

A new species of *Temelucha* Förster from Malta with an updated and revised identification key to the Western Palaearctic *Temelucha* species (Hymenoptera, Ichneumonidae, Cremastinae)

Zoltán Vas¹

¹ Hungarian Natural History Museum, Department of Zoology, Hymenoptera Collection, H-1088 Budapest, Baross Street 13, Hungary

Corresponding author: Zoltán Vas (vas@nhmus.hu)

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Abstract

A new species, *Temelucha rea* sp. n., of the ichneumon wasp subfamily Cremastinae is described from Malta. Since the last published keys to the Western Palaearctic species of *Temelucha* are outdated and lack several species, an updated and revised identification key is provided for the 47 known *Temelucha* species of the region.

Keywords

Taxonomy, species description, ichneumon wasp, Mediterranean region, Europe

Introduction

Temelucha Förster, 1869 is a moderately species-rich genus of the ichneumon wasp subfamily Cremastinae. The definition of the genus was summarized by Townes (1971). According to Yu et al. (2012), 235 valid species belong to this genus, with worldwide distribution, and 46 species have been known from the Western Palaearctic region. The

early keys provided for the Western Palearctic species of *Temelucha* (i.e. in combination with *Cremastus* Gravenhorst, 1829 at that time) are seriously outdated by now and cover only a very limited set of species (e.g. Szépligeti 1905, Schmiedeknecht 1910). The only comprehensive taxonomic revision of the European species was published by Šedivý (1971). In his work he not only provided a useful key for the 23 European *Temelucha* species known at that time but also gave detailed descriptions for all the species. As several, previously described species were published with insufficient morphological descriptions, Šedivý's (1971) work is still a base-line for the European species.

Since Šedivý's (1971) revision, several new species have been described from the Western Palearctic region, mainly from the Balkan Peninsula and the Mediterranean area (Aubert 1977, 1981, Narolsky 1987, Kolarov 1989, Šedivý and Schwarz 1993, Kolarov 1995, 1996, Kolarov and Beyarslan 1999, Narolsky 2004). Kolarov (1997) provided a new key for 36 species of the region with a valuable zoogeographical discussion. His key includes many but not all species that have been described since Šedivý (1971) and it was a good attempt to simplify the distinguishing characters; however, some mistakes could be revealed by comparing the distinguishing characters of some species in that key with the original descriptions and type specimens (e.g. a species known only from males could only be keyed out by choosing between ovipositor characteristics, or a species with a yellow scutellum was keyed in the section of species with a black scutellum, etc.). Additionally, some species described long ago, such as *Temelucha corsicator* Aubert, 1961, *T. picticollis* (Hellén, 1949), and *T. minuta* (Morley, 1912) were included in neither previous key.

Recently, by finding a new *Temelucha* species from Malta, I realized the necessity of an updated identification key which covers all the species of the region and corrects the errors of the previous keys. In this paper, along with the description of a new species, an identification key is provided for the 47 currently known Western Palearctic *Temelucha* species (including the one described here).

Methods

Ichneumonidae taxonomy and nomenclature follow Yu and Horstmann (1997) and Yu et al. (2012). The morphological terminology follows Gauld (1991), and Gauld et al. (1997). The updated and revised key is based on previous keys (Šedivý 1971, Kolarov 1997), original descriptions and descriptions given by Šedivý (1971), Narolsky (1990), Kolarov and Beyarslan (1999), Kolarov and Yurtcan (2009), and Rouse et al. (2011). The key was tested on the material of the Hungarian Natural History Museum (HNHM), Budapest. The author examined the types of species described by Szépligeti (deposited in HNHM), and of *T. picticollis* (Hellén) (borrowed from the Finnish Natural History Museum, Helsinki). Distribution notes are not given in the key; it would just repeat Kolarov's (1997) work, and are well summarized in Yu et al. (2012). The specimens were examined using Nikon SMZ645 and Olympus SZX9 stereoscopic microscopes. Photos were taken by T. Németh (HNHM Coleoptera Col-

lection) with Nikon D5200 and Nikon AF Micro Nikkor 60mm lens and Mitutoyo M Plan Apo 5X microscope lens. Exposures were stacked in Zerene Stacker, post image work was done with Photoshop CS5.

Results

Taxonomy

Temelucha rea sp. n.

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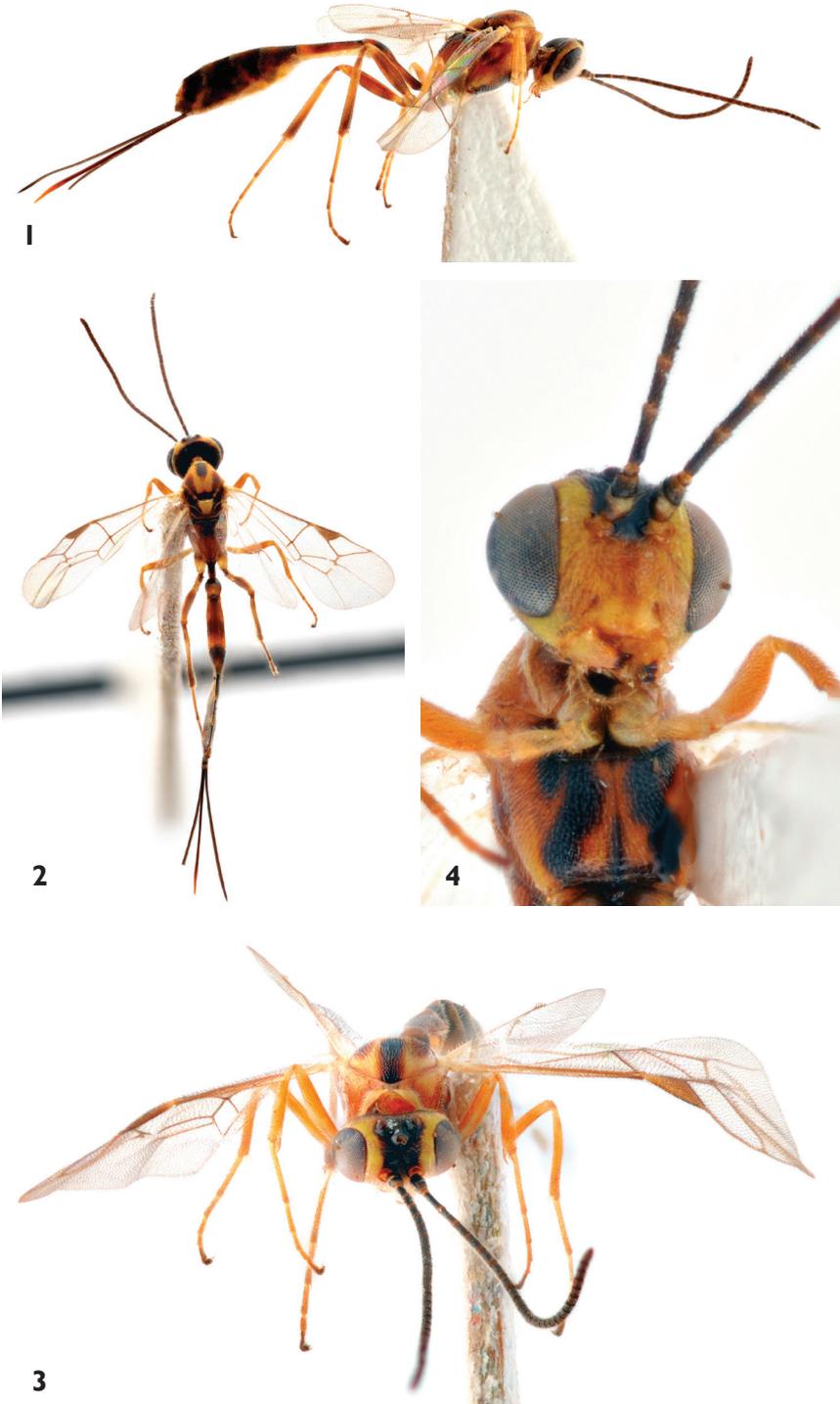
Material examined. Holotype: female, Malta, Mellicha, Il-Prajjet, 14.viii.2014, leg. M. Zammit. Paratype: female, same locality, collecting date, and collector. The holotype and the paratype are deposited in the HNHM Hymenoptera Collection (HNHM Id. No. 23011, 23012, respectively).

Diagnosis. The new species belongs to the morphological group of *Temelucha* species with the following characters in combination: mainly yellow head and thorax, at least the basal part of the hind coxa dark, the second discal cell more than $1.5 \times$ as long as the first sub-discal cell, and the second recurrent vein (*2m-cu*) postfurcal. Within this group it most resembles *T. decorata* (Gravenhorst, 1829) due to its colour pattern; however, it is significantly smaller than *T. decorata*. Another such small species within this group is *T. picticollis* (Hellén, 1949); however, *T. picticollis* differs from the newly described species by its black propodeum, the absence of notauli, and colour pattern.

Description. Female (holotype) (Figs 1–4). Body length 4.7 mm, fore wing length 2.7 mm, ovipositor sheath 2.0 mm.

Head. Antenna with 26 flagellomeres. First flagellomere $3.3 \times$ as long as wide. Gena short, strongly constricted behind eyes. Occipital carina dorsomedially incomplete. Occiput smooth and shiny. Vertex, frons, gena and malar space finely coriaceous. Middle of face punctate, punctures separated from each other by usually less than a puncture diameter. Clypeus with fewer punctures, convex in profile, and with curved apical margin. Inner eye orbits parallel. Ocellus diameter slightly smaller than distance between lateral ocellus and eye. Malar space about $0.75 \times$ as long as basal width of mandible. Mandibular teeth of equal length.

Mesosoma. Mesosoma densely punctate; distance between punctures on mesonotum and mesopleuron generally smaller than puncture diameter. Pronotum less densely punctate and with fine wrinkles. Epomia distinct. Notaulus distinct, reaching middle of mesoscutum. Scutellum punctate with lateral carinae not reaching its middle. Sternaulus indistinct. Speculum shiny and almost impunctate. Epicnemial carina present, reaching above middle of hind edge of pronotum. Posterior transverse carina of mesosternum complete. Metanotum (including postscutellum) with longitudinal wrinkles and a few punctures. Metapleuron densely punctate. Legs slender, hind femur about $5 \times$ as long as wide. Tarsal claws small and thin, only slightly longer than aro-



Figures 1–4. Holotype of *Temelucha rea* sp. n., female. **1** lateral view **2** dorsal view **3** frontal view **4** anteroventral view.

lium. Propodeum long, only very weakly convex in profile with its apical edge reaching middle of hind coxa. Pleural carina complete, its distance from circular propodeal spiracle about equal to diameter of spiracle. Spiracle connected to pleural carina by a raised ridge. Lateromedian and lateral longitudinal carinae and basal transverse carina complete. Median section of apical transverse carina indistinct. Pleural areas strongly punctate. Lateral areas with dense punctures and sparse transverse wrinkles. Area basalis very small with almost parallel lateral carinae on its basal half. Area superomedia and area petiolaris indistinctly separated; both areas narrow, almost parallel-sided and with dense transverse striation, except basal part of area superomedia, which is almost triangular-shaped and less striate, rather shiny with a few punctures.

Wings. Wing membrane with dense short hairs. Fore wing with vein *cu-a* interstitial. Vein *2m-cu* postfurcal with a wide bulla. Distal abscissa of *Rs* almost completely straight. Second discal cell about 2 × as long as first sub-discal cell (measured at front margins). Pterostigma slightly shorter than front margin of marginal cell. Hind wing with vein *cu-a* + abscissa of *Cu1* between *M* and *cu-a* almost straight, not intercepted. Distal abscissa of *Cu1* spectral.

Metasoma. First metasomal segment slightly longer (about 1.15 ×) than second segment. Ventral margins of first tergite touching each other ventrally. Lateromedian carinae of first tergite relatively weak. Second tergite with longitudinal striation characteristic of many *Cremastinae*. Third tergite coriaceous. Following tergites mainly punctate. Metasoma strongly laterally compressed, especially from third tergite on. Ovipositor sheath twice as long as hind tibia (or as long as fore wing from base to middle of marginal cell). Ovipositor straight, laterally compressed with distinct subapical notch. Apex smooth and straight, with subapical part somewhat widened in profile.

Colour. Head yellow except following parts. Upper face with brownish patch in midline. Black parts are: mandible teeth, middle of frons, ocellar area, posterior half of gena and occiput. Maxillary and labial palpi yellowish brown. Antennal flagellomeres dark brown with lighter apical bands on first few basal flagellomeres. Scapus and pedicellus mainly dark brown with some yellowish brown colouration on ventral side. Wings hyaline, venation and pterostigma brownish. Pronotum reddish with wide yellowish edges and hind corner. Mesoscutum yellow with an anteromedian black patch and two posterolateral brownish patches. Hind edge of mesoscutum and scutellar groove black. Scutellum entirely yellow. Mesopleuron mainly reddish and yellowish with black patches on ventral parts. Metanotum dark brown, its center somewhat lighter reddish brown. Metapleuron reddish and yellowish, its anterior ventral corner black. Propodeum almost entirely pale reddish, only basally black, medially reaching only basal part of area superomedia.

Fore and mid legs: coxae yellow with brownish patches basally; trochanters and trochantelli yellow; femora, tibiae and tarsomeres pale reddish except brown apical tarsomeres. Hind leg: coxa basally black; trochanter and trochantellus brown with yellowish apical parts; femur brown, basally and apically yellowish brown; tibia yellowish brown in middle, basally and apically brown; tarsomeres brown with yellowish brown base of first tarsomere; apical tarsomere dark brown.



5



6



8



7

Figures 5–8. Paratype of *Temelucha rea* sp. n., female. **5** lateral view **6** dorsal view **7** frontal view **8** anteroventral view.

First tergite reddish brown laterally as well as dorsally in middle and in most apical part. Basal part of tergite and basal part of postpetiolus almost black dorsally. Second tergite reddish brown with irregular brown patches in middle. Following tergites dark brown (almost black) basally, reddish brown apically with yellowish brown lateral and posterolateral edges. Ovipositor sheath dark brown (almost black); ovipositor reddish brown with paler apex.

Variation. The paratype female (Figs 5–8) is identical to the holotype in all the characteristics described above except that it is darker than the holotype. The brownish patch in the midline of the upper face is larger and black; pronotum more reddish; the posterolateral dark patches of the mesoscutum are black; mesopleuron with less yellowish and more reddish colouration and almost black around the speculum; metanotum almost black; propodeum darker, the basal half black, apical half pale reddish; hind tibia darker brown in the middle; the first and second tergites are darker, the light edges of the apical tergites are slightly darker.

Male. Unknown.

Distribution. Currently known only from Malta.

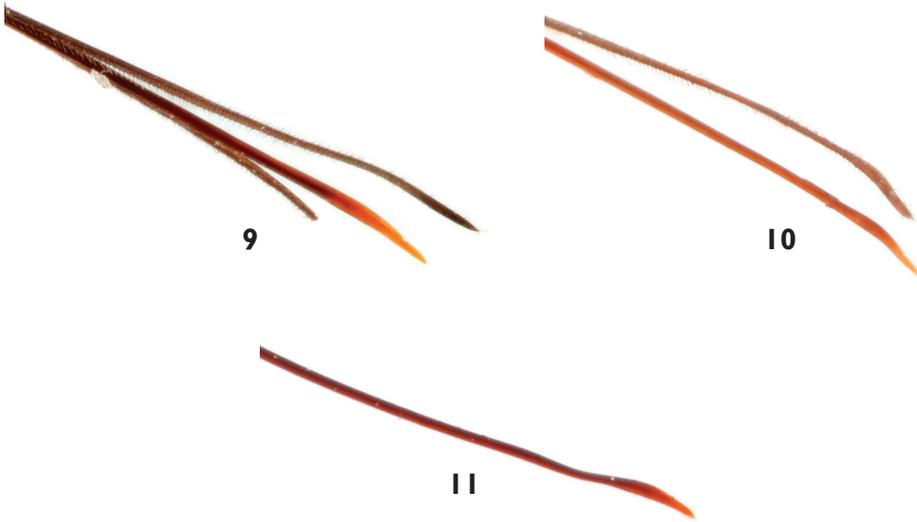
Ecological note. Adult wasps emerged on 14.viii.2014 from flowers of *Limbarida crithmoides* (Linnaeus) collected on 8.ix.2014. Several adult moths of *Eublemma parva* (Hübner) (Lepidoptera: Noctuidae) also emerged from the flowers; most probably it is the host species.

Etymology. Arbitrary combination of letters, feminine gender.

Identification key to *Temelucha* in the Western Palaearctic region

Supporting but not distinguishing characters are given in parentheses, comments in brackets. Figures 9–18 depict some important characteristics. Only some specific figures are cited in the key; other features used throughout the key such as ovipositor (Figs 9–11) and propodeum (Figs 14–15) shapes are recommended to be checked before using the key.

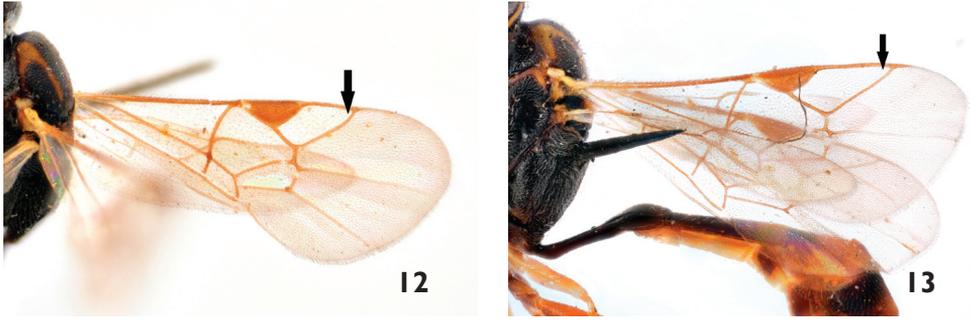
- 1 First tergite 0.6–0.8 × as long as second tergite (ovipositor apex down-curved; male ocellus relatively small, its diameter about as long as distance between lateral ocellus and eye; body length ~6 mm)..... ***T. brevipetiolata* Kolarov, 1989**
- First tergite as long as or longer than second tergite **2**
- 2 Malar space at least 2 × as long as basal width of mandible (ventral margins of first tergite not touching each other; ovipositor sheath about as long as fore wing; ovipositor apex straight to very weakly down-curved; the diameter of male ocellus longer than distance between lateral ocellus and eye; body length 5–8 mm) ***T. genalis* (Szépligeti, 1899)**
- Malar space distinctly less than 2 × as long as basal width of mandible **3**
- 3 Spurs on hind tibia unusually short, the longer spur shorter than apical width of hind tibia (body length 3.5 mm; fore wing venation pigmented; the diameter of



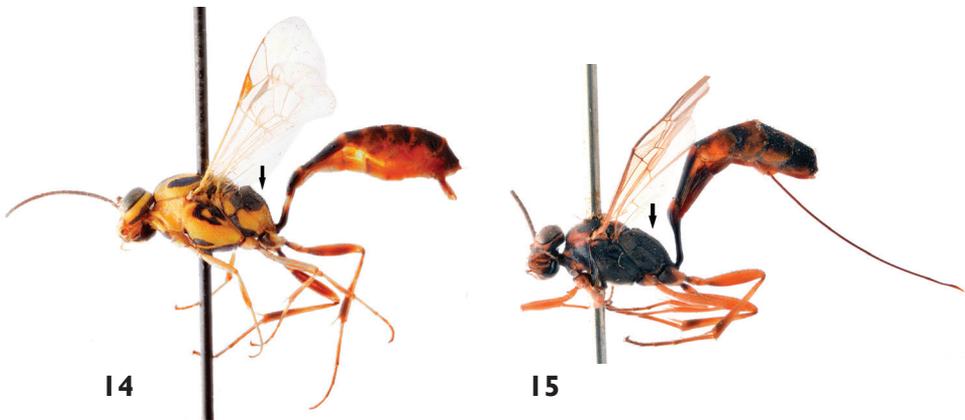
Figures 9–11. Ovipositor apex characteristics, lateral view. **9** straight, *Temelucha rea* sp. n. **10** down-curved, *Temelucha interruptor* (Gravenhorst, 1829) **11** sinuous, *Temelucha discoidalis* (Szépligeti, 1899).

- male ocellus almost as long as distance between lateral ocellus and eye) [female unknown] ***T. tibialis* Kolarov, 1995**
- Spurs on hind tibia not unusually short, longer spur is longer than apical width of hind tibia **4**
- 4** Fore wing venation partly unpigmented, basal abscissa of *M+Cu* spectral, other veins (except most apical ones) are more or less pigmented, not spectral; mesosoma predominantly black (ovipositor apex very weakly sinuous, not down-curved; male ocellus large, its diameter longer than distance between lateral ocellus and eye; body length 2.4–4 mm).... ***T. minuta* (Morley, 1912)**
- Fore wing venation pigmented, or if (partly) unpigmented, then pattern of depigmentation not the same as described above **5**
- 5** Mesothorax in greater part yellow and/or reddish coloured (usually both female and male face mainly yellow; propodeum often with yellowish/reddish colouration) **6**
- Mesothorax in greater part black (usually female face mainly dark, male face either mainly yellow or mainly dark; propodeum usually black)..... **18**
- 6** Frons with a pair of tubercles; hind femur elongate, 7.5 × as long as wide medially (ovipositor apex straight with distinct dorsal subapical notch; fore wing ~6 mm long) [male unknown]
..... ***T. tuberculata* Kolarov & Beyarslan, 1999**
- Frons without a pair of tubercles; hind femur not so elongate..... **7**
- 7** Second discal cell 1.5–2 × as long as first sub-discal cell **8**
- Second discal cell shorter, less than 1.5 × as long as first sub-discal cell **15**

- 8 All coxae entirely yellow and/or reddish (ovipositor apex down-curved; body length 7–8 mm)..... *T. schoenobia* (Thomson, 1890)
- At least hind coxa basally dark 9
- 9 Propodeum short, curved in lateral view 10
- Propodeum long, not curved in lateral view..... 11
- 10 Male ocellus small, its diameter shorter than distance between lateral ocellus and eye; vein *2m-cu* weakly postfurcal (ovipositor sheath as long as fore wing from base to the base of marginal cell; ovipositor apex straight; body length 7–9 mm) [the lightest specimens key out here, for the darker specimens see also couplet 47] *T. lucida* (Szépligeti, 1899)
- Male ocellus large, the lateral one almost touching eye; vein *2m-cu* interstitial (fore wing 6.3 mm long) [female unknown] *T. ocellaris* Kolarov, 1995
- 11 Fore wing vein *2m-cu* interstitial (female ocellus large, its diameter about the same as distance between lateral ocellus and eye; male ocellus large, its diameter longer than distance between lateral ocellus and eye; body length 6.5–7 mm)....
..... *T. tricolorata* Šedivý, 1968
- Fore wing vein *2m-cu* distinctly postfurcal (ocellus shorter than or about the same as distance between lateral ocellus and eye) 12
- 12 Following characters in combination: malar space $0.4 \times$ as long as basal width of mandible; inner eye orbits weakly convergent ventrally; ocellus small, its diameter shorter than distance between lateral ocellus and eye; fore wing ~ 4 mm long [female unknown] *T. pagliani* Kolarov, 1995
- Not exactly as above (either female or male with distinctly longer malar space and parallel inner eye orbits, as in *T. decorata* (Gravenhorst, 1829), or with distinctly shorter fore wing, as in *T. picticollis* (Hellén, 1949))..... 13
- 13 Propodeum black; ovipositor apex weakly sinuous; notaulus absent (male ocellus small, its diameter shorter than distance between lateral ocellus and eye; body length 4–5 mm) [lighter female specimens key out here, for the darker females and males see also couplet 53 and 59].....
..... *T. picticollis* (Hellén, 1949)
- Propodeum extensively yellowish/reddish coloured; ovipositor apex straight to very weakly down-curved; notaulus well developed..... 14
- 14 Female body 7–10 mm, fore wing 3.5–4 mm long; first tergite relatively stout, postpetiolus distinctly swollen (ovipositor sheath relatively shorter, less than $0.4 \times$ as long as body length; male ocellus relatively small, its diameter slightly shorter than or about the same as distance between lateral ocellus and eye; body length 6–10 mm) *T. decorata* (Gravenhorst, 1829)
- Female body 4–5 mm, fore wing less than 3 mm long; first tergite slender, postpetiolus not distinctly swollen (ovipositor sheath relatively longer, 0.4 or more \times as long as body length) [male unknown] *T. rea* sp. n.
- 15 Body length 3–4 mm; fore wing venation mostly depigmented (ovipositor apex slightly down-curved) *T. anatolica* (Šedivý, 1968)
- Body length 8–11 mm, fore wing venation pigmented 16



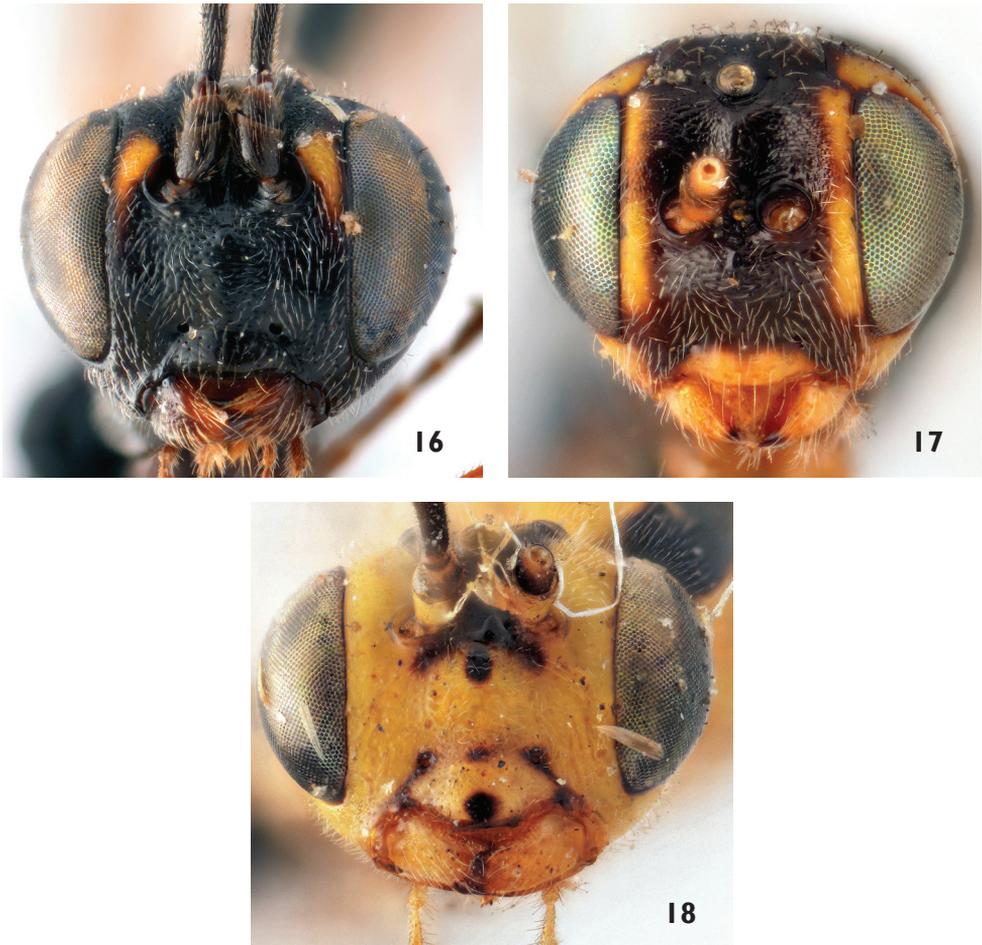
Figures 12–13. Fore wing characteristics. **12** *Rs* curved near the front margin of the wing, *Temelucha signata* (Holmgren, 1860) **13** *Rs* straight, not curved near the front margin of the wing, *Temelucha interruptor* (Gravenhorst, 1829).



Figures 14–15. Propodeum characteristics, lateral view. **14** short and curved propodeum, *Temelucha lucida* (Szépligeti, 1899) **15** not short, not curved, ‘usual’ propodeum, *Temelucha discoidalis* (Szépligeti, 1899).

- 16 Ocellus small, its diameter as long as or shorter than the distance between lateral ocellus and eye (ovipositor sheath about as long as fore wing from base to the apex of marginal cell; body length 8–12 mm) *T. dorsonigra* (Hedwig, 1957)
- Ocellus large, its diameter longer than the distance between lateral ocellus and eye **17**
- 17 Hind tarsal claws distinctly longer than arolium; fifth tarsal segment of hind leg 4.2 × as long as wide; ovipositor sheath about as long as fore wing (body length ~10 mm)..... *T. afghana* Šedivý, 1968
- Hind tarsal claws as long as arolium; fifth tarsal segment of hind leg shorter, 3.2–3.4 × as long as wide; ovipositor sheath about as long as fore wing from base to the base of marginal cell (body length 8–11 mm)..... *T. observator* Aubert, 1966

- 18 Front edge of clypeus almost straight to weakly convex; clypeus flat or very weakly convex in lateral view (cf. Fig. 16–17) **19**
- Front edge of clypeus distinctly curved, convex; clypeus moderately to strongly convex in lateral view (cf. Fig. 18) **25**
- 19 Ventral margins of first tergite not touching each other **20**
- Ventral margins of first tergite touching each other **22**
- 20 Mesosoma distinctly elongate, 2.6 × as long as high, in lateral view slightly concave ventrally (ovipositor apex straight; male ocellus diameter shorter than distance between lateral ocellus and eye; fore wing length 2.5–2.7 mm)
..... ***T. cylindrator* Narolsky, 1987**
- Mesosoma not so elongate and not curved; fore wing > 4 mm long **21**
- 21 Ovipositor sheath long, distinctly longer than fore wing (ovipositor apex weakly down-curved; male ocellus large, its diameter longer than the distance between lateral ocellus and eye; body length 9–11 mm)
..... ***T. caudata* (Szépligeti, 1899)**
- Ovipositor sheath distinctly shorter than fore wing (fore wing length 4.2 mm) [male unknown] ***T. pseudocaudata* Kolarov, 1982**
- 22 Malar space black (eye orbits mostly black, a pair of spots on the vertex and patches on the inner orbits below toruli are yellowish; ovipositor apex not down-curved; ovipositor sheath about as long as fore wing from base to the apex of marginal cell; diameter of male ocellus shorter than the distance between lateral ocellus and eye; body length 4–7 mm)
..... ***T. guttifer* (Thomson, 1890)**
- Malar space at least partly yellow, eye orbits partly or entirely yellow **23**
- 23 Fore wing with vein *R*₅ almost straight, not curved near the front margin (cf. Fig. 13); ovipositor sheath as long as fore wing from base to apex of marginal cell (diameter of male ocellus shorter than the distance between lateral ocellus and eye; body length ~5 mm) ***T. albipennis* (Zetterstedt, 1838)**
- Fore wing with *R*₅ curved near the front margin of the wing (cf. Fig. 12) ... **24**
- 24 Ovipositor sheath as long as fore wing from base to base of marginal cell (the diameter of male ocellus shorter than the distance between lateral ocellus and eye; body length 5–9 mm) ***T. signata* (Holmgren, 1860)**
- Ovipositor sheath longer, as long as fore wing or at least as long as fore wing from base to apex of marginal cell (body length ~5 mm) [male unknown] ...
..... ***T. subsignata* Kolarov, 1989**
- 25 Clypeus distinctly separated from face, strongly convex and nose-shaped in lateral view; propodeum convex in lateral view (ovipositor apex sinuous; male ocellus large, its diameter distinctly longer than the distance between lateral ocellus and eye; body length 6–8 mm) ***T. subnasuata* (Thomson)**
- Clypeus weakly separated from face, moderately convex and not nose-shaped in lateral view **26**
- 26 Scutellum black (to a maximum brownish or rusty laterally) **27**
- Scutellum entirely or partly yellow **46**



Figures 16–18. Clypeus characteristics, frontal view. **16** edge of clypeus almost straight, *Temelucha caudata* (Szépligeti, 1899) **17** edge of clypeus weakly convex, *Temelucha signata* (Holmgren, 1860) **18** edge of clypeus distinctly convex, *Temelucha lucida* (Szépligeti, 1899).

- 27 Frons raised laterally (ovipositor sheath as long as fore wing, ovipositor apex down-curved and with a distinct subapical notch; area superomedia closed from behind; the diameter of male ocellus as long as the distance between lateral ocellus and eye) ***T. turcata* Kolarov & Beyarslan, 1999**
- Frons not raised laterally; ovipositor without dorsal subapical notch or with only a faint notch..... **28**
- 28 Following characters in combination: head large and transverse, gena strongly widened; second tergite coriaceous without longitudinal striation; area superomedia closed posteriorly; hind coxa relatively small (ovipositor longer than fore wing and with sinuous apex; the diameter of male ocellus shorter than

- the distance between lateral ocellus and eye; fore wing 4.4–4.9 mm long)
 *T. tobiasi* Narolsky, 2004
- Not exactly as above 29
- 29 Female [note that females of *T. elongata* Kolarov, 1995 and *T. szepligetii* (Dalla Torre, 1901) are unknown]..... 30
- Male [note that male of *T. thoracica* Kolarov, 1989 is unknown]..... 38
- 30 Mesonotum short, only 1.1 × as long as wide; ovipositor apex rather strongly down-curved (body length ~7 mm) *T. thoracica* Kolarov, 1989
- Mesonotum more elongate; ovipositor apex either straight or sinuous, or very weakly down-curved 31
- 31 Malar space entirely or partly yellow 32
- Malar space black to reddish 33
- 32 Scutellum without lateral carinae; malar space yellow (ovipositor apex straight; body length 4–5 mm) *T. tenerifensis* Šedivý, 1993
- Scutellum carinate to its apex; malar space only partly yellow (ovipositor apex straight to very weakly down-curved; body length ~5 mm) [there are only a few females with partly yellow malar space; the majority have black malar space, hence they key out at couplet 35] *T. arenosa* (Szépligeti, 1899)
- 33 Ovipositor apex not sinuous (straight or weakly down-curved) 34
- Ovipositor apex sinuous..... 36
- 34 Ovipositor sheath longer than fore wing (ovipositor apex straight and sharp; body length 6–7 mm) *T. longicauda* Kolarov, 1996
- Ovipositor sheath shorter than fore wing 35
- 35 Scutellum carinate to its apex (body length ~5 mm)
 *T. arenosa* (Szépligeti, 1899)
- Scutellum not carinate to its apex (body length 5–6.5 mm)
 *T. meridionellator* Aubert, 1981
- 36 Scapus entirely dark brown (body length 7–8 mm).....
 *T. annulata* (Szépligeti, 1899)
- Scapus with yellow or reddish colouration 37
- 37 Thorax matt; propodeum elongate, not curved in lateral view; lateromedian carinae of first tergite reaching the middle of the tergite; petiolus basally depressed; outer surface of hind tibia brown (body length 5–6 mm).....
 *T. ophthalmica* (Holmgren, 1860)
- Thorax shiny; propodeum short, curved in lateral view; lateromedian carinae of first tergite missing or faint; petiolus basally cylindrical; outer surface of hind tibia whitish (body length ~7 mm) *T. marocator* Aubert, 1977
- 38 Ocellus diameter longer than the distance between lateral ocellus and eye ... 39
- Ocellus diameter shorter than the distance between lateral ocellus and eye..... 41
- 39 Scutellum without lateral carinae (body length 4–5 mm).....
 *T. tenerifensis* Šedivý, 1993
- Scutellum with lateral carinae 40

- 40 Thorax matt; propodeum elongate, not curved in lateral view; outer surface of hind tibia brown (body length 5–6 mm) ... *T. ophthalmica* (Holmgren, 1860)
- Thorax shiny; propodeum short, curved in lateral view; outer surface of hind tibia whitish (body length ~7 mm) *T. marocator* Aubert, 1977
- 41 Malar space yellow 42
- Malar space black to reddish 43
- 42 Fore wing veins indistinctly pigmented, pale yellowish, the wing membrane lactescent; scapus in greater part and ventral side of basal flagellomeres yellow (body length ~5 mm) *T. szepligetii* (Dalla Torre, 1901)
- Fore wing veins pigmented, brown, the wing membrane more hyaline; scapus in greater part and ventral side of basal flagellomeres black or dark brown (body length ~5 mm) *T. arenosa* (Szépligeti, 1899)
- 43 Propodeum short, curved in lateral view (body, except the legs, black; body length 6–7 mm) *T. longicauda* Kolarov, 1996
- Propodeum longer, not curved in lateral view 44
- 44 Mesosoma elongate, 2.2 × as long as high (fore wing 4.7 mm) *T. elongata* Kolarov, 1995
- Mesosoma not so elongate 45
- 45 Fore femur mainly yellowish/reddish (body length ~7 mm) *T. annulata* (Szépligeti)
- Fore femur mainly black, anterior surface and apex yellowish or reddish (body length 5–6.5 mm) [note that this couplet does not allow safe identification due to the poorly described males in the original description of this species] *T. meridionellator* Aubert, 1981
- 46 Propodeum short, curved in lateral view (male ocellus small, its diameter shorter than distance between lateral ocellus and eye) 47
- Propodeum long, not curved in lateral view (male ocellus either small or large) 48
- 47 Head and mesosoma not covered with unusually dense white hairs; vein *2m-cu* weakly postfurcal; ovipositor sheath relatively short, as long as fore wing from base to the base of marginal cell; ovipositor apex straight; usually mesoscutum, mesopleuron and propodeum with rich yellow colouration (body length 7–9 mm) [for the lightest specimens see also couplet 10] *T. lucida* (Szépligeti, 1899)
- Head and mesosoma covered with distinct dense white hairs; vein *2m-cu* postfurcal; ovipositor sheath distinctly longer; ovipositor apex weakly down-curved; body with more restricted yellow, propodeum black, mesopleuron only with small yellowish patch or black (body length ~10 mm) *T. lucidator* Kolarov, 1995
- 48 Following characters in combination: malar space swollen, 1.3 × as long as basal width of mandible; notauli present as transversely striate shallow concavities; area superomedia pentagonal, closed posteriorly (ocellus diameter shorter than the distance between lateral ocellus and eye; body length ~7 mm) [female unknown] *T. notaulata* Kolarov, 1989

- Not exactly as above 49
- 49 Female 50
- Male [note that males of *T. arenosella* Kolarov, 1989, *T. notata* Kolarov, 1989, *T. corsicator* Aubert, 1961 are unknown] 58
- 50 Ovipositor apex down-curved 51
- Ovipositor apex not down-curved (straight or sinuous) 52
- 51 Head very strongly and almost rectilinearly constricted behind eyes; hind femur reddish, usually somewhat darker basally (body length 6–9 mm)
..... *T. interruptor* (Gravenhorst, 1829)
- Head strongly but roundly constricted behind eyes; hind femur yellowish apically (body length ~5 mm) *T. notata* Kolarov, 1989
- 52 Ovipositor apex sinuous (strongly or weakly but distinctly) 53
- Ovipositor apex straight, not sinuous 54
- 53 Ovipositor sheath as long as fore wing; body length 8–9 mm; ovipositor apex strongly sinuous (head mainly black) *T. discoidalis* (Szépligeti, 1899)
- Ovipositor sheath distinctly shorter than fore wing; body length 4–5 mm; ovipositor apex weakly sinuous (head mainly yellow) [for lighter female specimens see also couplet 13] *T. picticollis* (Hellén, 1949)
- 54 Following characters in combination: malar space slightly longer than basal width of mandible; second discal cell 2 × as long as first sub-discal cell; area superomedia shiny with or without punctures; lateromedian carinae on first tergite short and weak or absent (body length 5–7 mm)
..... *T. mohelnensis* Šedivý, 1971
- Not exactly as above (malar space at a maximum as long as basal width of mandible; second discal cell less than 2 × as long as first sub-discal cell; lateromedian carinae on first tergite usually distinct) 55
- 55 Following characters in combination: body length ~4.5 mm; notauli absent or indistinct; first tergite as long as second tergite; lateromedian carinae on first tergite well developed *T. arenosella* Kolarov, 1989
- Not exactly as above; body length 6–10 mm (first tergite either longer than second tergite, or if equal then notauli present) 56
- 56 Notauli present [although not very easy to recognize: the different sculpture (i.e. the very short transverse striae among the punctures of the mesoscutum) helps reveal the shallow line of the notaulus]; inner eye orbits slightly divergent ventrally; second discal cell distinctly longer (~1.5–1.7 ×) than first sub-discal cell (area superomedia entirely or partly striate; body length 6–9 mm)
..... *T. variipes* (Szépligeti, 1899)
- Notauli absent or indistinct; inner eye orbits parallel; second discal cell less than 1.5 × (~1.2 ×) as long as first sub-discal cell (area superomedia not entirely striate) 57
- 57 Head roundly constricted behind eyes; lateral areas of propodeum mainly striate; metasomal tergites brown to black, tergites 2–7 with lighter posterior edges (body length ~10 mm) *T. confluens* (Gravenhorst, 1829)

- Head more strongly constricted behind eyes; lateral areas of propodeum mainly punctate; tergites black, only the apical tergites with lighter posterior edges (body length ~10 mm) *T. corsicator* **Aubert, 1961**
- 58 Ocellus diameter longer than the distance between lateral ocellus and eye (head, as in females, very strongly and almost rectilinearly constricted behind eyes; body length 6–9 mm)..... *T. interruptor* (**Gravenhorst, 1929**)
- Ocellus diameter shorter than the distance between lateral ocellus and eye..... **59**
- 59 Following characters in combination: body length < 5 mm; second discal cell ~1.5 × as long as first sub-discal cell; lateromedian carinae of first tergite absent; pronotum and mesoscutum almost entirely black with little yellow colouration *T. picticollis* (**Hellén, 1949**)
- Not exactly as above; body length > 5 mm..... **60**
- 60 Second discal cell 2 × as long as first sub-discal cell (area superomedia shiny with or without punctures; body length 5–7 mm) *T. mohelnensis* **Šedivý, 1971**
- Second discal cell less than 2 × as long as first sub-discal cell..... **61**
- 61 Lateral areas of propodeum mainly striate; second discal cell less than 1.5 × (~1.2 ×) as long as first sub-discal cell (body length ~8 mm)
..... *T. confluens* (**Gravenhorst, 1829**)
- Lateral areas of propodeum mainly punctate; second discal cell at least ~1.5 × as long as first sub-discal cell..... **62**
- 62 Notauli present [although not very easy to recognize but usually easier than in females: the different sculpture (i.e. the very short transverse striae among the punctures of the mesoscutum) helps to reveal the shallow line of the notaulus]; inner eye orbits slightly divergent ventrally; area superomedia entirely or partly transversely striate (body length 6–8 mm)
..... *T. variipes* (**Szépligeti, 1899**)
- Notauli absent or indistinct; inner eye orbits parallel; area superomedia shiny and distinctly punctate, not striate (body length 8–9 mm).....
..... *T. discoidalis* (**Szépligeti, 1899**)

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