

Taxonomic notes on two species of *Pegomya* R.-D. (Dipt., Muscidae) from Iceland.

By D. M. Ackland.

Hope Department, University Museum, Oxford.

Pegomya Robineau-Desvoidy.*

Pegomya Robineau-Desvoidy, 1830, Essai sur les Myodaires p. 598.

Pegomyia Macquart, 1835, Histoire naturelle des insectes. Diptères 2: 350.

Pegomya rufipes (Fallén).

Musca rufipes Fallén, 1825, Muscides, p. 85.

Pegomyia rufipes (Fallén), Stein, 1892, Ent. Nachr., 18: 331.

Pegomyia ruficauda Ringdahl, 1953, Ent. Medd., 26: 462, **syn. n.**

P. ruficauda was described by Ringdahl from the female, the male being unknown to him. Recently Dr. L. Lyneborg of the Zoological Museum, Copenhagen, sent me a series of *Pegomya* sp., 5 ♂♂, 5 ♀♀, collected in 1962 at Skaftafell, Iceland, by an expedition from Lund University, which appeared to be referable to this species. Owing to the difficulty in distinguishing between the females in some species of *Pegomya*, it was thought advisable to describe the male of this species, and figure the genitalia.

The 5 ♀♀ in this material agree in most respects with the type, which I have been able to examine through the courtesy of Dr. Lyneborg. In two specimens a pair of small cruciate inter-

*) The majority of Dipterists have followed Macquart's 1835 emended spelling of this name, probably in the belief that the termination -mya was connected in some way with 'shellfish', and could be considered as a lapsus calami. Shortly before his death, Prof. L. W. Grensted kindly gave me (in litt.) some information on the matter. The following is a summary of his letter. "Mya, a generic name in Conchology, comes directly from the Latin a single reference to a mussel of sorts in Pliny. This is said, in Lewis and Short's Latin Dictionary, to be derived from the Greek mya = μύα, but there is no mention of μύα in the more modern Liddell and Scott's Greek Lexicon. It is clear that myia, a fly, was occasionally (in Attic) written mya (i. e. μύια and μύα). I think that all we can say is that the best spelling, where a fly is intended, is -myia, but also that -mya is perfectly possible, and must be retained where it has priority. Mya and its compounds, based on the Latin, are proper enough to the Conchologists."

frontal setae are present (absent in type); the colour of interfrontalia varies between all reddish-yellow (one specimen), partially infuscated (two specimens), and posterior half black (as in type). There is also some variation in ground colour of parafacialia and jowls, black in some, in others reddish-yellow. The reddish caudal margin of tergite V in the type is not present in four specimens, the abdomen being blackish-brown; in the fifth specimen the abdomen is wholly reddish. In spite of these differences in colour, which occur in many species of *Pegomya*, there can be little doubt that these specimens are conspecific with the type. The females of the other *Pegomya* species so far recorded from Iceland (excluding *P. björnssoni* Ringdahl) differ as follows:— *P. bicolor* (Wied.) has three equally strong dorsal pre-apicals to hind tibia, and numerous setulae on disc of scutellum; *P. fulgens* (Mg.) has shorter hind metatarsus with long hairs between ventral setulae, and stronger cruciate interfrontals. The 5 ♂♂ in the material were collected at the same time, and in the same locality.

Description of *Pegomya ruficauda* Ringdahl ♂

Colour. Antennae entirely black. Interfrontalia, parafrontalia, parafacialia and jowls black, (reddish-yellow in some examples, due to immaturity?) with thick whitish-grey dust. Occiput black with grey dust. Palpi reddish-brown with almost black apex. Proboscis black, shining. Thorax black, brownish-grey dusted, mesonotum, viewed from behind, without vitta, but with a small black undusted spot at junction of *acr* and suture; viewed from in front at a low angle mainly black or blackish-brown, with brownish-grey dusting on humeri and around 1st *prst dc*, and a small brownish-grey dusted spot at junction of *acr* and suture. Dusting on sides of mesonotum shifting according to point of view. Pleura lightly grey dusted. Scutellum black, brownish-grey dusted. Abdomen black or brownish-black, viewed from behind brownish-grey dusted with a narrow undusted median vitta, on tergite I+II not reaching caudal margin. Legs reddish-brown, femora more strongly infuscated, fore tibiae paler infuscated reddish-yellow. Tarsi darker. Wings subhyaline with a greyish tinge. Squamae whitish-yellow, halteres yellow.

Head: arista almost bare; 3rd antennal segment slightly more than twice as long as wide, ratio 13 : 6; eyes almost touch-

ing, separated by width of anterior ocellus; parafrontalia linear below ocellar tubercle, touching for a short distance, widening to about $\frac{3}{4}$ width of 3rd antennal segment at level of lunula, then narrowing to about $\frac{1}{2}$ width of 3rd antennal segment at narrowest part of parafaciale; ratio of width of jowls at narrowest part to total height of head 1 : 7; 4-6 pairs of frontal setae, uppermost pair at about halfway between lunula and anterior ocellus. Upper post-ocular setulae long, gradually becoming shorter laterally. Proboscis parallel-sided.

Thorax: *prst acr* strong, 3 pairs, about $\frac{1}{2}$ length of *prst dcs*, with a few setulae between rows, separated by about $\frac{1}{2}$ distance between *acr* and *dc* rows; *pra* slightly shorter than 2nd *npl*; *stpl* 1 : 2, lower posterior seta $\frac{3}{4}$ length of upper; discal setulae $\frac{1}{4}$ - $\frac{1}{3}$ length of posterior seta; disc of scutellum bare basally in median $\frac{1}{2}$, with 6-7 setulae on each side between basal laterals and subapical setae.

Abdomen about as long as thorax, dorso-ventrally compressed; hypopygium large, 5th sternite projecting downwards; from above almost parallel-sided, tergite III slightly wider than I+II and IV.

Legs: f2 with 3-4 *pv* setae in basal $\frac{1}{2}$; f3 with 6-7 long *av*, and a row of 8-12 short strong *pv*; t1 with 1 very short submedian *ad*, 1 stronger median *pv* seta; t2 with 1 short *ad*, 1 stronger *pd*, and 2 *p* setae; t3 with 1(2) *av*, 2 *ad*, and 2 *pd* setae; pulvilli and claws of medium length.

Wings: *m-m* slightly sinuate, angle between penultimate section of *m* and *m-m* less than 90° , ratio of penultimate section of *m* to ultimate section 3 : 5; costal spine small; lower squamae small, not projecting beyond upper. Wing length 5.5 mm.

Genitalia figs. 1, 2, 3, 8.

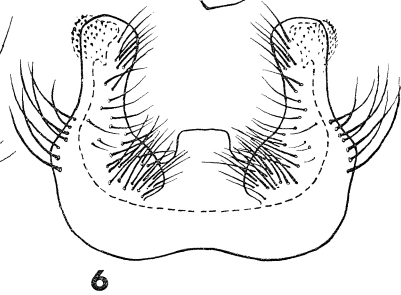
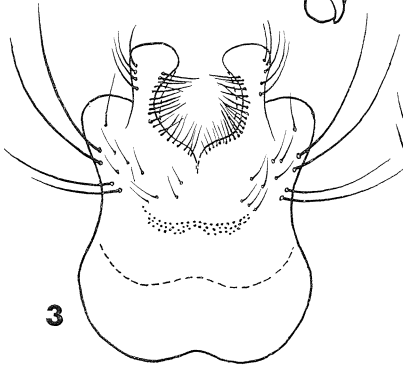
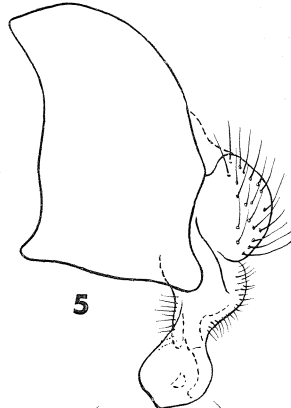
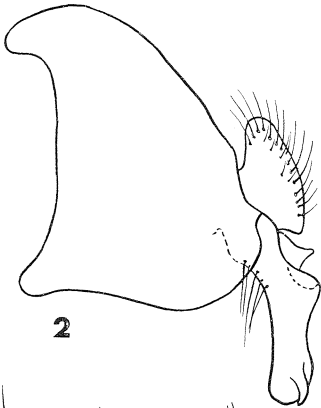
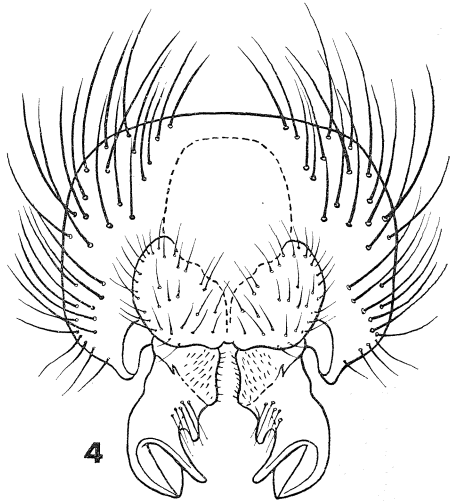
These male specimens agree in all structural characters with *Pegomya rufipes* (Fall.), differing only in colour from European examples of that species. I have examined a large series of *rufipes* in the British Museum (Nat. Hist.) (ex Coll. P. Harwood), and a number of specimens approach very closely to this dark form. The structure of genitalia and 5th sternite in *ruficauda* is identical to that found in *rufipes* from Scotland. The male of *rufipes* is fairly easily separated from allied species of *Pegomya* owing to the presence of a row of short strong *pv* setae on posterior femur. The female is more difficult to recognise. Ringdahl

compared *ruficauda* with *Pegomya longimana* (Pok.), (now included in *Pegomyza* Schnabl and Dzied.), a species from which it differs on structural characters, as stated by Ringdahl, and to which it is not closely related. In 1931 Collin (Collin 1931 p. 84) described from Greenland a dark variety of *P. tenera* (Zett.) which he called *obscurior*. It would appear that *ruficauda* is a similar dark form of *rufipes*. Collin mentions (l. c., p. 85) the difficulty of separating females of *obscurior* from *rufipes*. Specimens of *obscurior* in the Hope Dept., Oxford, differ from *ruficauda* in having the lower posterior *stpl* seta not more than half the length of the upper seta, in *ruficauda* two-thirds or more that length. The chaetotaxy of legs in *ruficauda* is also stronger. I cannot say whether these slight characters will prove constant. I have dissected females of *obscurior* and *rufipes*, but can find no appreciable differences in structure of ovipositor, chaetotaxy, sclerotization of intersegmental membrane, or shape of spermathecae. Hockett (1941 p. 108) mentions that *tenera* has stronger setae on caudal margin of basal tergum of ovipositor than *rufipes*, but I have not found this to be so in the material that I have examined. *P. tenera* has not, so far, been found in Iceland.

Pegomya rufipes is recorded as occurring in Iceland (Nielsen et al. 1954 p. 131) from Reykjavik, without further data. I have examined 2 ♂♂ from Iceland (det. O. Ringdahl), one without data, the other labelled "Reykjavik" and "*P. rufipes* Fall. antagligen". Both of these specimens are very immature. It is possible that they represent immature examples of this dark form of *rufipes*. Until more material is available it is not possible to say whether typical *rufipes* occur with the darker form in Iceland.

It is interesting to note that in two of the other species of this genus so far recorded from Iceland, *P. bicolor* occurs as a dark form (Ringdahl 1930 p. 173), and a male of *P. fulgens* from Skaftafell that I have examined is also very dark.

-
- Fig. 1. *Pegomya ruficauda* ♂ hypopygium, caudal aspect.
 Fig. 2. " " " " , lateral aspect.
 Fig. 3. " " ♂ 5th sternite.
 Fig. 4. *Pegomya björnssoni* ♂ (syntype) hypopygium, caudal aspect.
 Fig. 5. " " " " , lateral aspect.
 Fig. 6. " " " 5th sternite.



Pegomya haemorrhoea (Zetterstedt).

Anthomyza haemorrhoea Zetterstedt, 1838, Insecta Lapponica, p. 692.

Anthomyia (Pegomyia) haemorrhoea (Zett.), Pandellé, 1901, Rev. Ent., Caen 20: 298.

Pegomyia haemorrhoea (Zett.), Stein, 1906, Wien ent. Ztg., 25: 102.

Pegomyia björnssoni Ringdahl, ♂, 1957, Ent. Medd. 28: 102.

Through the courtesy of Dr. Lyneborg I have been able to examine the male syntype of *P. björnssoni*.

Redescription of *Pegomya björnssoni* Ringdahl ♂

Colour. Head, thorax, abdomen and legs black. Interfrontalia and parafrontalia black, whitish-grey dusted; antennae, palpi, and proboscis black, the latter shining. Thorax grey dusted; mesonotum, viewed from in front, thickly grey dusted, with very indistinct darker vittae along lines of *acr* and *dcs*. Abdomen grey dusted, slightly shining; viewed from behind with an indistinct darker vitta. Wings subhyaline with a faint greyish tinge, darkened blackish-brown at base. Squamae whitish, halteres yellow.

Head: arista almost bare, strongly swollen at base; 3rd antennal segment short, about $1\frac{1}{2}$ times as long as wide; eyes separated by $1\frac{1}{2}$ times width of anterior ocellus; parafrontalia very narrow just below ocellar tubercle, widening to about width of 3rd antennal segment at level of lunula, then narrowing slightly to level of ventral margin of eye; frontal setae 8-10 pairs, uppermost pair almost reaching ocellar tubercle; jowls slightly wider than width of 3rd antennal segment, ratio of width at narrowest part to maximum height of head 2:9; occiput swollen in ventral $\frac{2}{3}$; upper post-ocular setulae long, becoming progressively shorter laterally; epistoma projecting in profile as far as frons at lunula; palpi slightly swollen at apex; proboscis parallel-sided.

Thorax with *prst acr* close together, without small setulae between rows, distance between *acr* and *dcs* in front of suture about $2\frac{1}{2}$ times distance between *acr*; *pra* fine but slightly longer than 2nd *npl*; scutellum bare on basal $\frac{2}{3}$ of disc, with numerous setulae between basal laterals and subapical setae; *stpl* 1:2, lower anterior seta short and fine, lower posterior almost as long as upper; discal setulae of *stpl* almost $\frac{2}{3}$ length of lower *p* seta.

Abdomen compressed, parallel-sided viewed from above, subequal to width of thorax.

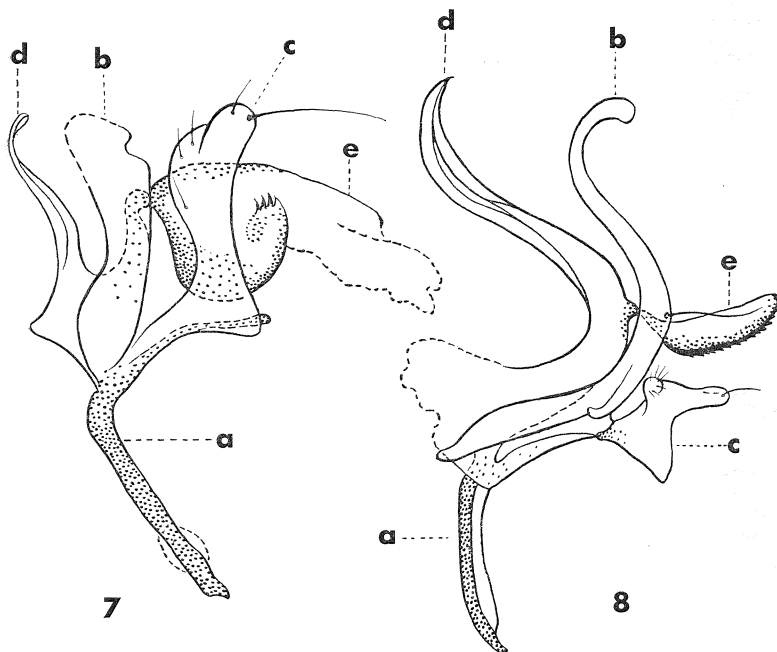


Fig. 7. *Pegomya björnssoni* ♂ (syntype) aedeagus, lateral aspect.

Fig. 8. *Pegomya ruficauda* ♂ aedeagus, lateral aspect.

a phallapodeme. b postgonite. c praegonite. d epiphallus. e distiphallus.

Legs: f2 with 4-5 basal *pv*; t1 with 1 median *p* seta, t2 with 1 small *ad*, 1 stronger *pd* at same level, and 1 *p* above middle; t3 with 2 *av*, 2 *ad*, and 2 *pd*.

Wings: *m-m* straight and upright, ratio of penultimate section of *m* to ultimate section 2:3; costal spine absent; lower squamae small, not projecting.

Genitalia figs. 4, 5, 6, 7.

In my opinion the male syntype agrees in most respects with typical *P. haemorrhoea* (Zett.), differing in having mesonotum more greyish dusted, abdominal median vitta more diffused, squamae whiter, (normally yellowish in typical *haemorrhoea*), and chaetotaxy of legs weaker. The genitalia agree in every respect with this species. I have examined a large series of *haemorrhoea* collected in Swedish Lapland in 1962 by Mr. A. C. Pont, and a number of these specimens agree very closely with the type of *björnssoni*. Hockett (op. cit., p. 58), in synonymizing *P. icterica* Holmg. with *haemorrhoea* mentions variation in this species.

Unfortunately Dr. Lyneborg has been unable to locate the female syntype of *P. björnssoni* in the Zoological Museum, Copenhagen. Ringdahl (op. cit., p. 103) gives the following description:—"Blackish or bluish grey; thoracic and abdominal stripes indistinct or absent; frons broad, reddish anteriorly; Tb2 with a weak *ad*; wing base rather yellowish, otherwise as in male." This implies that the legs are all black. In *haemorrhhoa* ♀ the middle and hind legs (excluding tarsi) are mainly yellowish, and the frons is all red. *P. björnssoni* ♀ may be a dark form of *haemorrhhoa*, but because of the possibility of its being a distinct species I have not selected the male syntype as the lectotype.

Terminology. I have followed, with a few exceptions, the terminology used by van Emden. The structures of the aedeagus in figs. 7 and 8 are labelled in accordance with some of the suggestions of van Emden and Hennig (1956, Tuxen, S. L., Taxonomist's Glossary of Genitalia in Insects, Copenhagen pp. 111-122).

Acknowledgements.

I should like to thank Mr. A. C. Pont for much useful discussion; also Dr. M. W. R. de V. Graham and Prof. G. C. Varley of the Hope Dept., Oxford, who have kindly read the manuscript, and given me advice and criticism. I am indebted to the authorities at the British Museum (Nat. Hist.) for the opportunity to study material in their care. My thanks also to Dr. Lyneborg for sending me the Icelandic specimens on which this paper is based.

Literature.

- Collin, J. E., 1931: The Oxford University Expedition to Greenland, 1928: Diptera (Orthorrhapha Brachycera and Cyclorrhapha) from Greenland. — Ann. Mag. Nat. Hist., Ser. 10, 7 p. 67—91.
- Huckett, H. C., 1941: A revision of the North American species belonging to the genus *Pegomyia* (Diptera: Muscidae). — Mem. Amer. ent. Soc., Philadelphia no. 10. 131 pp., 9 pls.
- Nielsen, P., Ringdahl, O. and Tuxen, S. L., 1954: Diptera 1 (exclusive of Ceratopogonidae and Chironomidae). — The Zoology of Iceland, Copenhagen and Reykjavik 3 pt. 48a, 189 pp., 49 figs.
- Ringdahl, O., 1930: Fünf neue Fliegenformen aus Island. — Ent. Tidskr., Stockholm 51, p. 173.
- 1953: Zwei neue Anthomyiinen aus Island (Diptera Brachycera: Muscidae). — Ent. Medd., Copenhagen 26 p. 462—464, 1 fig.
- 1957: Neue isländische Dipteren nebst Beschreibung einer neuen *Pegomyia*-Art. — Ent. Medd., Copenhagen 28 p. 101—103.