

## A preliminary key to the Central-Asiatic species of the genus *Tmethis* Fieb. (Orth. Acrid.).

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(With 4 Figures.)

The number of species of the genus *Thmetis* Fieb. in the Russian Central Asia increased strongly during the last few years, mainly because of my new descriptions and those of my Russian colleagues. This makes it my duty to try and give a key for separating them, and the present paper was compiled only to serve as a temporary key to the species already known. The key is obviously artificial, since no natural arrangement can be made, while, as I firmly believe, we know, probably, not more than half of the species in the genus, I hope, however, that the key, together with the illustrations, will serve its purpose and enable one to identify species with reasonable certainty. Of course, in a genus as difficult for systematic studies, as *Tmethis* undoubtedly is, it would be very unsafe to rely on identification by key only, and one must *always* refer to the full original description; an annotated list of species is given for this purpose.

Only the species from the Russian Central Asia are included in the paper; the only exception is *T. cinerascens* St. known from N. E. Persia and likely to occur in the neighbouring Kopet-Dagh mountains of Transcaspia.

It may be suggested that more than one generic unit are at present included in *Tmethis*, such species as *T. muricatus*, *crassus* and *cinerascens* being amply distinct to be considered not congeneric. It would be, however, premature to split up the genus *Tmethis* at the present state of our knowledge of its species, and a thorough revision of the whole group must be undertaken in order to ascertain the value of certain characters. In such a revision not only the species of *Thmetis*, as understood at present, must be included, but also those of *Eremocharis*, *Glyphanus* and *Filchnerella*, Karny. This latter genus, considered by its author to be very distinct from *Tmethis* and even of intermediate position between *Tmethini* and

*Pamphagidae* seems to me very closely allied to such species of *Tmethis*, as *ferghanensis* or *crassus*, and to *Glyphanus*. This makes its occurrence in Mongolia still more interesting from the zoogeographical point of view, indicating a great age of the whole group, but I feel it better to leave this problem until the group is better known.

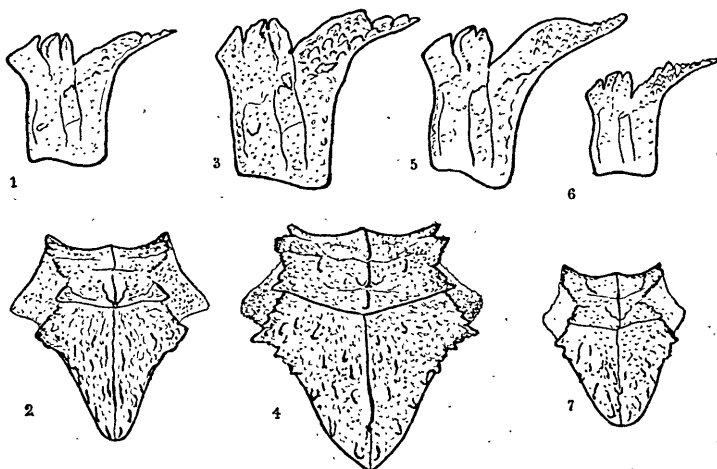


Fig. 1.

### Key to species of *Tmethis* from Central Asia.

- 1 (24). Pronotum distinctly selliform, with the prozona tectiform and the metazona moderately convex or flat. Median keel in prozona raised more than in metazona, where it is often linear, and only sometimes raised, but even in that case strongly lowered towards the typical sulcus (Figs. 1—12).
- 2 (15). Elytra in ♂ extending beyond the hind knees, in ♀ at least reaching them.
- 3 (12). Median keel in prozona high, deeply tridentate (Figs. 1—6).
- 4 (7). Median keel in metazona sharp, raised, suddenly lowered behind and gradually forwards. (Figs. 1—2). Lateral keels strong, dentate. Lateral margins of metazona incurved. Larger.
- 5 (6). Median keel in metazona not high (Figs. 1). Pronotum less rugose and dentate. Hind angle of metazona rounded. Wings with a narrow, often feeble, fascia. — Kirghiz Steppes, S. Russia. 1. *muricatus* (Pall.)

- 6 (5). Median keel in metazona strongly raised, truncate behind. Pronotum with sharp short ridges and strong tubercles (Fig. 2). Hind angle acute. Hind wings black infumate, except in the apical part and in the expanded areas (posterior axillar and radial). Hind tibiae violaceous. — Eastern Kirghiz Steppes.  
2. **jubatus**, sp. n.
- 7 (4). Median keel in metazona low, linear. Lateral margins of metazona convex. Smaller.
- 8 (11). Pronotum with lateral keels.
- 9 (10). Pronotum strongly impressed at the typical sulcus. Median keel in prozona with narrow, pointed teeth (Figs. 4). Lateral keels distinct, dentate. Metazona with numerous short ridges. Wings bluish at the base, with a narrow fascia. Hind tibiae red. — Semiretchye.  
3. **heptapotamicus** (Zub.)
- 10 (9). Pronotum not strongly impressed at the typical sulcus. Median keel in prozona less high, with broad obtuse teeth (Fig. 5). Lateral keels feeble. Wings black infumate, except apically and in the expanded areas. Hind tibiae red. — Fergana.  
4. **transiens** Uv.
- 11 (8). Pronotum without lateral keels, with small, low, round and elongated callous tubercles (Fig. 6). Wings with a narrow, incomplete fascia. Hind tibiae sanguineous. — Zaisan.  
5. **zacharjini** B.-Bienko.
- 12 (3). Median keel in prozona low, not strongly dissected, in metazona very low, linear (Figs. 7, 8). Hind margin of pronotum thick.
- 13 (14). Median keel in prozona practically straight in profile (Fig. 7). Hind angle of metazona rounded. Hind tibiae red. Wings greenish at the base, then with a very broad blackish fascia. Elytra in ♀ extend beyond hind knees. — Kopet-Dagh; Goldnaya steppe.  
6. **semenowi** (Zub.)
- 14 (13). Median keel in prozona convex in profile (Fig. 8). Hind angle of metazona acute. Hind tibiae dark blue, with the base and the apex red. Wings bluish-black, except the apex, which is infumate. Elytra in ♀ not extend beyond hind knees. — Kopet-Dagh; Goldonaya Steppe.  
7. **fuscipennis** (Redt.)
- 15 (2). Elytra in both sexes strongly abbreviated (only in ♂ of *Tm. karatavicus* reaching hind knees.)

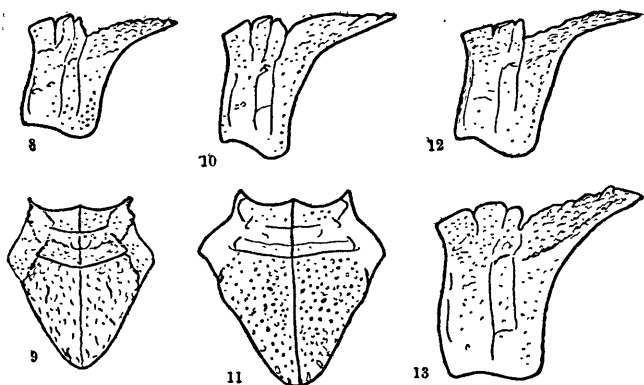


Fig. 2.

- 16 (17). Elytra in ♂ reaching hind knees, in ♀ equal in length to pronotum. Median keel in prozona thick. Hind angle of metazona straight or obtuse. Wings with a broad, but not sharp, infumate fascia, leaving the apex and the dilated areas. Hind tibiae sanguineous. — Karatau. **8. karatavicus** Uv.
- 17 (16). Elytra in ♂ not reaching beyond the middle of hind femora, in ♀ not longer than pronotum.
- 18 (19). Median keel in prozona very high, crest-like (Fig. 9). Metazona with numerous short sharp ridges; hind angle straight or obtuse. **9. tartarus** (Sauss.)  
 a(b). Hind femora inwardly and hind tibiae red. — Central Turkestan; in plains. **9a. tartarus tartarus** (Sauss.)  
 b (a). Hind femora inwardly and hind tibiae yellow. — Mountains near Tashkent. **9b. tartarus montanus** Uv.
- 19 (18). Median keel in prozona low, thick (Figs. 10—12). Hind angle of metazona rounded.
- 20 (23). Median keel in prozona distinctly prominent in profile, tridentate (Figs. 10, 11). Hind tibiae bright red.
- 21 (22). Pronotum with strong and numerous rounded tubercles. Metazona in profile gradually ascending (Fig. 10). — Aulie-Ata and Tchimkent districts. **10. nigrescens** Pyl.
- 22 (21). Pronotum with scattered rounded tubercles; its median impression smooth. Metazona in profile distinctly seliform. (Fig. 11). — Ferghana. **11. ferghanensis** Uv.
- 23 (20). Median keel in prozona very low and thick, in profile scarcely raised, feebly dissected. Pronotum with fairly dense rounded

tubercles (Fig. 12). Hind tibiae sanguineous. — Aulie-Ata district.

12. *crassus* Uv.

24 (1). Pronotum with the median keel not more raised in prozona, than it is in metazona; all transverse sulci narrow; metazona convex or tectiform (Fig. 13). Wings with a narrow, angulate black fascia.

25 (26). Wings blue at the base. Pronotum tectiform. Hind tibiae blackish-blue, or violaceous. — Khiva. 13. *cyanipennis* (Sauss.)

26 (25). Wings yellow at the base. Pronotum scarcely tectiform. Hind tibiae sanguineous. — N. E. Persia. 14. *cinerascens* (St.)

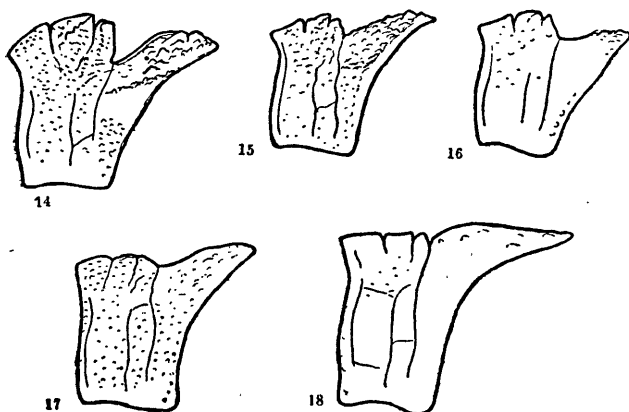


Fig. 3.

### Annotated list of species.

#### 1. *Tmethis muricatus* (Pall.)

1771. *Gryllus muricatus*, Pallas, Reise, I, p. 466.

It has been often stated by various authors that this species is subject to strong individual variations, but no one ever attempted to study carefully the connection between these variations and geographical and ecological conditions. I am fairly certain that such a study would result in defining several constant forms, perhaps even species.

2. *Tmethis jubatus*, sp. n. (Figs. 3, 4, 19).

*Tmethis bilobus* auct. partim (nec Stal!).

♂. Size medium for the genus, strongly rugose and acutely tuberculate; in the habitus similar to *T. muricatus* (Pall.).

Face vertical. Frontal ridge deeply sulcate, with a sharp trans-

verse carinula just above ocellum, in profile strongly depressed below ocellum. Sculpture of the head similar to that in *T. muricatus*, but less regular and ridges and tubercles more acute.

Pronotum shorter, broad and much more rugose than in *T. muricatus*, densely covered with acute tubercles up to the very top of the median keel. First lobe of the keel (in profile) longer than second; third not bent backwards. Metazona as broad as long, with dense tubercles and short, acute and well raised carinulae; margins thin, convex in shape; apical angle acute, not rounded. Lateral keels in metazona strongly projecting sideways, dentate; in prozona acutely triangular and dentate near the hind sulcus, shifted downwards in the anterior part of prozona where they form again a multidentate strong projection. Pleurae acutely tuberculate.

Elytra extending well beyond the hind knees. Wings with the principal veins strongly incassate; transverse veinlets in the dilated areas regular and incassate.

General coloration ochraceous-brown. Elytra with some indefinite greyish streaks and dots, especially along the veins. Wings strongly infumate, except in the apical part, and in the dilated areas. Inner face of hind femora and tibiae violaceous.

Total length 36, pronotum 10, elytra 28, hind femur 14 mm.

Described from a single male taken at Severnaya, Slavgorod district, Omsk province, 3. VII. 1922 (V. Raevsky), received from Mr. V. Berezhkov under the name *T. bilobus*. (Type will be deposited in the Zoological Museum of the Academy of Sciences, Petrograd).

This insect has been always misidentified by previous writers (myself included) as *T. bilobus* St. originally described from the Apsheron peninsula in Transcaucasia. A comparison of our insect with the Transcaucasian one shows striking differences in the shape of pronotum; particularly distinct is the shape of the median carina of metazona, which in *T. bilobus* is gradually lowered behind (Fig. 5); the shape of metazona in *T. bilobus* is similar to that in *T. muricatus*, and thus also widely different from the new species.

### 3. *Tmethis heptapotamicus* (Zub.)

1898. *Eremobia muricata* var. *heptapotamica*, Zubovsky, Ann. Mus. Zool. St. Petersburg., III, p. 103.

1905. *Eremobia stummeri*, Kuthy, Ann. Mus. Nat. Hungar., III, p. 217.

The characters separating this insect from the true *T. muricatus* of Pallas are sufficiently definite and constant to be of specific value.

4. ***Tmethis transiens* Uv.**

1925. *Tmethis transiens*, Uvarov, Journ. Bombay Nat. Hist. Soc. XXX, p. 269.

5. ***Tmethis zacharjini* Bei-Bienko.**

1926. *Tmethis zacharjini*, Bei-Bienko, Ivestia Zap.-Sibirsk. Otd. Russ. Geogr. Obst., V, p. 202, Fig. 2.

6. ***Tmethis semenowi* (Zub.)**

1898. *Eremobia semenowi*, Zubovsky, Horae Soc. Ent. Ross., XXXII, p. 581.

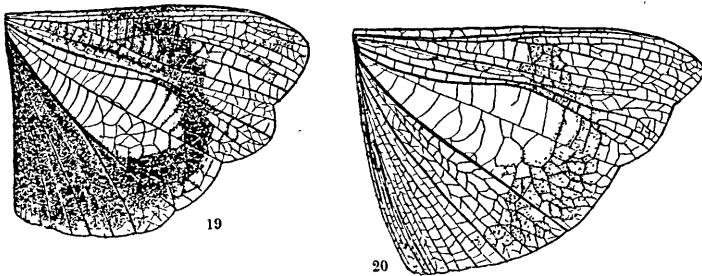


Fig. 4.

7. ***Tmethis fuscipennis* (Redt.)**

1889. *Eremobia fuscipennis*, Redtenbacher, Wien. Ent. Zeit., VIII, p. 28.

8. ***Tmethis karatavicus* Uv.**

1912. *Tmethis bilobus* sbsp. *karatavicus*, Uvarov, Revue Russe d'Entom., XII, p. 212.

Though the original description is very brief, it is clear to me now that the insect represents an independent species and has very little relation to *Tm. jubatus*, which I incorrectly called *bilobus* (see above) at that time.

9 a. ***Tmethis tartarus tartarus* (Sauss.).**

1884. *Eremobia tartara*, Saussure, Prodr. Oedipod, p. 229.

9 b. ***Tmethis tartarus montanus* Uv.**

1925. *Tmethis tartarus montanus*, Uvarov, Journ. Bombay Nat. Hist. Soc., XXX, p. 269.

10. ***Tmethis nigrescens* Pyl.**

1914. *Tmethis nigrescens*, Pylnov, Revue Russe d'Entom. XIV, p. 107, fig. 2.

Originally described from the Tschimkent district, but known to me also from that of Aulie-Ata.

11. *Tmetis ferghanensis* Uv.

1925. *Tmethis ferghanensis*, Uvarov, Journ. Bombay Nat. Hist. Soc., XXX, p. 270.

12. *Tmethis crassus* Uv.

1925. *Tmethis crassus*, Uvarov, Journ. Bombay Nat. Hist. Soc., XXX, p. 271.

13. *Tmethis cyanipennis* (Sauss.).

1884. *Eremobia cyanipennis*, Saussure, Prodr. Oedipod., p. 231.

14. *Tmethis cinerascens* (St.).

1875. *Eremobia cinerascens*, Stal, Bihang Sven. Akad. Handl. III (14), p. 35.

I had an opportunity of studying in the Tiflis Museum a good series of specimens of this species taken near Teheran, at the same place and date. Their study showed a considerable variation in the metazona, which may be strongly tectiform on flat, with all intermediate forms.

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