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Description of four new species from USSR related to *Tychius hauseri* FAUST

(Insecta, Coleoptera, Curculionidae: Tychiinae)

With 8 Figures

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Abstract. Four new species of *Tychius* closely related to *T. hauseri* FAUST from southern USSR are described: *T. konstantinovi* n. sp. (Kazakhstan, Uzbekistan, Tadzhikistan), *T. kostali* n. sp. (Kazakhstan, Uzbekistan), *T. amplus* n. sp. (Armenia) and *T. minor* n. sp. (Crimea, Georgia, Armenia, Azerbajdzan, N. Iran). A key to these and related species is given.

In the revision of the Palearctic *Tychius* (CALDARA, 1990), the study of *Tychius hauseri* FAUST was rendered very difficult due to the presence of a few specimens differing from the type series on the grounds of subtle details. After a careful examination of more numerous material collected in various Soviet Republics, we have now concluded that the specimens belong to a complex of species closely related but dissociable by definite characters. Four of them are now described as new to science.

List of abbreviations

CBo	R. BOROVEC, Nechanice
CK	S. M. JABLOKOFF-KHNZORIAN, Institute of Zoology, Erevan
CKo	M. KOSTÁL, Bratislava
MD	Staatliches Museum für Tierkunde, Dresden
MLe	Institute of Zoology, Leningrad (now: St. Petersburg)
IZMi	Institute of Zoology, Minsk
MMi	Museo di Storia Naturale, Milano

Tychius konstantinovi n. sp.

Holotype ♂ »13. V. 1990, Uzbekistan, Ugamskij range, Sidzhak, h-1300 m, *Astragalus ugamicus*, Karasjov leg.« (MLe). **Paratypes** 2 ♂♂ and 3 ♀♀ same data as holotype (IZMi, MMi); 2 ♂♂ »12. VI. 1989, Uzbekistan, Chatkalskij range, Parkent, Konstantinov leg.« (IZMi); 3 ♂♂ and 1 ♀ »USSR, Uzbekistan, Tien-Shan Mts., Chatkal valley, R. Borovec Igt./80 km NE Tashkent, 18.-19. 5. 1985, 1500 m. n. m.« (CBo); 3 ♂♂ »Uzbekistan or, Tien-Shan Mts., Chatkal valley, M. Kostal Igt./Aurachmat, 100 km NE Tashkent, 1400 m, 18.-19. V. 1985« (CKo); 1 ♂ »Uzbekistan mer. or, Hissar Mts., M. Kostal Igt./Kaltakul p. Yakkabag 5 km E, 1700 m, 5. VI. 1985« (CKo); 5 ♂♂ and 6 ♀♀ »22. V. 1990, Kazakhstan, Talasskij Alatau, Aksu river, h-1800 m, *Astragalus* sp., Karasjov leg.« (IZMi, MD, MMi); 1 ♂ »Tadzhikistan, Nyrek, on the dam, Korotjaev leg., 7. 5. 83« (MLe); 2 ♂♂ »Nyrek reserv., 25 km beyond Nyrek, Sirhy 900 m, 17. V. 1983, Korotjaev leg.« (MLe); 1 ♂ ditto except »10. VI. 1983« (MLe).

Description Length: 2.5-3.5 mm.

Integument: Dark brown except rostrum, antennae and legs ferruginous; scales on dorsum rather thickened, recumbent, subelliptical, mostly elongate and brown-greyish (length/width 5-7), and larger and shorter whitish (l/w 3-5) along sides of pronotum, midline of body and elytral interstriae 1 and 7. Scales of elytral interstriae unevenly arranged in 4-5 rows, striae well visible with a row of thin hairlike scales. Abdomen densely covered with brown-greyish subelliptical scales of various width.

Head: Eyes convex, rather prominent. Frons slightly narrower than rostrum at base. Rostrum (rostrum length/prothorax length ♂ 0.79-0.86, ♀ 0.85-0.90) in dorsal view subparallel sided, in lateral view slightly

curved, feebly narrowing in ♂ and about of same thickness in ♀ from base to apex. Antennal funicle of seven articles, article 1 twice the length of article 2.

Prothorax: Rather transverse (w/l 1.11-1.19), curved at sides from base, widest in middle, abruptly narrowed near apex, distinctly convex on dorsum.

Elytra: Subrectangular, short (l/w 1.30-1.41), rather convex, distinctly wider at base than prothorax (elytral width/prothorax width 1.26-1.32), humeri prominent.

Legs: Femora unarmed, profemora and protibiae without sexual dimorphism; tarsal article 3 bilobate and distinctly wider than article 2, claw processes $\frac{2}{3}$ as long as claw (fig. 7).

Genitalia: ♂: median lobe figs. 4 and 5; ♀: spermatheca and spiculum ventrale as in *T. hauseri* FAUST (CALDARA, I. c.).

Variability: The narrow scales are slightly variable in width and thickness on pronotum as well as on elytra, the elytra sometimes have sides slightly curved from base. The median lobe of aedeagus is always robust, but the basal portion is more or less abruptly narrowed also in specimens of the same population.

Derivatio nominis. *T. konstantinovi* is named in honour of one of the collectors of typical specimens, Vladimir KONSTANTINOV.

Comparative notes. - Due to the pattern of dorsal vestiture, *T. konstantinovi* n. sp. is the species more closely related to *T. hauseri*, from which it differs by the more elongate claw processes, by the median lobe distinctly wider and more robust and with thicker apodemes, and by the larger size on average.

***Tychius kostali* n. sp.**

Holotype ♂ »22. V. 1990, Kazakhstan, Talasskij Alatau, Aksu river, h-1800 m, Astragalus ugamicus, Karasjov leg.« (IZMi). **Paratypes** 14 ♂♂ and 15 ♀♀ same data as holotype (IZMi, MMi); 2 ♂♂ and 2 ♀♀ »20. V. 1990, Kazakhstan, Talasskij Alatau, Dzhabagly river, h-2000 m, Astragalus neolipskyanus, Karasjov leg.« (IZMi); 6 ♂♂ and 5 ♀♀ »13. V. 1990, Uzbekistan, Ugamskij range, Sidzhak, h-1300 m, Karasjov leg.« (IZMi); 7 ♂♂ and 5 ♀♀ »Uzbekistan or., Tien-Shan Mts., Pskem Ridge, M. Kostal lgt./Nanai pr. Charvak 7 km NE, 2000 m, 13-14. VI. 1987/on Astragalus sp.« (MMi, CKo).

Description - Length: 2.5-3.3 mm.

Integument: Blackish except apex of rostrum, scape and funicle of antennae, tibiae at apex and tarsi ferruginous; rather visible on dorsum between scales that are recumbent, subelliptical, mostly narrow (l/w 4-6), dark brown on pronotum, brown-greyish on elytral interstriae (a little lighter and denser on the odd ones), wider and whitish (l/w 3-4) only along sides and midline of pronotum and on elytral interstriae 1 and 7. Scales unevenly arranged on elytral interstriae, striae well visible with a row of thin hair-like scales. Abdomen covered with greyish subelliptical scales.

Head: Eyes globose, somewhat prominent. Frons slightly narrower than rostrum at base. Rostrum (rostrum length/prothorax length ♂ 0.85-0.90, ♀ 0.94-0.98) in dorsal view subparallel sided, in lateral view curved especially at base where it is slightly wider. Antennal funicle of seven articles, article 1 1.5 times as long as article 2.

Prothorax: Rather transverse (w/l 1.12-1.21), sides slightly curved from base, widest in middle, distinctly narrowed near apex, convex on dorsum.

Elytra: Subrectangular (l/w 1.34-1.43), with prominent humeri, distinctly wider at base than prothorax (elytral width/prothorax width 1.26-1.32), convex.

Legs: Femora unarmed, profemora and protibiae without sexual dimorphism; tarsal article 3 bilobate and distinctly wider than article 2, claw processes small, half as long as claw.

Genitalia: ♂ median lobe fig. 3; ♀: spermatheca and spiculum ventrale as in *T. hauseri* FAUST (CALDARA, I. c.).

Variability: Two specimens have brown tibiae, three other specimens have only feebly prominent eyes, the elytral sides sometimes are slightly curved with the widest point in middle.

Derivatio nominis. - We take the pleasure in naming the species for our friend and colleague Michael KOŠÁL.

Comparative notes. It differs from the related species by the black femora (and usually also by the black tibiae). Moreover, in *T. kostali* the sides of the median lobe distinctly widen from base to apex.

Tychius amplus n. sp.

Holotype ♂ »6. vi. 1987, Armenia, Hosrov reservation, h-2000 m, *Astragalus brachycarpus*, Karasjov leg.« (IZMi). **Paratypes**: 2 ♂♂ and 3 ♀♀ same data as holotype (IZMi); 1 ♂ ditto except »1. VI. 1987« (IZMi); 1 ♂ ditto except »4. VI. 1987« (IZMi); 6 ♂♂ and 5 ♀♀ ditto except »5. vi. 1987« (IZMi, MD, MMi); 1 ♀ ditto except »11. VI. 1987« (IZMi); 1 ♂ »17. V. 1988, Armenia, Hosrov reserv., Konstantinov leg.« (IZMi); 1 ♂ ditto except »18. V. 1988« (IZMi); 1 ♂ and 1 ♀ ditto except »31. V. 72, Sygonjaev leg.« (MLE); 1 ♂ »5.-8. VI. 1986, Armenia, Garni, Romantsov leg.« (IZMi).

Description Length: 3.2-4.1 mm.

Integument: Blackish except rostrum, antennae and legs brown; slightly visible on dorsum (especially pronotum) between scales that are recumbent, subelliptical, mostly elongate (l/w 4-6), dark brown on pronotum, light brown on elytral interstriae (often slightly lighter on the odd ones). Midline and sides in basal half of pronotum and elytral interstriae 1 and 7 covered with wider (l/w 3-4) white scales. Elytral interstriae with scales unevenly arranged, striae somewhat visible with a row of thin hairlike scales. Abdomen covered with brown-greyish subelliptical scales.

Head: Eyes convex, rather prominent. Frons feebly narrower than rostrum at base. Rostrum (rostrum length/prothorax length ♂ 0.81-0.87, ♀ 0.88-0.97) in dorsal view subparallel sided, in lateral view curved and only feebly narrower at apex than at base. Antennal funicle of seven articles, article 1 about twice as long as article 2.

Prothorax: Transverse, with rounded sides from base, widest in middle, strongly narrowed near apex (w/l 1.13-1.22), convex on dorsum.

Elytra: Subrectangular (l/w 1.33-1.37), with prominent humeri, slightly wider at base than prothorax (elytral width/prothorax width 1.22-1.33), somewhat convex.

Legs: Femora unarmed, profemora and protibiae without sexual dimorphism; tarsal article 3 bilobate and distinctly wider than article 2, claw processes $\frac{1}{3}$ as long as claw.

Genitalia: ♂: median lobe fig. 2; ♀: spermatheca and spiculum ventrale as in *T. hauseri* FAUST (Caldara, l. c.).

Variability: The difference in colour between the scales of odd and those of even elytral interstriae is more or less marked. The narrower scales of dorsal vestiture change a little in length. The sides of prothorax are more or less curved, while the sides of elytra sometimes are slightly curved.

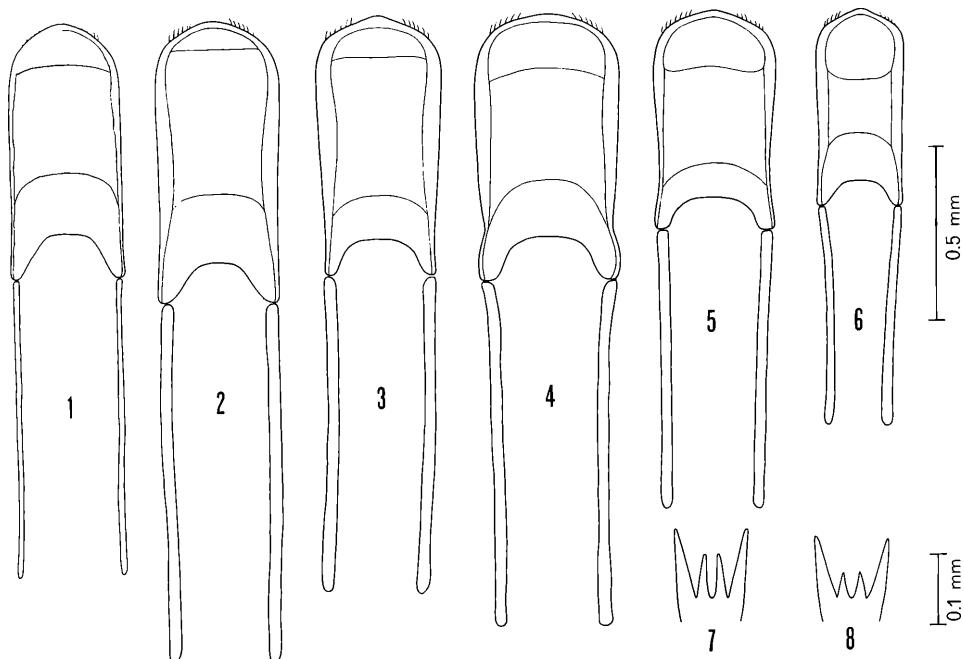
Comparative notes. *T. amplus* differs from the related species by the larger size on average, the prothorax distinctly more transverse in the basal two thirds, more convex on dorsum and more abruptly narrowed at apex, and the shape of median lobe.

Tychius minor n. sp.

Holotype: ♂ »5. VI. 1987, Armenia, Hosrov reservation, h-2000 m, *Vicia elegans*, Karasjov leg.« (MLE). **Paratypes**: 1 ♂ and 3 ♀♀ same data as holotype (IZMi, MMi); 1 ♀ ditto except »3. VI. 1987« (IZMi); 1 ♂ ditto except »1. VI. 1987, h-1500« (IZMi); 1 ♂ and 1 ♀ ditto except »11. VI. 1987, h-1500« (IZMi); 1 ♂ ditto except »12. VI. 1987, h-1500« (IZMi); 1 ♂ and 1 ♀ »18. V. 1988, Armenia, Hosrov reserv., Konstantinov leg.« (IZMi); 7 ♂♂ and 1 ♀ »25. VI. 1988, Armenia, Hosrov reserv., Kalashjan leg.« (IZMi, MD, MMi); 1 ♀ »5.-10. VI. 1984, Armenia, Bjurakan, Kalashjan leg.« (IZMi); 1 ♂ »Sevan, Shorza, Armenia, 12. 6. 49« (CK); 1 ♂ and 1 ♀ »Shiraki, Vaschlovani, Georgia, 6. 5. 71« (CK); 1 ♂ »Shiraki, Pantishara, Georgia, 7. 5. 71« (CK); 2 ♀♀ »Tbilisi, Krasnyj most, Georgia, 9. 5. 75« (CK); 1 ♀ »Georgia, Shirak-Ehldari, Vashlovanskij forest, 23. V. 1955« (MLE); 1 ♂ and 1 ♀ »East Georgia, Vashlovanskij reserv., 23. V. 1977, Kryzhanovskij leg.« (MLE); 1 ♂ »2. VII. 1902, Crimea, Eupatoria, Jakovlev leg.« (IZMi); 1 ♀ »16. VI. 1983, Nachiczevanj, Buzgov, Kazjucitz leg.« (IZMi); 1 ♂ »Iran, Shahryd, Kirienko leg.« (MLE).

Description Length: 2.0-2.7 mm.

Integument: Dark brown except rostrum, antennae and legs ferruginous; distinctly visible on dorsum between scales that are recumbent, subelliptical, mostly narrow (l/w 5-7), dark brown on pronotum and elytral interstria 2 and brown-greyish on the other interstriae (slightly darker on the even ones), wider (l/w 3-4) and white on basal half of pronotum (midline and sides) and interstriae 1 and 7. The latter



Figs. 1-8: Median lobe of aedeagus in dorsal view (1-6) and claws (7-8).

1: *Tychius hauseri* FAUST - 2: *T. amplus* n. sp. - 3: *T. kostali* n. sp. - 4+5: *T. konstantinovi* n. sp. (loc. typ.) - 6: *T. minor* n. sp. - 7: *T. konstantinovi* n. sp. - 8: *T. minor* n. sp.

type of scales covers the abdomen also, not densely. Scales on elytral interstriae confusedly arranged; striae well visible with a row of thin hairlike scales.

Head: Eyes slightly prominent. Frons only feebly narrower than rostrum at base. Rostrum (rostrum length/prothorax length σ 0.75-0.82, ♀ 0.83-0.88) in dorsal view subparallel sided, in lateral view of about same thickness from base to apex and slightly curved. Antennae short, of seven articles, article 1 about 1.5 times as long as article 2.

Prothorax: Slightly transverse (w/l 1.08-1.16), with slightly curved sides from base, widest in middle, narrowed near apex, slightly convex on dorsum.

Elytra: Subrectangular (l/w 1.28-1.38), distinctly wider at base than prothorax (elytral width/prothorax width 1.23-1.32), with prominent humeri, somewhat convex.

Legs: Short, femora unarmed, profemora and protibiae without sexual dimorphism; tarsal article 3 bilobate and distinctly wider than article 2, claw processes $1/3$ as long as claws (fig. 8).

Genitalia: ♂: median lobe fig. 6; ♀: spermatheca and spiculum ventrale as in *T. hauseri* FAUST (CALDARA, I. c.).

Variability: Sides of prothorax and elytra more or less curved, the narrower scales on pronotum and elytra change a little in width and thickness. Elytral pattern from uniformly greyish to striped dark and light brown.

Comparative notes. *T. minor* is the smallest of the species related to *T. hauseri* FAUST. It has very short claw processes and the shape of the median lobe is more related to that of *T. astragali* BECKER (CALDARA, I. c.). Moreover, unlike the other related species (*T. amplus* included, which occurs in sympatry with it in Armenia), that have hosts in genus *Astragalus*, *T. minor* appears to live on *Vicia*.

Key to the species related to *T. hauseri* FAUST

1	Rostrum black to apex proximity.	2
—	Rostrum reddish.	3
2	Femora and usually tibiae blackish. Scales covering elytral interstria 7 wider than those covering contiguous interstriae. Uzbekistan, Kazakhstan.	<i>T. kostali</i> n. sp.
—	Legs completely reddish. Scales covering elytral interstria 7 as wide as those covering contiguous interstriae. Turkey.	<i>T. lodosi</i> HOFFMANN
3	Pronotum distinctly convex on disc and abruptly narrowed near apex, with vitta of white scales along midline from base to half. Large size (length 3.2-4.1 mm). Armenia.	<i>T. amplus</i> n. sp.
—	Pronotum slightly convex on disc and less strongly narrowed near apex, usually with complete white vitta of scales along midline.	4
4	Claw processes elongate, about $\frac{2}{3}$ of length of claws. Length 2.5-3.5 mm. Uzbekistan, Kazakhstan, Tadzhikistan.	<i>T. konstantinovi</i> n. sp.
—	Claw processes small, about $\frac{1}{3}$ of length of claws.	5
5	Length 2.5-3.8 mm. Usually femora more slender, eyes more convex, rostrum more curved at antennal insertion and in female more elongate. Southern Soviet Republics.	<i>T. hauseri</i> FAUST
—	Length 2.0-2.7 mm. Usually femora more stout, eyes more flat, rostrum less curved at antennal insertion and in female shorter. Crimea, Georgia, Armenia, Azerbajdzan, N. Iran.	<i>T. minor</i> n. sp.

A c k n o w l e d g e m e n t s

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R e f e r e n c e

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