section 3 are 0.12–0.13 mm long. Vein Sc generally brown but fading out before reaching R1. Small hair at base of vein 3 only about 0.025 mm long. Axillary ridge with 3–4 (usually 4) bristles. Veins are essentially brown, but vein 7 pale. Vein 4 originates level with fork of vein 3 or slightly beyond. Membrane lightly tinged brownish grey. Haltere with stem and knob brown.

TYPE LOCALITY. Poland, Bialowieska Forest.

TYPE MATERIAL. Holotype ♂, Poland, Bialowieska Forest, young pine plantation (aged 10–20 years), 25.ix.1987, Ewa Durska (in Museum and Institute of Zoology, P. A. S., Warsaw, Poland). Paratypes: 3♂, same data as holotype; 6♂, same locality but dates were 5.vii.1986 and 9.x.1987, and some deposited in University Museum of Zoology, Cambridge, England.

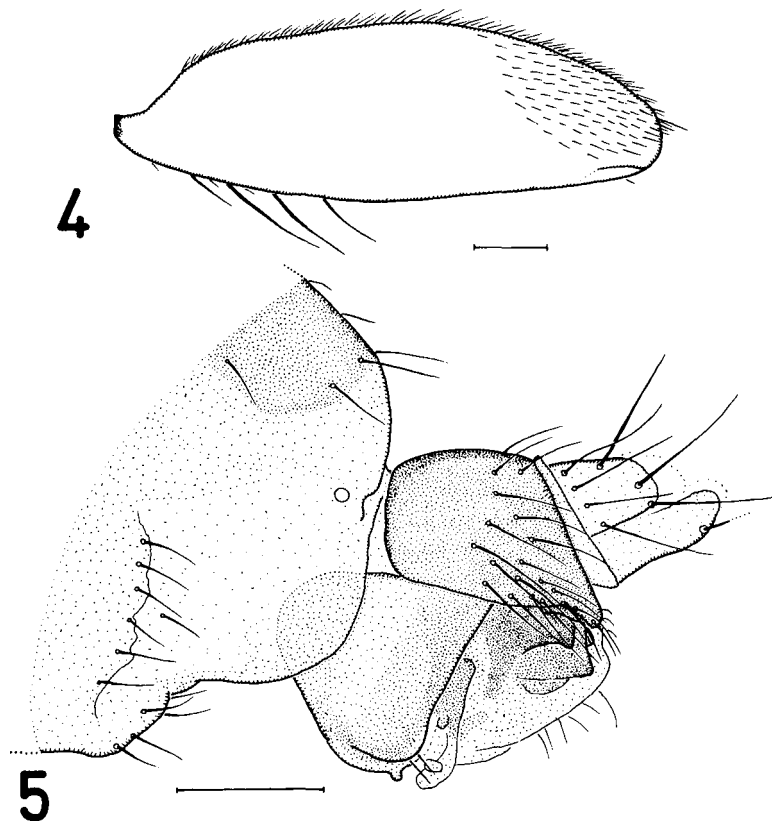
ETYMOLOGY. The name honours Dr Henry Disney, who has encouraged and helped me in my study of Phoridae.

AFFINITIES. In the key to British species (Disney, 1989a) *M. henrydisneyi* runs to couplet 81. The possession of a lobe from the left side of the hypandrium immediately distinguishes it from *M. alticolella* (Wood) and the details of the hypopygium from the latter and from *M. crassipes* (Wood). In the key of Schmitz & Beyer (1965) the new species runs to a cluster of species on page 523, which are covered by the key to British species or which have very different hypopygia, with the exception of *M. incontaminata* (Schmitz). The latter species, however, has the frons subquadratic, the hairs at rear of abdominal tergite 6 shorter and more hair-like, and the hairs of the left side of the epandrium situated in the posterior half. Schmitz (1926) described the legs as brown, with the fore legs being more yellowish brown. Beyer (in Schmitz & Beyer 1965), however, described the legs of the same specimen as being yellow. In *M. henrydisneyi* all the femora are brown.

*Megaselia joannae* Disney, sp. n.

**DIAGNOSIS.** Frons broader than long and with dense microtrichia; antials between antero-laterals and upper supra-antennal bristles, which are longer and more robust than lower SA's; hairs of arista very short; palps pale yellow very lightly tinged brown; labella densely spinose below; thorax and abdominal tergites brown; mesopleuron bare; notopleuron with only two bristles and no cleft; scutellum with an anterior pair of short hairs and a posterior pair of bristles; hairs at rear of abdominal tergite 6 shorter than longest hairs of epandrium, which are shorter than longest hairs of cerci; anal tube subequal to or slightly longer than midline length of top of epandrium; hypandrial lobes vestigial; femora yellowish brown to brown; hairs below hind femur long; hind tibia with a dozen differentiated posterodorsal hairs and spines of apical comb of posterior face all simple; costa about one third of wing length; costal cilia < 0.1 mm long; vein 3 unforked; a hair at base of vein 3; vein 4 almost straight, Sc fades away well before R1; with four axillary bristles; haltere knob yellow.

**MALE.** Frons brown, clearly broader than long (high) and with dense microtrichia; with 108–118 hairs; lower supra-antennal bristles shorter and weaker than upper pair; antials



Figs 4–5: *Megaselia joannae*, male. 4 – posterior face of hind femur; 5 – left face of hypopygium. Scales: 0.1 mm.

slightly closer to antero-laterals than to upper SA's; the Al's being about level with upper SA's but the antials being slightly lower on frons; bristles of middle row almost equally spaced and the pre-ocellars slightly lower on frons than medio-laterals; third antennal segment orange brown to brown, with finely-haired arista; palps yellow very lightly tinged brown, with six bristles in apical half and about ten hairs below. Thorax orange brown to brown, being darkest on top; each side of scutum with a humeral bristle, two posteriorly-situated notopleurals, an intra-alar, a postalar and a prescutellar dorsocentral bristle; scutellum with an anterior pair of fine hairs (shorter and weaker than those at rear of scutum) and a posterior pair of bristles; mesopleuron bare. Abdomen with orange brown to brown tergites and greyish brown venter; hairs of tergites short and sparse, but those at rear of 6 a little stronger but still shorter than longest hairs of epandrium (Fig. 5); tergite 6 a little longer than other tergites; venter with hairs on segments 3–6, but only those on 6 conspicuous (Fig. 5); hypopygium largely brown, with a pale yellow anal tube very lightly tinged brown, and as in Fig. 5. Legs brown, the first pair being more yellow brown; all five fore-tarsal segments with a posterodorsal longitudinal hair palisade; basitarsus slender and segment 5 a little longer than 4; hairs below basal quarter of mid femur a little crowded; near-dorsal longitudinal hair palisade of mid tibia extends almost three quarters of length; hairs below basal half of hind femur long (Fig. 4), being clearly longer than those of anteroventral row of distal half; the 12–14 posterodorsal hairs of hind tibia clearly differentiated, especially in lower two thirds; spines of apical comb of posterior face all simple. Wing 1.77 mm long; costal index 0.33–0.34; costal ratios 1.77 : 1, vein 3 being unforked; costal cilia 0.08 mm long; a hair at base of vein 3; four bristles on axillary ridge, the outermost being clearly longer than costal cilia; vein Sc obscure, fading away well before R1; thick veins pale brownish yellow; veins 4–6 very pale and only the base of 7 scarcely visible; membrane almost colourless. Haltere knob yellow.

TYPE LOCALITY. Poland, Bialowieska Forest.

TYPE MATERIAL. Holotype ♂, Poland, Bialowieska Forest, young pine plantation (aged 10–20 years), 19.vii.1986, Ewa Durska (in Museum and Institute of Zoology, P. A. S., Warsaw, Poland).

ETYMOLOGY. The species is named for ED's daughter Joanna.

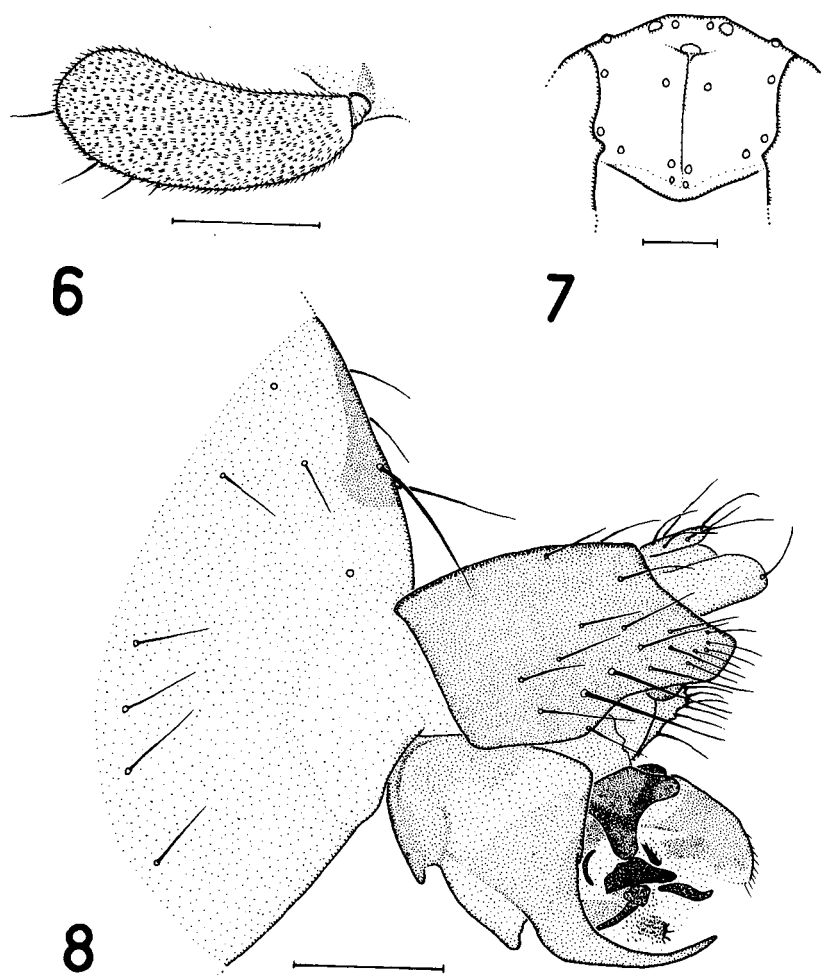
AFFINITIES. In the key to British species (Disney, 1989a) this species runs to the triplet 218. It differs from all three species by its unforked vein 3 and details of the hypopygium. Apart from the most extreme brachypterous forms of *M. longicostalis* (Wood) (see Fig. 513 in Disney, 1989a), European *Megaselia* species all have vein 3 forked. However, species with an unforked vein 3 occur in other regions. The hypopygium and general brown colour will readily distinguish *M. joannae* from all such species except for the similar *M. jorgensis* Disney from the Cape Verde Islands (Disney, 1991). The latter, however, is smaller (wing <1.5 mm long instead of >1.5 mm), with yellowish femora, apart from brown apex to hind femur, and more orange scutum and paler thoracic pleura.

Because of the unforked vein 3, *M. joannae* will not run to *Megaselia* in Schmitz's (1941) key to Palearctic genera. In the most recent key to world genera (Disney, 1994) this species will run to *Syneurina* Borgmeier at couplet 119, to *Megaselia* (part) at couplet 122 or to *Pradea* Borgmeier at couplet 174 (if one takes lead 2 at couplet 134, where neither lead applies). *Syneurina* has a single axillary bristle, a much shorter anal tube and short spinules below the basal half of the hind femur. The Neotropical genus *Pradea* includes only two species, which are essentially *Megaselia* species whose females have

dorsoventrally flattened abdominal terminalia embracing a sclerotised, pointed ovipositor. The validity of the genus needs critical evaluation. Both *Pradea* species have vein 4 distinctly curved (concavely towards front), in contrast to that of *M. joannae*, whose vein 4 is almost straight.

*Megaselia marekdurskii* Disney, sp. n.

DIAGNOSIS. Lower supra-antennal bristles shorter and less robust than upper pair; antials a little lower than anterolateral bristles and nearer to latter than to upper SA's; frons with fine but dense microtrichia; palps with bristles much reduced in size; mesopleuron bare; scutellum with anterior pair of short hairs and a posterior pair of bristles; notopleuron with three bristles; thorax and abdominal tergites brown; hairs at rear of tergite 6 subequal to



Figs 6-8: *Megaselia marekdurskii*, male. 6 – left palp; 7 – frons, with bristles represented by basal sockets only; 8 – left face of hypopygium. Scale: 0.1 mm.

longest hairs of epandrium; the latter hairs being stronger than those of cerci; anal tube clearly shorter than dorsal midline length of epandrium; end hairs of proctiger weak; posterior left lobe of hypandrium a long, tapered, hairless, upcurved process; femora yellowish brown to brown; hairs below hind femur not differentiated; hind tibia with at least a dozen, weakly differentiated, posterodorsal hairs and spines of apical comb of posterior face all simple; costal index 0.42–0.45; section 1 longer than 2+3; costal cilia <0.1 mm long; haltere knob brown.

**MALE.** Frons brown, with dense but fine microtrichia, with 86–100 hairs and bristles disposed as in Fig. 7; the lower supra-antennal bristles shorter and finer than upper pair; with two bristles on cheek and 2–3 similar bristles on jowl; third antennal segment subglobose and pale brown to brown, with hairs of arista a little longer than greatest breadth of basal segment; palp brown, with a ring-shaped basal segment and as in Fig. 6; labrum pale dusky yellow and only about two-thirds as wide as diameter of third antennal segment; labella similarly coloured with pale spines below largely restricted to apical-lateral margins and a few pale teeth on inner faces adjacent to glossa. Thorax brown, being darkest on top of scutum; mesopleuron bare; each side of scutum with a humeral bristle, three notopleurals, an intra-alar, a postalar and a prescutellar dorsocentral bristle; scutellum with a posterior pair of bristles and an anterior pair of hairs, which are shorter than those at rear of scutum. Abdomen with brown tergites bearing mainly short sparse hairs, apart from those at rear of 6 (Fig. 8); venter pale brownish grey with hairs below on segments 3–6; hypopygium brown, with paler anal tube and as in Fig. 8. Legs yellowish brown to brown; fore tarsus with posterodorsal longitudinal hair palisades on segments 1–4 only, the hairs of these being almost spinules on the basitarsus along with those of its posteroventral palisade; segment 5 a little longer than 4; near-dorsal longitudinal hair palisade of mid tibia only extends about half its length; hind femur with no hairs below basal half and the few hairs of anterior face that protrude below are clearly shorter and weaker than those of anteroventral row of distal half; about a dozen weakly differentiated posterodorsal hairs on hind tibia; the spines of the apical combs of the posterior face all simple. Wing length 1.18–1.21 mm; costal index 0.42–0.45; costal ratios 2.77–2.90 : 0.93–0.99 : 1; costal cilia 0.08–0.09 mm long; with no hair at base of vein 3; with two bristles on axillary ridge, the outermost being distinctly longer than costal cilia of section 3; vein Sc fades away before reaching R1; veins yellowish brown to pale brown, but 7 very pale grey; membrane lightly tinged brownish grey. Haltere with brown knob.

**TYPE LOCALITY.** Poland, Bialowieska Forest.

**TYPE MATERIAL.** Holotype ♂, Poland, Bialowieska Forest, young pine plantation (aged 10–20 years), 23.x.1986, Ewa Durska (in Museum and Institute of Zoology, P. A. S., Warsaw, Poland). Paratype ♂, same data as holotype except 10.x.1986 (in University Museum of Zoology, Cambridge, England).

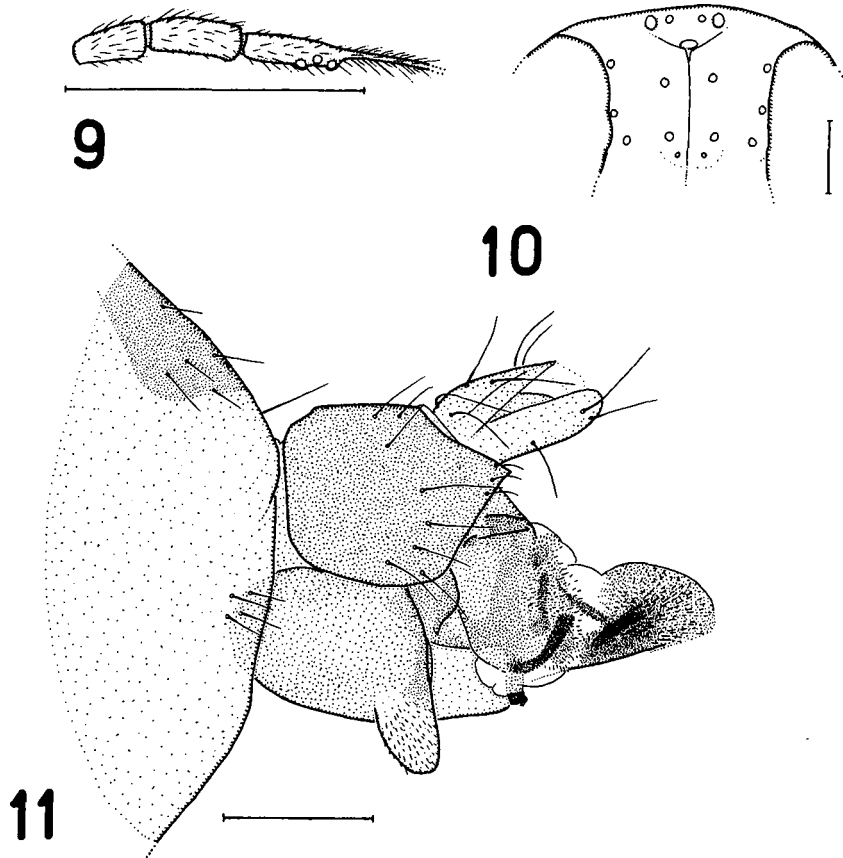
**ETYMOLOGY.** The species is named for ED's husband Marek Durski.

**AFFINITIES.** In the keys to British species (Disney, 1989a) this species runs to couplet 166, to *M. longipalpis* (Wood). It is evidently a sibling species of the latter. It has a more evenly curved left hypandrial process, stronger hairs on the posterolateral lobes of the epandrium, more yellowish brown legs and abdominal tergites and paler palps and antennae.

*Megaselia teresamajewskae* Disney, sp. n.

DIAGNOSIS. Frons with antials situated lower than anterolateral bristles, and almost as close to the eye margin; with three (not two) sensilla on third segment of arista; labella with only a few small spines below; mesopleuron bare; scutellum with an anterior pair of small hairs and a posterior pair of bristles; notopleuron with three bristles; epandrium with hairs at most as strong as those on cerci; right process of hypandrium broad with a straight hind margin; femora brown; hairs below basal half of hind femur long; costa less than half wing length; costal cilia short; no hair at base of vein 3; vein Sc free; haltere knob yellow.

MALE. Frons brown, with 22–30 hairs, dense microtrichia, and bristles arranged as in Fig. 10. The lower supra-antennal bristles are clearly shorter and finer than upper pair; 2–3 bristles on cheek and a large and small bristle on jowl; third antennal segment subglobose and pale brown; arista brown and basal part as Fig. 9; palps yellow very lightly tinged brown, with seven bristles and almost as many hairs; labrum pale brown and clearly not as broad as third antennal segment; labella pale brown, with few spinules below and a few



Figs 9–11: *Megaselia teresamajewskae*, male. 9 – basal two-fifths of arista; 10 – frons, with bristles represented by basal sockets only; 11 – left face of hypopygium. Scales: 0.1 mm.

colourless teeth on inner faces adjacent to glossa. Thorax orange brown to almost black on top; mesopleuron bare; each side of scutum with a humeral, three notopleurals, an intralar, a postalar and a prescutellar dorsocentral bristle; scutellum with an anterior pair of short hairs (shorter and finer than those at rear of scutum) and a posterior pair of bristles. Abdominal tergites 1–6 brown and with short, sparse, hairs, even those at rear of 6 are only a little stronger (Fig. 11); venter grey to pale grey and with short fine hairs below segments 3–6; hypopygium brown with a paler anal tube and as in Fig. 11. Legs yellowish brown, the first pair being paler; all five fore-tarsal segments with a posterodorsal longitudinal hair palisade and basal three segments (at least) a little stout; these same segments with hairs in some rows on posteroventral regions reduced in size and down-curved; the near-dorsal longitudinal hair palisade of mid tibia extends almost two thirds of length; the hairs below basal half of hind femur are paler but clearly longer than those of anteroventral row of distal half; with 12–15 differentiated posterodorsal hairs on hind tibia; spines of apical comb of posterior face all simple. Wing 1.22–1.23 mm long; costal index 0.46; costal ratios 2.36 : 1.55 : 1; costal cilia 0.06–0.07 mm long; no hair at base of vein 3; with three bristles on axillary ridge, the outermost being longer than costal cilia of section 3; veins pale brownish yellow, but 7 very pale; vein Sc ends just before R1; membrane only lightly tinged grey. Haltere knob yellow, stem brown.

TYPE LOCALITY. Poland, Bialowieska Forest.

TYPE MATERIAL. Holotype ♂, Poland, Bialowieska Forest, new pine plantation (aged 4–5 years), 18.vii.1986, Ewa Durska (in Museum and Institute of Zoology, P. A. S., Warsaw, Poland).

ETYMOLOGY. The species is named for ED's mother Teresa Majewska.

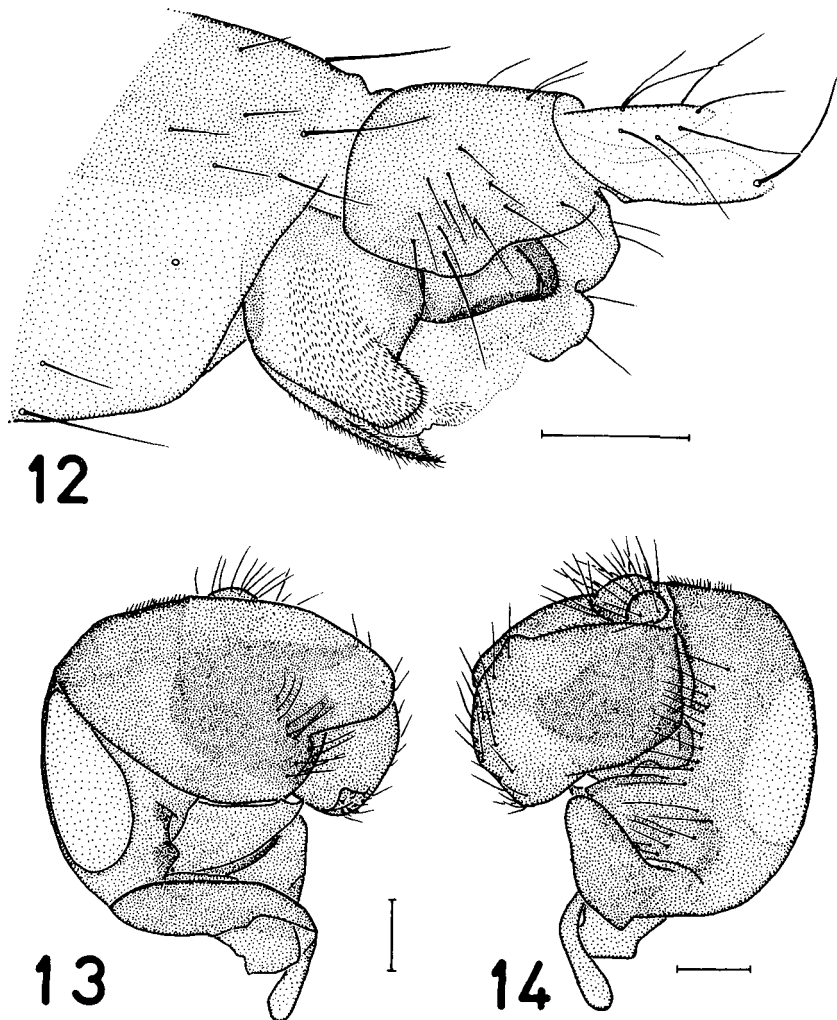
AFFINITIES. In the key to British *Megaselia* (Disney, 1989a) this species runs to *M. cinereifrons* (Strobl) at couplet 203. It closely resembles this species, but has a shorter costal index, fewer than 34 hairs on frons, and three (instead of the usual two) sensilla at the tip of the swollen base of the third segment of arista. It is possible that this specimen is only a variety of *M. cinereifrons*, but we are treating it as a sibling species. Only a good series, with both sexes, will allow evaluation of these competing hypotheses.

*Megaselia trojani* Disney, sp. n.

DIAGNOSIS. Upper supra-antennal bristles reduced in size, and lower pair even smaller; palp bristles relatively short; labella with only a few pale spines below; mesopleuron bare; only two bristles on notopleuron and no notopleural cleft; scutellum with an anterior pair of hairs and a posterior pair of bristles; brown abdominal tergites with long hairs at rear of 6; venter with hairs on segments 3–6 below, those on 6 being strong; longest hair on left side of epandrium subequal to those on cerci; hairs at tip of proctiger longer and more robust; hairs of hypandrial lobes well developed, but left lobe subequal or shorter than right; relatively long hairs below basal half of hind femur; 10–12 posterodorsal hairs of hind tibia clearly differentiated, and spines of apical comb of posterior face all simple; all five fore-tarsal segments with a posterodorsal longitudinal hair palisade; costal index of wing 0.45–0.46; costal section 1 longer than 2+3; vein Sc ends before R1; a hair at base of vein 3; costal cilia about 0.1 mm long, three axillary bristles; knob of haltere pale yellow.

MALE. Frons brown, broader than long, with dense microtrichia and 50–52 hairs; upper supra-antennal bristles clearly shorter than other frontal bristles and lower pair even smaller, the anterolaterals, antials and upper SA's almost equally spaced, but the antials

distinctly lower on frons; pre-ocellars about twice as far apart as upper SA's but closer together than either is to a mediolateral and very slightly lower on frons than latter; subglobose third antennal segment brown with brown, medium to short-haired, arista; palps relatively short, pale yellow except for brown near base, and with eight relatively short bristles and as many hairs; the pale brown labrum with greatest breadth only about two thirds that of third antennal segment; labella with only a few pale spines, largely restricted to apical lateral regions. Thorax brown to almost black on top; mesopleuron bare; each side of scutum with a humeral bristle, two notopleurals, an intra-alar, a postalar and a prescutellar dorsocentral; there is no notopleural cleft; scutellum with an anterior pair of small hairs and a posterior pair of bristles. Abdomen with brown tergites and mainly short



Figs 12–14: Male hypopygia. 12 – *Megaselia trojani*, left face; 13–14 – *Phora michali*: 13 – left face; 14 – right face. Scales: 0.1 mm.

sparse hairs, but those at rear margins are a little stronger; and there are a few stronger hairs at sides of 2 and those at rear of 6 are strongly differentiated (Fig. 12); venter greyish brown with hairs on segment 3–6 below, those on 6 being strongly differentiated (Fig. 12). Hypopygium brown with a pale dusky yellow anal tube and as in Fig. 12. Legs yellowish brown; fore tarsi with posterodorsal longitudinal hair palisades on all five segments, which are relatively slender; near-dorsal longitudinal hair palisade of mid tibia extending about three quarters of length; hairs below basal half of hind femur longer than those of antero-ventral row of apical half; hind tibia with 10–12 distinctly differentiated posterodorsal hairs; spines of apical comb of posterior face all simple. Wing 1.56 mm long; costal index 0.45–0.46; costal ratios 2.75 : 1.48 : 1; costal cilia 0.10 mm long; axillary ridge with three bristles; a small hair at base of vein 3; vein Sc not reaching R1; veins with yellowish brown costa and vein 1, the rest being darker, apart from the distinct vein 7; membrane lightly tinged yellowish grey. Haltere with brown stem and pale yellow knob.

TYPE LOCALITY. Poland, Bialowieska Forest.

TYPE MATERIAL. Holotype ♂, Poland, Biakowieska Forest, young pine plantation (aged 10–20 years), 26.ix.1986, Ewa Durska (in Museum and Institute of Zoology, P. A. S., Warsaw, Poland).

ETYMOLOGY. The name honours Prof. P. Trojan.

AFFINITIES. In the keys to British species (Disney, 1989a) this species will run to couplet 158 (via a return loop from 165) or 225. It differs from *M. badia* Schmitz by its longer-haired unequal hypandrial lobes. It closely resembles *M. giraudii* (Egger), but the latter has the left hypandrial lobe clearly longer than the right and has a notopleural cleft.

*Phora michali* Disney, sp. n.

DIAGNOSIS. Sides of male frons subparallel and width about a quarter of diameter of head. Mid tibia with one anterior bristle in basal three quarters. Lower lobe of left side of epandrium absent (being truncated at its base). Right surstylus large with convex apical margin. Upturned brown process of right side of hypandrium subtriangular with rounded apex. Process of left side descending and rounded at tip.

MALE. Frons almost parallel sided and about a quarter of head width; pre-ocellars much shorter than the mediolateral bristles or the anterolaterals; supra-antennals differentiated from frontal hairs, which number 8–10; hypopygium as in Figs 13–14; ratios of the lengths of fore-tarsal segments about 2.2 : 1.3 : 1.2 : 1.1 : 1; mid tibia with one anterior bristle adjacent to first or second dorsal bristle, there being 4–5 dorsal bristles. Wing length 2.33 mm; costal index 0.52–0.53; costal ratios 0.83 : 1; costal cilia 0.13–0.14 mm long; hair at base of vein 3 at least as strong as costal cilia; five axillary bristles; costa dark brown, other veins being greyish to yellowish brown, except vein 7 is only a faint shadow; membrane only very lightly tinged grey. Haltere dark brown.

TYPE LOCALITY. Poland, Bialowieska Forest.

TYPE MATERIAL. Holotype ♂, Poland, Bialowieska Forest, young pine plantation (aged 10–20 years), 4.vi.1987, Ewa Durska (in Museum and Institute of Zoology, P. A. S., Warsaw, Poland).

ETYMOLOGY. The species is named for ED's son Michal.

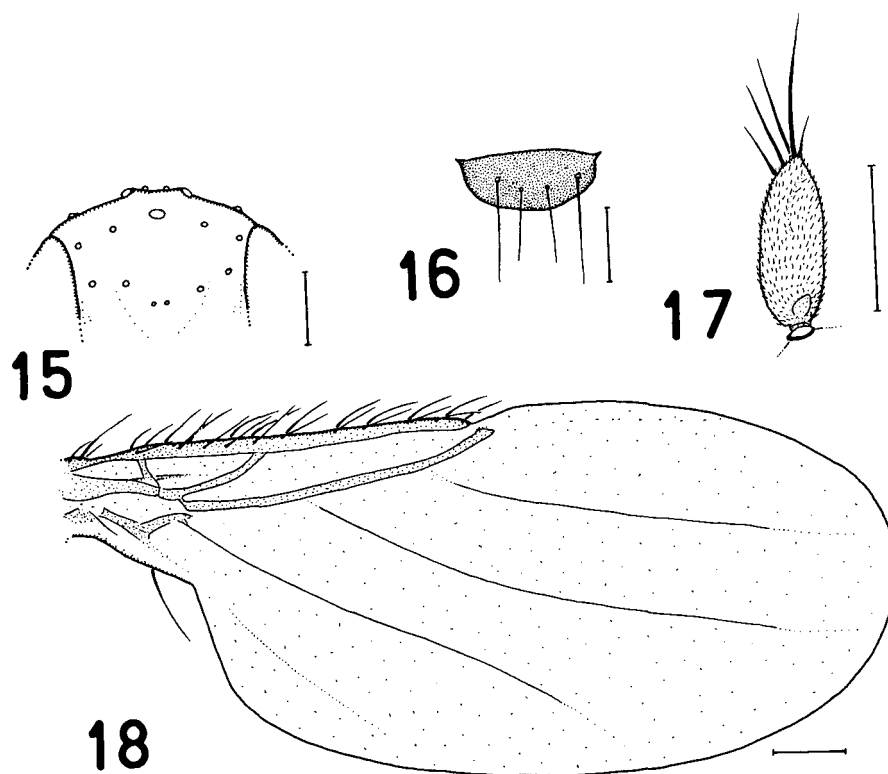
AFFINITIES. In the key to British species (Disney, 1983) this species runs to *P. stictica* Meigen or *P. speighti* Disney. It is closest to the latter, but the right surstylus is broader and the left face of the epandrium is different. In the keys of Schmitz (1953, 1955) the lack of hind legs in the unique holotype creates a problem. If the species belongs to Group I

then it is immediately distinguished by the hypopygium. However, the single anterior bristle on the mid tibia suggests that *P. michali* belongs to Group II. The parallel-sided frons means that it runs to the group of species covered by the key to British species and/or else the hypopygium is distinctly different.

Genus *Poloniphora* Disney & Durska, gen. n.

TYPE SPECIES: *Poloniphora bialoviensis* Disney, sp. n.

DIAGNOSIS. Frons broader than high and without median furrow. Palp with short, ring-shaped, basal segment. Third antennal segment globose to slightly elongate in male, with a just pre-apical arista. Chaetotaxy of frons with two supra-antennals and 4-4-4 bristles. Mesopleuron with mid-mesopleural ridge (= "mesopleural furrow" – see Disney, 1996) and bare. Notopleuron of male without opening of notopleural gland. Each side of scutum with a humeral, three notopleural, an intra-alar, a post-alar and a pre-scutellar dorsocentral bristle. Scutellum with four bristles, the posterior pair being shorter and closer together than anterior pair. All tibiae devoid of pre-apical bristles and near-dorsal longitudinal hair palisades. Spines of apical comb of posterior face of hind tibia simple. Hairs below basal



Figs 15–18: *Poloniphora bialoviensis*, male. 15 – frons, with bristles represented by basal sockets only; 16 – scutellum from above; 17 – outer face of right palp; 18 – right wing. Scales: 0.1 mm.

half of hind femur not differentiated from adjacent hairs of anterior face. Costa of wing nearly half wing length. Vein 3 unforked. Costal section 1 clearly shorter than 2. No hair at base of vein 3. A single bristle on axillary ridge. Male hypopygium with asymmetric epandrium and proctiger reduced, being shorter than cerci and with finer, shorter, terminal hairs. Each cercus with apical-ventral hair bristle-like. Female abdominal tergites 1–6 relatively narrow; but 6 divided into one posterior and three anterior sclerites, associated with a gland lying below 5 and 6. Tergite and sternite 7 present and also tergite 8. Posterior ventral margin of segment 8 with paired lobes bearing hairs. An irregular subcircular furca (= sternite 9) present internally. With four rectal papillae (as in male) and seemingly devoid of Dufour's crop mechanism.

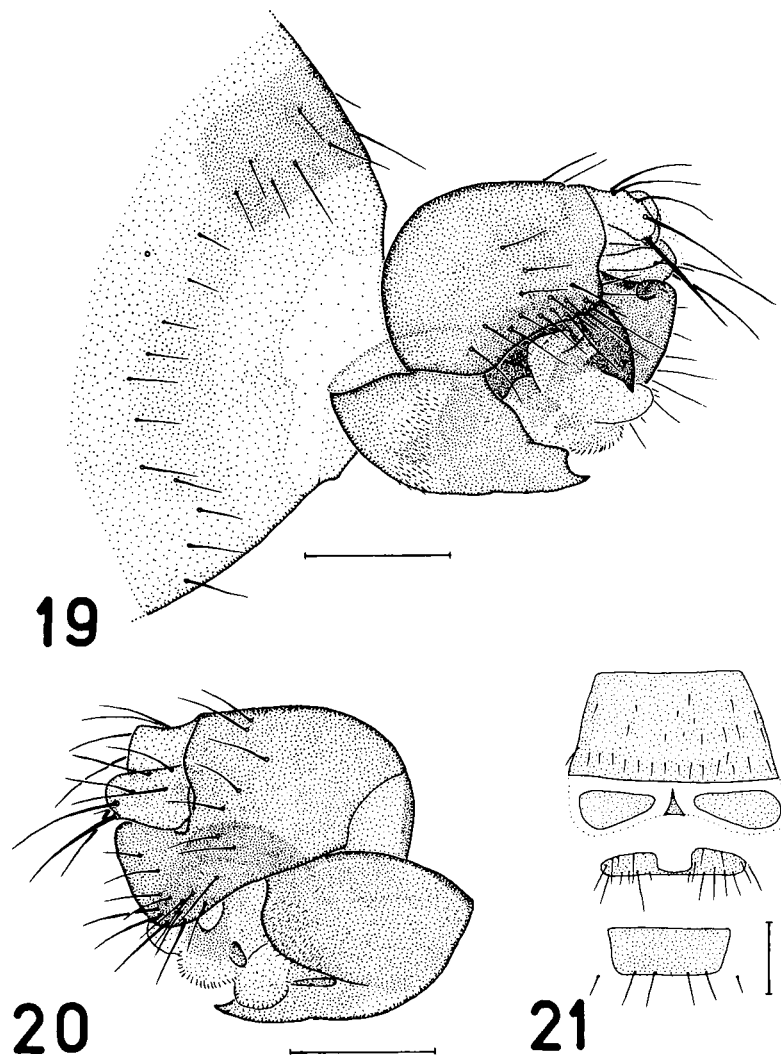
**ETYMOLOGY.** The name refers to the type locality, Poland, of the type species plus the root name for the family, *Phora*.

**AFFINITIES.** In the keys to world genera (Disney, 1994) the males will run to couplet 191, where neither lead applies. If we take the first lead we proceed to 192 and the genus *Paraphiura* Beyer (1966), a genus known from a single male from Tasmania. The peculiar feature that the two genera share is the posterior pair of scutellar bristles being shorter and finer than the anterior pair. In *Paraphiura*, however, the third antennal segment has an apical point and the two costal sections are subequal. The female of *Poloniphora* will run to couplet 266, where neither lead applies as there is only a single bristle on the axillary ridge. If one proceeds to 267 one goes on to 268, where neither lead applies. Of the two options, the genus *Rhopica* Schmitz is closest to *Poloniphora*. Both genera have the posterior scutellars shorter than the anterior pair. In *Rhopica* vein 3 is forked, the third antennal segment is apically elongated and the female's abdominal tergite 6 is simple.

Whether the reduced posterior scutellars of the new genus, *Paraphiura* and *Rhopica* represent a synapomorphy or convergence is not known. The possession of a distinct basal segment to the palp is probably plesiomorphic (Disney, 1996, 1997a). It is possible that *Paraphiura* is a species of *Rhopica* with a reduced apical extension of the third antennal segment and the loss of vein  $R_{2+3}$ . The new genus shows some resemblance to fossils in the Baltic amber (of Eocene age) which were referred to *Megaselia* Rondani earlier this century (see Borgmeier, 1968). However, all the specimens resembling these fossils that are in the Museum König (Bonn) and in the Natural History Museum (London) lack hair palisades on the mid and hind tibiae. Therefore they would not now be assigned to *Megaselia*. Some of these fossils have normal scutellars but in at least one specimen in the NHM the hind pair of bristles are strong but distinctly shorter than the anterior pair. These fossils resemble *Beckerina* Malloch (a genus included in *Megaselia* earlier in this century), but until a male specimen is available in which the notopleuron can be scrutinised for the presence of the orifice of a notopleural gland (see Disney, 1994) we reserve judgement. However, we can now confirm that the genus *Beckerina* includes species with and without tibial hair palisades, having recently remounted a male specimen of *B. neotropica* Brues (from the Museum König) on a slide. It has the notopleural gland orifice as well as tibial hair palisades. Furthermore, in this species the posterior scutellars are a little shorter and weaker than the anterior pair. The type species and *B. burmicola* Beyer, however, lack hair palisades. It would seem, therefore, that like *Woodiphora* Schmitz (Disney, 1989b), some species possess tibial hair palisades and some lack them. It would seem probable,

therefore, that in both genera there has been a secondary loss of hair palisades that were characteristic of the groundplan of both genera (Disney, 1996, 1997a).

Since completing the above discussion we have received a copy of the interesting paper by Brown (1997) dealing with Neotropical species he regards as belonging to this genus. However, by rejecting the presence of the exposed notopleural gland orifice as a diagnostic character of the genus his paper mainly serves to underline the need for new data to clarify the generic diagnoses of this group of species. His own diagnosis of the genus



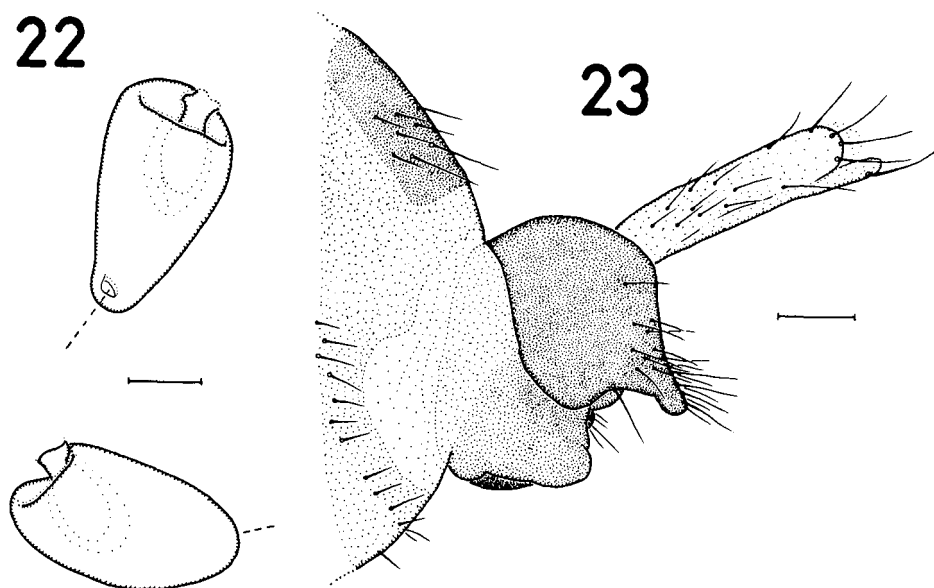
Figs 19–21: *Poloniphora bialoviensis*. 19 – left face of male hypopygium; 20 – right face of male hypopygium; 21 – female abdominal tergites 5–7. Scales: 0.1 mm.

*Beckerina* is far from satisfactory, being replete with qualifications and alternatives. His useful hypotheses need evaluation by exposure to new data.

*Poloniphora bialoviensis* Disney, sp. n.

**MALE.** Frons brown, with dense microtrichia, 22–30 hairs and bristles disposed as in Fig. 15; the anterolateral bristles distinctly weaker than other frontal bristles; third antennal segment brown; hairs of third segment of arista a little longer than greatest breadth of first segment; swollen base of third segment just over twice length of first segment, which is about 1.2× as long as segment 2; palps greyish brown and as in Fig. 17; labrum brown, subtriangular, and with greatest breadth at most only two thirds that of third antennal segment; labella pale brown, narrow and tapering apically, with only a few hairs below. Thorax brown; scutellum as in Fig. 16. Abdominal tergites brown, with short, fine hairs that are only a little longer at rear of 6 (Fig. 19); venter greyish brown, with hairs below on segments 3–6 but those on 6 are stronger and more numerous (Fig. 19); hypopygium, including anal tube, brown and as in Figs 19–20; internally with four rectal papillae. Legs brown with yellowish brown tarsi; fore tarsal segments 1–4 with posterodorsal longitudinal hair palisades. Wings 1.0–1.1 mm long and as in Fig. 18; costal index 0.48–0.49; costal ratios 0.51–0.56 : 1; costal cilia 0.07–0.08 mm long; veins greyish brown, 7 being pale grey; membrane very lightly tinged grey. Haltere entirely brown.

**FEMALE.** Similar to male. Frons with 40–50 hairs and larger vestige of median furrow just above supra-antennal bristles, otherwise as male; antennae, palps and proboscis similar to male, except labrum distinctly a little broader than greatest diameter of third



Figs 22–23: *Veruanus oldenbergi*, male. 22 – right and left antennal segments (minus aristas, but their positions indicated by dashed lines), from different angles; 23 – left face of hypopygium, but tilted a little posterodorsally. Scales: 0.1mm.

antennal segment. Thorax as male. The narrow abdominal tergites 1–7 brown and with only a few small hairs, except at rear of 6; the latter and 7 as in Fig. 21; sternite 7 and tergite 8 also present; rear margin of sternum 8 with paired lobes bearing hairs; the tapered cerci brown and about twice as long as greatest breadth; internally with four rectal papillae and a pale brown irregular subcircular furca; venter pale greyish brown with numerous hairs below segments 3–6. Legs similar to male. Wing 1.0 mm long; costal index 0.51; costal ratios 0.48 : 1; costal cilia 0.07 mm long; vein 7 very pale, otherwise wing and haltere as male.

TYPE LOCALITY. Poland, Puszcza Bialowieska.

TYPE MATERIAL. Holotype ♂, Poland, Puszcza Bialowieska, young (10–20 years) pine plantation, 2.vii.1987. E. Durska, in coll. Museum and Institute of Zoology, P. A. S., Warsaw. Paratypes, 1 ♂ as holotype except date is 4.vi.1987 and depository is University Museum of Zoology, Cambridge; 1 ♂ as holotype except in younger plantation (4–5 years), 8.–24.v.1986, UMZC; 1 ♀, as holotype except in 4–5 year plantation, 31.vii.1987.

ETYMOLOGY. The name refers to the type locality.

### *Veruanus oldenbergi* (Schmitz)

Schmitz (1927) illustrated the head and hypopygium of the unique, holotype, male when he established a new genus for a previously described species, *Veruanus memorabilis* (Schmitz). These figures were reproduced when synonymising this male with the females of *V. oldenbergi*, following the discovery that vein 3 may be forked or unforked in the female sex (Disney, 1997b). The original male had an unforked vein 3. We now report a male from Poland with a forked vein 3, thus confirming the expectation that this character varies in both sexes. We also take the opportunity to provide new figures of the male antennae and hypopygium, as Schmitz's figures do not adequately convey the form of the third antennal segment or the details of the hypopygium. Our fresh male specimen represents the first record of this species for Poland.

The procurement of a male with a forked vein 3 requires modifications to the key to the genera of male Phoridae of the world (Disney, 1994). Couplet 163 should now read:

- |     |   |     |
|-----|---|-----|
| 163 | Costa clearly less than half wing length .....      | 164 |
| –   | Costa extends almost half wing length or more ..... | 165 |

The direction from Lead 1 of couplet 167 should then read “168A” and a new couplet added thus:

- |      |  |                        |
|------|--|------------------------|
| 168A | Epadrium higher than long. Anal tube long and slender (clearly longer than epandrium). Hairs below basal half of hind femur only as long as adjacent hairs of anterior face. A single pair of well developed supra-antennal bristles that are set at least as far apart as preocellar bristles ..... | <i>Veruanus</i> (part) |
| –    | Without this combination .....   | 168                    |

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