

# New or poorly known Douglassiidae from the Palaearctics (Lepidoptera: Douglassiidae)

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## Abstract

Five new species of the genus *Tinagma* Zeller, 1839 were described and illustrated (*T. fasciatum* Gaedike, sp. n., *T. mikkolai* Gaedike, sp. n., *T. jalavai* Gaedike, sp. n., *T. kullbergi* Gaedike, sp. n., *T. caucasicum* Gaedike, sp. n.). New country records for five species of the same genus (*T. perdicella* Zeller, 1839, *T. balteolella* (Fischer von Röslerstamm, 1841), *T. klimeschi* Gaedike, 1987, *T. bledella* (Chrétien, 1915), *T. ocnerosomella* (Stainton, 1850)) and for two species of the genus *Klimeschia* Amsel, 1938 (*K. transversella* (Zeller, 1839), *K. cinereipunctella* (Turati & Fiori, 1930)) are provided.

KEY WORDS: Lepidoptera, Douglassiidae, *Tinagma*, *Klimeschia*, new species, new record, distribution, Palaearctics.

## Douglassiidae nuevos o pobremente conocidos del Paleártico (Lepidoptera: Douglassiidae)

## Resumen

Se describen e ilustran cinco nuevas especies del género *Tinagma* Zeller, 1839 (*T. fasciatum* Gaedike, sp. n., *T. mikkolai* Gaedike sp. n., *T. jalavai* Gaedike sp. n., *T. kullbergi* Gaedike sp. n., *T. caucasicum* Gaedike sp. n.) y se proporcionan nuevos registros de países para cinco especies del mismo género (*T. perdicella* Zeller, 1839, *T. balteolella* (Fischer von Röslerstamm, 1841), *T. klimeschi* Gaedike, 1987, *T. bledella* (Chrétien, 1915), *T. ocnerosomella* (Stainton, 1850)) y para dos especies del género *Klimeschia* Amsel, 1938 (*K. transversella* (Zeller, 1839), *K. cinereipunctella* (Turati & Fiori, 1930)).

PALABRAS CLAVE: Lepidoptera, Douglassiidae, *Tinagma*, nuevas especies, nuevos registros, distribución, Paleártico.

## Introduction

According to REGIER *et al.* (2015) the Douglassiidae together with the Millieriidae are a member of an unassigned superfamily, located between Gracillarioidea and Hyblaeoidea. Hitherto 32 species (23 from the Palaearctics, 8 from the Neotropics and 1 from the Australis) are known worldwide.

The study of still undetermined material of this family has allowed us to describe some new members of the genus *Tinagma* Zeller, 1839 and to establish some new country records.

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## Abbreviations

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FMNH	Finnish Museum of Natural History, Helsinki, Finland
SDEI	Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany
ZMUC	Zoological Museum, Copenhagen, Denmark

### *Tinagma perdicella* Zeller, 1839

GREECE: ♂, Greece, Thessaly, 3,1 km NE Metsovo, Katara Pass, 1580 m, 19-VI-2013, leg. P. Skou; ZMUC; BULGARIA: 3 ♂♂, Rila Mts, 1950-2150 m, 42° 0'8N, 23° 26'E, 1-VIII-2013, leg. O. Karsholt; ZMUC: **First records for the countries.**

### *Tinagma fasciatum* Gaedike, sp. n. (Figs 1, 6)

Holotype: 1 ♂, RUSSIA: Tuva rep., 50° 01'N, 95° 03' E, 1150 m, Lake Tere-Khol, sand dunes, 9-12-VI-1995, Jalava & Kullberg leg.; Gen. präp. [genitalia slide] Gaedike Nr. 5707; Holotypus ♂, *Tinagma fasciatum* sp. n., det. R. Gaedike 2017. Deposited in the Finnish Museum of Natural History, Helsinki, Finland.

Diagnosis: Superficially distinguishable from the other species, described below, by the colouration of forewings. Somewhat similar to *T. mongolicum* Gaedike, 1991, but the pattern of forewing of that species is more greybrown and the apical fourth is completely brown.

Description (Fig. 1): Wingspan 11 mm; head, thorax and tegulae with white scales with grey tip, labial palpus curved up, white, scales on second segment long, directed downward, with grey tips, third segment thin, short; scape of antenna with white-grey scales too, flagellum light grey, ringed; forewing on white groundcolour with a goldenbrown pattern: a broad strip between 1/3 and 1/2 from costa to dorsum, parallel sided, at edge on dorsum with some dark, nearly black scales, an oval patch from end of cell directed oblique to costa at 3/4, prolonged to beginning of fringe as short strip, more or less covered by blackish scales; fringe greyish, overlaid partly with white scales with black tip, apex with a dark brown dot; the space between broad strip and patch, and between patch and apex, white, only some dark tips are visible; basal third with white-grey scales, only the border to the strip white; hindwing light creamy.

Male genitalia (Fig. 6): Vinculum band-shaped, saccus as broad as vinculum, long, with rounded tip; valva broader than long, broadest at base, costal edge apically rounded to oblique apical edge, ending in a short finger-like process, ventral edge at basal half folded, on inside, along the middle of the apical edge, a field of numerous long strong sclerotized bristles, apodeme long and thin; phallus two times longer than valva, from base narrower to pointed tip, with minute sclerotizations in the vesica.

Female genitalia: Unknown.

Etymology: Named after the pattern of forewing.

### *Tinagma mikkolai* Gaedike, sp. n. (Figs 2, 7, 11)

Holotype: ♂, USSR, Magadan obl., Upper Kolyma r., 62° N, 149° 40'E, 1400 m, mnt. tundra, 22-VII-1987, K. Mikkola leg.; Gen. präp. [genitalia slide] Gaedike Nr. 4186; Holotypus ♂, *Tinagma mikkolai* sp. n., det. R. Gaedike 2017; FMNH; Paratypes: 1 ♀, same dates, but with genitalia slide Gaedike Nr. 4187; FMNH; 1 ♂, same location, but 13-VII-1987; SDEI.

Diagnosis: Superficially similar to *jalavai*, described below, but scales on head and thorax with more whitish parts, and forewings with greybrown bands, while *jalavai* has dark grey band and patches. In male genitalia the shape of valva is different: *mikkolai* with nearly square valva with winkled costal edge, the finger-like process is short, with field of strong sclerotized bristles without acute tips, while *jalavai* with valva more longer than broad, finger-like process broad, the bristles on inside long, strongly sclerotized with pointed tips.

Description (Fig. 2): Wingspan 9 mm; head, labial palpus, scape of antenna, thorax and tegulae

with nearly white scales with dark grey tip, labial palpus short, on inside more whitish, flagellum dark grey; forewing with pattern of two greybrown bands, the first between 1/3 and 1/2, the second at 3/4 from costa to dorsum, the space between the bands and between the second band to apex more whitish than basal third of wing; tip of apex with a dot of dark grey scales; fringe basally overlaid with long whitish scales with dark tip; hindwing grey.

Male genitalia (Fig. 7): Vinculum band-shaped, saccus somewhat narrower than vinculum, long, with rounded tip; valva nearly square, basal edge vertically, costal edge shorter than ventral edge, angled to apical edge, oblique directed to short finger-like process, on inside a field of numerous strong sclerotized bristles; phallus more than two times longer than valva, slightly curved.

Female genitalia (Fig. 11): Anterior apophysae apically ending triangularly, between the ends with a lancet-shaped sclerotization; ostium basally with sclerotized ring, dorsally prolonged, covered with minute thorns and ending in a cup-shaped emargination; signum a bundle of numerous various-sized strong sclerotized spines.

Etymology: Named after Kauri Mikkola, the collector of the species.

***Tinagma jalavai* Gaedike, sp. n. (Figs 3, 8)**

Holotype: ♂, RUSSIA, Tuva rep., 50° 50'N, 94° 19'E, 2175 m, E. Tannu-Ola mts, timberline (Larix)steppe, 17-VI-1995, Jalava & Kullberg leg.; Gen.präp. [genitalia slide] Gaedike Nr. 9036; Holotypus ♂, *Tinagma jalavai* sp. n., det. R. Gaedike 2017; FMNH; Paratypes: 3 ♂♂, same dates, two of them with genitalia slides Gaedike Nr. 5709 and 5711; FMNH, SDEI.

Diagnosis: See under *mikkolai*.

Description (Fig. 3): Wingspan 9-11 mm; the whitish base of scales on head, thorax and tegulae nearly complete overlaid by dark grey, labial palpus short, straight, on inside more whitish, flagellum of antenna ringed, underside of scape and first half of flagellum whitish; forewing on basal third with same colouration as thorax, followed by a nearly complete dark grey band with indistinct basal border, apical half more whitish, at the end of cell one dark grey patch, apex with dark dot, fringe overlaid with long white scales with dark tip; hindwing grey.

Male genitalia (Fig. 8): Vinculum band-shaped, with long saccus with rounded tip; valva nearly square, somewhat broader than long, basal edge a little curved inward, apical edge oblique from costal edge to the finger-like process, along ventral edge an indication of fold; on inside a field of strong sclerotized bristles with acute tips; phallus nearly three times longer than broadness of valva, straight, with pointed tip.

Female genitalia: Unknown.

Etymology: Named after Jukko Jalava, one of the collectors of the type series.

***Tinagma kullbergi* Gaedike, sp. n. (Figs 4, 9)**

Holotype: ♂, RUSSIA, Buryatia, 54° 55'N, 111° 14'E, Barguzin valley, 600 m, Dijirga st.[ation], Betula/mead.[ow], 10-VII-1996, Jalava & Kullberg [leg.]; "Gen. präp. [genitalia slide] Gaedike Nr. 5714; Holotypus ♂, *Tinagma kullbergi* sp. n., det. R. Gaedike 2017; FMNH; Paratypes: 1 ♂, same dates; SDEI; 1 ♂, RUSSIA, Buryatia, 54° 52'N, 110° 55'E. Barguzin range 920 m, Olso r.[iver] valley, taiga, 4-6-VII-1996, Jalava & Kullberg [leg.]; "Gen. präp. [genitalia slide] Gaedike Nr. 9035; FMNH.

Diagnosis: The nearly unicoloured forewing make the species distinguishable from the other species here described. In male genitalia the valva with the long narrow finger-like process and the large field of long pointed bristles is characteristic.

Description (Fig. 4): Wingspan 10-12 mm; head, thorax and tegulae dark greybrown, tips of scales light grey, labial palpus short, with same colouration, second segment ventrally with longer scales, scape of antenna somewhat ringed; forewing nearly complete unicoloured dark greybrown, apex with a small dark dot, wing between 1/2 and 3/4 lighter, border to base as an oblique whitish stripe; hindwing with same colouration as forewing.

The colouration of the specimen from Barguzin range is lighter, the tips of scales are whitish, the lighter aerea on forewing with more clear border to base.

Male genitalia (Fig. 9): Vinculum band-shaped, saccus long, narrow, with rounded tip; valva broader than long, base straight, costa somewhat oblique to rounded edge, apical edge curved to long apical process, ventral edge longer than costal edge, inside with fold; on inside along the main part of apical edge a field of long, thin, strong sclerotized pointed bristles; phallus nearly three times longer than valva, slightly curved.

Female genitalia: Unknown.

Etymology: Named after Jakko Kullberg, one of the collectors of the type series.

Remark: Although the colouration of the specimen from Barguzin range is somewhat different to the colouration of the other specimens, the genitalia structure is completely the same, only the size is smaller.

*Tinagma caucasicum* Gaedike, sp. n. (Figs 5, 10)

Holotype: ♂, USSR, 43° N, 43° E, Kabardino-Balkarskij zap. [National Park], 35 km SE mt. Elbrus, alp. mead. 2500 m, E-slope, 15-VII-1990, J. Jalava [leg.]; Gen. präp. [genitalia slide] Gaedike Nr. 5713; Holotypus ♂, *Tinagma caucasicum* sp. n., det. R. Gaedike 2017; FMNH; Paratypus: 1 ♂, USSR, 43° N, 43° E, Kabardino-Balkarskij zap. [National Park], 35 km SE mt. Elbrus, subalp. meadows 2300 m, 10-VII-1990, J. Jalava [leg.]; FMNH.

Diagnosis: Superficially characterized by the two dark greybrown patches at dorsum and, opposite, the patches with same colouration on costa. Male genitalia with nearly square valva without fold along ventral edge and with phallus three times longer than valva.

Description (Fig. 5): Wingspan 10-12 mm; scales on head, thorax and tegulae greybrown with whitish tips, head above palpi nearly complete whitish to creamy, labial palpus short, straight, inside creamy, outside dark greybrown; basal third of forewing with same colouration as thorax, dark greybrown are also a patch at dorsum before 1/2, reaching cell, a patch at beginning of fringe, a patch on apex, and patches on costa opposite the patches on costa; the area between these patches covered by scales with more whitish and creamy parts; hindwing light greybrown.

Male genitalia (Fig. 10): Vinculum band-shaped, saccus very long, narrow, with rounded tip; valva nearly square, apical edge oblique to apical finger-like process, along ventral edge no fold on inside visible, along first half of apical edge a field of long, strong sclerotized bristles; phallus three times longer than valva, straight, with pointed tip.

Female genitalia: Unknown.

Etymology: Named after the location of the type series.

*Tinagma balteoella* (Fischer von Röslerstamm, 1841)

BULGARIA: 1 ♂, W of Gotse Delchew, Popovi Levadi, 1000 m, 25-V-2010, leg. O. Karsholt; ZMUC. **First country record.**

*Tinagma klimeschi* Gaedike, 1987

MOROCCO: 2 ♂♂, Anti Atlas: Souss-Massa-Draâ: Idikl 16 km E Tafraoute, 8-10-III-2017, 1580 m, leg. C. Hviid, O. Karsholt, K. Larsen & D. Nilsson; ZMUC. **First country records.**

*Tinagma bledella* (Chrétien, 1915)

MOROCCO: 1 ♂, High Atlas, Ouirgane, 7 km S, 950 m, 4-VI-2015, leg. C. Hviid, O. Karsholt & K. Larsen; ZMUC. **First country record.**

*Tinagma ocnerosomella* (Stainton, 1850)

BULGARIA: 1 ♀, 10 km NE Balich, Topola, 29-30-V-2010, leg. O. Karsholt; ZMUC; 1 ♂, 5 km E

Balich, Tuzlata, 29-30-V-2010, leg. O. Karsholt; ZMUC; 1 ♂, 5 km N Sandanski, 23-27-V-2010, leg. O. Karsholt; ZMUC. **First country records.**

*Klimeschia transversella* (Zeller, 1839)

ROMANIA: 1 ♂, 1 ♀, Rimitea area, 46° 22' 58"N, 23° 34' 44"E, 29-31-V-2009, leg. O. Karsholt; ZMUC. **First country record.**

*Klimeschia cinereipunctella* (Turati & Fiori, 1930)

CROATIA: 1 ♂, Is. Krk, dint. Di Polijica, 22-IV-2011, leg. et coll. Baldizzone. **First country record.**

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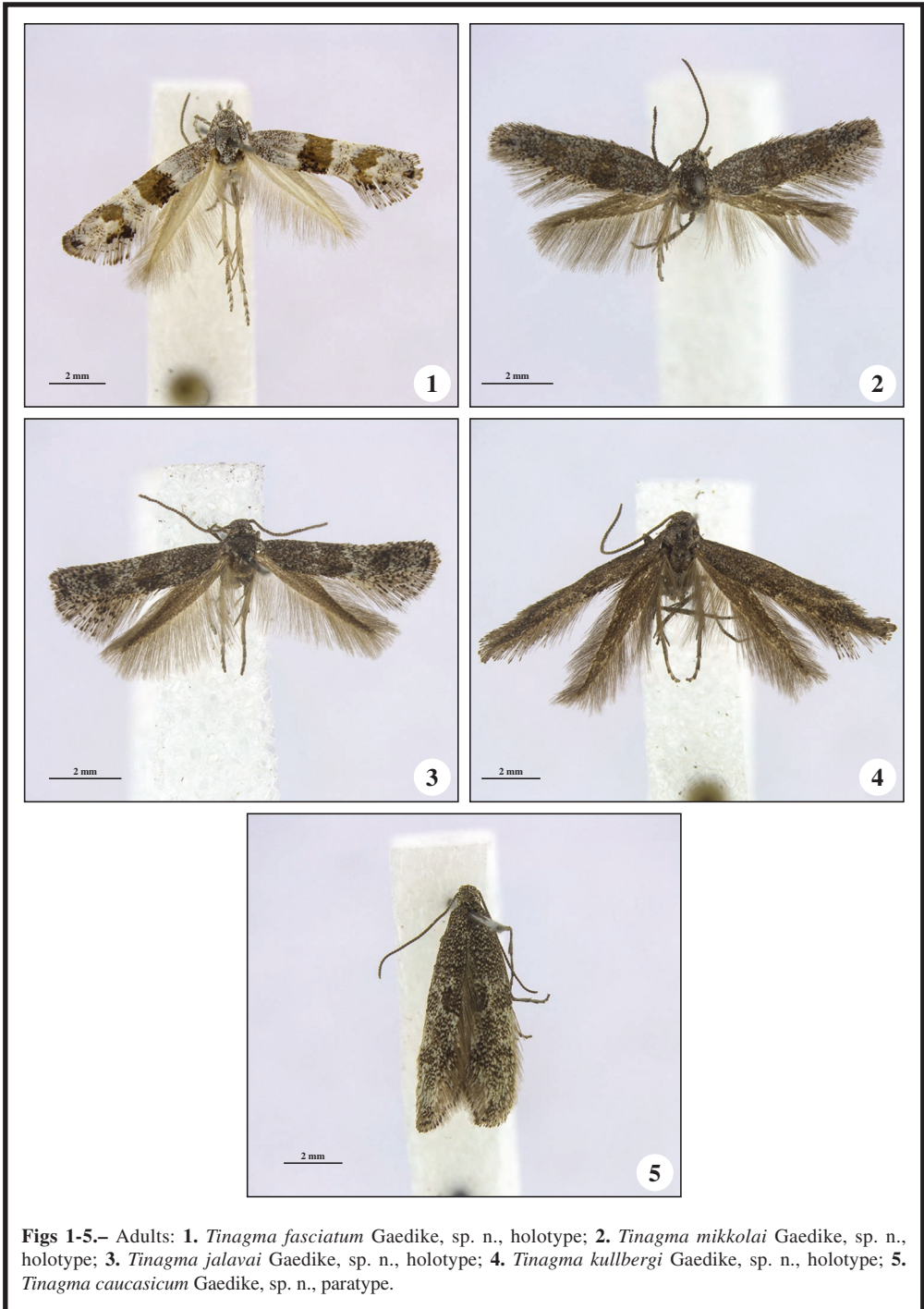
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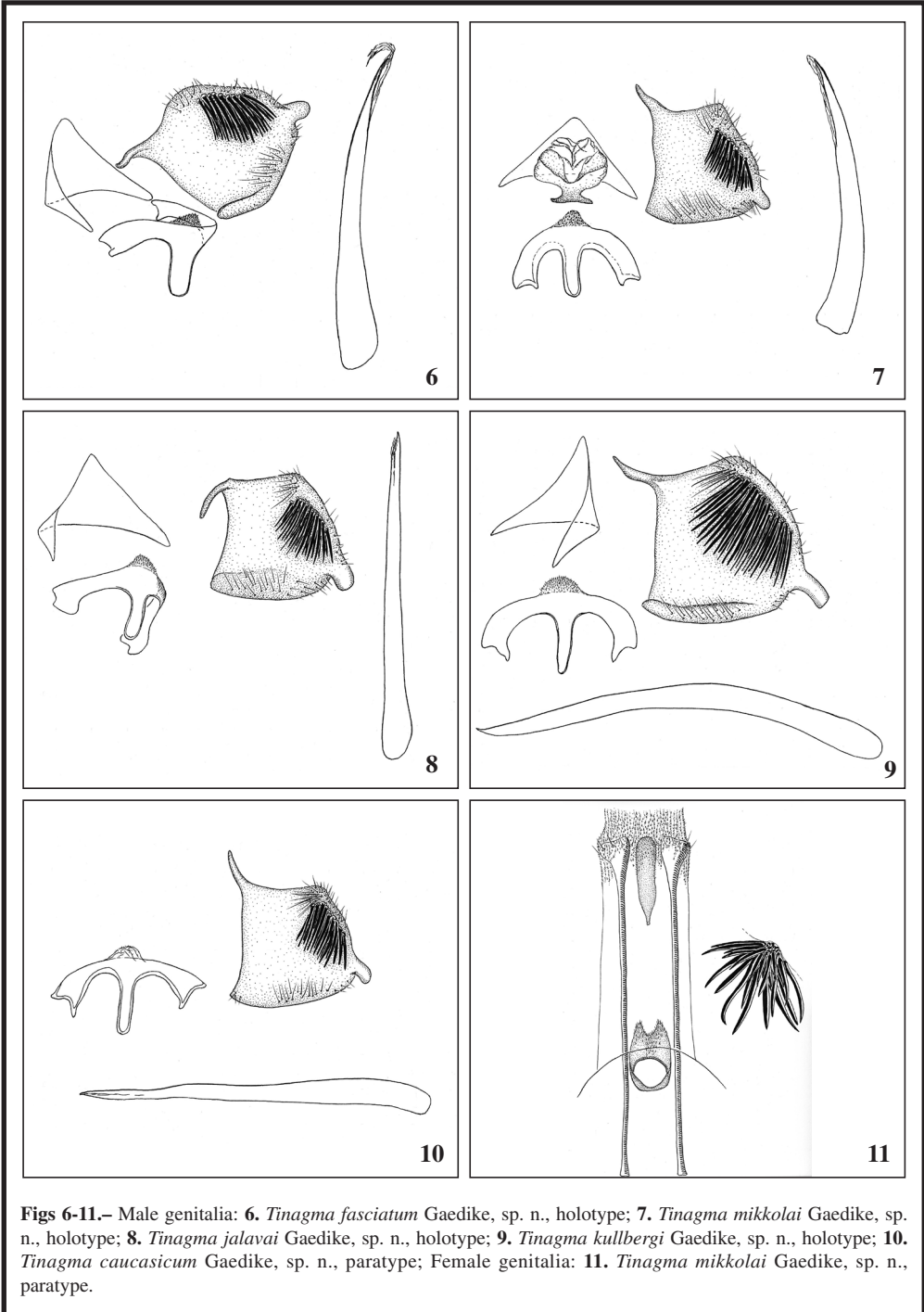
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**Figs 1-5.**— Adults: **1.** *Tinagma fasciatum* Gaedike, sp. n., holotype; **2.** *Tinagma mikkolai* Gaedike, sp. n., holotype; **3.** *Tinagma jalavai* Gaedike, sp. n., holotype; **4.** *Tinagma kullbergi* Gaedike, sp. n., holotype; **5.** *Tinagma caucasicum* Gaedike, sp. n., paratype.



**Figs 6-11.**– Male genitalia: **6.** *Tinagma fasciatum* Gaedike, sp. n., holotype; **7.** *Tinagma mikkolai* Gaedike, sp. n., holotype; **8.** *Tinagma jalavai* Gaedike, sp. n., holotype; **9.** *Tinagma kullbergi* Gaedike, sp. n., holotype; **10.** *Tinagma caucasicum* Gaedike, sp. n., paratype; Female genitalia: **11.** *Tinagma mikkolai* Gaedike, sp. n., paratype.