A long-lasting taxonomic problem in European Sympycnus resolved, with the description of a new species and data on habitat preferences

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Abstract

Type specimens of Sympycnus pulicarius, S. annulipes, S. cinerellus and S. desoutteri were examined to clear up a long-lasting taxonomic confusion. Our study revealed that they represent, together with S. pygmaeus and S. annulipes var. brunnitibialis, a single species, with S. pulicarius as the senior subjective synonym, which is redescribed in this paper. Lectotypes were designated for Dolichopus pulicarius, Porphyrops annulipes, Chrysotus cinerellus and Sympycnus desoutteri. The postpedicel in this species shows substantial variation in shape and size, but the presence of a posteroventral bristle on the mid tibia is more reliable and the particular chaetotaxy and relative lengths of the tarsomeres of the male hind tarsus are entirely consistent. Both latter features separate S. pulicarius from another species, S. septentrionalis sp. nov., that is described here. Ecological data on both species were examined. An analysis of Malaise trap and white pan trap samples collected in Belgium revealed that S. pulicarius is most common in the western part of Flanders, and most abundant in open grassy habitats. In contrast to S. pulicarius, which is widespread over Europe, S. septentrionalis sp. nov. seems confined to northern Europe, where it exhibits a similar habitat preference.

Key words: Dolichopodidae, Sympycnus pulicarius, Sympycnus annulipes, Sympycnus cinerellus, Sympycnus desoutteri, new species, Europe, Sweden, taxonomy, distribution, ecology

Introduction

For nearly two hundred years, the most abundant and widespread Sympycnus species in Western Europe, S. pulicarius (Fallén, 1823), has been causing taxonomic confusion. As in most other European species of this genus, the main diagnostic features in the male of this species are the shape of the postpedicel and the chaetotaxy of the hind tarsus. The confusion started when Sympycnus pulicarius and S. annulipes (Meigen, 1824) were described almost simultaneously from Sweden and Germany, respectively. Fallén (1823) mentioned the antenna in S. pulicarius being short and black (“antennae breves nigrae”) and the fore legs being black at the base and the hind legs black dorsally at apex (“pedes pallidis … anticis prope ad basin, posticis supra apicem nigris”). Meigen (1824) described S. annulipes with a very similar leg coloration (“pedicus rufis: femoribus anticis basi facia nigra, posticis apice nigris”) and a dark antenna with strong pubescence and a basodorsal stylus. He specifically mentioned the hind tarsus featuring two basal equal-sized tarsomeres and a third tarsomere with long posterior bristles (“articulo tertio tarsorum posticorum barbato”). Zetterstedt (1838) added to the situation by describing S. cinerellus (in Chrysotus), also from Sweden, fourteen years later. Later Parent (1925) completed the confusing array of these species when he described S. desoutteri, stating it was different from S. annulipes by a short postpedicel (not as long as wide) with a blunt apex.

That the confusion of these species still exists is illustrated by the fact that at present Sympycnus pulicarius, S. annulipes and/or S. desoutteri are listed in checklists, faunistic notes or ecological studies, in various combinations,
northern Europe (Collin 1940; Blank 1987; Meuffels 1981; and Santos Abreu 1929). Nonetheless, the type specimens of these species were never examined for any morphological differences. However, the following series of events have strongly contributed to the current confusion. Although it was suggested by several authors (e.g., Collin 1940; Meuffels 1981; Cole 1987) that S. pulicarius, S. annulipes and S. desoutteri most probably did not represent separate species, type specimens were never examined. Lundbeck (1912) listed S. annulipes as a valid species with S. cinerellus and S. pulicarius as synonyms. He presented a very accurate redescription of the species mentioning the elongate triangular postpedicel and included a drawing of the hind tarsus, which differed from that of specimens examined by other authors. Parent (1925) explicitly pointed out the assumed "erroneous" drawing of Lundbeck (see also Discussion below). Collin (1940) emphasized that Parent did not check Meigen’s types. Collin himself recorded forms with a short, blunt postpedicel from England, hitherto named as S. annulipes. He concluded that they belonged to S. desoutteri but added that either S. annulipes or S. desoutteri might be synonymized with S. pulicarius. Meuffels (1981) studied non-type specimens of S. annulipes and S. desoutteri from France and the Netherlands and noted a large (and gradual) variation in the shape of postpedicel, without examining any other morphological differences. He concluded that both species should be considered conspecific and suggested S. pulicarius as the valid name. Negrobov (1991) omitted listing S. desoutteri and S. annulipes var. brunnitibialis in his Palaearctic catalogue, while listing S. annulipes and S. cinerellus as synonyms of S. pulicarius. In both the initial and revised checklists of Swedish Dolichopodidae, Grichanov (2002, 2004a) listed S. pulicarius as a valid species with S. annulipes and S. desoutteri as synonyms, however, without supporting data. Finally, during this study a hitherto undescribed species (indicated as 2nd "form" in Material and methods), closely related to the above species, was discovered.

In order to provide firm evidence for the taxonomic status of all involved species, an effort was made to examine the type specimens of S. pulicarius, S. annulipes, S. cinerellus and S. desoutteri, as well as specimens from numerous samples collected all over Europe. In the present paper, the results of the examination of the type specimens are given, a re-description of the valid species and a description of the new species are presented, and their distribution and ecology is discussed.

Material and methods

Type specimens of S. annulipes and S. cinerellus, and images of type specimens of S. pulicarius were examined in detail. The entire collection of S. desoutteri of the Parent collection (MNHN) was also studied. As type specimens often appeared quite damaged and in order to achieve a detailed and reliable characterization of the two most distinct forms (species), recently collected material (stored in alcohol) from Belgium (Oost-Vlaanderen, Gent, Bourgoyen-Ossemeersen Nature Reserve, 1993, leg. Marc Pollet) and Sweden (Södermanlands, Trosa, Hunga Södergård nr 1, 2004; part of Swedish Malaise Trap Project (SMTP), see Karlsson et al. 2005) was used. In each form, a total of 173 character states were scored, with 35, 61 and 77 related to the head, thorax/abdomen/wing, and legs respectively. Observations were made on specimens in alcohol, but dusting (e.g., face, frons, pleura) was checked in dried specimens. This allowed us to extract the most reliable and consistent decisive diagnostic features, which were subsequently used to compare both forms with the type specimens and other material.

Type specimens were photographed by the senior author, and relevant non-genitalic diagnostic characters in recently collected specimens of both forms (species) by the second author. The hypopygium of both species was
drawn using a camera lucida. The left lateral view of the hypopygium was illustrated. In describing the hypopygium, ‘dorsal’ and ‘ventral’ refers to the morphological position prior to genitalic rotation and flexion. Thus, in the drawings showing a lateral view of the hypopygium, the top is morphologically ventral, while the bottom is dorsal.

Biometrics were carried out on five specimens of each sex in each of the two forms (species) and include: (i) body length, (ii) wing length, (iii) relative wing width, (iv) proximal versus apical section of vein M_{1+2}, (v) proximal versus apical section of vein Cu_{1}, (vi) Cu_{A} ratio (= apical section of vein Cu_{A} versus crossvein dm-cu) and (vi) relative length ratios of femur, tibia and tarsomeres of each leg. The latter relative lengths were recalculated so that the shortest leg part represents a value of “1”. In addition, and due to the variation in this character, biometrics on the antenna were also carried out on S. pulicarius specimens (n = 2–3, each from Portugal, Iran, and Wales (UK)). All values given in this paper are average values, unless otherwise mentioned. Palpus and proboscis size is compared to eye size, the eye was measured as the vertical diameter (from about ocellar tubercle to the lower eye margin).


Information from type specimen labels is provided in full and with the original spelling, information on other specimens is sometimes slightly adjusted for reasons of readability or completeness. For type and non-type specimens, supplementary information is given between square brackets [ ]. Label information is given from the top downward, with data from each label between quotation marks, and data from different lines on the same label separated by a slash (/). Information from different labels is separated by a semi-colon. The repository of each specimen is given in parentheses. All specimens examined were pinned, unless otherwise mentioned (W: wet alcohol sample).

Results

Lectotypes of Dolichopus pulicarius, Porphyrops annulipes, Chrysotus cinerellus and Symypycnus desoutteri are designated below. Meigen (1824) mentioned that specimens of both sexes of S. annulipes were collected by von Winthem near Hamburg and that one male had also been collected “here”, most probably referring to Meigen’s residence in Stolberg (Germany). No type specimens of S. annulipes could be located in von Winthem’s collection in NHMW. It is thus considered most plausible that the two specimens of the Meigen collection in MNHN we examined were the type specimens. Neither carried a type label, though, which is not unusual for Meigen types. Parent (1925) recorded Fermanville as the type locality of S. desoutteri, but none of the 79 specimens (78 males/1 female) from this locality carried a type label.

A comparative study revealed that S. pulicarius, S. annulipes and S. desoutteri are conspecific. In contrast to a distinct variation in the postpedicel shape (from rounded triangular, short and sometimes blunt-ended to elongate triangular with acute apex), the chaetotaxy of the hind tarsus in the male was identical. Also, the relative lengths of ta{II}_{2} and ta{II}_{3} matched entirely between the species (Fig. 1). The condition of the lectotype specimens and sex (female) of S. cinerellus did not allow for verification of species identification, but as this species was already
considered synonymous with *S. annulipes* by Kowarz (1889), Lundbeck (1912) and Becker (1918), we consider its current status reliable. See Parent (1925) for convincing evidence concerning the synonymy of *S. pygmaeus* with *S. annulipes* (= *S. pulicarius*). *Sympycnus pulicarius* is thus considered senior subjective synonym with the other species as junior subjective synonyms. In the following overview, type depositories are given between square brackets.

**Sympycnus pulicarius** (Fallén)

(Figs 2–3, 6, 8, 10)

*Dolichopus pulicarius* Fallén, 1823: 20. Type locality: not given (Sweden?) [NRM].

*Porphyrops annulipes* Meigen, 1824: 56. Type locality: Hamburg and Stolberg (Germany) [MNHM] rev. status.

*Medeterus pygmaeus* Macquart, 1827: 50. Type locality: not given (northern France) [unknown].

*Chrysotus cinerellus* Zetterstedt, 1838: 706. Type locality: Stöttings fj. (Sweden) [MZLU].

*Sympycnus desoutteri* Parent, 1925: 549. Type locality: Fermanville, Cotentin (France) [MNHM].

*Sympycnus annulipes var. brunnitibialis* Santos Abreu, 1929: 449. Type locality: La Palma (Spain) [possibly lost: Marcos Báez, pers. comm.].

**Diagnosis** (male). Slender species (Fig. 2). Face narrow, at narrowest width about 0.4 x as wide as postpedicel (length). Antenna (Fig. 3) dark, with postpedicel variable, triangular to elongate triangular with acute apex, 1.1–1.5 x as long as deep, and 1.1–1.7 x as long as scape and pedicel combined. Stylus rather basodorsal, inserted at about basal 2/5 of upper rim. Coxa I dark brown with metallic reflection, with apical 1/3–3/5 pale yellow. Femur I pale yellow, with basal 1/3 dark brown. Femur I and II with one rather thin preapical pv bristle, about as long as femur is deep. Tibia I without ventral serration. Tibia II with one small pv bristle at apical 1/3. Tarsus I without ventral...
serration. Tarsus III (Fig. 6) with taIII₃ nearly entirely laterally flattened; taIII₁ 0.7 x as long as taIII₂; with 2 posterior bristles at basis, straight with only extreme apex slightly curved, 0.8 x as long as taIII₁; with 3–5 strong pd bristles also in central part of taIII₁; and with several smaller erect pd and pv bristles on apical 1/2–2/3 of taIII₁ and basal 1/3–1/2 of taIII₁ (MSSC).

FIGURES 2–5. *Sympycnus pulicarius*. 2, habitus; 3, head; *Sympycnus septentrionalis* sp. nov. 4, habitus; 5, head (photos: M. Persson).
Description. Male. Head. Face silvery white, greyish below antennae, with shallow central furrow; narrowing below antenna, and nearly parallel-sided towards clypeus, at narrowest width about 0.4 x as wide as postpedicel (length), bare. Frons bronze, strongly dusted brownish. Occiput bronze, slightly dusted, rather convex. Palpus small, 1/4 of eye (mostly less than half of palpus exposed), half-moon shaped (mostly exposed part triangular), with basal 1/3–1/2 brown, and apical 1/2 pale reddish yellow (mostly only apical 1/2 exposed), with white pollinosity, pale pubescence and without apical bristles. Proboscis brown. Eyes red, pubescent. About 7 uppermost po bristles strong and black, and lower (about 10) bristles rather short and thin, yellowish white, uniserial; with a few long yellowish white bristles posterior of po bristles on lower occiput. One pair of black postocellar bristles. Antenna (Fig. 3) blackish brown, with scape bare dorsally and pedicel with apical circlet of bristles; postpedicel slightly paler, variable, triangular to elongate triangular with acute apex, 1.1–1.5 x as long as deep, and 1.1–1.7 x as long as scape and pedicel combined, with distinct pubescence, especially on apical 1/2; stylus rather basodorsal, inserted at about basal 2/5, with apical segment about 9 x as long as basal segment; stylus 2.2–3.0 x as long as first three antennal segments combined, with microscopic pubescence. Thorax. Mesonotum including pleura, postpronotum, scutellum and metapleura dark metallic green, with pleura slightly dusted greyish. Scutellum with 2 very strong median bristles, 2 minute lateral ones and a sparse fringe of white setae. Thoracic bristles black; 6 rather equal-sized dc; 7–8 ac, biserial, nearly reaching 5\textsuperscript{th} dc, strong, bristles about 3 x as long as distance between rows; 2 strong and 1 minute ant pprr, 1 bas pprr, 1 psut ial, 1 sut ial, as long as psut ial and anterior spal, 2 npl, 2 spal, and 1 pal bristles; upper proepisternum with a group of about 5 small white setae in front of anterior spiracle, lower proepisternum with 2–5 (mostly 4) white, equal-sized (prothoracic) setae; proepimeron bare, and antepronotum with fringe of erect white and black setae. Abdomen. Six abdominal segments pubescent, T\textsubscript{6} triangular in lateral view, slightly longer than T\textsubscript{5}. Tergites and sternites entirely dark metallic green, with T\textsubscript{1,4} with short black inclined setae on disc, with white inclined setae on sides; T\textsubscript{1} with strong bristles on posterior margin (black on disc, and paler on sides); T\textsubscript{1,2} with erect white setae laterally. Sternites with white pubescence, with S\textsubscript{3} with only erect setae on posterior margin, S\textsubscript{2,5} with short pubescence, and S\textsubscript{4,5} with longer setae on posterior margin.
Hypopygium (Fig. 8) with epandrium dark brown, with slight bronze reflection; hypandrium straight, dark brown, with jagged basodorsal margin; phallus narrow, slightly curved at apex; apicoventral epandrial lobe distinctly tapering, with one seta at base and one at extreme apex; surstylus apparently lacking; cercus rather short, rounded triangular, tapering towards apex, white, with greyish base and black apex; postgonites (Fig. 10) large, whitish, outreaching hypandrium, with bifurcate ventral structure arising at base, and forming two long and thin blackish appendages, running alongside the phallus. **Wing.** Slightly smoky, without anal lobe, and with anal vein only weakly indicated. Vein R~4+5~ slightly curved, M~1+2~ with smooth bend, both parallel near wing apex. Proximal section of M~1+2~ 0.7 x as long as apical section. Proximal section of CuA~1~ 1.2 x as long as apical section. CuA~1~ ratio: 3.7.

Halter yellow, squamal fringe dark brown. **Legs.** Overall largely pale yellow, with coxae I–III mainly dark, femur I and III strongly infuscated and tarsi I–III dark; with black bristles. Coxa I (Fig. 3) dark brown with metallic reflection and apical 1/3–3/5 pale yellow, especially on anterior face; with very dense pubescence of long white bristles and equal-sized white apical bristles. Coxa II dark brown, yellowish at apex, especially on anterior face; with pubescence of inclined white setae on anterior face, and one strong white bristle and a few setae on outer margin of anterior face. Coxa III dark brown, with one straight, white external bristle, as long as coxa III, inserted at about basal 2/5, with a few minute setae at its basis and at coxal apex. Trochanters yellow in leg I, brown in legs II–III. Femur I pale yellow, with about basal 1/2 dark brown (especially on posterior face), slightly curved; with one row of small black inclined av bristles along entire length, longest in basal 1/2, there about 1/3 x as long as femur is deep; with 1 preapical pv bristle on about apical 1/6, rather thin, about as long as femur is deep. Femur II entirely pale yellow, with 1 strong ad and 1 very small av preapical bristles, and 1 pv preapical bristle on about apical 1/7, rather thin, about as long as femur is deep. Femur III pale yellow, with apical 1/3 to 2/3 brown to dark brown, especially on dorsal face; with 1 strong ad, 1 small av and 1 small pv preapical bristles; with one av, one vt and one pv row of short inclined black bristles along entire length, producing av and pv preapical bristles. Tibia I pale yellow, with ad serration of 5–7 robust black bristles on apical 1/2, about 2 x as long as tibia is deep; with one thin pd seta at about basal 1/4, at most as long as tibia is deep. Tibia II pale yellow, with 3 strong, inclined ad bristles, 3–4 x as long as tibia is deep, inserted at about basal 1/5, 1/3 and 2/3; with 2 slightly weaker pd bristles, at most 2.5 x as long as tibia is deep, inserted at basal 1/5 and 3/5; with 4 strong ap bristles; with 1 pv bristle at apical 1/3, slightly longer than tibia is deep. Tibia III pale yellow, becoming gradually darker towards apex, with apical 1/3–1/4 dark brown; with 2 strong ad bristles, about 2 x as long as tibia is deep, and with 3–5 distinctly stronger and many smaller dorsal bristles, strongest ones about 1.5 x as long as tibia is deep, and with 5 ap bristles; with indistinct pd pubescence along entire length, including some longer thin bristles, about as long as tibia is deep. Tarsus I pale yellow, dark brown from apical 1/4–1/5 of tali, onwards; tal, without or with only weak ventral serration; tal~1,~ very short, combined about 1.3 x as long as tal~1,~. Tarsus II yellow at base, dark brown from apical 1/5 of talII, onwards; talI~2,~ combined 1.1 x as long as tal~1,~. Tarsus III (Fig. 6) black, brownish at most at extreme base, and with talIII~4,~ shiny on inner (posterior) face; talIII~1,~ with one black posterior bristle at apex, 0.2 x as long as talII~1,~ is long; talIII~2,~ nearly entirely laterally flattened; talIII~3,~ 0.7 x as long as talII~3,~ with 2 brown posterior bristles, inserted at extreme basis, straight with only extreme apex slightly curved, 0.8 x as long as talIII~3,~. With 3–5 slightly curved, dark pd bristles also in central part of talIII~3,~ about 0.5 x as long as talIII~3,~ with several shorter erect pd and pv dark bristles on apical 1/2–2/3 of talIII~3,~ and basal 1/3–1/2 of talIII~4,~ less than 0.5 x as long as tarsomers. Length ratios of femur/tibia/tarsomeres 1–5 in leg I: 8.5/9.3/4.1/3.1/1.1/1, in leg II: 8.3/9.5/4.6/2.1/1.7/1, and in leg III: 7.5/9.6/3.2/1.6/1.1/1. **Body length:** 2.3–2.8 mm (n = 5); **wing length:** 2.3–2.6 mm, 0.3 x as wide as long (n = 5). **Female.** Similar to male, except for following features: more robust stature. Face slightly narrowing towards clypeus, with distinct central funnus and thinner diverging funnus in some specimens, wide, at upper edge of clypeus 1.8 x as wide as postpedicel (length). Palpus large, nearly 2/5 of eye, elongate triangular, with basal 3/5 brown and apical 2/5 pale reddish yellow, with brown pubescence and 2 strong brown preapical bristles. Proboscis brown, robust, about 0.7 x as long as eye. Antenna with postpedicel rounded triangular, mostly with acute apex, 0.9 x as long as deep, and as long as scape and pedicel combined, with short pubescence; stylus rather basodorsal, inserted at about middle of upper rim; apical segment about 10 x as long as basal segment, 2.9 x as long as first three antennal segments combined. As irregularly uniserial to biserial, reaching between 4th and 5th dc. Abdomen with 5 pubescent segments, with T~6,~ usually enclosed by T~5,~ S~3,~ with short, white pubescence. Coxa I dark brown with metallic reflection, with apical 1/4–1/2 pale yellow. Coxa III with black external bristle. Femur I pale yellow, with about basal 1/2–3/5 brown (especially on posterior face), with one row of indistinct equal-sized short inclined
av bristles along entire length; with 1 minute and one large pv preapical bristles, latter at apical 1/8 and 1–1.5 x as long as femur is deep. Femur II with 1 minute and 1 large preapical pv bristles, latter at apical 1/10, slightly longer than femur is deep. Femur III pale yellow, with apical 1/3 brown to dark brown, often apical 1/2 darkened dorsally; without ventral bristles. Tibia I pale yellow, with ad serration of 7–9 robust black bristles on apical 1/2, about as long as tibia is deep; with 1 minute ventral seta at about apical 1/4, sometimes with a few other similar setae towards middle. Tibia II with 3 ad bristles, 2.5–3 x as long as tibia is deep, and 2 pd bristles, 1–2 x as long as tibia is deep; with one pv bristle at apical 1/3, about 1.5 x as long as tibia is deep. Tibia III mainly pale yellow, with apical 1/5 brown; with dorsal row of stronger and smaller dorsal bristles along entire length, at most 1.5 x as long as tibia is deep; with 3–5 thin inclined pv setae, about as long as tibia is deep. Tarsus I with tal1 yellow at basis, gradually darkened towards apex; tal2,3 dark brown. Tarsus III without MSSC, with talII, 0.7 x as long as talIII.

Length ratios of femur/tibia/tarsomeres 1–5.

- Body length: 2.5–3.1 mm (n = 5); wing length (mm): 2.7–3.0 mm, 0.3 x as wide as long (n = 5).


Sympycnus annulipes (Porphyrops) (Figs 13–15): LECTOTYPE (here designated in order to fix identity of the species), ♂, [GERMANY], labelled: [white, round] “Meigen” (upper side) / “1617” / “40” (bottom side); [brown, rectangular] “annulipes” / “♀” / “; [red] “lectotype des. Marc” / “Pollet, 2015”; [white] “Porphyrops annulipes” / “Meigen, 1824”. PARALECTOTYPE: ♂, [GERMANY], labelled: [white, round] “Meigen” (upper side) / “1617” / “40” (bottom side); [brown, rectangular] “annulipes” / “♀”; [red] “paralectotype des. Marc” / “Pollet, 2015”; [white] “Porphyrops annulipes” / “Meigen, 1824” (both MNHN (coll. Meigen)). Notes on synonymy. Meigen (1824) reported specimens of both sexes. The lectotype is in bad condition: only the head, thorax, left wing and left fore and mid leg are present on the pin; the head is lacking both postpedicels, and the right hind leg is glued to the foam holding the specimen. The paralectotype only lacks the apical part of the left stylus and the left hind leg.


The lectotype lacks both postpedicels, is otherwise complete, but strongly mouldy. In the paralectotype, only the right wing and one fore femur are left on the pin.

MNHN (coll. Parent)). **Notes on synonymy.** Without designating a holotype or allotype, Parent described *S. desoutteri* in 1925 on the basis of a couple (male + female), collected in Fermanville (Normandy, France). In his collection, a large number of specimens from Fermanville were present, but only with 1929 and 1933 as label dates (together with a large number of specimens lacking any label). Moreover, none of the females of the Fermanville series were separately pinned. Type specimens could thus not be detected, and the lectotype and paralectotype were selected among the Parent specimens based on their conservation status and the fact that they were separately pinned. Both specimens are in a good state; in the paralectotype, only the apex of both wings is slightly damaged and tarsomeres III, of the left hind leg are missing.

SYMPYCNU S PULICARIUS TAXONOMY REVISITED

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**Remarks.** Types of *S. desoutteri* were not designated in the original description (Parent, 1925), but the concept of this species *sensu* Parent could be easily established thanks to the large number of specimens in his collection from the Manche Department (France), including the type locality (Fermanville). Specimens mounted on micropins were often put together on one piece of styrofoam and individual pieces contain up to 13 specimens. Surprisingly, Parent consistently misspelled the name of his new species as “*Dessouteri*” on the identification labels, while his fellow-collector in the Vallée des Moulins was Dr “Desoutter” (Parent, 1925).

Due to its size, the historical Parent collection (MNHN) of *S. desoutteri* enabled us to gather quantifiable information on some morphological features. All specimens most probably originated from sites in the Manche Department (Normandy), although 38 of the 252 specimens did not carry any label. Only two out of 122 male specimens showed a slightly longer postpedicel (1.1 x as long as wide) whereas in the other specimens it was about as long as wide; in all those specimens the postpedicel had an acute apex. The lectotype specimen, indeed, features a slightly shorter postpedicel (0.9 x as long as wide) with a blunt apex, but no other differences with the other specimens were detected. The external bristle of the hind coxa is mostly white in the male of this and the other species, and black in the female (also reported by Lundbeck 1912), but exceptions were found in the Parent collection as well. Of 67 males, only one showed a black bristle instead of the normal white one, whereas among 28 females, 19 had a black bristle (at each side), 6 had two brown bristles, 2 had two white bristles and one specimen even showed one black coxal bristle at one side and a white coxal bristle at the other side. Neither the shape/length of the postpedicel nor the hind coxal bristle colour in the females seem reliable for identification.

**Distribution.** Specimens of *S. pulicarius* from a number of countries were examined either by the senior author or colleagues, and the following distribution records can be considered valid: Andorra (first country record), Austria, Belgium, Bosnia and Herzegovina (presence confirmed), Bulgaria, Canary Islands (Spain), Croatia (presence confirmed), Czech Republic, Denmark, Finland, France, Georgia (first country record), Germany, Great Britain, Greece, Italy, Luxemburg, Macedonia (presence confirmed), the Netherlands, Norway, Poland, Portugal (first country record), Romania, Slovakia, Spain, Sweden, Switzerland, and Iran in the Palaearctic region.
FIGURES 13–15. *Sympycnus annulipes* (*Porphyrops*). 13, lectotype; 14, paralectotype; 15, lectotype (left) and paralectotype labels (right) (photos: M. Pollet).
Based on the literature, *S. pulicarius*, *S. annulipes* and/or *S. desoutteri* have also been reported from Estonia, Corsica (France), North Aegean Islands (Greece), Hungary, Ireland, Kaliningrad Oblast (Grichanov 2011), Latvia and Lithuania (Grichanov 2006b), Moldova (Grichanov 2011), northern Russia (Murmansk, Grichanov 2004b; Republic of Karelia, Grichanov & Polevoi 2004), northwestern Russia (Leningrad Region, Novgorod Region and Pskov Region, Grichanov 2006b), central and southern European Russia, Ukraine (including Kherson and Crimea, Grichanov 2007), former Yugoslavia, North Caucasus and other Caucasian regions like Alania, Krasnodar Territory, Adygea, Kabardino-Balkaria, Karachai-Cherkessia, and Stravropol Krai (Grichanov et al. 2006; Grichanov 2007), eastern Russia (Altai) (Grichanov 2007), Turkey (Grichanov 2007), Israel (Grichanov et al. 2006), Kazakhstan (Grichanov 2011), and Afghanistan. Although specimens from all these countries should preferably be checked again to ascertain their identification, most of these records are likely to refer to *S. pulicarius*.

The single Californian record (Pollet et al. 2004) of *S. pulicarius* proved correct and is based on six specimens. If the current seemingly disjunct distribution is reliable, then its occurrence in California might be explained by human introduction. However, the species has been reported from eastern Russia (Altai) and possibly occurs also in the Far East of Russia and Japan, but has not yet been collected there.
Symyrcus septentrionalis Pollet, sp. nov.
(Figs 4–5, 7, 9)

Diagnosis (male). Slender species (Fig. 4). Face narrow, at narrowest width about 0.6 x as wide as postpedicel (length). Antenna (Fig. 5) dark, with postpedicel triangular, as long as deep, and about 0.5 x as long as scape and pedicel combined. Styli inserted at about middle of upper rim of postpedicel. Coxa I dark brown with metallic reflection, with apical 1/5 pale yellow. Femur I pale yellow, with basal 3/5 dark brown. Femur I with 3–4 and femur II with 4 strong preapical pv bristles, with apical bristle slightly curved (MSSC). Tibia I with indistinct av and pv serration of thin setae along entire length (MSSC). Tibia II without pv bristle. Tarsus I with taf, with ventral serration of thin inclined setae, not as long as taf, is deep (MSSC). Tarsi III (Fig. 7) with taIII, laterally flattened on apical 2/3, and taIII, entirely laterally flattened; taIII, slightly longer (1.1 x) than taIII, with 2 posterior bristles at basis, straight with abrupt bend at about apical 1/3, about 1.2 x as long as taIII; with white pd setae at basis and on apical 1/2, and bare pd zone in between; taIII, with white bristles along its entire length.

Description. Male. Head. Face silvery white, greyish below antennae, with shallow central furrow; narrowing below antenna, and parallel-sided towards elyseps, at narrowest width about 0.6 x as wide as postpedicel (length), bare. Frons bronze, strongly dusted brownish. Occiput bronze, slightly dusted, rather convex. Palpus small, 1/4 of eye (mostly less than half of palpus exposed), half-moon shaped (exposed part triangular), basal 1/2 brown, and apical 1/2 pale reddish yellow (mostly only apical 1/2 exposed), with white pollinosity, pale pubescence and without apical bristles. Proboscis brown. Eyes red, pubescent. Po bristles rather long, with about uppermost 8 black, stronger, and lower bristles yellowish white, thin, uniserial; with few long yellowish white bristles posterior of po bristles on lower occiput. One pair of black postcoccler bristles. Antenna (Fig. 5) blackish brown, with scape bare dorsally and pedicel with apical cirect of bristles; postpedicel slightly paler, triangular, as long as deep, and about 0.5 x as long as scape and pedicel combined, with distinct pubescence, especially on apical 1/2; stylus rather basodorsal, inserted at about middle of upper rim; apical stylar segment 9 x as long as basal segment, 2.7 x as long as first three antennal segments combined, with microscopic pubescence. Thorax. Mesonotum including pleura, postpronotum, scutellum and metapleura dark metallic green, with pleura slightly dusted greyish. Scutellum with 2 very strong median bristles, 2 minute lateral ones and a sparse fringe of white setae. Thoracic bristles black; 6 rather equal-sized dc; 8 ac, biserial, nearly reaching 5th dc, strong, bristles about 3 x as long as distance between rows; 2 strong and 1 minute ant pprn, 1 bas pprn, 1 psut ial, 1 sut ial, as long as psut ial and anterior spal, 2 npl, 2 spal, and 1 pal bristles; upper proepisternum with group of about 5 small white setae in front of anterior spiracle, lower proepisternum with 2–5 (mostly 4) white, equal-sized (prothoracic) setae; proepicier and antepronotum bare, and antepronotum with fringe of erect white and black setae. Abdomen. Six pubescent abdominal segments, T5 triangular in lateral view, slightly longer than T4. Tergites and sternites entirely dark metallic green, with T5, with short black inclined setae on disc, and with white inclined setae on sides; T4, with white bristles on posterior margin (black on disc, and paler on sides); T1–2, with erect white setae laterally. Sternites with white pubescence, S1 with only erect setae on posterior margin; S2–4, with short pubescence, and S5–6, with longer setae on posterior margin. Hypopygium (Fig. 9) with epandrium dark brown, with slight bronze reflection; hypandrium straight, dark brown, with jagged basodorsal margin; phallus narrow, rather straight; apicoventral epandrial lobe rather robust and conical, with two setae at basis and one at extreme apex; surstyli apparently lacking; cercus rather short, rounded triangular, tapering towards apex, white, with greyish base and black apex; postgonites large, whitish, outreaching hypandrium, with bifurcate ventral structure arising at its base and forming two long and thin blackish appendages, running alongside the phallus. Wing. Slightly smoky, without anal lobe, with anal vein only weakly indicated. Veins Rs, r1 slightly curved, M1+2 with smooth bend, both parallel near wing apex. Proximal section of M1+2 0.8 x as long as apical section. Proximal section of CuA1 1.2 x as long as apical section. CuA ratio: 3.5. Halter yellow; squamal fringe dark brown. Legs. Overall largely pale yellow, with coxae I–III dark, femur I and III strongly infuscated and tarsi I–III dark; with black bristles. Coxae I dark brown with metallic reflection, with apical 1/5 pale yellow; with very dense pubescence of long white bristles and equal-sized white apical bristles. Coxae I and III dark brown, yellowish at apex, especially on anterior face; with inclined white setae on anterior face, and one strong white bristle and a few setae on outer margin of anterior face. Coxae II dark brown, with one white, straight external bristle, as long as coxa III, inserted at about basal 2/5, with a few minute setae at base and at coxal apex. Trochanters yellow in leg I, brown in legs II–III. Femur I pale yellow, with basal 3/5 dark brown, slightly curved;
with one row of small black inclined av bristles along entire length, longest in basal 1/2, there about 1/3 x as long as femur is deep; with 3–4 preapical pv bristles in apical 1/3, with three apical ones stronger, slightly longer than femur is deep, and apical bristle slightly curved. Femur II entirely pale yellow, with 1 strong ad, 1 very small preapical av, and with 4 pv preapical bristles in apical 1/3, with three apical ones stronger, about 0.5 x as long as femur is deep, and apical bristle slightly curved. Femur III pale yellow, with more than apical 1/2 dark brown, especially on dorsal face; with 1 strong ad, 1 small av preapical and 1 small pv preapical bristles; with 1 av, 1 vt and 1 pv row of short inclined black bristles along entire length, producing the av and pv preapical bristles. Tarsus I pale yellow, with ad serration of 5–7 robust black bristles on apical 1/2, about 2 x as long as tibia is deep; with 1 thin pd seta at about basal 1/4, as long as tibia is deep, and with indistinct av and pv serration of thin setae along entire length. Tarsus II pale yellow, with 3 strong, inclined ad bristles, 3–4 x as long as tibia is deep, inserted at basal 1/5, and near basal 2/5 and 3/4; with 2 slightly weaker pd bristles, at most 2.5 x as long as tibia is deep, inserted at about basal 1/5 and 3/5; with 4 strong ap bristles; ventral bristles lacking. Tibia III pale yellow, becoming gradually darker towards apex, with apical 1/4–1/5 dark brown; with 2 strong ad bristles, about 2.5 x as long as tibia is deep, and with 6–7 distinctly longer and several smaller dorsal bristles, strongest ones about 1.5 x as long as tibia is deep, and with 5 ap bristles; with indistinct pd pubescence along entire length, including some longer thin bristles, about as long as tibia is deep. Tarsus I pale yellow, dark brown from apical 1/4 of tal, onwards; tal, with ventral serration of thin inclined setae, not as long as tal, is deep; tal, very short, combined about 1.3 x as long as tal, Tarsus II yellow at basis, dark brown from apical 1/4 of tali, onwards; tali, combined 1.3 x as long as tali, Tarsus III (Fig. 7) black, brownish at most at extreme base, with tali3e shiny on inner (posterior) face; tali, with two black posterior bristles at apex, 0.3 x as long as tali is long; tali laterally flattened on apical 2/3, and tali entirely laterally flattened; tali, slightly longer (1.1 x) than tali; tali, with 2 brown posterior bristles, inserted at extreme base, straight with abrupt bend at about apical 1/3, about 1.2 x as long as tali; with 1–2 dark pd bristles at basis and 2–3 pd bristles on apical 1/2 with bare pd zone in between, bristles at most 0.5 x as long as tali, and slightly curved; with 4 white pv bristles on apical 1/2, two basal ones curved and two apical ones straight; tali, with bristles along its entire length, including 3 straight, white pd bristles, about 0.5 x as long as tali, and with 3 shorter and thinner pv bristles; tali4e with vt inclined black bristles. Length ratios of femur/tibia/tarsomeres 1–5 in leg I: 9.2/9.8/3.9/1.2/1.1/1.3, in leg II: 7.3/8.6/3.8/1.7/1.5/1.1/1, and in leg III: 7.4/9.3/2.4/1.7/1.9/1.2/1. Body length: 2.5–3.0 mm (n = 5); wing length: 2.4–2.6 mm, 0.3 x as wide as long (n = 5). Female. Similar to male, except for the following features: more robust stature. Face slightly narrowing in upper 1/2 of epistoma, parallel-sided in lower 1/2 and clypeus; with diverging furrows on epistoma, wide, about 2 x as wide as postpedicel (length). Palpus large, nearly 2/5 of eye, elongate triangular, with basal 3/5 brown and apical 2/5 pale reddish yellow, with brown pubescence and with 2 strong brown preapical bristles. Proboscis brown, robust, about 0.5 x as long as eye. Antenna with postpedicel rounded triangular to almost reiform, with blunt apex, 0.8 x as long as deep, about 0.7 x as long as scape and pedicel combined, with short pubescence. Ac irregularly uniserial to biserial, reaching between 4th and 5th dc. Abdomen with 5 pubescent segments, with T6 usually enclosed by T5; S6e with short, white pubescence. Coxu I dark brown with metallic reflection, mostly with apical 1/6, at most with apical 1/4 pale yellow. Coxu III dark brown, yellowish at apex, with 1 mostly black but sometimes also white, straight external bristle. Femur I pale yellow, with basal 2/3 dark brown, with one row of indistinct equal-sized short inclined av bristles along entire length. Femur I mostly with 1–2 (rarely 3), and femur II with 1–2 preapical pv bristles at apical 1/8, apical bristle slightly curved, slightly longer than femur is deep. Femur III pale yellow, with at least apical 1/3 dark brown, largely darkened dorsally and extreme apex pale yellow; without ventral bristles. Tibia I with ad serration of 7–9 robust black bristles on apical 1/2, about as long as tibia is deep; with 1 thin pd seta and 1 minute vt seta at about apical 1/4, sometimes with another similar vt seta at middle. Tibia II with 3 ad bristles, 3 x as long as tibia is deep, and 2 pd bristles, 2 x as long as tibia is deep; with one pv bristle at apical 1/3, slightly longer than tibia is deep. Tibia III mainly pale yellow, with apical 1/10 (at most apical 1/5) brown; with row of stronger and smaller dorsal bristles along entire length, at most 1.5 x as long as tibia is deep; with only some indistinct short small pv setae. Tarsus I with tal, yellow at base, gradually darkened towards apex (basal 3/4 of tal, yellow in some specimens). Tarsus II with tali2e, 0.8 x as long as tali. Lengths ratio of femur/tibia/tarsomeres 1–5 in leg I: 8.8/9.1/4.1/1.7/1.4/1.1, in leg II: 7.9/9.5/4.4/1.9/1.6/1.1, and in leg III: 8.7/10.4/2.9/2.3/1.9/1.2/1. Body length: 2.9–3.2 mm (n=5); wing length: 2.7–3.2 mm, 0.3 x as wide as long (n = 5).
FIGURES 20–22. *Sympycnus desoutteri*. 20, lectotype; 21, paralectotype; 22, lectotype (left) and paralectotype labels (right) (photos: M. Pollet).
FIGURE 23. Type locality of *Sympycnus septentrionalis* sp. nov. (Sweden, Södermanland, Trosa, Hunga Södergård nr 1, behind stable, N58°55.244' E17°31.274'; photo: SMTP).

**Type material** (location codes between brackets refer to Fig. 24). **HOLOTYPE**, ♂, SWEDEN: Södermanland, Trosa, Hunga Södergård nr 1, behind stable (Fig. 23), N58°55.244' E17°31.274' (SE01, see Fig. 24), 17.vii–1.viii.2004, MT, leg. B.-E. Bengtsson (NRM: W). **ALLOTYPE**, ♀, same data as holotype (NRM: W). **PARATYPES: GERMANY**: 3♂, 1♀, Mecklenburg-Vorpommern, Prerow-Darß (DE01), 24.vi.1991, SW, leg. A. Stark (MAPC: W). **DENMARK**: 1♂, Sjælland (DK01), leg. Westermann (ZMUC); 1♂, East Jutland, Ajsstrup Krat (DK02), 29.vi.–21.vii.2010, leg. E. Bøggild (ZMUC); 3♂, Fyn, Arreskov Sø (DK03), 23.viii.1964, leg. N.P. Kristensen (ZMUC); 1♂, North East Fyn (DK04), leg. Schlick (ZMUC); 1♂, Fyn, Keldsnor (DK05), 24.vii.1964, leg. O. Martin (ZMUC); 1♂, Lolland, Bogo (DK06), 8.viii.1922, leg. P. Nielsen (ZMUC); 2♂, 2♀, Lolland, Sundby Storskov (DK07), 22.vi.1964, leg. L. Lyneborg & N.M. Andersen (ZMUC); 3♂, North East Jutland, Hostmark (meadow) (DK08), 13–24.vi.2007, MT, leg. E. Bøggild (ZMUC: W); 3♂, same site, 24.v.–7.vi.2007, MT, leg. E. Bøggild (ZMUC: W); 1♂, North East Jutland, Rebild, St Stendal, N56°50', E9°50' (DK09), 14–28.vii.2013, MT, leg. E. Bøggild (MAPC: W); 1♂, North West Jutland, Sennels (DK10), 13.vii.1974, leg. K. Schnack (ZMUC); 1♂, South Jutland, Augustenborg (DK11), leg. Wustnei (ZMUC); 1♂, South Jutland, Draved Mose (DK12), 7.viii.1964, leg. O. Martin (ZMUC); 1♂, West Jutland, Tipperne (DK13), 20.vi.1973, leg. H. Rald (ZMUC). **FINLAND**: 1♂, Ahvenanmaa, Finiström, Godby träsk, 60.229, 19.997 (WGS84) (FI01), 21.vii.1942, leg. R. Frey (MZH), label: Finiström; R. Frey; 4734; 1♂, same data, label: Finiström; R. Frey; 4731. **GREAT BRITAIN**: 1♂, England, Suffolk, Walberswick TM49.73 (GB01), saltmarsh, 15.vii.2003, leg. R. Crossley (RCRC); 1♂, Scotland, Culbin Sands NH91.58 (GB02), 16.vii.1991, leg. R. Crossley (MAPC); 1♂, same site, saltings, 15.vii.1991, leg. R. Crossley (RCRC). **NORWAY**: 2♂, Buskerud, Hurum, Ostenstangen (NO01), 26.v.–8.vii.1995, MT, leg. L.O. Hansen (TEJC: W); 1♂, Oslo, Christiania (now Oslo) (NO02), 21.vi.1894, leg. T. Becker (ZMHB (Becker coll.)), label: Norwegen / 7. 35145; 1♂, Vestfold, Re, Våle, Langoya (NO03), in calcareous

**FIGURE 24.** Sympycnus septentrionalis sp. nov., distribution map (capture locations indicated in green). Location codes refer to the type material listing.
Identification. Male specimens of this species are most easily separated from those of S. pulicarius by the lack of the pv bristle on tibia II (nearly always present in S. pulicarius at apical 1/3), the taIII, that is slightly longer than taII (0.7 x as long as taIII, in S. pulicarius), and the specific chaetotaxy of taIII₃₄ (see Diagnosis; Figs 6, 7). Due to the large variation of the shape in S. pulicarius, the postpedicel is not considered a reliable diagnostic feature. Female specimens cannot be reliably separated but the following characters seem the most useful: shape and relative length of postpedicel (always blunt-ended and never as long as wide in S. septentrionalis), colour of coxa I (dark with mostly only apical 1/6 pale yellow, at most apical ¼; apical ¼ to ½ pale yellow in S. pulicarius), and colour of external bristle on coxa III (mostly black but sometimes white; only black bristle thus far observed in S. pulicarius). Females of both species have a small pv bristle on tibia II, which is slightly longer in S. pulicarius.

Distribution. Sympycnus septentrionalis exhibits a primarily northern European distribution (Fig. 24) and has thus far been recorded from England, Scotland, Germany, Denmark, Norway, Sweden and Finland. It is likely to be discovered also in Poland, the Baltic countries, northwestern and northern European Russia, and perhaps even in the Netherlands.

Etymology. The name “septentrionalis” is Latin for “northern” and refers to the northern European distribution of this species, at least as far as is currently known, and as compared to the current extent of occurrence of S. pulicarius in the Palaearctic.

Discussion

Despite the characteristic arrangement of bristles on the hind tarsus of the male (considered a MSSC), Sympycnus pulicarius was described under six different names. In addition to the fact that too much taxonomic significance was assigned to the highly variable length and shape of the postpedicel (Parent 1925; see also Meuffels 1981), the orientation of the two basal bristles on the 3rd tarsomere of the hind leg has also caused repeated confusion. Drawings of the hind tarsus of S. desoutteri by Parent (1938) and d’Assis Fonseca (1978) lack this couple of bristles, whereas they are clearly present in drawings of S. annulipes by Lundbeck (1912), Becker (1918) and Parent (1938). The apparent absence in S. desoutteri is easily explained by the fact that these bristles are often positioned parallel with, and close to the tarsus and, as such, situated in between the other shorter bristles on the 3rd and 4th tarsomere. This was observed in Parent’s large collection of S. desoutteri by the senior author, where it was also seen that some specimens featured one tarsus with the bristles positioned erect and perpendicular, and the other tarsus with the bristles nearly attached to the tarsomeres.

<table>
<thead>
<tr>
<th>Belgian province</th>
<th>total no. surveys</th>
<th>surveys with S. pulicarius</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>no.</td>
<td>%</td>
</tr>
</tbody>
</table>
| West-Vlaanderen   | 22                | 19                        | 86.4
| Oost-Vlaanderen   | 91                | 63                        | 69.2
| Antwerpen         | 20                | 10                        | 50.0
| Limburg           | 27                | 8                         | 29.6
| Vlaams Brabant    | 5                 | 1                         | -
| Waals Brabant     | 3                 | 3                         | -
| Hainaut           | 4                 | 3                         | -
| Liège             | 8                 | 4                         | -
| Luxembourg        | 2                 | 1                         | -
| Namur             | 5                 | 2                         | -
| Total             | 187               | 114                       | 61.0

TABLE 1. Analysis results on the distribution of Sympycnus pulicarius in Belgium based on Malaise trap and/or white pan trap surveys.
<table>
<thead>
<tr>
<th>Province (landskap)</th>
<th>Municipality</th>
<th>Location (sampling site)</th>
<th>Habitat type</th>
<th>No specimens</th>
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<td><strong>Sympycnus aeneicoxa</strong></td>
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<tr>
<td>Skåne</td>
<td>Klippans</td>
<td>Skäralid, valley below northern Lierna</td>
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<td>Småland</td>
<td>Gränna</td>
<td>LÖmmeåsen, next to old cellar</td>
<td>Norway spruce forest with big harvested ashes</td>
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<td>Nybro</td>
<td>Alsterbro/Alsteråsen</td>
<td>mixed forest</td>
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</tr>
<tr>
<td>Småland</td>
<td>Åmhusl</td>
<td>Stenbrohol, Djäknybygård bokbacke</td>
<td>heath with old beeches</td>
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</tr>
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<td>Södermanland</td>
<td>Trosa</td>
<td>Hunga Södergård nr 1, behind stable</td>
<td>tall grass close to pile of manure</td>
<td>2</td>
</tr>
<tr>
<td>Uppland</td>
<td>Knivsta</td>
<td>Rickebasta alsumpskog, western part</td>
<td>alder swamp wood</td>
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</tr>
<tr>
<td>Uppland</td>
<td>Norrtälje</td>
<td>Svarlåga, Mattrok</td>
<td>maritime deciduous wood</td>
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<td><strong>Sympycnus pulicarius</strong></td>
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<tr>
<td>Bohuslän</td>
<td>Tanums</td>
<td>Hamburgsund, Stora Snixholmen</td>
<td>semi-exposed coastal flat-rock</td>
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<td>Gotland</td>
<td>Gotlands</td>
<td>Roleks, border between wood and open pasture</td>
<td>grazed calcareous pine forest</td>
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<td>Halland</td>
<td>Halmstad</td>
<td>Gårdsålt, Buskastycket</td>
<td>moist hay meadow</td>
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<tr>
<td>Öland</td>
<td>Mörbylånga</td>
<td>Södra lunden (Ottenby), military radar station, Ottenby</td>
<td>nemoral grove</td>
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<td>Östergötland</td>
<td>Ödeshögs</td>
<td>Omberg, Bokskogsreservatet, Omberg</td>
<td>beech forest</td>
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<td>Östergötland</td>
<td>Ödeshögs</td>
<td>Omberg, Stocklocke ång</td>
<td>lime meadow</td>
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<td>Simrishamns</td>
<td>Stenshuvuds nationalpark, between Stenshuvud and Krivarby</td>
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<td>Skåne</td>
<td>Tomelilla</td>
<td>Drakamöllan, at border between pasture 1 and 2</td>
<td>Agrostis capillaris heath</td>
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<td>Söderås, Påboda</td>
<td>garden</td>
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<td>Trosa</td>
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<td>Marma skjutfält, east of Sköldvägen/Kamnäven</td>
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<td>Häbo</td>
<td>Biskops-Arnö, northern beach</td>
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<td>Uppland</td>
<td>Knivsta</td>
<td>Rickebasta alsumpskog, western part</td>
<td>alder swamp wood</td>
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</tr>
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<td>Värmland</td>
<td>Munkfors</td>
<td>Ransäter, Ransberg Herrgård</td>
<td>old mixed deciduous forest in stream ravine</td>
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<td>Värmland</td>
<td>Munkfors</td>
<td>Ransäter, Rudtorp</td>
<td>sandy railway embankment through pasture land</td>
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<td>Västmanland</td>
<td>Sala</td>
<td>Nötmyran (Västerfärnebo), birches at Islingby, Östermyran</td>
<td>hay meadow</td>
<td>1</td>
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<td><strong>Sympycnus septentrionalis sp. nov.</strong></td>
<td></td>
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</tr>
<tr>
<td>Södermanland</td>
<td>Trosa</td>
<td>Hunga Södergård nr 1, behind stable</td>
<td>tall grass close to pile of manure</td>
<td>39</td>
</tr>
<tr>
<td>Södermanland</td>
<td>Södertälje</td>
<td>Tullgarns näs, Råsalviken</td>
<td>mixed forest next to pasture</td>
<td>2</td>
</tr>
<tr>
<td>Västerbotten</td>
<td>Vindeln</td>
<td>Kulbäcksängarna, Kulbäcken meadow</td>
<td>birch wood on fine alluvial sediments</td>
<td>1</td>
</tr>
</tbody>
</table>
This paper shows that there are two similar species present in northern Europe: *Sympycnus pulicarius* and *S. septentrionalis* sp. nov. However, descriptions and drawings in the literature reveal that most authors most probably dealt with *S. pulicarius* (Becker 1917; Parent 1925, 1938; d’Assis Fonseca 1978). The occurrence of two *Sympycnus* “forms” (or species) in the UK has been suggested for quite some time (see Collin 1940; Cole 1987; Beuk 1990; Crossley 2014), and has been confirmed in the present study.

Unaware of its significance, Lundbeck (1912) was the first to illustrate the hind leg of *S. septentrionalis* (fig. 119, p. 384), but assigned it to *S. annulipes* [= *S. pulicarius*]. As his accompanying description mentioned the presence of a ventral bristle on the mid tibia (only present in *S. pulicarius*), Lundbeck most probably examined a mixed sample of *S. pulicarius* and *S. septentrionalis*.

In addition to its wide distribution in Europe, *S. pulicarius* also seems to be eurytopic i.e. occurring in a wide variety of habitat types. In order to gather more detailed information on its most preferred habitats, distributional and ecological data from EURODOL (personal database of the senior author) were analysed. Of the 187 (of a total of 247) locations in Belgium investigated by Malaise and/or white pan traps with a total yield of 50 or more dolichopodid specimens, *S. pulicarius* was retrieved from 114 sites. The sites without *S. pulicarius* were not evenly distributed over the different Belgian provinces (see Table 1), and the species was particularly less widespread in the eastern provinces of Antwerp and Limburg (see also Pollet 2000). In this part of the country, oligotrophic habitats (heathland, peat bogs) are predominant and mainly these habitat types, together with humid (dark) forests, were among the 73 sites without *S. pulicarius*. In 23 of the sites harbouring the species, *S. pulicarius* represented 5% or more of the total dolichopodid yield. These sites included at least 8 gardens, whereas this habitat type was distinctly rarer (5/91) among the other sites. Also in sweep net samples, open grassy habitats (including forest edges) seemed to be the favourite biotope of this species. In Sweden, the same ecological patterns were observed (Table 2). Despite the incomplete SMTP data set, sample data revealed that the species occurred in a wide variety of habitat types, but 3 out of 4 sites with over 10 specimens of *S. pulicarius* had a grassy vegetation. *Sympycnus septentrionalis* sp. nov. is definitely much more rare in Sweden (and elsewhere in Europe), but, like *S. pulicarius*, seems to prefer open humid grassy habitats like marshland, salt marshes, lake shores and meadows. Thus far, it has mainly been recorded from coastal regions (see Fig. 24) in contrast with *S. pulicarius*, which is also widespread inland across the European continent. Contrary to its congener, *S. aeneicoxa* prefers forest habitats (Table 2), which corresponds with its Belgian distribution (Pollet 2000). Surprisingly enough, the type locality of *S. septentrionalis* sp. nov., basically a grassland next to a manure pile, yielded all three species.

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