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The genus *Dolichomitus* Smith (Hymenoptera: Ichneumonidae) in Switzerland

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The Swiss species of *Dolichomitus* are diagnosed and an illustrated key for their identification is provided. The taxonomic relevance of a number of morphological characters is discussed. *D. crassiceps*, stat. rev., is removed from synonymy with *D. dux*, and a lectotype is designated for the latter. Eighteen species of *Dolichomitus* are reported here from Switzerland, seven of which are new for Switzerland. The occurrence of another two species, *D. atratus* and *D. speciosus*, is likely but hard evidence is presently lacking.

Keywords: *Dolichomitus*, Hymenoptera, Ichneumonidae, Pimplinae, taxonomy, identification key, Switzerland.

INTRODUCTION

Dolichomitus Smith (1877) is a relatively large, homogeneous genus of the tribe Ephialtini (Ichneumonidae: Pimplinae). Worldwide it comprises about 64 species, with approximately 25 species represented in Europe and 11 reported from Switzerland (Fauna Europaea, 2005). The Pimplinae, with worldwide about 77 genera, is a particularly interesting group due to the diversity of biological strategies. The majority are ectoparasitoids feeding on larvae of Lepidoptera, Coleoptera and Hymenoptera, and a few are endoparasitoids of pupae. The majority are idiobionts and while most live solitarily, some live gregariously. A few are also known to be parasitic on spiders and their eggs. They are represented in almost all terrestrial habitats. The variety of host interactions and vast host range make this an ideal group to use as bio-indicators, bio-control agents and as a model system in general biological studies, which makes it all the more important to have a sound taxonomic base including accurate, useable keys.

The *Dolichomitus* species are forest dwellers, and primarily ectoparasitoids on wood-boring Coleoptera and, in a few reported cases, Lepidoptera (Aubert 1969). They are the largest of European Pimplinae and quite impressive with their extremely long ovipositors. The construction of the ovipositor with its enlarged and fortified lobes of the lower valves appears to be an adaptation enabling these wasps to drill through bark, thus reaching their host.

Previous keys to this genus (Townes & Townes 1960; Constantineanu & Pisica 1970; Kasparyan 1981; Fitton et al. 1988; Kolarov 1997) have either not

included all the species found in Switzerland, are difficult to use or have not been properly translated. The synonymy set by Perkins (1943) for *D. dux* and *D. crassiceps* has been ignored by Kasparyan (1981), Kazmierczak (1990) and Kolarov (1997), yet is maintained in Fauna Europaea (2005).

The present paper, concentrating on females, assesses diagnostically relevant characters for the use of the key, provides an identification key to the species found in Switzerland, diagnoses each species to confirm identification and lists distributional data for each species based on the revision of Swiss collections.

MATERIALS AND METHODS

Morphological terminology follows primarily Goulet & Huber (1993) and Fitton et al. (1988). The nomenclature follows Taxapad (Yu et al. 2004) and Fauna Europea (2005) where extensive information on synonymy and distribution can be found.

Length of the fore wing was measured from the apex of the tegula to the apex of the wing tip. The length of the ovipositor is measured from the apex of the last metasomal segment to the apex of the ovipositor tip.

Approximately 400 Swiss specimens from the following collections have been examined: BNM – Bündner Naturmuseum, Chur; ETHZ – Sammlung der ETH Zürich; MHNG – Muséum d'histoire naturelle, Genève; MZL – Musée cantonale de zoologie, Lausanne; NAR – Naturama, Aarau; NHMB – Naturhistorisches Museum, Basel; NMBE – Naturhistorisches Museum, Bern (see appendix). Additional material was examined from CABI, Delémont and the Zoologische Staatssammlung, München.

The species diagnoses are based on Swiss and other material. For *D. atratus* and *D. speciosus*, whose presence in Switzerland needs additional confirmation, material from Germany was used for the description.

TAXONOMY

Dolichomitus Smith, 1877

Closterocerus Hartig, 1847: 18; type species *Closterocerus sericeus* Hartig, by monotypy. Junior homonym of *Closterocerus* Westwood, 1833. (Hymenoptera, Eulophidae).
Dolichomitus Smith, 1877: 411; type species *Dolichomitus longicauda* Smith, by monotypy.
Mesoephialtes Schmiedeknecht 1906: 1014; type species *Mesoephialtes coracinus* Schmiedeknecht (= *zonatus coracinus* Schmiedeknecht), by monotypy.
Diclosterocerus Viereck, 1914: 45; replacement name for *Closterocerus* Hartig.
Exeristoidea Viereck, 1924: 202; type species *Ichneumon watsoni* Viereck (= *cephalotes* Holmgren), by original designation.
Tuberculephialotes Ozols, 1962: 19; type species *Ichneumon tuberculatus* Geoffroy, by original designation.

Description

The species of *Dolichomitus* are generally large and slender, with a long ovipositor and long antennae. Most are black with red legs, yet some have reddish abdomens and dark coxae. The most distinctive characteristics of this genus are: the dorsal lobe of the ovipositor enclosing the sides of the upper valve (Figs. 13–35), the

long first tergite, and the basal grooves of the second tergite running from the base, near the midline, toward the spiracle.

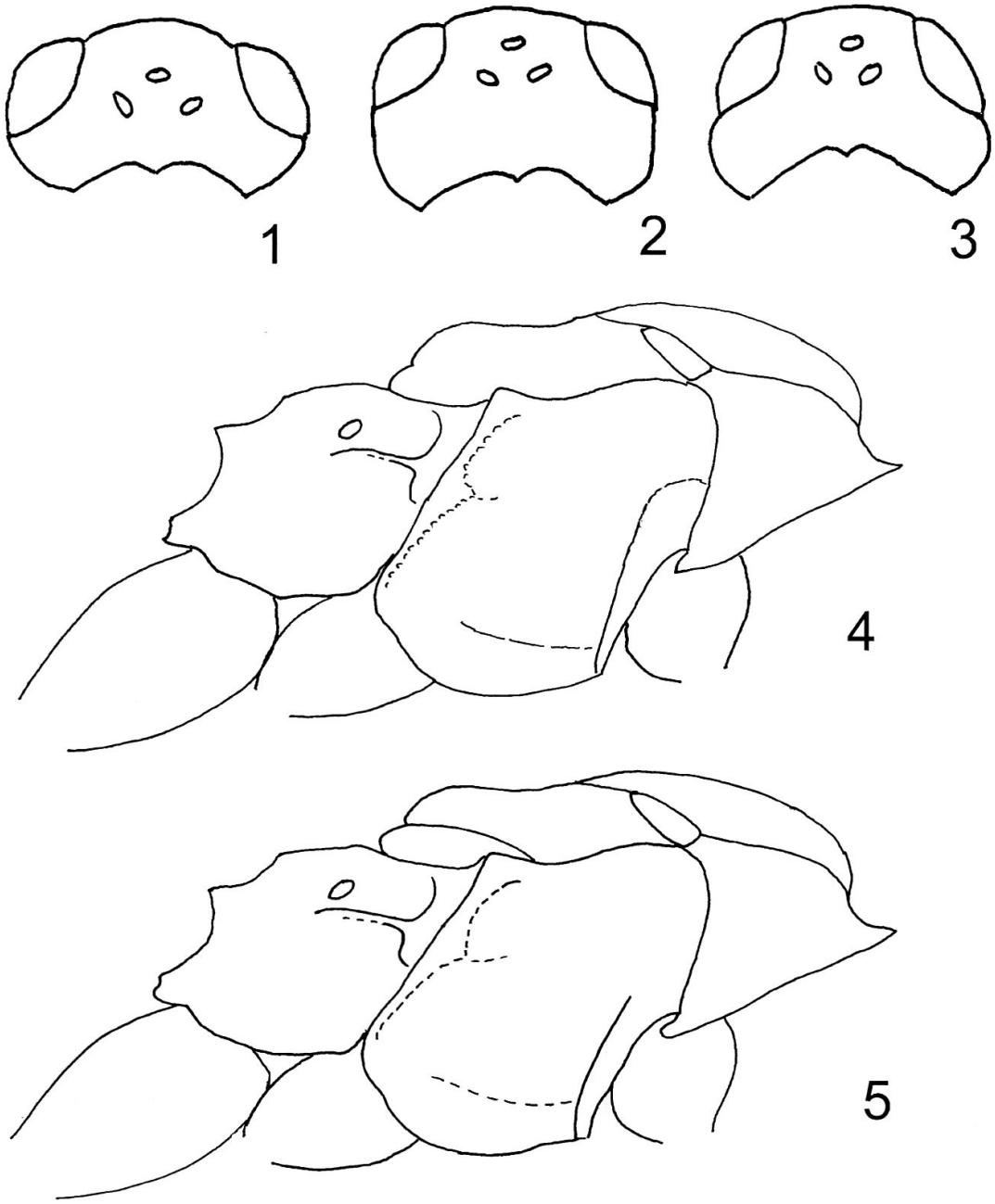
Head: Generally transverse. Face black or same color as head. Clypeus black, brown or reddish, moderately wide, flat or weakly convex, the apical part with a deep medial notch, rarely with a median apical tubercle. Teeth of mandible of equal length (with the exception of *D. agnoscendus*, in which the lower tooth is slightly longer than the upper tooth). The occipital carina is complete, with a strong dip at the midline. Antennae filiform, rather long and thin; 24–44 flagellomeres gradually decreasing in length from base to apex.

Mesosoma: Mesoscutum not wrinkled but smooth with moderately dense hairs. Prepectal carina of the mesopleuron usually present. Mesopleural suture angled opposite episternal scrobe. Submetapleural carina complete. Propodeum moderately long with longitudinal carinae at least on the basal upper third. Fore wings 5 to 22 mm long. Areolet rather wide, the first intercubitus generally longer and more oblique than in other Pimplinae, at least as long as the second intercubitus. Second recurrent vein received basad of apical corner of aerolet. Nervellus in hind wing intercepted near or above middle.

Metasoma: First tergite narrow and long, about as long as second tergite. Second tergite with a conspicuous groove on each side that runs from the base, near the midline, toward the spiracle. Third and fourth tergites with strong tubercles. The ovipositor sheath 1.0 to 10.0 times as long as the fore wing. The ovipositor is cylindrical, straight. Ovipositor tip with lower valves extended dorsally to partially enclose the upper valve and clearly visible in dorsal view.

Character comparison between similar genera

Dolichomitus can easily be mistaken for a few other closely related genera which have midsized and large specimens with long ovipositors. *Ephialtes* is represented by only four species in Europe and all clearly have a much broader face and clypeus than *Dolichomitus* (face twice as wide as high, width measured as the shortest distance between the compound eyes, height measured from antennal bases to the clypeus). The mandible is also longer with a very elongated lower tooth (not to be mistaken for *D. agnoscendus* with a slightly longer lower tooth and strong diagonal furrows on the second tergite). *Liotryphon* with its 8 European species is the genus most likely to be confused with *Dolichomitus*; however a quick look at the dorsal view of ovipositor shows that the lower valve does not in any way enclose the upper valve. Furthermore, the first tergite of *Liotryphon* spp. is rather short and the second tergite has no or very weak diagonal grooves. The same applies to the genera *Afrephialtes* and *Paraperitous*. *Townesia tenuiventris* (Holmgren) could be mistaken for *Dolichomitus* due to the similar ovipositor. Although the lower valve of the ovipositor of *T. tenuiventris* does enclose the upper valve, the upper valve has a row of dorsolateral fine teeth and the nervellus in the hind wing is intercepted at the middle (intercepted above the middle in *Dolichomitus* spp., with the exception of *D. terebrans*).



Figs 1–5: 1–3, Head dorsal view: 1, rounded with genae constricted behind eyes, 2, parallel with genae not or only weakly constricted behind eyes, 3, bulging and genae broader behind eyes. 4–5, Prepectal carina; 4, complete, extending well above lower corner of pronotum and reaching anterior margin of the mesopleuron, 5, incomplete, short, ending just at lower corner of pronotum.

Character assessment

The following assessment of morphological characters is intended to facilitate the use of the key. Each character is defined and, where applicable, an illustration is provided.

Head

— The shape of the head in dorsal view is either rounded with genae constricted behind eyes (Fig.1), angular (parallel) with genae not or only weakly constricted behind eyes (Fig. 2) or bulging with genae broader behind the eyes (Fig. 3). Couplets 5, 18.

— The number of antennal flagellomeres (= antenna excluding scape and pedicel) is used in a few cases to help differentiate between species. Couplet 3.

— Color of palpi and clypeus differ between species. However, depending on the condition and age of the specimen these characters may vary and should only be used in conjunction with other characters. Couplet 16.

Mesosoma

— The postero-dorsal corner of the pronotum directly in front of the tegula (hence referred to as hind corner of pronotum) can either be dark, or of the same color as the rest of the pronotum, with a reddish or yellow spot, or as in one case with a yellow stripe. Couplet 15.

— The prepectal carina can extend well above the lower corner of the pronotum and turn forward, extending all the way to the anterior margin of the mesopleuron (Fig. 4). This upper section can be strong, weak or incomplete. In a few cases the prepectal carina is short, ending below the corner of the pronotum (Fig. 5). Couplet 13.

— The distal portion of median longitudinal carinae of the propodeum can be strongly divergent (Fig. 6), slightly divergent (Fig. 7) or parallel to one another (Fig. 8). Couplet 16.

Wings

— The nervellus (cu-a) of the hind wing can be intercepted by the discoidella (Cu) at or slightly above the middle (Fig. 9) or clearly above the middle (Fig. 10). Couplet 9.

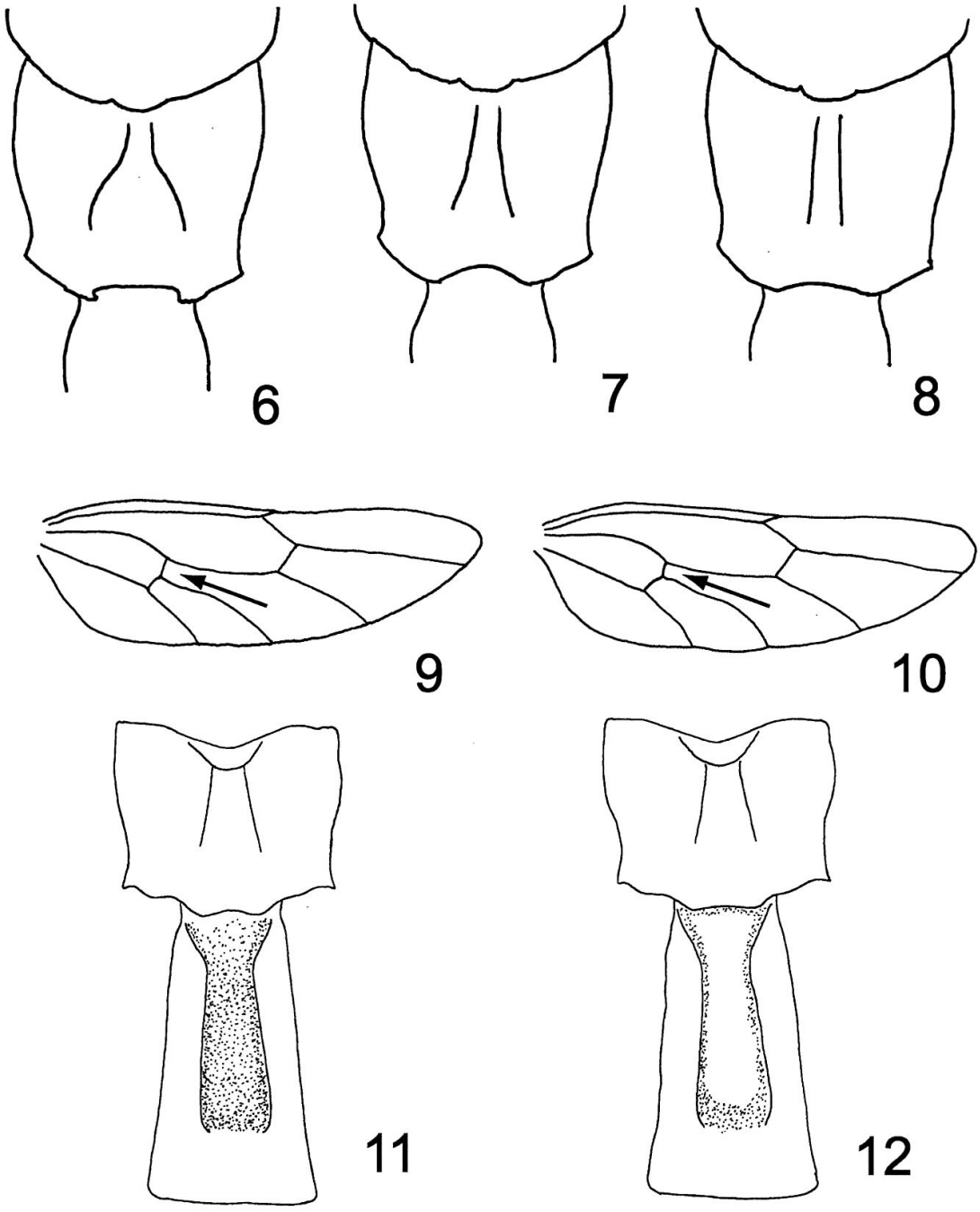
— The color of the pterostigma has been used as a primary character in historical descriptions. For a few species, the color of the pterostigma is a reliable character and is included in this key. However, due to color variation, general use of pterostigma color for identification is to be used with some caution. Couplets 3, 18.

Color pattern

— Color variation and color combinations of the coxae, tibiae and tarsi can, in a few cases, be fairly consistent and can be used as reliable characters. Couplets 17, 19.

Hind tarsus

— The relationship between the length of metatarsal segment 3 and metatarsal segment 5 is used in several couplets. The third metatarsus can be longer than, as long as, or shorter than metatarsus 5. Couplets 6, 13, 17.



Figs 6–12: 6–8, Median longitudinal carinae of the propodeum, 6, strongly divergent, 7, slightly divergent, 8, parallel. 9–10, Nervellus (cu-a) of the hind wing can be intercepted by the discoidella (Cu), 9, at middle, 10, clearly above middle. 11–12, Area between median longitudinal carinae of first metasomal tergite, 11, evenly and densely punctate, 12, not punctate.

Metasoma

— The length and width of the tergites differs between species (elongate = longer than wide, square = as long as wide, transverse = wider than long). The first tergite is elongate in all but one species (*D. terebrans*). The second tergite is most often elongate, with a few exceptions, where it is square. The third tergite can be

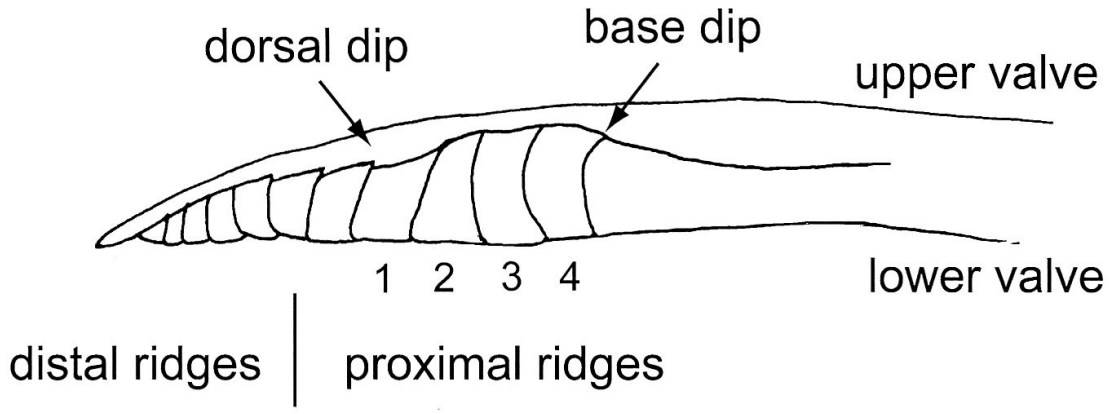


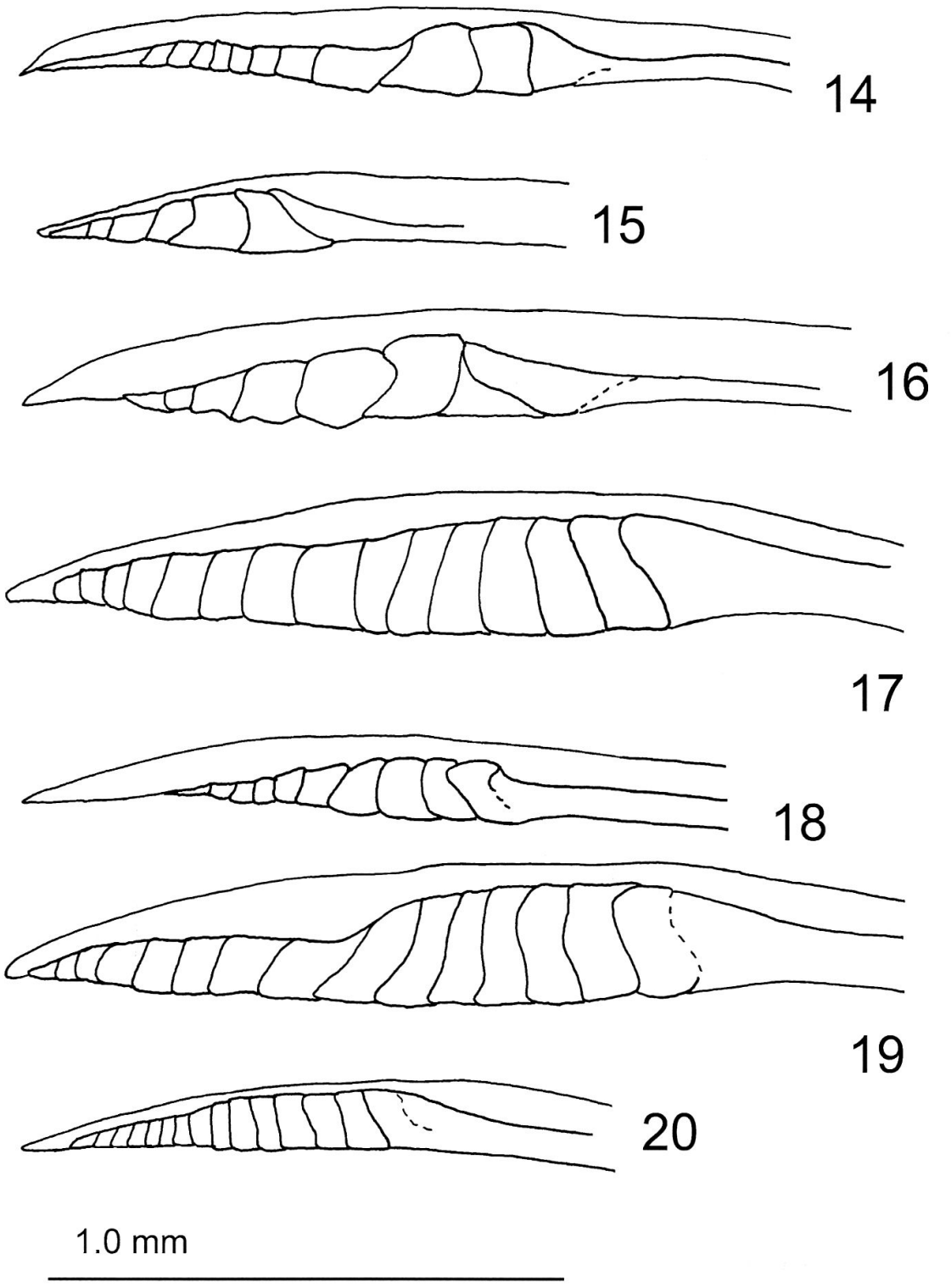
Fig 13: Diagrammatic lateral view of ovipositor tip.

either elongate or square. The fourth and fifth tergites are generally square or transverse. Although we found the proportion of length to width of tergites to be a fairly reliable character, the length of the tergites in another pimpline genus, *Perithous*, have been shown to vary according to host size (Horstmann 1967). Couplet 2.

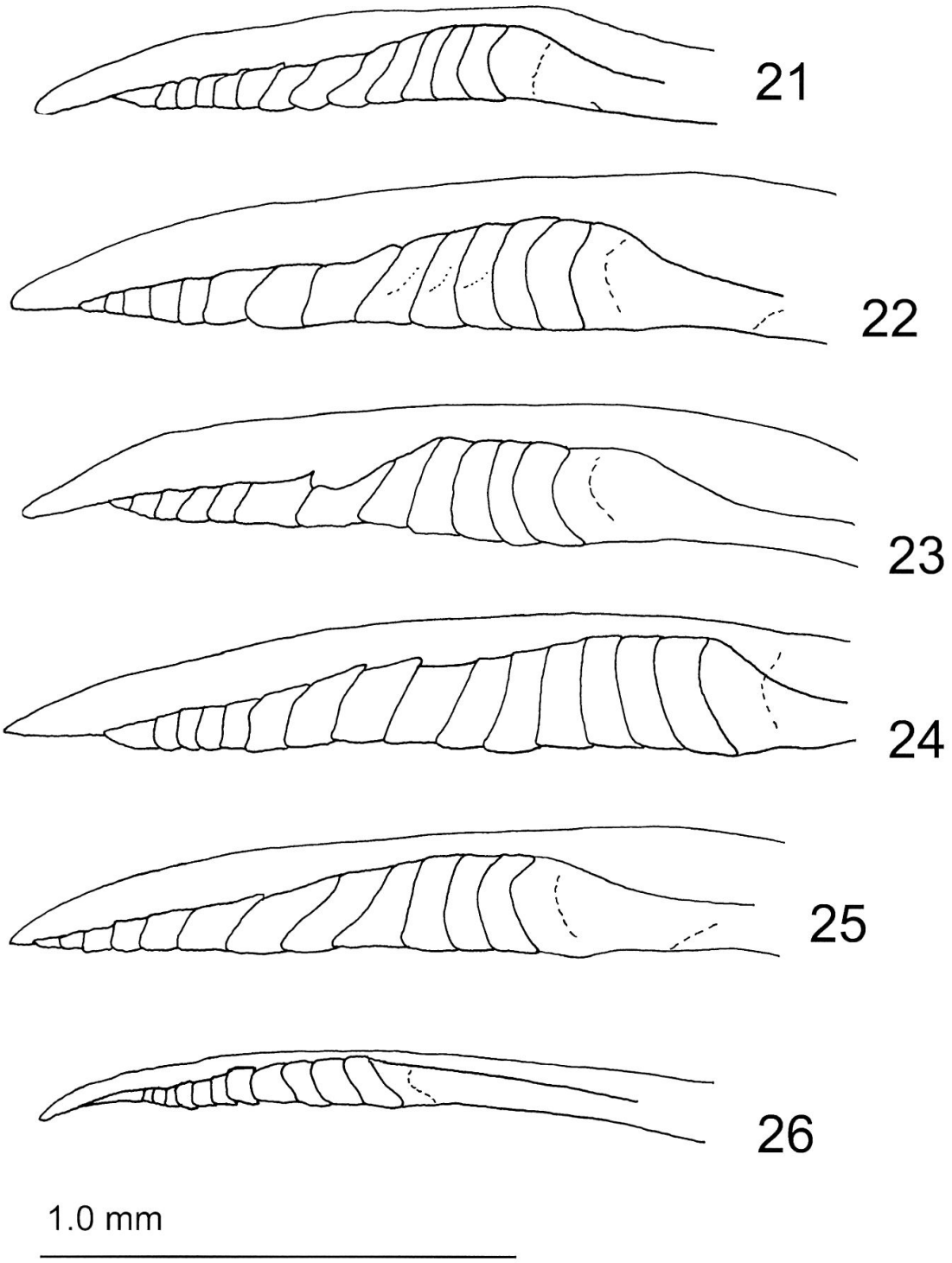
— The area between the latero-median longitudinal carinae of the first metasomal tergite can be densely punctate (Fig. 11) or not punctate, with the exception of a few punctures along the sublateral or apical edges (Fig. 12). Couplet 10.

— The length of the ovipositor in proportion to the length of the fore wing is also a valuable indication and is given for every species in the key and diagnosis. The fore wing is measured from the apex of the tegula to the apex of the wing. The length of the ovipositor is measured from the apex of the gaster to the tip.

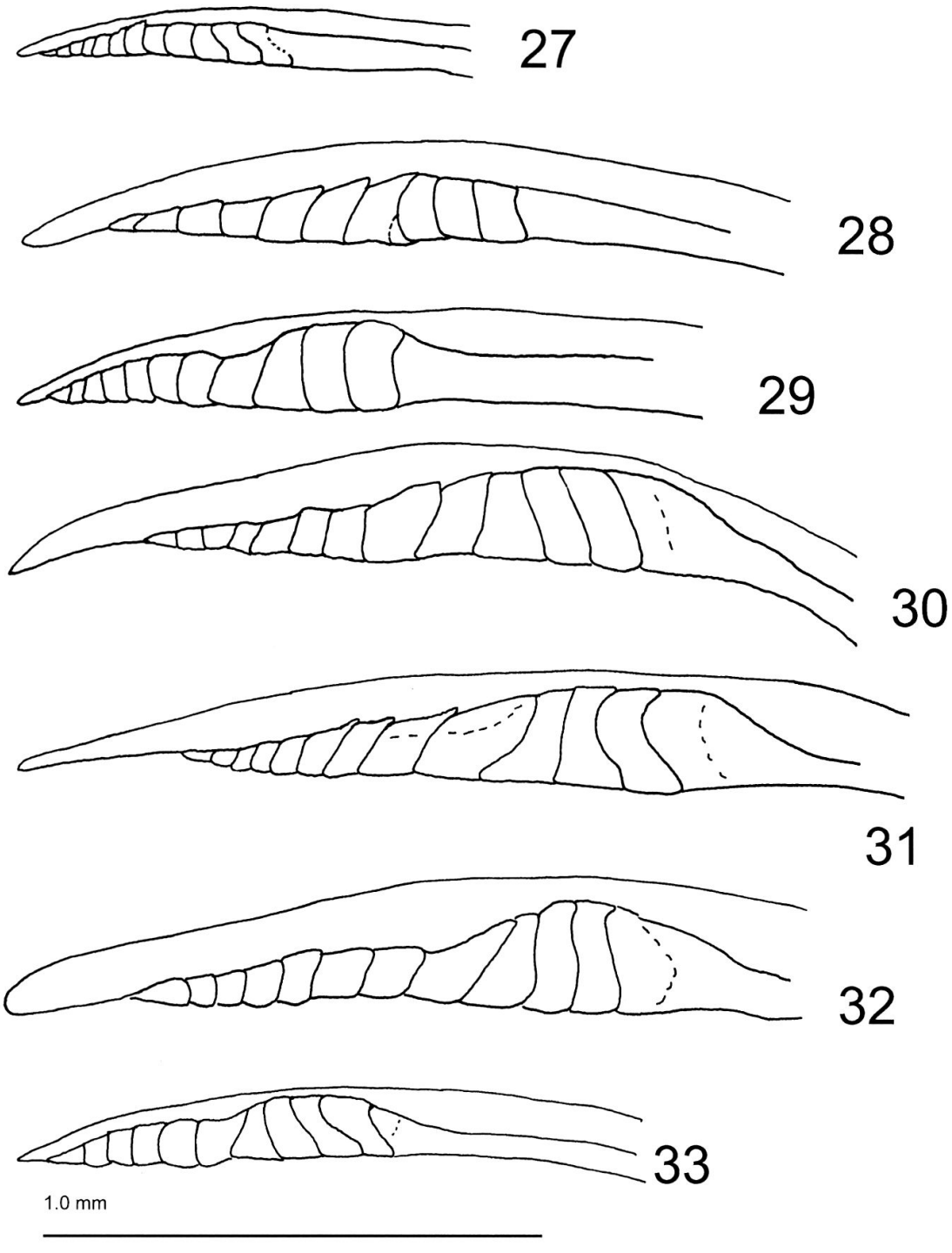
— The most important character used in this key for identification is the tip of the ovipositor. The ovipositor is enclosed by the ovipositor sheaths, which may need to be pulled aside in order to view the ovipositor. The ovipositor consists of one smooth upper valve and two semi-fused lower valves with ridges. The upper and lower valves can slide longitudinally along each other so that the appearance of the ovipositor varies. The lower valve of the ovipositor has a subapicodorsal extension that somewhat encloses the sides of the upper valve. When examining the ovipositor laterally, the subapicodorsal extension of the ovipositor (hence referred to as dorsal lobe) can be divided into two main regions; the area between the base of the ovipositor tip and dorsal dip, and the area after the dorsal dip (Fig. 13). The dorsal lobe of the ovipositor tip has several transverse ridges which can either be broadly and unevenly spaced (Fig. 14–16) or evenly spaced (Fig. 17–31). A critical aspect is properly counting the number of proximal ridges located between the base dip and the dorsal dip of the ovipositor tip (Fig. 13). The ridges may slant forward toward the body or backward away from the body. Furthermore, the gradual (Fig. 26–28) or steep (Fig. 29–33) distal and proximal descent of the ridges between the base of the ovipositor tip and dorsal dip is relevant for species identification. Figures of the ovipositor tip are provided for each species. However, it is not recommended to rely solely on this character for species identification since the ovipositor may be twisted or the upper valve may have shifted, thereby obstructing a clear view. Couplets 1, 8, 14.



Figs 14–20: Lateral view of ovipositor tip of *Dolichomitus* spp. 14, *D. imperator*, 15. *D. curticornis*, 16, *D. pterelas*, 17, *D. cephalotes*, 18, *D. aciculatus*, 19, *D. atratus*, 20, *D. terebrans*.



Figs 21–26: Lateral view of ovipositor tip of *Dolichomitus* spp. 21, *D. populneus*, 22, *D. sericeus*, 23. *D. messor*, 24 *D. tuberculatus*, 25, *D. speciosus*, 26, *D. kriechbaumeri*.



Figs 27–33: Lateral view of ovipositor tip of *Dolichomitus* spp. 27, *D. agnoscendus*, 28, *D. dobrogensis*, 29, *D. diversicostae*, 30, *D. scutellaris*, 31, *D. mesocentrus*, 32, *D. dux*, 33, *D. crassiceps*.

Key to *Dolichomitus* species found in Switzerland (females)

The following abbreviations are used in the key:
Fwl = length of fore wing
Ov/fw = length of ovipositor divided by length of fore wing

1 Dorsal lobe of lower valve of ovipositor with 2 widely spaced ridges (Fig. 14–16) 2
– Dorsal lobe of lower valve of ovipositor with 3 or more evenly spaced ridges (Fig. 17–33) 4
2 Second tergite finely trans-striate, aciculate, with very fine indistinct punctation. Tergites 1–4 elongate, tergite 3 at least 1.5 times as long as broad.Ov/fw = 1.9–2.3. Pterostigma fuscous. Fwl 10–22 mm ..... ***imperator***
– Second tergite closely punctate. Third tergite at most 1.3 times as long as wide 3
3 Antennal flagellum short, as long as head + thorax + tergite 1; with at most 25 segments and with apex slightly broadened. Ov/fw = 1.3–1.6. Pterostigma yellow-fuscous. Fwl 9–16 mm .. .. ***curticornis***
– Antennal flagellum about as long as head + thorax + tergites 1–3. With at least 30 segments, apex not widened. Ov/fw = 1.1–1.3. Pterostigma yellowish. Fwl 9–16 mm ..... ***pterelas***
4 Ov/fw at least 2.5 5
– Ov/fw at most 2.0 7
5 Ov/fw about 4–5. Head buccate (Fig. 3). Dorsal lobe of ovipositor with 6 ridges (Fig. 17). Pterostigma brown. Fwl = 15–18 mm ..... ***cephalotes***
– Ov/fw 2.5–3.3 6
6 Ventral part of ovipositor with minute tubercles. Dorsal lobe with 3 ridges (Fig. 18). Tergite 3 elongate. Hind tarsus with segment 5 about as long as 3. Hind corner of pronotum black. Pterostigma fuscous. Metasoma finely aciculate. Fwl = 10–12 mm ..... ***aciculatus***
– Ventral part of ovipositor smooth. Dorsal lobe with 7 ridges (Fig. 19). Tergite 3 square. Hind tarsus with segment 5 about 1.3 times as long as segment 3. Hind corner of pronotum marked with yellow. Pterostigma yellowish. Fwl = 14–20 mm ..... ***atratus***
7 Hind corner of pronotum with a yellow line. Petiole evenly convex and closely punctate over its entire surface. Pterostigma fuscous. Ov/fw 1.5–1.7. Metatarsal segment 5 as long as segment 3. Dorsal lobe gradually tapering distally to apical teeth of ovipositor (Fig. 26). Fwl 7–8 mm ..... ***kriechbaumeri***
– Hind corner of pronotum black or at most with a small yellow spot 8
8 Dorsal lobe with at least 5 ridges (Fig. 21–25) 9
– Dorsal lobe with 3–4 ridges (Fig. 27–33) 14
9 Nervellus vertical and intercepted slightly above the middle (Fig. 9) Tergite 2 square. Ov/fw = 1.2–1.4. Metatarsal segment 5 as long as segment 3. Pterostigma fuscous. Dorsal lobe of ovipositor distally gradually tapering to ventral part with no gap between ridges on lobe and apical teeth (Fig. 20). Hind corner of pronotum black. Fwl 6–10 mm ..... ***terebrans***
– Nervellus intercepted at its upper third (Fig. 10) or second tergite elongate 10
10 Central area between the dorsal carinae of tergite 1 evenly and densely punctate to rugulo-punctate. Pterostigma yellowish 11
– Central area between the dorsal carinae of tergite 1 not punctate, rather smooth. At most with some punctures along the lateral or apical edges 13
11 Lower half of mesepimeron pubescent. Tergite 1–4 elongate. Ov/fw about 2. Dorsal lobe with 5 ridges (Fig. 22). Fwl 14–18 mm ..... ***sericeus***
– Lower half of mesepimeron glabrous, at most with a few scattered hairs 12
12 Dorsal lobe with 6–7 strongly forward slanting ridges (Fig. 21). Ov/fw = 1.1–1.4. Fwl 9–14 mm..... ***populneus***
– Dorsal lobe with 5–6 ridges (Fig. 23). Ov/fw = 1.4–1.8. Fwl 10–22 mm ..... ***messor***
13 Prepectal carina extending well above lower corner of pronotum, reaching anterior margin of mesopleuron. Pterostigma fuscous. Ov/fw = 1.5–1.6. Metatarsal segment 5 = 1.3 times as long as segment 3. Dorsal lobe with 6–7 ridges (Fig. 24) Fwl 10–17 mm ..... ***tuberculatus***
– Prepectal carina not extending above lower corner of pronotum. Pterostigma yellowish. Ov/fw = 1.6–1.8. Metatarsal segment 5 slightly shorter than 3. Dorsal lobe with 6–7 ridges (Fig. 25). Fwl 14–19 mm ..... ***speciosus***
14 Dorsal lobe with 3–4 ridges which gradually descend distally (fig. 28) 15
– Dorsal lobe with 4 ridges which steeply descend distally (Fig. 30) 16
15 Fwl 6.5–9.0 mm Hind corner of pronotum with a yellow spot. Apical half of petiole between median longitudinal carinae punctate. Dorsal lobe with 4 backward slanting ridges (fig. 27) . ..... ***agnoscendus***

– Fwl 11–12 mm. Hind corner of pronotum red–brown. Apical half of petiole between median longitudinal carinae not punctate with the exception of a few punctures along the apical edge. Dorsal lobe with 4 ridges (Fig. 28) ..... ***dobrogensis***

16 Dorsal longitudinal carinae of propodeum strongly diverging (Fig. 6). Procoxa black, mesocoxa and metacoxa red. Palpi fuscous. Hind corner of pronotum black. Pterostigma fuscous. Ov/fw 1.4–1.5. Dorsal lobe with 4 rather vertical ridges (Fig. 29). Fwl 8–14 mm ..... ***diversicostae***

– Dorsal longitudinal carinae of propodeum parallel to weakly diverging (Fig. 7, 8). Procoxa red. Palpi yellowish 17

17 Metatarsal segment 5 about 0.8 times as long as segment 3. Metacoxa black, procoxa and mesocoxa usually fuscous to black. Tergite 1–3 elongate. Pterostigma fuscous. Ov/fw = 1.7–2.0. Fwl 11–15 mm ..... ***scutellaris***

– Metatarsal segment 5 as long as segment 3. All coxae red 18

18 Pterostigma yellowish. Head constricted. Tergite 4 elongate. Ridges on dorsal lobe approximately vertical (Fig. 31). Ov/fw = 1.5–2.0. Fwl 12–20mm ..... ***mesocentrus***

– Pterostigma fuscous. Head parallel 19

19 Hind corner of pronotum black. Coxae red and trochanters yellow. Basal ridges on dorsal lobe rather vertical (Fig. 32). Ov/fw = 1.5. Fwl 14–20 mm ..... ***dux***

– Hind corner of pronotum marked with yellow. Coxae and trochanters red. Basal 2–3 ridges on dorsal lobe strongly slanting backward (Fig. 33). Ov/fw 1.4–1.8. Fwl 10–17 mm .... ***crassiceps***

SPECIES DIAGNOSES

Dolichomitus aciculatus (Hellén, 1915) (Fig. 18)

Antenna with about 33–34 flagellomeres. Head in dorsal view parallel, not narrowed behind eyes. Palpi generally tan or light brown; clypeus dark, same color as face. Hind corner of pronotum dark. Prepectal carina extending well above corner of pronotum and turning forward, almost reaching anterior margin of mesopleuron. Latero-median longitudinal carinae of propodeum nearly parallel. Fore wing 9–15 mm long. Pterostigma brown with darker margins. Nervellus intercepted clearly above middle. All coxae red, metatibia and metatarsus brown. Metatarsus 3 and 5 same length. Tergite 1 and 2 both clearly elongate, tergite 3 somewhat elongate, tergite 4 square. Dorsal lobe of ovipositor with 4 evenly spaced ridges. Lower valve of ovipositor roughened and dull with tiny tubercles along entire length. Ovipositor about 2.7 times as long as fore wing.

Dolichomitus agnoscendus (Roman, 1939) (Fig. 27)

Antennae with about 32 flagellomeres. Head in dorsal view angular, not narrowed behind eyes. Lower tooth of mandible slightly longer than upper tooth. Palpi generally beige to tan, clypeus red-brown. Hind corner of pronotum yellow or tan. Prepectal carina extending well above corner of pronotum and turning forward, reaching anterior margin of mesopleuron. Upper section of carina may be rather weak. Latero-median longitudinal carinae of propodeum parallel. Fore wing 6–10 mm long. Pterostigma mustard-yellow with darker upper margin. Nervellus intercepted slightly above middle. All coxae red, metatarsi brown. Metatarsus 3 longer than metatarsus 5. Tergites 1–5 all elongate. Dorsal lobe of ovipositor has 4 evenly spaced ridges, descending gradually both proximally and distally. Ovipositor 1.5–2.0 times as long as fore wing.

Dolichomitus atratus (Rudow, 1881) (Fig. 19)

Antenna with about 42–44 flagellomeres. Head in dorsal view rounded, slightly narrowed behind eyes. Palpi generally tan or light brown, clypeus brown with golden markings. Hind corner of pronotum dark with a slight yellow edge. Prepectal carina extending well above lower corner of pronotum and turning forward, reaching anterior margin of mesopleuron. Latero-median longitudinal carinae of propodeum nearly parallel. Fore wing 14–20 mm long. Pterostigma mustard yellow or reddish gold. Nervellus intercepted clearly above middle. All coxae and leg segments red. Metatarsus 3 shorter than metatarsus 5. Tergite 1 and 2 both clearly elongate, tergite 3 square. Apicodorsal extension of dorsal lobe of ovipositor with 7 evenly spaced transverse ridges. Ovipositor 2.5 times as long as fore wing.

Dolichomitus cephalotes (Holmgren, 1860) (Fig. 17)

Antenna with about 33–34 flagellomeres. Head in dorsal view bulging slightly behind eyes. Palpi brown, clypeus dark-brown, same color as face. Hind corner of pronotum dark. Prepectal carina extending well above corner of pronotum and turning forward, weakly reaching anterior margin of mesopleuron. Latero-median longitudinal carinae of propodeum nearly parallel. Fore wing 15–18 mm. Pterostigma brown. Nervellus intercepted clearly above middle. All coxae red, metatibia and metatarsus brown. Metatarsus 3 and 5 same length. Tergite 1 clearly elongate, tergite 2 almost square, tergites 3–5 transverse. Dorsal lobe of ovipositor with 6 evenly spaced ridges. Ovipositor 4–6 times as long as fore wing.

Dolichomitus crassiceps (Thomson, 1877) (Fig. 33)

Antenna with about 34 flagellomeres.Head in dorsal view angular, not narrowed behind eyes. Palpi tan to light brown, clypeus tan-brown. Hind corner of pronotum reddish. Prepectal carina extending well above corner of pronotum and turning forward, weakly reaching anterior margin of mesopleuron. Latero-median longitudinal carinae of propodeum slightly divergent. Fore wing 10–15 mm. Pterostigma red-brown with darker upper margin. Nervellus intercepted clearly above middle. Procoxa, mesocoxa and metacoxa red-orange. Metatibia and metatarsus brown. Metatarsus 3 and 5 same length. Tergite 1 and 2 elongate, 3 slightly elongate and 4 square. Dorsal lobe of ovipositor with 4 evenly spaced ridges, descending steeply both proximally and distally. Ovipositor 1.4–1.8 times as long as fore wing.

Dolichomitus curticornis (Perkins, 1943) (Fig. 15)

Antennae with about 25–26 flagellomeres. Head in dorsal view angular, not narrowed behind eyes. Palpi generally light brown, clypeus dark, and same color as face. Hind corner of pronotum dark. Prepectal carina extending well above corner of pronotum and turning forward, reaching anterior margin of mesopleuron. Median longitudinal carinae of propodeum diverge slightly. Fore wing 9–16 mm long. Pterostigma mustard yellow to brown with darker margins. Nervellus intercepted above middle. All coxae red, metatibia and metatarsus brown. Metatarsus 5 shorter than 3. Tergite 1 and 2 both clearly elongate, tergite 3 square. Dorsal lobe of ovipositor with 2 widely separated ridges. Ovipositor 1.3–2.0 times as long as fore wing.

Dolichomitus diversicostae (Perkins, 1943) (Fig. 29)

Antenna with about 34 flagellomeres. Head in dorsal view parallel, not narrowing behind eyes. Palpi generally brown, clypeus reddish brown. Hind corner of pronotum dark. Prepectal carina extending well above corner of pronotum and turning forward, weakly reaching anterior margin of mesopleuron. Median longitudinal carinae of propodeum strongly divergent. Fore wing 7–15 mm long. Pterostigma light to dark brown with darker margins. Nervellus intercepted clearly above middle. Procoxa brown, mesocoxa and metacoxa red. Metatibia and metatarsus brown. Metatarsus 5 equal to 3. Tergite 1 clearly elongate, tergite 2 square, tergites 3 and 4 transverse. Dorsal lobe of ovipositor with 4 evenly spaced ridges, descending steeply distally. Ovipositor 1.4–1.6 times as long as fore wing.

Dolichomitus dobrogensis Constantineanu & Pisica, 1970 (Fig. 28)

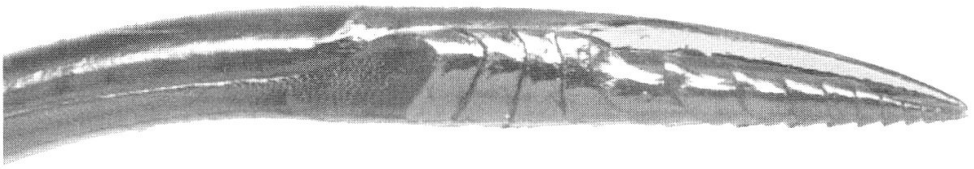
Antenna with about 34 flagellomeres. Head in dorsal view parallel, not narrowing behind eyes. Palpi generally brown, clypeus reddish brown. Hind corner of pronotum dark. Prepectal carina extending well above corner of pronotum and turning forward, weakly reaching anterior margin of mesopleuron. Median longitudinal carinae of propodeum parallel. Fore wing 11–12 mm. Pterostigma dark brown to black with darker margins. Nervellus intercepted above middle. All coxae red. Metatibia and metatarsus brown. Metatarsus 3 slightly longer than 5. Tergite 1 clearly elongate, tergite 2–4 elongate. Dorsal lobe of ovipositor with 4 evenly spaced transverse ridges, descending gradually both proximally and distally. Ovipositor 2.1 times as long as fore wing.

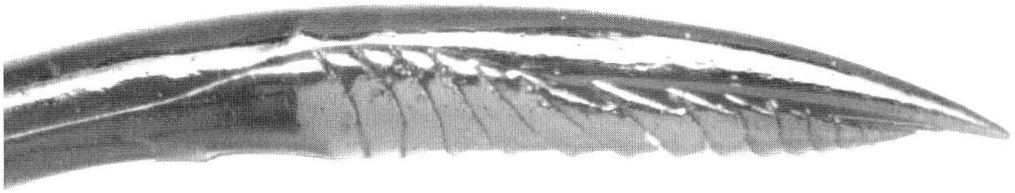
Dolichomitus dux (Tschek, 1869) (Fig. 32)

Antennae with about 36–38 flagellomeres. Head in dorsal view parallel, not narrowing behind eyes. Palpi generally beige, clypeus beige to tan. Hind corner of pronotum dark. Prepectal carina extending well above corner of pronotum and turning forward, faintly reaching anterior margin of mesopleuron. Median longitudinal carinae of propodeum diverge slightly. Fore wing 15–20 mm long. Pterostigma light brown with darker upper margin. Nervellus intercepted clearly above middle. Procoxa and metacoxa brown, mesocoxa red-orange. Metatibia and metatarsus brown. Metatarsus 5 and 3 equal in length. Tergite 1 and 2 both clearly elongate, tergite 3 somewhat elongate, tergite 4 square. Dorsal lobe of ovipositor with 4 ridges, descending steeply distally. Ovipositor 1.5 times as long as fore wing.

Dolichomitus imperator (Kriechbaumer, 1854) (Fig. 14)

Antennae with about 37 flagellomeres. Head in dorsal view rounded, slightly narrowing behind eyes. Palpi beige to light brown, clypeus red-brown. Hind corner of pronotum dark brown. Prepectal carina extending well above lower corner of pronotum and turning forward, weakly reaching anterior margin of mesopleuron. Median longitudinal carinae of propodeum slightly divergent. Fore wing 10–22 mm. Pterostigma dark brown almost black, black margins. Nervellus intercepted clearly above middle. All coxae red. Metatibia and metatarsus brown. Metatarsus 5 distinctly shorter than 3. Tergite 1, 2 and 3 distinctly elongate, tergite 4 elongate-trans-





Figs 34–35: Lateral view of ovipositor tip of *Dolichomitus* spp. 34, *D. mesocentrus*, 35, *D. populneus*.

verse. Dorsal lobe of ovipositor with 2 widely spaced transverse ridges. Ovipositor 1.9–2.5 times as long as fore wing.

Dolichomitus kriechbaumeri (Schulz, 1906) (Fig. 26)

Antenna with about 29 flagellomeres. Head in dorsal view parallel, slightly narrowing behind eyes. Palpi generally brown, clypeus brown. Hind corner of pronotum with yellow stripe. Prepectal carina extending well above lower corner of pronotum and turning forward, weakly reaching anterior margin of mesopleuron. Median longitudinal carinae of propodeum parallel. Fore wing 7–15 mm. Pterostigma dark brown almost black with darker margins. Nervellus intercepted at middle. All coxae red. Mesotibia and metatibia slightly darker. Metatarsus 5 shorter than 3. Tergite 1 clearly elongate, tergite 2 almost square, tergites 3 and 4 square. Dorsal lobe of ovipositor with 4 evenly spaced ridges, descending gradually distally. Ovipositor 1.5–2.0 times as long as fore wing.

Dolichomitus mesocentrus (Gravenhorst, 1829) (Fig. 31, 34)

Antennae with about 32 flagellomeres. Head in dorsal view rounded, narrowing behind eyes. Palpi generally brown, clypeus dark brown with red-gold edges. Hind corner of pronotum dark. Prepectal carina extending well above corner of pronotum and turning forward, weakly reaching anterior margin of mesopleuron. Median longitudinal carinae of propodeum slightly divergent. Fore wing 12–20 mm long. Pterostigma strikingly yellow. Nervellus intercepted clearly above middle. All coxae red. Metatarsus 5 of equal length as 3. Tergites 1–4 clearly elongate. Dorsal lobe of ovipositor with 4 evenly spaced ridges, descending steeply distally. Most common species in collections. Ovipositor 1.5–2.0 times as long as fore wing.

Dolichomitus messor (Gravenhorst, 1829) (Fig. 23)

Antennae with about 36 flagellomeres. Head in dorsal view parallel and slightly contracting behind eyes. Palpi brown with golden tips, clypeus reddish-

brown. Hind corner of pronotum dark. Prepectal carina short, ending just at lower corner of pronotum. Mesopleuron above and below prepectal carina evenly punctate. Median longitudinal carinae of propodeum parallel. Fore wing 10–22 mm long. Pterostigma mustard yellow. Nervellus intercepted above middle. Procoxa orange with brown markings, mesocoxa and metacoxa orange. Metatarsus 5 slightly longer than 3. Tergite 1 clearly elongate, tergite 2 elongate, tergites 3 and 4 almost square. Dorsal lobe of ovipositor with 5–6 ridges. Ovipositor 1.4–1.8 times as long as fore wing.

Dolichomitus populneus (Ratzenburg, 1848) (Fig. 21, 35)

Antenna with about 34 flagellomeres. Head in dorsal view slightly bulging behind eyes. Palpi brown, clypeus reddish brown. Hind corner of pronotum dark. Prepectal carina short, ending just at lower corner of pronotum. Median longitudinal carinae of propodeum parallel. Fore wing 7–14 mm. Pterostigma mustard yellow with darker margin. Nervellus intercepted above middle. All coxae red or orange. Metatarsus 5 slightly longer than 3. Tergite 1 clearly elongate, tergite 2–4 square or transverse. Dorsal lobe of ovipositor with 6–7 ridges. Ovipositor 1.1–1.4 times as long as fore wing.

Dolichomitus pterelas (Say, 1829) (Fig. 16)

Antennae with about 30 flagellomeres. Head in dorsal view parallel, not narrowing behind eyes. Palpi light brown, clypeus reddish brown. Hind corner of pronotum dark. Prepectal carina extending well above lower corner of pronotum and turning forward, weakly reaching anterior margin of mesopleuron. Median longitudinal carinae of propodeum parallel. Fore wing 9–16 mm. Pterostigma light brown. Nervellus intercepted slightly above middle. All coxae orange-red. Metatarsus 5 as long as 3. Tergite 1 clearly elongate, tergite 2 square, 3 and 4 square or transverse. Dorsal lobe of ovipositor with 2 widely spaced ridges. Ovipositor 1.1–1.5 times as long as fore wing.

Dolichomitus scutellaris (Thomson, 1877) (Fig. 30)

Antennae with about 35–38 flagellomeres. Head in dorsal view parallel, not narrowing behind eyes. Palpi light brown, clypeus brown with lighter margins. Hind corner of pronotum dark. Prepectal carina short, ending just at lower corner of pronotum. Median longitudinal carinae of propodeum parallel. Fore wing 11–17 mm. Pterostigma brown, upper margin darker. Nervellus intercepted above middle. Procoxa, mesocoxa brown, metacoxa dark brown. Metatibia and metatarsus brown. Metatarsus 5 shorter than 3. Tergite 1 clearly elongate, tergites 2–4 elongate, 5 square. Dorsal lobe of ovipositor with 4 ridges, descending steeply distally. Ovipositor 1.7–2.0 times as long as fore wing.

Dolichomitus sericeus (Hartig, 1847) (Fig. 22)

Antennae with about 36 flagellomeres. Head in dorsal view slightly bulging behind eyes. Palpi dark brown, clypeus reddish-brown. Hind corner of pronotum dark with tiny red mark. Prepectal carina extending slightly above lower corner of pronotum and turning forward, not quite reaching anterior margin of mesopleuron.

Lower half of mesopleural epimeres evenly covered with hair. Median longitudinal carinae of propodeum slightly divergent. Fore wing 14–18 mm long. Pterostigma mustard yellow, upper margin darker. Nervellus intercepted clearly above middle. All coxae orange. Metatarsi rust brown. Metatarsus 5 as long as 3. Tergite 1 clearly elongate, tergite 2 and 3 elongate, 4 almost square. Dorsal lobe of ovipositor with 5 ridges. Ovipositor 2 times as long as fore wing.

Dolichomitus speciosus (Hellén, 1915) (Fig. 25)

Antennae with about 36 flagellomeres. Head in dorsal view parallel, not narrowing behind eyes. Palpi brown, clypeus red-orange. Hind corner of pronotum dark. Prepectal carina short, ending just at lower corner of pronotum. Median longitudinal carinae of propodeum parallel. Fore wing 14–19 mm. Pterostigma mustard-yellow, upper margin darker. Nervellus intercepted clearly above middle. All coxae red-orange. Metatibia and metatarsus red-brown. Metatarsus 5 slightly shorter than 3. Tergite 1 and 2 clearly elongate, tergites 3, 4 almost square. Dorsal lobe of ovipositor with 6–7 ridges. Ovipositor 1.6–1.8 times as long as fore wing.

Dolichomitus terebrans (Ratzeburg, 1844) (Fig. 20)

Antennae with about 28–30 flagellomeres. Head in dorsal view rounded behind eyes. Face wide and flat. Palpi light brown, clypeus mustard-brown with lighter margins. Hind corner of pronotum dark. Prepectal carina extending well above lower corner of pronotum and turning forward, reaching anterior margin of mesopleuron. Median longitudinal carinae of propodeum parallel. Fore wing 5–10 mm. Pterostigma mustard-brown, upper margin darker. Nervellus intercepted at middle. All coxae red. Metatibia and metatarsus brown. Metatarsus 5 equal to 3. Tergite 1 square, tergites 2–4 transverse. Dorsal lobe of ovipositor with 7–8 very gradually tapering ridges. Ovipositor 1.2–1.4 times as long as fore wing.

Dolichomitus tuberculatus (Geoffroy, 1785) (Fig. 24)

Antennae with about 36 flagellomeres. Head in dorsal view rounded slightly behind eyes. Palpi light to dark brown, clypeus coloured as face. Hind corner of pronotum dark. Prepectal carina extending well above lower corner of pronotum and turning forward, reaching anterior margin of mesopleuron. Median longitudinal carinae of propodeum parallel. Fore wing 8–19 mm long. Pterostigma mustard-brown, upper margin darker. Nervellus intercepted clearly above middle. Procoxa and mesocoxa red, metacoxa brown. Metatibia and metatarsus brown. Metatarsus 5 slightly longer than 3. Tergite 1 clearly elongate, tergites 2–4 elongate. Dorsal lobe of ovipositor with 6–7 ridges. Ovipositor 1.5–1.6 times as long as fore wing.

The taxonomic status of *D. crassiceps* and *D. dux*

The taxonomic status of *Dolichomitus dux* is currently controversial. Perkins (1943) in an attempt to clarify the members in the «*Ephialtes* complex» reviewed all the described species and synonymised *D. dux* Tschek, 1869 and *D. crassiceps* Thomson, 1877. The original descriptions of these two species are in fact similar. However, the synonymy of *D. dux* and *D. crassiceps* has been ignored by Kasparyan (1981), Kazmierczak (1990) and Kolarov (1997), yet is maintained in Fauna

Europaea (Fauna Europaea, 2005). We examined the type material of *Ephialtes dux* Tschek, 1869. This consists of a male and female specimen. Both were labeled as syntypes by M.G. Fitton in 1981. The male is referrable to *D. tuberculatus*. The female agrees with Tscheks description of *Ephialtes dux* and here we use the name *dux* in agreement with that female specimen. For stabilizing the nomenclature the female syntype is designated here as lectotype. The examination revealed the fact that Kasparyan unfortunately misinterpreted *dux*. *D. dux* corresponds to his interpretation of *crassiceps* and *dux* sensu Kasparyan agrees with our *crassiceps*. We found several reliable characters to differentiate the two taxa. In *D. dux*, the hind trochanter and the base of the hind femur and hind tibia are yellow, whereas all of the hind leg segments of *D. crassiceps* are red. The hind corner of the pronotum is dark in *D. dux* and reddish or yellow in *D. crassiceps*. The dorsal lobe in *D. dux* has four almost vertical ridges (Fig. 32). In *D. crassiceps* the basal 2–3 ridges are strongly slanting backward (Fig. 33). Here we consider the two nominal taxa as distinct species and remove *D. crassiceps*, stat. rev., from the synonymy with *D. dux*.

FAUNISTICS

Of the 24 *Dolichomitus* species (*D. crassiceps* treated a synonym of *dux*) reported from Europe (Fauna Europaea 2005) we document here the occurrence of 18 species in Switzerland (females only; see Appendix). Eleven species, viz. *D. cephalotes*, *D. dux*, *D. imperator*, *D. kriechbaumeri*, *D. mesocentrus*, *D. messor*, *D. populneus*, *D. pterelas*, *D. scutellaris*, *D. terebrans* and *D. tuberculatus*, have been previously reported from Switzerland (Kriechbaumer 1896; Blösch 1906; Ferrière 1947; Aubert 1969; Yu et al. 2004; Fauna Europaea 2005). The following species are here reported for the first time for Switzerland: *D. aciculatus*, *D. agnoscendus*, *D. curticornis*, *D. crassiceps*, *D. diversicostae*, *D. dobrogensis* and *D. sericeus*. Two additional species, *D. atratus* and *D. speciosus*, are represented each by a single insufficiently labeled specimen of possible Swiss origin.

Many specimens in Swiss collections had been misidentified or were unidentified. A great deal of this material is available due to the indefatigable collecting of Theodor Steck during the early part of the 20th century and of J. de Beaumont between 1930 and 1966. This faunistic information gives a general idea of the distribution of *Dolichomitus* in Switzerland despite the incomplete surveillance of all of the Swiss regions.

DISCUSSION AND CONCLUSION

The Swiss *Dolichomitus* species can be identified by a suite of color and structural characters (cf. key). The single most important diagnostic character is the ovipositor shape. Using the characters discussed in the character assessment the vast majority of specimens housed in Swiss collections could be unambiguously attributed to a particular species. One exception is a specimen which has been caught by Theodor Steck in the Valais. It is provisionally attributed to *D. speciosus* for its general resemblance (cf. description of *D. speciosus* given by Jussila 1963) but differs in the morphology of the ovipositor tip. Its identity is still in need of clarification.

The Swiss findings conform, for the most part, with reports on *Dolichomitus* in the countries bordering Switzerland. Fauna Europaea (2005) reports findings of

D. mordator in Austria, France and Italy but so far, not in Switzerland or Germany. *D. nitidus* can be found in Austria, France and Germany, but has not been reported in Switzerland or in Italy. On the other hand, *D. aciculatus* has only been found in Switzerland and in Germany. A field investigation on *Dolichomitus* in the Gastein region of Austria reported 19 species (Kazmierczak 1990). These results correspond to our results with the exception of *D. cognator* and *D. mordator* which were found in Gastein and *D. aciculatus*, *D. agnoscendus* and *D. speciosus* which have been documented for Switzerland. A study on Ichneumonidae in Baden, South West Germany, revealed only 13 *Dolichomitus* species (Schmidt & Zmudzinski 2002).

The present study almost doubles the number of *Dolichomitus* species reported from Switzerland. However, continuous additional surveying and collecting is necessary to compile the details needed for habitat assessments and biogeographic analyses.

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APPENDIX

List of Swiss *Dolichomitus* material (females only). Depositories are as follows: BNM – Bündner Naturmuseum, Chur; ETHZ – Sammlung der ETH Zürich; MHNG – Muséum d'histoire naturelle, Genève; MZL – Musée cantonale de zoologie, Lausanne; NAR – Naturama, Aarau; NHMB – Naturhistorisches Museum, Basel; NMBE – Naturhistorisches Museum, Bern.

***Dolichomitus aciculatus* (Hellén, 1915)**
GR: Versam, 9.VII.1898 (NMBE). – VS: Lötschental, 16.VI.1919 (T. Steck, NHMB).

***Dolichomitus agnoscendus* (Roman, 1939)**
BE: Bern, Dählhölzli, 30.VII.1911 (T. Steck, NHMB). – BS: Lange Erlen, 8.VI.2001 (A. Coray, NHMB). – GE: Satigny, Peney, 1886, 20.VIII.1889 (H. Tournier, MHNG). – GR: Val Somvix, 11.VII.1931, 13.VII.1910 (T. Steck, NMBE); Tarasp (MHNG). – NE: Auvernier, 20.VIII.1955 (J. de Beaumont, MZL); Montmollin, 1.VIII.1966 (J. de Beaumont, MZL). – SG: Pfäfers, Vättis, 11.VII.1914, 20.VII.1914 (T. Steck, NMBE). – VD: Bex, 9.VI.1968 (M. Ruzette, NHMB); Lausanne, 8.V.1945 (J. de Beaumont, MZL); Jorat, Ste. Catherine, 19.VI.1960 (J. Aubert, MZL); Vallorbe, 28.VIII.1953 (J. de Beaumont, MZL). – VS: Les Agettes, Les Mayens-de-Sion, VIII.1942, VIII.1963 (J.L. Nicod, MZL); Euseigne, 9.VIII.1932 (T. Steck, NHMB).

***Dolichomitus atratus* (Rudow, 1881)**
?CH: Jura (E. Poncy, MHNG).

***Dolichomitus cephalotes* (Holmgren, 1860)**
VD: Ste-Croix, 1860 (MZL).

***Dolichomitus crassiceps* (Thomson, 1877)**
BE: Bern, Bremgartenwald, 5.VIII.1906 (T. Steck, NHMB); Eymatt, Bremgartenwald, 9.VI.2003 (H. Baur, NMBE); Niederwangen, Forst, 10.VI.2004 (J. Grosjean, NMBE); Köniz, Gurtental, 7.X.1911 (T. Steck, NHMB); Könizbergwald, 12.VIII.1906, 9.X.1908 (T. Steck, NHMB).

***Dolichomitus curticornis* (Perkins, 1943)**
GR: Versam (J. Kaiser, NMBE). – SG: Pfäfers, Vättis, 29.VI.1925, 28.VI.1935 (T. Steck, NHMB). – VS: Ayer, Mission, 19.VI.1887 (M. Paul, NMBE); Binntal, 22.VI.1916, 23.VI.1916, 27.VII.1917 (T. Steck, NMBE); Euseigne, 21.VI.1926, 24.VI.1926 (T. Steck, NHMB); Stalden, 21.VI.1909 (T. Steck, NMBE); Unterbäch, 15.VI.1925 (T. Steck, NHMB); VS: Vissoie, 27.VI.1922 (T. Steck, NHMB).

***Dolichomitus diversicostae* (Perkins, 1943)**
GR: Val Somvix, 25.VII.1891 (NMBE); Versam, 9.VII.1898 (NMBE). – SG: Pfäfers, Vättis, 6.VII.1912 (T. Steck, NMBE). – Leuk, Pfynwald, 11.VIII.1929 (T. Steck, NHMB).

***Dolichomitus dobrogensis* Constantineanu & Pisica, 1970**
GE: Versoix, Richelien, 17.VI.1906 (Julien, MHNG).

***Dolichomitus dux* (Tschek, 1869)**
GR: Val Somvix, 25.VII.1891 (NMBE); Versam, 9.VII.1898 (NMBE). – VD: Les Pléiades, 2.VIII.1954 (J. de Beaumont, MZL); Mont-la-Ville, Col du Mollendruz, 7.VII.1957 (J. de Beaumont, MZL). – VS: Ayer, Zinal, 26.VII. (E. Frey-Gessner, NMBE); VS: Champéry, Col de Bretolet, 15.VII.1964 (MZL); Lötschental, VII.1918 (M. Diebold, NAR).

***Dolichomitus imperator* (Kriechbaumer, 1854)**
BE: Bern, 23.VI.1885, 8.VI.1898, 1.IX.1900 (T. Steck, NHMB); Bern, Dählhölzli, 14.VII.1905, 20.VIII.1909 (T. Steck, NHMB); Könizbergwald, 16.VI.1907, 4.VII.1909 (T. Steck, NHMB); Niederwangen, Forst, 30.V.2003, 1.VI.2003, 9.VI.2003, 13.VI.2003, 16.V.2004; 28.V.2004, 7.VI.2004, 15.VI.2004 (J. Grosjean, NMBE); Muri, Gümligen, 21.VII.1918, 6.VI.1920, 29.V.1923, 9.VI.1924 (T. Steck, NHMB); Tramelan (J.-C. Guédat, MHNG). – GE: Satigny, Peney, 20.IV.1878, 2.VII.1878, 20.VIII.1889 (H. Tournier, MHNG). – GR: S-chanf, Cinuoschel, 12.VII.1925 (C. Ferrière, BNM); S-chanf, God God, 8.VII.1925 (C. Ferrière, BNM); Scuol, Val Foraz, 16.VII.1920 (C. Ferrière, BNM); Val Somvix, 25.VII.1891, 14.VII.1910 (T. Steck, NMBE); Versam, 9.VII.1898 (NMBE); Zernez, Il Fuorn, 25.VII.1931 (C. Ferrière, BNM); Zernez, Il Fuorn, 23.VII.1946, 22.VII.1951 (J. de Beaumont, MZL); Zernez, La Drossa, 28.VII.1919 (C. Ferrière, BNM); Val Cluozza, 6.VII.1922 (C. Ferrière, BNM); Val dal Spöl, Alp la Schera, 21.VII.1949 (J. de Beaumont, MZL). – NE: St. Blaise, 20.V.1909 (T. Steck, NHMB). – SG: Pfäfers, Vättis, 5.VII.1912, 6.VII.1912, 11.VII.1912 (T. Steck, NMBE). – SO: Herbetswil, 2.VI.1991 (F. Amiet, NMBE). – TI: Airolo, VI.1887 (NMBE). – VD: Bex, Nant, Pont de Nant, 7.VI.1964 (J. de Beaumont, MZL); Epalinges, 29.V.1960 (J. de Beaumont, MZL); Bois de Belmont, 9.VIII.1942 (J. de Beaumont, MZL); Lausanne, Le Chalet-à-Gobet, 27.V.1945 (J. de Beaumont, MZL); Le Jorat, 23.VI.1956 (J. de Beaumont, MZL); Romanel-sur-Lausanne, 19.VI.1950 (MZL). – VS: Les Agettes, Les Mayens-de-Sion, .VIII.1955 (J.L. Nicod, MZL); Ausserberg, 18.VI.1919 (T. Steck, NHMB); Ayer, Zinal, 20.VI. (T. Steck, NHMB); Binntal, 29.VI.1926, 30.VI.1926 (P. Bucher, NMBE); Binntal, 22.VI.1916, 23.VI.1916, 24.VI.1916, 25.VI.1916 (T. Steck, NMBE); Chandolin, 26.VI.1921 (T. Steck, NHMB); Evolène, 7.VII.1908 (T. Steck, NMBE); Evolène, Les Haudères, 21.VI.1924, 29.VI.1926, 17.VI.1934 (T. Steck, NHMB); Grimentz, 27.VII.1944 (J. de Beaumont, MZL); Euseigne, 11.V.1924, 22.VI.1926, 23.VI.1926, 2.VII.1926, 17.VIII.1929 (T. Steck, NHMB); Lötschental, VI.1919 (M. Diebold, NAR); Lötschental, 5.VII.1927 (P. Bucher, NMBE); Orsières, Som la Proz, 23.VII.1948 (F. Schmid, MZL); Saas Grund, VII.1938 (J. de Beaumont, MZL); Saas Grund, VII.1886 (NMBE); Sion, Bramois, 26.IV.1944 (P. Bovey, MZL); Stalden, 20.VI.1909, 18.VII.1915, 19.VII.1915, 20.VII.1915 (T. Steck, NMBE); Val d'Hérens, 25.VII.1935 (P. Bucher, NMBE); Val Ferret, 15.VII.1903 (T. Steck, NHMB); Vissoie, 14.VII.1908 (T. Steck, NMBE); Zermatt, 15.VII.1884 (NMBE).

***Dolichomitus kriechbaumeri* (Schulz, 1906)**
BE: Bern, 2.VI.1899 (T. Steck, NHMB). – GE: Thônex, Villette, VIII.1941 (C. Juilland, MHNG). – GR: Versam, 9.VII.1898 (NMBE). – SG: Pfäfers, Vättis, 11.VII.1914 (T. Steck, NMBE). – VS: Visp, IV. (R. Meyer-Dür, MZL); Vissoie, 14.VII.1904 (T. Steck, NMBE).

***Dolichomitus mesocentrus* (Gravenhorst, 1829)**
BE: Belp, Belpmoos, 5.XI.1992 (J. Grosjean, NMBE); Bern, 1.VI.1886, 5.IX.1897, 9.IX.1900 (T. Steck, NHMB); Bern, Dählhölzli, 5.IX.1904, 19.IX.1904, 31.VIII.1911, 5.IX.1911 (T. Steck, NHMB); Burgdorf (R. Meyer-Dür, NMBE); Köniz, Gurtental, 6.X.1909, 7.X.1921 (T. Steck, NHMB); Könizbergwald, 2.X.1904, 3.X.1904, 17.IX.1905, 9.X.1908, 28.IX.1910 (T. Steck, NHMB); Köniztal, 26.X.1912, 11.X.1922, 12.X.1922, 4.X.1932 (T. Steck, NHMB); Niederwangen, Forst, 16.V.2003, 9.VI.2004 (J. Grosjean, NMBE); Ulmizberg, 4.X.1908, 6.X.1918 (T. Steck, NHMB); Heggidorn, Michelsforst, 15.IX.1999 (J. Grosjean, NMBE); Gümligen, 6.X.1911, 16.IX.1913, 14.IX.1919, 6.X.1919, 22.VIII.1920, 12.IX.1920, 18.IX.1920, 28.IX.1920, 7.X.1920, 4.X.1921, 6.X.1921, 13.X.1922, 14.X.1927, 17.X.1927, 15.X.1932, 24.IX.1933 (T. Steck, NHMB); Gümligen, Amslenberg, 16.X.1911, 9.X.1921 (T. Steck, NHMB); Neuenegg, Bramberg, 21.IX.2003 (J. Grosjean, NMBE); Oberthal, 9.X.1988 (J. Grosjean, NMBE); Ostermundigenberg, 22.IX.1912, 27.IX.1912, 29.IX.1913, 2.X.1915, 9.X.1916, 3.X.1921, 2.X.1925 (T. Steck, NHMB); Prêles, 15.VI.1929 (NHMB); Dentenberg, 12.X.1918, 7.X.1925, 8.X.1925, 4.X.1925, 10.IX.1929 (T. Steck, NHMB). – GE: Satigny, Peney, 20.VIII.1889, 10.V.1900 (H. Tournier, MHNG). – GR: Ftan, VIII.1910 (K.B. Lehmann, NHMB); Versam, 9.VII.1898 (NMBE). – NE: Auvernier, 21.IV.1957, 22.IV.1957, 23.IV.1957, 17.V.1959 (J. de Beaumont, MZL); Le Landeron, 25.V.1989 (F. Amiet, NMBE). – SG: Pfäfers, Vättis, 5.VII.1912, 15.VII.1912 (T. Steck, NMBE). – UR: Andermatt, 15.VII.1871 (ETHZ). – VD: Belmont-sur-Lausanne, 10.V.1947 (J. Aubert, MZL); Les Pléiades, 5.VII.1956, 5.VI.1958 (J. de Beaumont, MZL); Boussens, 4.IX.1954, 23.X.1963, 26.IX.1964, 4.X.1964 (J. de Beaumont, MZL); Bussigny, 6.X.1957 (J. de Beaumont, MZL); Les Clées, 3.X.1954 (J. de Beaumont, MZL); Crissier, 18.IX.1957 (J. de Beaumont, MZL); Eclépens, Mormont, 7.VII.1963, 9.VI.1964 (J. de Beaumont, MZL); Ferreyres, 10.V.1964, 13.V.1964, 29.VI.1965, 4.VI.1967 (J. de Beaumont, MZL); Bois de Belmont, 24.IX.1944, 5.V.1946 (J. de Beaumont, MZL); La Sarraz, 11.V.1961 (J. de Beaumont, MZL); St. Cergue, 8.VI.1930 (J. de Beaumont, MZL). – VS: Val de Bagnes, 12.VII.1889 (NMBE); Binntal, 20.VI.1916, 23.VI.1916 (T. Steck, NMBE); Noès, 23.IV.1890 (M. Paul, NMBE); Euseigne, 4.VI.1945 (F. Schmid, MZL); Euseigne, 2.VII.1916 (T. Steck, NHMB); Euseigne, 17.VI.1909, 7.VIII.1932 (T. Steck, NMBE); Lötschental, Fafleralp, 4.VI.1960 (E. Handschin, NHMB), Simplon, Berisal, 28.VI.1919 (T. Steck, NHMB); Vouvry, 16.V.1948 (F. Schmid, MZL). – ZH: Illnau, Schlüsselberg, 20.V.1989 (W. Sauter, ETHZ).

***Dolichomitus messor* (Gravenhorst, 1829)**
BE: Bern, 3.IX.1885, 22.VIII.1886, 1.IX.1900 (T. Steck, NHMB); Köniztal, 4.X.1922 (T. Steck, NHMB); Niederwangen, Forst, 3.V.2003, 8.V.2003 (J. Grosjean, NMBE); Münchenbuchsee, Lätti, 5.IV.1997 (W. Hirschi, NMBE); Gümligen, 5.X.1928, 29.IX.1933 (T. Steck, NHMB); Dentenberg, 15.IX.1934, 18.IX.1934 (T. Steck, NHMB).

***Dolichomitus populneus* (Ratzeburg, 1848)**
VS: Grimentz, 16.VII.1942 (J. de Beaumont, MZL).

***Dolichomitus pterelas* (Say, 1829)**
BE: Bern, Dählhölzli, 7.IX.1908 (T. Steck, NHMB); Könizbergwald, 4.IX.1909 (T. Steck, NHMB). – GR: Val Somvix, 25.VII.1891 (NMBE); Tombal bei Soglio, 20.VI.1950 (E. Sutter, NHMB). – VS: Binntal, 27.VII.1917 (T. Steck, NHMB); Evolène, Les Haudères, 11.VI.1935 (T. Steck, NHMB); Grimentz, 16.VII.1942 (J. de Beaumont, MZL); Laggintal, 13.VIII.1931 (T. Steck, NHMB); Lötschental, VIII.1918 (M. Diebold, NAR); Saas Grund, 22.VII.1915 (T. Steck, NMBE); Zermatt, 15.VII.1884 (NMBE).

***Dolichomitus scutellaris* (Thomson, 1877)**
GR: Val Somvix, 25.VII.1891, 11.VII.1931 (T. Steck, NHMB); Versam, 9.VII.1898 (NMBE). – JU: Jura, (E. Poncy, MHNG). – VS: Binn, Säge, 29.VII.1946 (E. Handschin, NHMB); Hérémence, 18.IX. (E. Frey-Gessner, NMBE); Stalden, 21.VI.1909 (T. Steck, NMBE); Vissoie, 14.VII.1908 (T. Steck, NMBE); Zermatt, 15.VII.1884 (NMBE).

***Dolichomitus sericeus* (Hartig, 1847)**
BE: Bolligen, Grauholz, 25.V.1947 (P. Bucher, NMBE).

***Dolichomitus speciosus* (Hellén, 1915)**
?CH: without locality data, possibly (NMBE); – VS: Evolène, 6.VII.1911 (T. Steck, NMBE; this specimen is provisionally referred to *D. speciosus*. It differs in the ovipositor shape and further investigations are required to establish its identity).

***Dolichomitus terebrans* (Ratzeburg, 1844)**
BE: Biel, 16.V.1927 (T. Steck, NHMB); Jura, 10.VI.1900 (T. Steck, NHMB); Lenk, Hahnenmoos, VI.1906 (MHNG); Twann, 21.IV.1916 (T. Steck, NHMB). – GE: Satigny, Peney, 18.VII.1878 (H. Tournier, MHNG). – GR: Scuol, Val Foraz, 16.VII.1920 (C. Ferrière, BNM); Scuol, Val Sesvenna, 14.VII.1920 (C. Ferrière, BNM); Versam, 9.VII.1898 (NMBE); Zernez, Il Fuorn, 23.VII.1946, 27.VII.1946 (J. de Beaumont, MZL); Zernez, La Drossa, 23.VII.1923 (C. Ferrière, BNM); Val Cluozza, Chamanna Cluozza, 6.VII.1922 (C. Ferrière, BNM). – NE: Rochefort, La Tourne, 18.VI.1907 (B. Jaco, MZL). – OW: Pilatus (Falcoz, MHNG). – VD: Les Pléiades, 29.V.1958 (J. de Beaumont, MZL); St. Cergue, 15.VI.1930 (J. de Beaumont, MZL); St. Sulpice, 8.V.1936 (J. de Beaumont, MZL). – VS: Binntal, 25.VI.1916 (T. Steck, NMBE).

***Dolichomitus tuberculatus* (Geoffroy, 1785)**
AG: Berikon, 8.X. (E. Frey-Gessner, NMBE). – BE: Bern, 17.VI.1900, 22.IX.1900, 4.X.1900 (T. Steck, NHMB); Könizbergwald, 4.VII.1909, 28.IX.1910 (T. Steck, NHMB); Lenk, Hahnenmoos, VI.1906 (MHNG); Gümligen, Amslenberg, 6.X.1916, 30.IX.1923, 17.X.1926 (T. Steck, NHMB). – GE: Genève, IV.1950 (MHNG). – GR: Sent, Sur En, 21.VIII.1918 (C. Ferrière, BNM); Tschierv, 31.VII.1923 (C. Ferrière, BNM); Versam, 9.VII.1898 (NMBE). – NE: Auvernier, 26.VIII.1957 (J. de Beaumont, MZL). – OW: Pilatus (Falcoz, MHNG). – VD: Pont de Nant, 13.VIII.1918 (MZL); Les Pléiades, 5.VI.1958 (J. de Beaumont, MZL); Boussens, 18.IX.1963 (J. de Beaumont, MZL); Bussigny, 18.IX.1955 (J. de Beaumont, MZL); Crissier, 18.IX.1957 (J. de Beaumont, MZL); Develier, II.2002 (C. Villemant, NHMB); Bois de Belmont, 28.IV.1943 (J. de Beaumont, MZL); Lausanne, Le Chalet-à-Gobet, 6.IX.1942 (J. de Beaumont, MZL); Le Jorat, 24.VI.1965 (J. de Beaumont, MZL). – VS: Champéry, Col de Bretolet, 14.VII.1964 (MZL).