

## A new *Pipizella* (Diptera, Syrphidae) from the French and Italian Alps, with a key to the *Pipizella* species of Central and Western Europe

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*Pipizella speighti* **spec. nov.** is described. It is closely related to *P. calabra* (Goeldlin, 1974) and *P. viduata* (Linnaeus, 1758). A key is provided to identify all *Pipizella* species recorded so far from temperate and montane zones in Central and Western Europe.

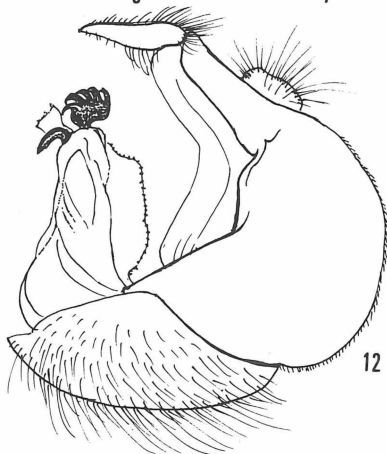
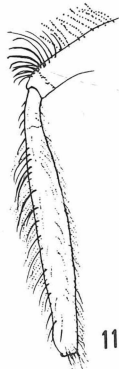
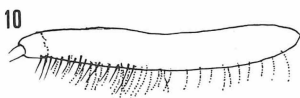
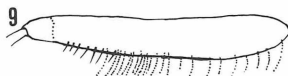
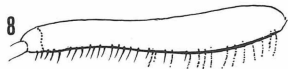
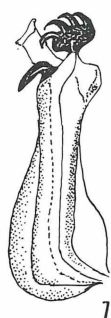
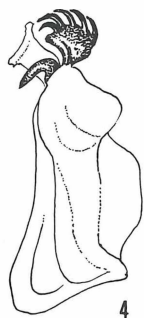
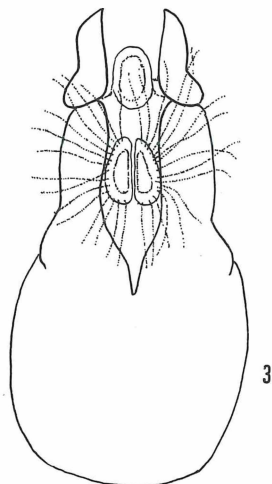
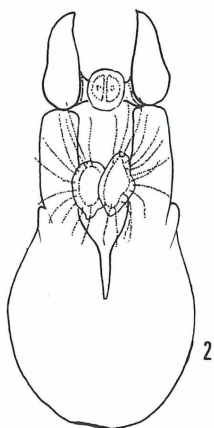
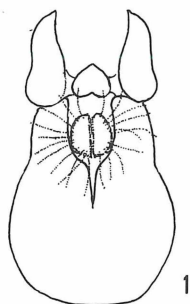
### Zusammenfassung

*Pipizella speighti* **spec. nov.** wird neu beschrieben. Die Art ist nahe verwandt mit *Pipizella calabra* (Goeldlin, 1974) und *P. viduata* (Linnaeus, 1758). Ein Schlüssel zur Bestimmung aller aus der gemäßigten Zone und den Gebirgen Mittel- und Westeuropas bekannten *Pipizella*-Arten wird vorgelegt.

### Introduction

A re-examination of the genitalia of male *Pipizella*, taken recently in the French and Italian Alps brought to light a series apparently belonging to a species not yet described. Though it is obviously closely related to *P. calabra* and *P. viduata* there are enough characteristics to indicate that it is a separate species.

As the essential data on the ca. 20 *Pipizella*-species recorded from Europe (the former Soviet Union excepted) are now scattered over a number of publications, it seems useful to summarize these and draw up keys for their identification. Only *P. lyneborgi* Torp, 1971 (from Andalusia), *P. siciliana* Nielsen & Torp, 1973, and *P. zloti* Vujić, 1997 (Balkans) are not included as they appear to belong to a group of Mediterranean taxa.



*Pipizella speighti* spec. nov.

Holotype: ♂, France, Hautes Alpes, at 1500 m in the Rabious valley (a tributary of the Durance), near Châteauroux-des-Alpes, 26.V.1997; L. Verlinden leg.

Paratypes: 6♂ taken on the same site, four of them on the same date, two others 4.VI.1996. 1♂, Italy, Piemonte, Bobbio Pellice, 1000m, 8.V.1990, L. Verlinden leg.

The holotype has been deposited in the Koninklijk Belgisch Instituut voor Natuurwetenschappen, Brussels. One paratype is in C. Claussen's private collection, the remaining six in the author's.

Etymology: The species is dedicated to Martin C. D. Speight (Dublin) in honour of his contributions to the study of Syrphidae over the last four decades.

## Description

♂: Head: Eyes with darkish pile, grey-brown ventrally, almost black dorsally; coalescent over a distance comparable to the length of the ocellar triangle. Antennae (including arista) wholly dark; third segment about twice as long as deep, slightly widening apically, then rounded. Face and frons with long and dense silvery pile and only few black hairs behind the lunula. Occiput with silvery pile, dorsally with a few longer very fine black hairs. Eye angle ca. 90°.

Thorax: Mesonotum and scutellum closely punctured/reticulated, with long and dense erect yellow pile, longest on the scutellum where it exceeds the length of the antennae. Pleura slightly dusted, yet visibly shining on the bare anterior part; long and wavy light-coloured pile on the posterior part. Wings of the usual *Pipizella* venation, slightly infuscated but without obvious dark median cloud. Squamae white, haltere yellow. Legs: All femora black with narrowly yellow apex. Fore and mid femora with hair fringe on postero-lateral face that is much denser on the apical half, there with a varying number of black bristly hairs (figs. 8, 9). Fore and mid tibiae broadly (ca. 1/3) yellow basally, very narrowly yellow apically; hind tibia nearly entirely black, with a fairly long hair fringe postero-laterally, that may contain many black hairs (fig. 11); even the longest hairs hardly exceed the tibial diameter. Fore basitarsus slightly concave and shining underneath, partly yellow (especially underneath). Mid basitarsus normally all yellow, visibly compressed laterally. All other tarsomeres entirely dark.

Abdomen: The usual *Pipizella* habitus; sternites smooth, without any processes. Tergites more strongly punctured than mesonotum; the short erect median pile mainly yellowish, but with patches of black pile near the hind margin of tergite II and the fore margins of tergites III and IV. Pre-genital tergite with long and dense, mainly black pile (fig. 12).

← Figs. 1-12: *Pipizella* spp. – 1-3: Epandrium in dorsal view. – 1. *viduata*; – 2. *speighti*; – 3. *calabra*. – 4-7: Hypandrium in lateral view. – 4. *viduata*; – 5. *speighti*; – 6. *calabra*; – 7. *cantabrica*. – 8-11: Legs. – 8. Left fore femur of *P. speighti*; – 9. Left mid femur of *P. speighti*; – 10. Left mid femur of *P. calabra*; – 11. Left hind tibia (posterior view) of *P. speighti*. – 12: *Pipizella speighti*: genitalia in lateral view.

Genitalia (figs. 2, 5, 12, also 44 and 45 in the key): Epandrium ovate, fairly voluminous, with long and broad arms; surstyli rather small, about as long as the epandrial arms; narrower and flatter than in *viduata*. The postanal appendage, between the bases of the surstyli, broad and almost round, nearly half as long as the surstyli. Hypandrium (lateral view) very broad at base, tapering towards apex. The thin and flat translucent inner median process well developed, reaching from base to quite near the apex. Its unique feature: the outer margin is provided with relatively strong teeth (smooth or finely and irregularly serrated in related species). Upper gonocercus of the cockscomb-type with nearly horizontal teeth; lower gonocercus a strong, downward bent hook.

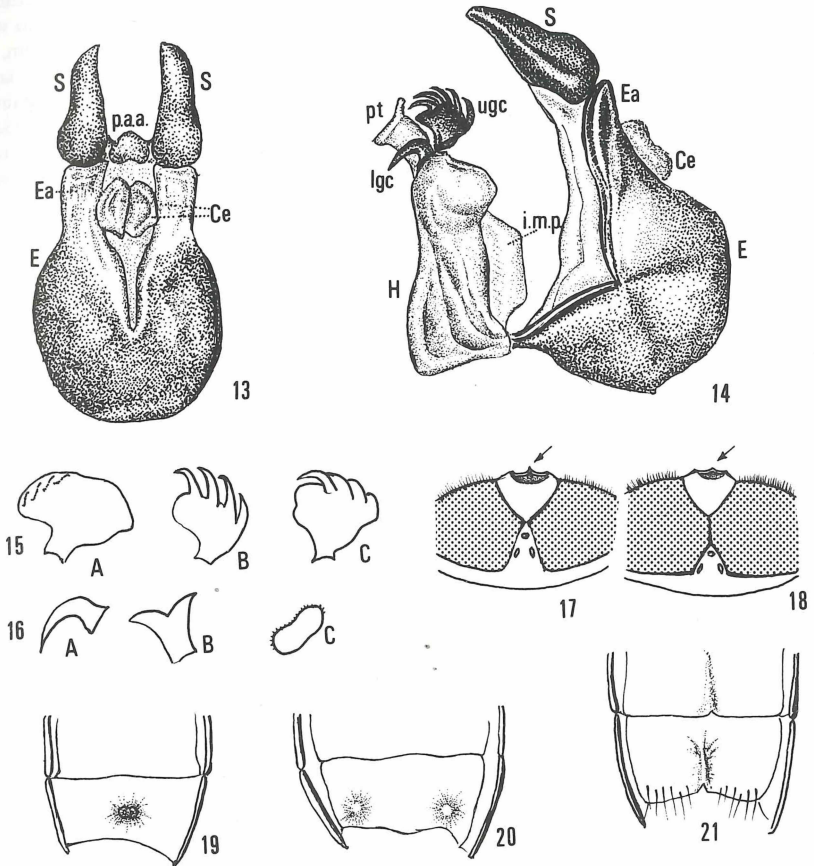
Variability: Even within this small sample there are some intraspecific variations (especially in colouring). The fore basitarsus may be completely dark, the mid basitarsus partly darkened. In one dark individual the normally bright yellow parts of the legs are very dusky and much reduced even in the mid tibia. The outer hair fringe of the hind tibia may be entirely whitish. The pilosity of the pre-genital tergite varies from all black to predominantly white. The number of black, bristly hairs on the posterolateral surface of the fore and mid tibiae is also variable (but always less numerous and less developed than in *calabra*). See figs. 8-10.

Genital characteristics of *speighti* compared with related taxa: The general aspect of the genitalia of *speighti*, *viduata*, *calabra* and *cantabrica* is so similar that the schematic drawings 1-7 may be needed to clarify the issue. In dorsal view the epandrium of *speighti* is intermediate between *viduata* and *calabra*. In *viduata* the epandrium is about twice as long as the surstyli; it is more than three times the length of the surstyli in *calabra*, but only 2 1/2 x in *speighti*. The surstyli of *viduata* are broader and more convex, and obviously longer than the epandrium arms. The exterior margin of the surstyli is almost straight in *speighti*, evidently excised in *calabra*. The postanal appendage of *viduata* is smaller and a different shape altogether. In dorsal view the epandrium of *cantabrica* would be very difficult to distinguish from *speighti*, except for the shape of the cerci (cf. fig. 30 in the key), but the characteristics of sternite IV rule out confusion. It is possible to distinguish *calabra* from the others by the unusually long hairs on the cerci, some of which surpass the length of the surstyli.

In lateral view it becomes apparent that the hypandria of *viduata*, (except for its apical process), *speighti* and *calabra* are quite similar, and different from *cantabrica*. The gonocerci are almost identical, but the inner median process, the "keel", separates *speighti* from the others. Its outer margin shows fairly strong, sclerotised teeth only in *speighti*. At most it is finely and irregularly serrated in the other two. This keel is shorter and broader in *calabra*, unfortunately rather variable in *viduata*.

The female of *speighti* is not yet known. Some females were collected (including a specimen of *P. sacculata* Becker, 1921) in the same sites on the same dates, but it does not seem possible to attribute any of them to *speighti*. Apart from the new species and "*sacculata*", males of six more *Pipizella* species were taken in the Rabious Valley:

*annulata*, *calabra*, *divicoi*, *nigriana*, *pennina* and *zeneggenensis*. In these circumstances it is not only impossible to guess which of the females might be *speighti*, it is equally impossible to make any statements as to the habitat preference of this new species.



**Figs. 13-21: *Pipizella* spp. – 13-14: *P. viduata*: male genitalia.** – 13. dorsal view (Ce = cerci, E = epandrium, Ea = epandrium arms, p.a.a. = postanal appendage, S = surstylus); – 14. lateral view (Ce = cerci, E = epandrium, Ea = epandrium arms, H = hypandrium, i.m.p. = inner median process, lgc = lower gonocercus, pt = penial tube, S = surstylus, ugc = upper gonocercus). – **15-16: Various types of gonocerci.** – 15. Upper gonocerci (a-c); – 16. Lower gonocerci (a-c). – **17-18: Eyes.** – 17. Eyes approaching in one point only (*P. nigriana*); – 18. Eyes holoptic (*P. viduata*). – **19-21: Sternite IV.** – 19. *P. bispina*; – 20. *P. pennina*; – 21. *P. cantabrica*.

## Key to the identification of male *Pipizella* from the temperate and mountain zones of Western and Central Europe

### Scope and limitations of the key

It should allow the determination of all male *Pipizella* (and the females of two species) recorded so far from Great-Britain and Ireland, the Benelux states, Denmark, Germany, Austria, Switzerland, as well as the non-Mediterranean parts of Spain, France and Italy. *P. brevis* Lucas, 1976, *P. fumida* (Goeldlin, 1974) and the female of *P. sacculata*, Becker, 1921 (= *P. beckeri* Brădescu, 1986) do not appear in the key, but are briefly characterised in an addendum. *P. brevis* was described from mountain areas in N. Spain, later recorded from Finland and Siberia (Dirickx 1994) as well as from the French side of the Pyrenees (Sarthou & Speight 1997). As one of the few *Pipizella* with dichoptic eyes in the male it should be easy to recognize. There is no description of the genitalia in Lucas (1976) and the figures in this paper are not easy to interpret. *P. fumida* was described briefly after the only specimen known so far, a male taken in the Pyrenees as far back as 1877. Goeldlin's description of the male genitalia is reproduced here. Whether *P. sacculata* is a bona species remains to be seen.

As far as possible the key has been based on morphological characteristics found to be constant (deformations of sternites, dichoptic eyes, hair fringes on femora and tibiae). In principle, however, the genitalia should always be studied both in lateral and dorsal view. This should not be too difficult even for novices.

Faunistic and ecological information on *Pipizella* is unfortunately very scarce. Yet the distribution pattern of several species is quite intriguing. Especially at higher altitude it is the rule rather than the exception to find several species occurring together, so that singularly little can be said about habitat preference.

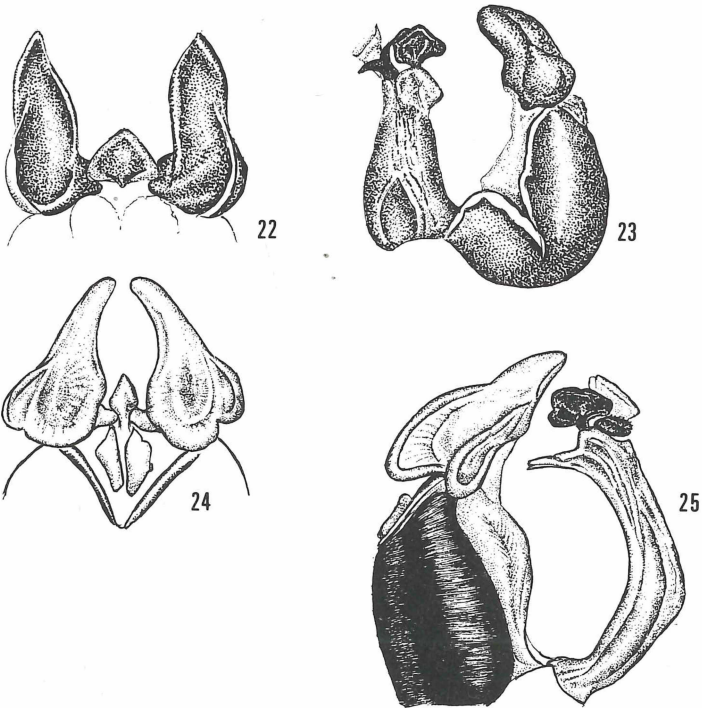
### External features of male genitalia

**Terminology:** The terms used in the key are borrowed from the most recent publications on *Pipizella*: Claussen (1991), Claussen & Hayat (1997) and Vujić (1997). They are depicted in figs. 13-16 that accompany the key. Figs. 13-14 represent the dorsal and lateral views of the genital capsule, here exemplified by *Pipizella viduata*, the most likely species to be present in any collection. Figs. 15-16 show the most common shapes found in the upper and lower gonocerci respectively: a pair of each can be seen on either side of the penial tube (**p.t.**) on the apex of the hypandrium. Fig. 13 shows the dorsal view of the epandrium (**E**) and the surstyli (**S**), placed on top of the epandrium arms (**Ea**). In nearly all species there is a small plate, here called the postanal appendage (**p.a.a.**), between the surstyli bases. In the aperture between the Ea are a pair of cerci (**Ce**).

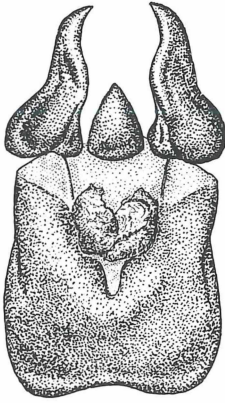
It is essential to study the genitalia in lateral view, too (fig. 14). It is often important to see epandrium and surstyli in profile as well as the hypandrium (**H**). Shape and relative size of the hypandrium are specific, as well as eventual processes and – in the case of species related to *viduata* – the thin translucent inner median process (**i.m.p.**). Finally there are the gonocerci. In most *Pipizella* the upper gonocercus (**u.g.c.**) is a rounded disk with narrow base, whose upper rim may carry several horizontal or more or less vertical teeth, a "cockscomb" (fig. 15). The lower gonocercus (**l.g.c.**) may be a single downward bent hook, an upright bifid structure or a flat plate in various shapes, which is often finely dented (fig. 16).

- 1 Eyes obviously holoptic (fig. 18), coalescent over a distance comparable to the height of the ocellar triangle. (Some *zeneggenensis* have the eyes narrowly separated, but then the eye margins are parallel.) ..... 2
- Eyes more or less dichoptic, approaching in one point; eye margins convergent (cf. fig. 17) ..... 13

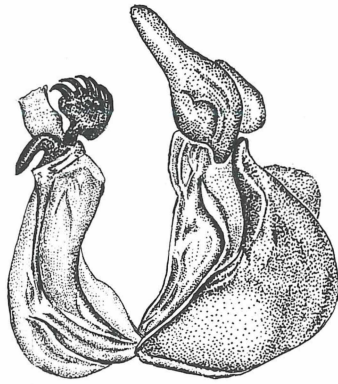
- 2 Sternite III with a transverse elevation, very convex. Wing usually with a well-developed median cloud. 3<sup>rd</sup> antennal segment quite elongate. Genitalia: E short and broad; S shoe-shaped, with a dorsal keel (fig. 22); p.a.a. triangular; H short and squat, tapering towards apex, which has a conical inner process (fig. 23); u.g.c. without apparent teeth; l.g.c. bifid. Pre-genital tergite with black pilosity ..... *Pipizella maculipennis* (Meigen, 1822)
- Recorded only sporadically from the Alps and further north; more common and widespread in the Mediterranean Basin. 0-1800 m.
- Sternite III flat. Wing clear or with weak median cloud, or (*mongolorum*) with infuscated apical half ..... 3
- 3 Sternite IV either with one median or two lateral elevations (figs. 19, 20), or a triangular median incision in the hind margin as well as a sharp median keel on the posterior half (fig. 21) ..... 4
- Sternite IV flat or the hind margin with a broad rounded elevation under which the genitalia are normally tucked in ..... 6



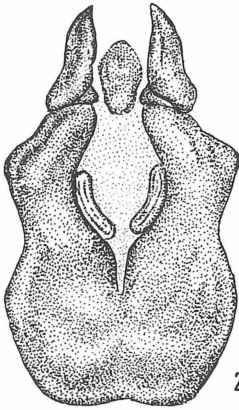
Figs. 22-25: *Pipizella* spp. – 22-23: *P. maculipennis*. – 22. surstyli (dorsal view); – 23. genitalia (lateral view). – 24-25: *P. annulata*. – 24. surstyli (dorsal view); – 25. genitalia (lateral view).



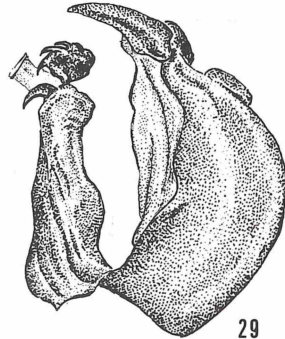
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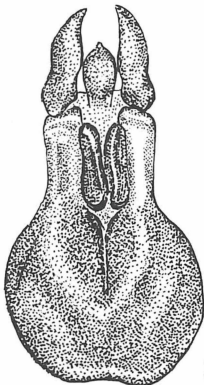
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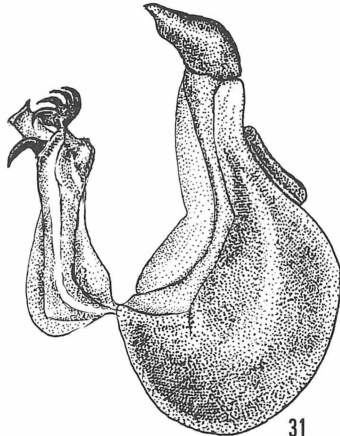
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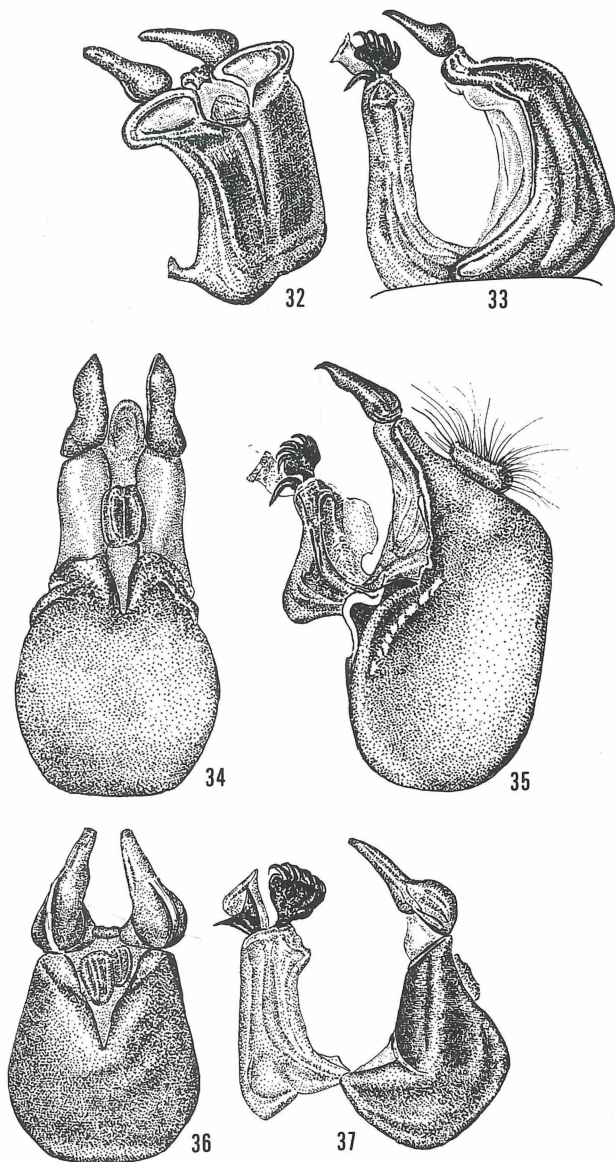
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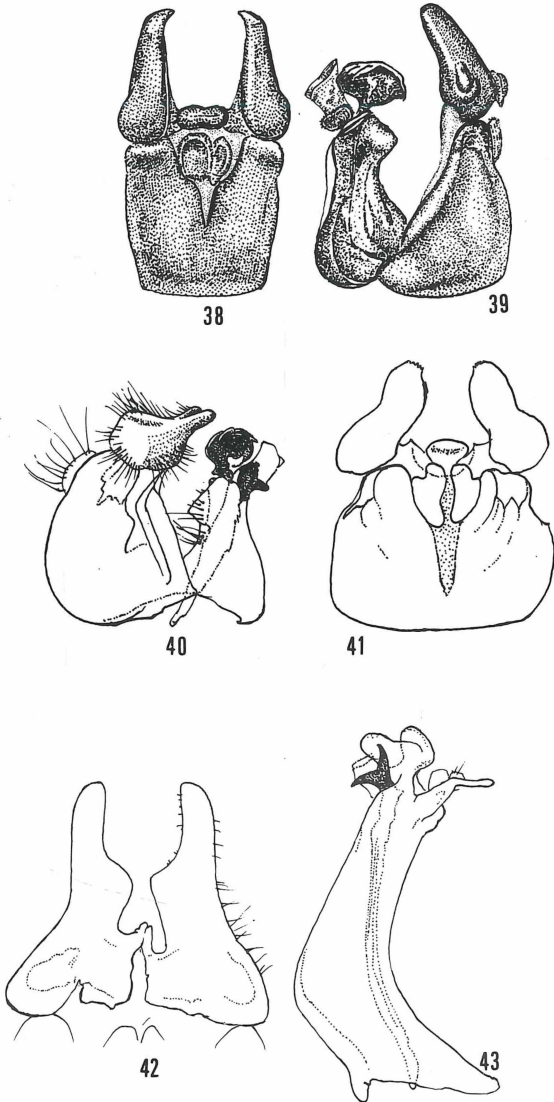


- 4 Sternite IV with a pair of rough and hairy elevations posteriorly (fig. 20). Genital capsule voluminous. Genitalia: E large, in lateral view rounded posteriorly (fig. 29; cf. *divicoi*, fig. 33); Ea already broad basally, widening even more apically (fig. 28); S minuscule, triangular; aperture between Ea large; Ce tiny; p.a.a. oval, elongate; H fairly slender, bulging apically (fig. 29); u.g.c. with horizontal teeth; l.g.c. a hook. Pre-genital tergite black-haired .....  
 ..... *Pipizella pennina* (Goeldlin, 1974)  
 An uncommon but widespread species mainly in mountainous areas from N.W. Spain into Austria; sporadically recorded from hilly country in F, D, B (1 record!), NL (id.), Serbia.
- Sternite IV with a single elevation or a sharp median keel posteriorly ..... 5
- 5 Sternite IV posteriorly with a sharp median keel; on each side along the hind margin a number of strong bristle-like hairs directed towards the rear (fig. 21). Sometimes a similar, but weaker keel on sternite III, too. Genitalia (figs. 30, 31) not unlike *viduata*, but E more elongate, Ea longer (equalling the S), p.a.a. ogival, Ce long and narrow; H again like *viduata* though longer and more slender, with similar gonocerci, but a very different i.m.p. (widest at base, then tapering sharply and disappearing well before apex of H). Pre-genital tergite with dominantly black pile ..... *Pipizella cantabrica* Claussen, 1991  
 Known only from Cantabrian Mountains and the Pellice Valley in N.W. Piemonte. Altitude ca. 1000 m. Early May.
- Sternite IV medially with a single sharp elevation (fig. 19), bearing two tiny processes set with minute bristles. Genitalia (figs. 26-27): E squarish, with short and broad arms; S large, roughly triangular with sinuous side margins; p.a.a. triangular; H rather short and broad, bent at base; u.g.c. a cockscomb, l.g.c. a hook. Pre-genital tergite with long and mainly white pilosity .....  
 ..... *Pipizella bispina* Šimić, 1987  
 A rare mountain species, recorded from CH, A, and (more frequently) former YU. The Belgian record (van den Goot 1981) probably an labelling error. Mid June - late July.
- 6 Fore and mid tibiae and basitarsi more extensively and brighter yellow than most *Pipizella*. Genitalia (figs. 24, 25): S light brown or yellow, more or less translucent, the basal half broad, surpassing Ea, semicircular, exteriorly with a rounded appendage set at an angle; the apical half tapering towards the apex; p.a.a. tiny; H long and slender, strongly curved, drawn out in a pointed process apically; u.g.c. without apparent teeth; l.g.c. a dented oval plate. Pre-genital tergite with light-coloured pile ..... *Pipizella annulata* (Macquart, 1829)  
 Not in Eire, G.B. and DK, elsewhere widespread, but uncommon and in small number; somewhat more frequent in mountain areas up to 2100 m. June and July; at lower altitude also May and August.
- Legs less extensively yellow and at least fore basitarsus normally (partly) darkened. S black, not at all translucent and narrower basally ..... 7



Figs. 32-37: *Pipizella* spp., genitalia in dorsal (*divicoi*: latero-dorsal view, from above) and lateral view.  
- 32, 33. *P. divicoi*; - 34, 35. *P. calabra*; - 36, 37. *P. virens*.

- 7 Genital capsule very voluminous and therefore sternite IV either very narrow and/or considerably elevated posteriorly. S very small, at least 3x shorter than E ..... 8
- Sternite IV normal and genital capsule small or medium-sized. S not so small compared with E ..... 9
- 8 Hair fringe an postero-lateral surface of mid femora evenly distributed and entirely yellowish. Sternite IV shorter: about 3x as broad as its median length. Genitalia (figs. 32, 33): E in lateral view flattened before Ea, which are abruptly and strongly bent forward and much widening; S very small, much narrower than Ea; p.a.a. tiny, transversely oval; Ce with normal pile; H curved only at base; u.g.c. a cockscomb; l.g.c. a hook. Pre-genital tergite with light-coloured pile ..... *Pipizella divicoi* (Goeldlin, 1974)  
 Widespread and fairly frequent in Alpine countries, up to 2300 m in summer, sometimes in number. North of the Alps local, in isolated populations (D, F, B, NL, Bohemia). Also in Southern Europe, from Spain to Greece.
- Mid femora with a postero-lateral hair fringe that is rather sparse basally, long and dense in the apical part and with numerous bristly black hairs (fig. 10). Genitalia: E huge, compared to S and H (figs. 34, 35), in dorsal view at least 3x as long as S, posteriorly rounded; S with outer margin sinuous; p.a.a. oval; Ea about as long as S, straight, not much broader than S; Ce with unusually long hairs, several longer than S; H short and stubby, very broad basally; i.m.p. short and broad, its margin not strongly dented; gonocerci resembling *divicoi*. Pre-genital tergite with long and dense mainly black hairs.....  
 ..... *Pipizella calabra* (Goeldlin, 1974)  
 Originally described from mountain areas in South and Central Italy, recently found to be fairly common and locally abundant in the southern half of the French Alps, up to 2200 m. Late May - August.
- 9 Tergite IV (and often also other tergites) entirely pale-haired, rarely some black pile near its front margin. Eyes sometimes narrowly separated, but eye margins parallel, not converging. Genital capsule small and flat. Genitalia (figs. 38, 39): E almost square and flat; Ea short; S almost as long as E, with nearly straight side margins; p.a.a. kidney-shaped; H broad at base, short, a conical process apically; u.g.c. without teeth; l.g.c. an oval dented plate. Pre-genital tergite with whitish pile. The yellow parts of the legs much reduced and dusky; hind leg almost entirely dark ..... *Pipizella zeneggenensis* (Goeldlin, 1974)  
 Mainly a mountain species, occurring up to 2000m, but (at any rate in spring) most numerous 1200-1500 m. Only in the western part of Europe? Rarer on the northern face of the Alps; in B, NL, F, D known from isolated populations on chalk and limestone. Late May - July.
- Tergites II-IV partly black-haired on disk, particularly near fore and hind margins. Genital capsule not so conspicuously small ..... 10

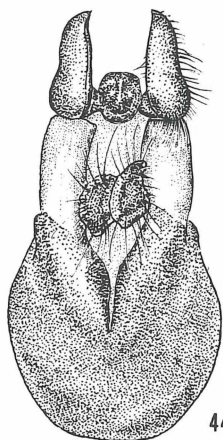


**Figs. 38-43: *Pipizella* spp.** – 38, 39. *P. zeneggenensis*: genitalia in dorsal and lateral view; – 40, 41. *P. mongolorum*: genitalia in dorsal and lateral view (after Claussen 1991); – 42, 43. *P. elegantissima*: surstyli (dorsal view) and hypandrium (lateral view) (after Claussen & Hayat 1997).

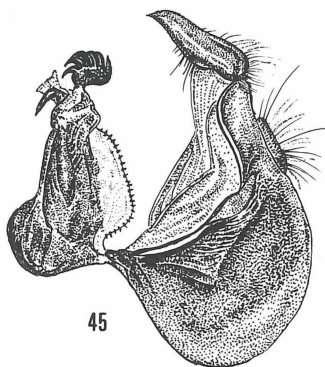
- 10 Hind tibia (fig. 48) with a longer hair fringe than any other *Pipizella* in the region; many hairs twice as long as the maximum diameter of the tibia; often many of these hairs are black and strong. 3<sup>rd</sup> antennal segment (fig. 52) quite elongate and tapering towards the top; arista entirely light brown. Genitalia (figs. 36, 37): E with very short arms, about 1 ½ times as long as S, which have a short keel and are in lateral view much thicker basally than in the apical half; p.a.a. tiny, kidney-shaped; H short and rather thick; u.g.c. with horizontal teeth; l.g.c. bifid. Pre-genital tergite with whitish pile. Usually a relatively large species ..... *Pipizella virens* (Fabricius, 1805)  
 Mainly a species of lowlands and hills; associated with ancient hardwood forests. Apparently very rare in most of the area, but still regularly recorded in the Low Countries (NL [south], B) and the Balkans. May - August.  
 Note: In lowland areas of the northern part of the area, where only *viduata* and *virens* occur in any number, females with a long hair fringe on tibia 3 (cf. fig. 50) and an entirely pale arista can be attributed to *virens*.
- Hair fringe on hind tibia not so long (cf. fig. 49) and normally all white. Genitalia different; S without dorsal keel ..... 11
- 11 Hairs on postero-lateral surface of fore femora all yellowish. Dorsal rim of antennae sockets with median projection barely discernible. Genitalia: E squarish; Ea short and broad; S very long, the outer margin deeply concave, the inner margin sinuous (fig. 42); bases of surstyli actually touching by means of a finger-like process; p.a.a. not visible in dorsal view; H strongly curved (fig. 43), apically drawn out in a pointed process; u.g.c. with an inner and an outer lobe, not a disk; l.g.c. bifid ..... *Pipizella elegantissima* Lucas, 1976  
 Montane zone of Sila and Apennine (I), Vercors and Beaumont (F). June - July. Very rare.
- Hairs on postero-lateral surface of fore femora partly black. Dorsal rim of antennae sockets with a small triangular projection (figs. 17, 18: arrow!). Genitalia different: S smaller and not touching basally; u.g.c. a cockscomb; i.g.c. a downward bent hook ..... 12
- 12 Arista usually paler near base. Fore basitarsus normally all dark, entirely pilose, matt. Genitalia (figs. 13, 14): E smaller, about twice as long as S; Ea moderately long, but evidently shorter than S; p.a.a. triangular, incised basally; H more swollen at base and normally with a conical projection apically; i.m.p. with smooth or very finely serrated outer margin. Pre-genital segment normally with predominantly whitish pile. Hind tibia: cf. fig. 40. ....  
 ..... *Pipizella viduata* (Linnaeus, 1758)  
 Appears in most of the recent literature as *P. varipes* (Meigen, 1822). The only fairly common and very widespread eurytopic species; present in all countries of the area. April - September. Rather variable, including genital features.
- Arista entirely dark. Fore basitarsus narrowly yellow at base (usually ventrally), sometimes also vaguely yellow apically; a shining slightly concave patch underneath; mid basitarsus much flattened in the middle (like in *calabra*).

Genitalia (figs. 44, 45) resembling *viduata*, but differing in the following points: E at least 2 ½ times as long as S; S flatter, about as long as Ea; p.a.a. round or slightly oval; H without apical process; i.m.p. with relatively strong teeth on the entire outer margin. Pre-genital segment with variable pile: from nearly all black to nearly all white ..... *Pipizella speighti* spec. nov.

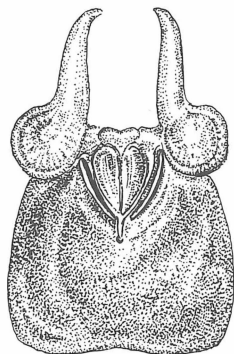
As yet known only from the French and Italian Alps (1000-1500 m). Early May - early June.



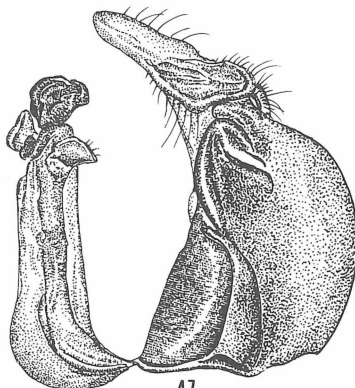
44



45



46



47

Figs. 44-47: *Pipizella* spp., genitalia in dorsal and lateral view. - 44-45. *P. speighti*; - 46-47. *P. nigriana*.

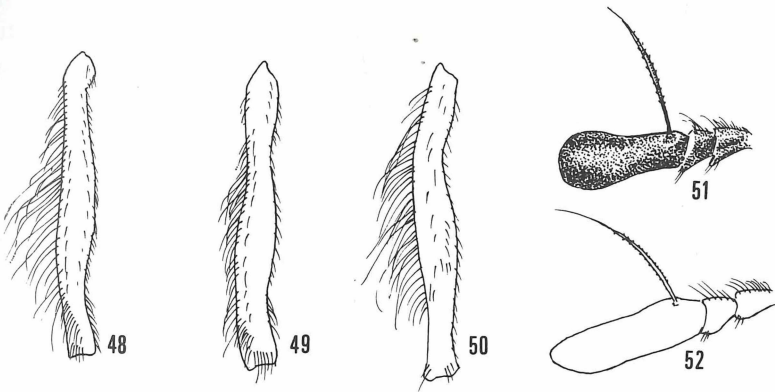
13

Apical half of wing darkened. Genitalia (figs. 40, 41): E subrectangular; Ea short; S black, convex, rather like *maculipennis*; H short and squat; u.g.c. with horizontal teeth; l.g.c. a combination of types a and c, the upper part with fine teeth

..... *Pipizella mongolorum* Stackelberg, 1953  
Siberia and Mongolia, but recently discovered in two localities in D (Bavaria) and in the Czech Republic (Šumava Mts., leg. Bártak).

Wing hyaline. Genitalia (figs. 46-47): surstyli rather like *annulata*, very broad, semicircular at base (but without the lateral appendage of *annulata*) and the same translucent pale brown, but much narrower apically; E squarish; aperture between Ea marked by a shining ridge-like projection; H straight, curved only at base, quite transparent, ending in a pair of triangular lamellae; u.g.c. an unarmed disk; l.g.c. very small, dented. Pre-genital tergite white-haired. Third antennal segment widening somewhat before apex (fig. 51). Pale parts of legs often as brightly yellow as in *annulata*, but some specimens have much darker legs ..... *Pipizella nigriana* (Séguy, 1961)

Not uncommon mountain species (1200-2300 m) known from all Alpine countries. Mid June - August.



Figs. 48-52: *Pipizella* spp. – 48-50: Hind tibia in dorsal view. – 48. *P. virens* (male); – 49. *P. viduata*; – 50. *P. virens* (female). – 51-52: Antennae (exterior). – 51. *P. nigriana* (male); – 52. *P. virens* (male).

### Addendum

Three more species have been recorded from mountain areas within or just outside the region: *P. brevis* Lucas, 1976 from N. Spain and the French Pyrenees, *P. fumida* (Goeldlin, 1974) from the French Pyrenees, *P. sacculata* Becker, 1921 (female only) from the Alps and Romania. It should not be too difficult to recognize them from the following descriptions:

1. *Pipizella brevis*: Eyes narrowly separated or just touching in one point. 3<sup>rd</sup> antennal segment not much longer than deep. Legs less extensively yellow than it is normally the case in *nigriana*. Mid basitarsus yellowish only at both ends. Genitalia rather similar to *annulata* and *nigriana* (E squarish; S surpassing the very short Ea; aperture between Ea marked by a ridge; similar gonocerci) but S are quite different not tapering towards top, apex broadly rounded. Mountains of N. Spain, French Pyrenees, Finland.

2. *Pipizella fumida*: Goeldlin's description is limited to a brief characterisation of the genitalia, which is precise and detailed enough to allow identification: S similar to *viduata*, but twice as long; Ea much shorter than *viduata*; H of medium length and nearly straight; u.g.c. with only two small teeth apically; l.g.c. bifid. French Pyrenees.

3. *Pipizella sacculata*: Described as a variety of *virens* on the strength of a single characteristic, the curiously elated third antennal segment, found in no other females, or indeed any males of the genus. Re-described by Brădescu (1986), who elevated it to the status of bona species, on the ground that, as the antennae were perfectly symmetrical, it could not be an aberration or deformity. This is contradicted by Claussen (in litt.) who points out that such symmetrical deformities do occur in some Syrphidae, quoting *Cheilosia "globulipes"* as an example. Specimens of "*sacculata*" (figure of antennae in Brădescu 1991) are known from the Swiss Alps, Romania and now also from Châteauroux in the French Alps. Until it is found in copula with a male presenting individual genital features, "*sacculata*" must remain a doubtful taxon.

### Acknowledgements

I am most grateful to M.C.D. Speight and C. Claussen, who each sent me a copy of their own unpublished keys to a number of European *Pipizella*, and thus drew my attention to a number of specific marks in *P. calabra*, *P. elegantissima* and *P. zeneggenensis* which I had not noticed myself. I also thank C. Claussen for examining and commenting on a paratype of *P. speighti*, M.C.D. Speight, C. Claussen and D. Doczkal for a critical reading of this paper.

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