Published December 14, 1999

Klapalekiana, **35**: 13-23, 1999
ISSN 1210-6100

Five new species of *Notoxus* (Coleoptera: Anthicidae) from Palaearctic Asia, with redescription of *N. quadrimaculatus*

Pět nových druhů rodu *Notoxus* (Coleoptera: Anthicidae) z palearktické Asie, s redeskripcí *N. quadrimaculatus*

Zbyněk KEJVAL

Muzeum Chodska, CZ-344 01 Domažlice, Czech Republic

Taxonomy, Coleoptera, Anthicidae, Notoxinae, *Notoxus*, new species, synonymy, key, Palaearctic region

Abstract. *Notoxus quadrimaculatus* Heyden, 1887 is redescribed and five new related species are described: *N. centralasiae* sp. n. (Uzbekistan), *N. cechovskyi* sp. n. (Turkmenistan, Afghanistan), *N. golestanus* sp. n. (Iran, Turkmenistan), *N. montivagus* sp. n. (Uzbekistan) and *N. strejceki* sp. n. (Tajikistan). The following new synonymy is proposed: *N. quadrimaculatus* Heyden, 1887 = *N. quadrimaculatus* var. *bangi* Pic, 1902, syn. n. Lectotypes of *N. quadrimaculatus* Heyden, 1887 and *N. quadrimaculatus* var. *bangi* Pic, 1902 are designated. A key to the males of all species studied is provided.

INTRODUCTION

Notoxus Geoffroy, 1762 is the largest genus of the subfamily Notoxinae, comprising about 300 species, of which nearly 30 are known to occur in the Palaearctic region. While European *Notoxus* are well treated in many modern keys (Bonadona 1971, 1989, 1991; Bucciarelli 1989), Asian species are generally poorly known and the only revisional work by Heberdey (1936), dealing with at least part of them (Palaearctic species with light coloured elytral apices), is more than sixty years old. The gap in the knowledge of the Asian fauna is also evidenced by the discovery of five unknown species, which are described in this paper. At least two of them, *N. golestanus* sp. n. and *N. cechovskyi* sp. n., have been previously misidentified and "hidden" under *N. quadrimaculatus* Heyden, 1887.

MATERIAL AND METHODS

The following abbreviations of collections are used throughout the text: DEIC - Deutsches Entomologisches Institut, Eberswalde; KMVC - Muzeum východních Čech, Hradec Králové; MMBC - Moravské zemské muzeum, Brno; MNHN - Museum national d'Histoire naturelle, Paris; NHMW - Naturhistorisches Museum, Wien; NMPC - Národní muzeum, Praha; ZHMB - Zoologisches Museum an der Humboldt Universität, Berlin; CKD - coll. Z. Kejval, Domažlice.

Label data are given within quotation marks. Author's comments are found in square brackets. Separate labels are indicated by semicolon. Body length is measured from the elytral apices to the apical margin of pronotal horn. The term sternite VII (tergite VII) indicates the last exposed, morphologically seventh, abdominal sternite (tergite). The term sternite VIII is used for the retracted, morphologically eight, abdominal sternite.

SYSTEMATICS

A key to males of the species related with *N. quadrimaculatus* Heyden, 1887

1 Sternite VII (Fig. 14) with posterior margin sinuous, not emarginate apically; aedeagus as in Figs 12, 13; parameres truncate apically. ..... *N. cechovskyi* sp. n.
- Sternite VII with posterior margin more or less emarginate apically; parameres pointed apically. 2
2 Aedeagus as in Figs 1, 2; lateral projections of penis club-like, rounded apically; parameres conspicuously long, exceeding penis; sternite VII as in Fig. 3. ..... *N. quadrimaculatus* Heyden
- Lateral projections of penis pointed; parameres shorter, as long as or at most moderately longer than penis. 3
3 Aedeagus as in Figs 18, 19; apical, pointed portion of penis slender, with a small, but rather distinct subapical dent; posterior margin of sternite VII deeply emarginate (Fig. 20). ..... *N. montivagus* sp. n.
- Apical portion of penis more robust, without a dent; posterior margin of sternite VII at most feebly emarginate (Figs 8, 11, 17). 4
4 Aedeagus as in Figs 15, 16; parameres rather long and slim; lateral projections of penis slim apically. ..... *N. strejceki* sp. n.
- Parameres thicker, shorter; lateral projections of penis enlarged, somewhat flattened apically. 5
5 Aedeagus as in Figs 6, 7; parameres distinctly flattened, enlarged apically. ..... *N. centralasiae* sp. n.
- Aedeagus as in Figs 9, 10; parameres cylindrical, narrowed apically. ..... *N. golestanus* sp. n.

Notoxus quadrimaculatus Heyden, 1887
(Figs 1-5, 21, 24, 27)

Notoxus quadrimaculatus Heyden, 1887: 315.
Notoxus quadrimaculatus var. *Bangi* Pic, 1902: 1; **syn. n.**

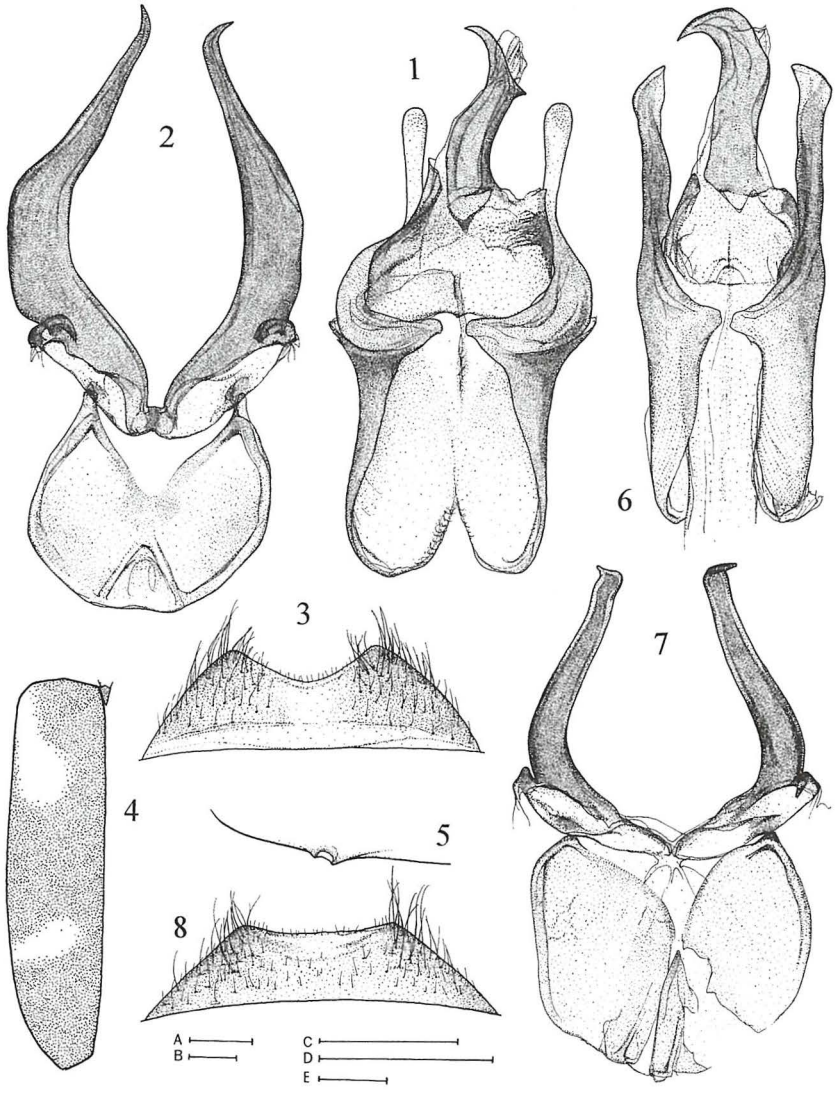
Type material. *N. quadrimaculatus* - 1 ♂ [herewith designated as lectotype]: "[small purple label]; Alexander Gebirg; Turkes. Staudg. 86; 380; Syntypus [red label, printed]; Coll. Heyden; 4-maculatus; coll. L. v. Heyden DE Eberswalde; Notoxus quadrimaculatus Heyd" (DEIC). Paralectotype, 1 ♂, "[small purple label]; Alexander Gebirg; Turkest. Staudg. 86; type [handwritten]; TYPE [red label, printed]; Muséum Paris Coll. M. Pic; Notoxus 4. maculatus Heyd. 2: exempl." (MNHN).

N. quadrimaculatus var. *bangi* - 1 ♂ [herewith designated as lectotype]: "[small brown label]; Aulie Ata Turkestan; TYPE [red label, printed]; Muséum Paris Coll. M. Pic; v. Bangi Pic" (MNHN). Paralectotypes: 1 ♀, same data as lectotype, without the last label (MNHN); 7 ♂♂, 8 ♀♀, same data, but "Aula Ata Turkestan" [sic!, newly written] (MNHN); 1 ♀, "Auli Ata Turkestan [sic!]; co-type [pink label, handwritten]; MUSÉUM PARIS coll. Bonadona; 4 maculatus var. Bangi Pic" (MNHN); 1 ♀, "Auli Ata Turkestan" [sic!]; PARATYPE [red label, printed]; MUSÉUM PARIS coll. Bonadona" (MNHN).

Additional material examined. 1 ♂, "Turkestan, Syr-Darja" (NMPC); 2 ♂♂, "Kazakhstan, Perovsk [Kzyl-Orda]" (coll. Pic, MNHN).

Redescription. Body length 3.0-4.0 mm. Brown to dark brown; pronotum sometimes lighter coloured, rufous-brown; legs, antennae and palpi rufous; each elytron (Fig. 4) with two, pale-yellow spots, not touching neither lateral margins nor suture; anterior spots larger, longitudinal, reaching over humeri; posterior spots round to transversely oval, situated in posterior half of elytra.

Head large, conspicuously wide; tempora short, with lateral outlines moderately convex in dorsal view; posterior temporal angles rounded; frons almost flat, without depressions; vertex distinctly vaulted; mandibular explanation wide; eyes moderately large, moderately convex, slight-



Figs 1-8. 1-5: *N. quadrimaculatus* Heyden, 1887: 1 - penis; 2 - tegmen; 3 - male sternite VII; 4 - elytron; 5 - apex of elytron. 6-8: *N. centralasiae* sp. n.: 6 - penis; 7 - tegmen; 8 - male sternite VII. Scale (0.1 mm): A - 1, 2, 6, 7; B - 3, 8; C - 5; D - 4. Scale (0.5 mm): E - 4.

Obr. 1-8. 1-5: *N. quadrimaculatus* Heyden, 1887: 1 - penis; 2 - tegmen; 3 -sternit VII samce; 4 - krovka; 5 - apex krovky. 6-8: *N. centralasiae* sp. n.: 6 - penis; 7 - tegmen; 8 - sternit VII samce. Měřítko (0,1 mm): A - 1, 2, 6, 7; B - 3; C - 5; D - 8. Měřítko (0,5 mm): E - 4.

ly protruding from lateral outlines of head; dorsal surface finely punctured and sparsely covered by pale, decumbent setae; few semierect setae present along inner margins and in front of eyes.

Antennae comparatively stout; antennomeres VII-IX shortly oval; antennomere X globose, nearly as long as wide; antennomere XI 2.1 times as long as wide and as antennomere X, slightly narrowed behind midlength.

Pronotum (including horn) 1.4 times as long as wide; pronotal horn rather stout; lateral margins of horn somewhat upturned, nearly straight, at most with 1-2 minute crenulations posteriorly; horn-crest feebly raised, evenly sloping toward apex; punctation and pubescence similar to that of head; dorsal surface of horn rugose; setae pointing mostly to dorso-median line; antebasal groove with band of setae distinctly interrupted medially.

Elytra twice as long as wide, rather parallel-sided; humeral angles prominent; hind wings fully developed; postscutellar impression indistinct; elytral apices in male modified (Fig. 5), each with round, somewhat raised opening of elytral gland; surface distinctly punctured, covered by short, pale decumbent setae; punctures much coarser than those of head and pronotum, becoming somewhat finer apically.

Male sternite VII (Fig. 3) with posterior margin deeply emarginate.

Aedeagus as in Figs 1, 2; apical portion of penis slender, moderately curved distally, pointed, with small, thorn-like dent at distal half; lateral projections of penis much shorter than apical portion, club-like, rounded apically; parameres conspicuously long, somewhat asymmetrical, distinctly exceeding penis, their apices pointed, curved laterad.

Female sternite VII (Fig. 24) with posterior margin moderately emarginate; female tergite VII (Fig. 27) regularly rounded apically, with lateral outlines slightly concave in distal half; female sternite VIII (Fig. 21) reduced, largely membranous, feebly sclerotized laterally; female tergite VIII membranous; styli robust, triangular, tapering apically.

Sexual dimorphism. Female somewhat more robust than male; elytra 1.8 times as long as wide, their apices truncate, simple.

Distribution. South-east Kazakhstan.

Differential diagnosis. Males of this species resemble those of *N. montivagus* sp. n. by the deeply emarginate sternite VII and by the presence of a small process at the midlength of the apical portion of penis. However, they differ from the latter mainly by the conspicuously long parameres and by the club-shaped, straight lateral projections of penis (the lateral projections are pointed and distinctly curved in *N. montivagus* sp. n).

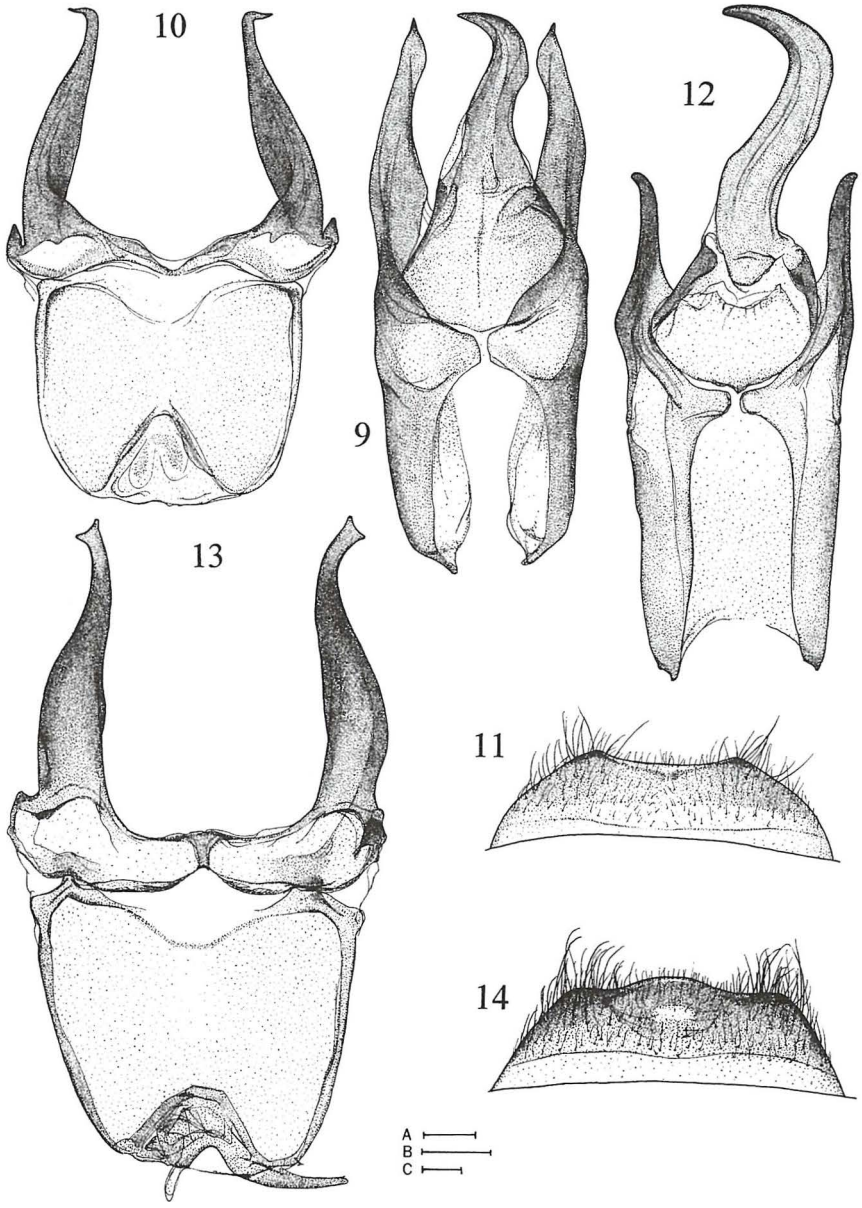
Notoxus centralasiae sp. n.

(Figs 6-8, 22, 25, 28)

Type material. Holotype ♂: "Asia centr. Coll. Obenberger [printed in black frame]; Jangi Kuduk, Buchara c., Malý legit." (NMPC). Paratypes: 1 ♂, 4 ♀♀, same data as holotype (NMPC, CKD).

Description. Body length 3.4-4.0 mm. In most of external characters identical with *N. quadrimaculatus,* but differing as follows:

Pronotal horn somewhat longer and more slender. Male sternite VII (Fig. 8) with posterior margin shallowly emarginate. Aedeagus as in Figs 6, 7; apical portion of penis long, rather stout, distinctly curved apically; lateral projections of penis long, not exceeding its apex, nearly straight,



Figs 9-14. 9-11: *N. golestanus* sp. n.: 9 - penis; 10 - tegmen; 11 - male sternite VII. 12-14: *N. cechovskyi* sp. n.: 12 - penis; 13 - tegmen; 14 - male sternite VII. Scale (0.1 mm): A - 9-11; B - 12, 13; C - 14.
Obr. 9-14. 9-11: *N. golestanus* sp. n.: 9 - penis; 10 - tegmen; 11 - sternit VII samce. 12-14: *N. cechovskyi* sp. n.: 12 - penis; 13 - tegmen; 14 - sternit VII samce. Měřítko (0,1 mm): A - 9-11; B - 12, 13; C - 14.

somewhat enlarged, flattened apically; parameres hardly exceeding penis, flattened and distinctly curved apically. Female sternite VII (Fig. 25) with posterior margin moderately emarginate apically; female tergite VII (Fig. 28) regularly rounded apically, with lateral outlines nearly straight in distal half; female sternite VIII (Fig. 22) well developed, composed of two sclerotized plates, rounded apically; styli convergent, flattened, bluntly pointed apically.

Etymology. Named after the region in which the species was discovered.

Distribution. Uzbekistan.

Differential diagnosis. *N. centralasiae* sp. n. is similar to *N. golestanus* sp. n. in the form of penis. It differs from the latter by its smaller size, lighter colouration, as well as by many details in the form of aedeagus, e. g., the lateral projections of penis are more slender proximally, the apical portion of penis more curved and distinctly longer than the lateral projections, and parameres are flattened apically in *N. centralasiae* sp. n.

Notoxus golestanus sp. n.
(Figs 9-11)

Type material. Holotype ♂: "Nord-IRAN, 50-70 km östl. Minudasht, Golestan Forest, 450-700 m, leg. Holzschuh & Ressl" (NMPC). Paratype, 1 ♂, "Notoxus tetragraphus i. l. m. n [illegible] Turcmen. v. Semenow; N. 4 maculatus Heyd. 1887 Turcmenia v Semenow; Coll. Reitter; Muséum Paris Coll. M. Pic" (MNHN).

Description. Body length 4.3 mm. In most of external characters identical with *N. quadrimaculatus*, but differing as follows:

Larger species. Dark brown to piceous black, legs, antennae, palpi and abdominal segments lighter. Male sternite VII (Fig. 11) with posterior margin shallowly emarginate. Aedeagus as in Figs 9, 10; apical portion of penis moderately curved; lateral projections of penis as long as its apical portion, straight, rather stout proximally, somewhat flattened and pointed apically; parameres hardly exceeding penis, their apices slim, distinctly curved laterad.

Female unknown.

Etymology. Named after the type locality.

Distribution. North Iran, Turkmenistan.

Differential diagnosis. *N. golestanus* sp. n. resembles *N. centralasiae* sp. n. by the general form of male sternite VII and the form of penis. For their separation, see the differential diagnosis of the latter and the key.

Notoxus strejceki sp. n.
(Figs 15-17)

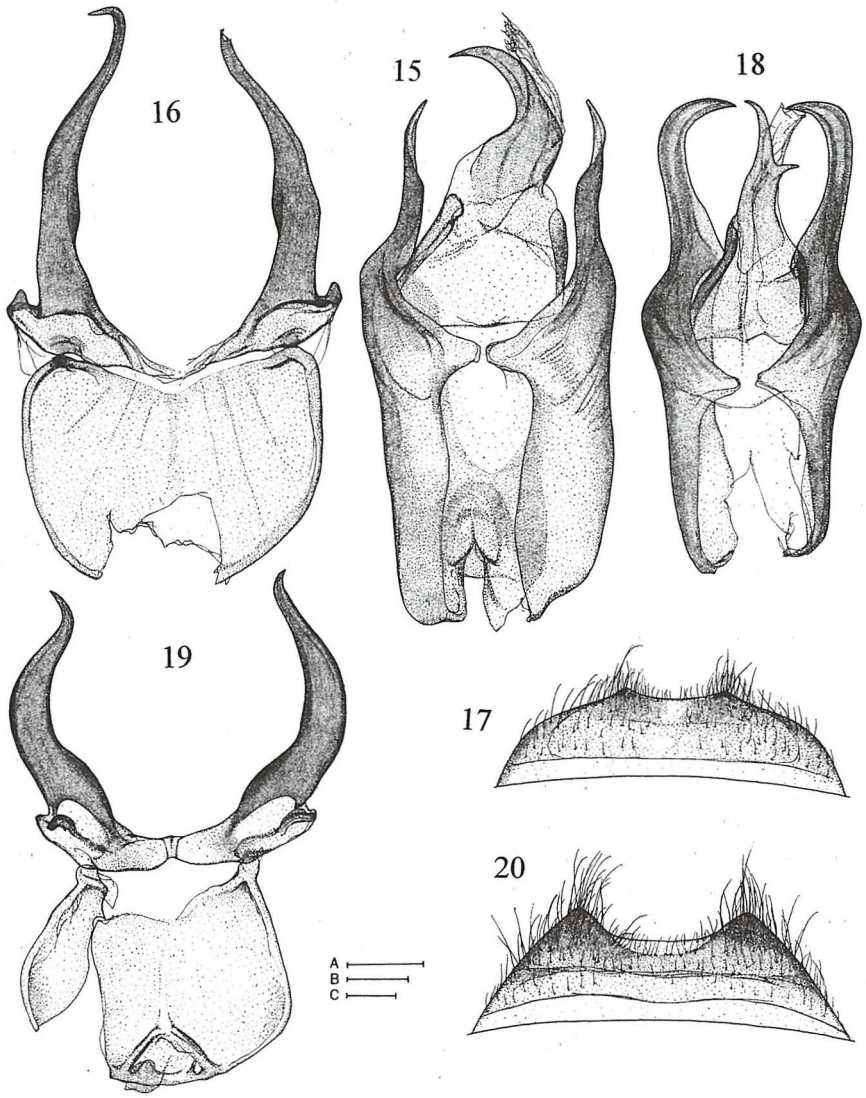
Type material. Holotype ♂: "USSR-Tadžikistan, Babatag Mt., cca 800 m (pr. Dušanbe), 18.4.1978, J. Strejček lgt." (NMPC).

Description. Body length 3.25 mm. In most of external characters identical with *N. quadrimaculatus*, but differing as follows:

Black, prothorax with only slight brownish tinge, legs, antennae, mouthparts, palpi and abdominal segments dark brown; elytral spots somewhat larger. Lateral outlines of tempora rather straight, moderately converging posteriad. Male sternite VII (Fig. 17) with posterior margin shal-

lowly emarginate. Aedeagus as in Figs 15, 16; apical portion of penis slender; lateral projections of penis distinctly shorter than its apical portion, slender, slightly curved mesad, pointed; parameres conspicuously long, distinctly exceeding apex of penis, their apices slender, curved laterad.

Female unknown.



Figs 15-20. 15-17: *N. strejceki* sp. n.: 15 - penis; 16 - tegmen; 17 - male sternite VII. 18-20: *N. montivagus* sp. n.: 18 - penis; 19 - tegmen; 20 - male sternite VII. Scale (0.1 mm): A - 15, 16; B - 18, 19; C - 17, 20.

Obr. 15-20. 15-17: *N. strejceki* sp. n.: 15 - penis; 16 - tegmen; 17 - sternit VII samce. 18-20: *N. montivagus* sp. n.: 18 - penis; 19 - tegmen; 20 - sternit VII samce. Měřítko (0,1 mm): A - 15, 16; B - 18, 19; C - 17, 20.

Etymology. Patronymic, dedicated to Dr. Jaromír Strejček (Praha), the collector of the type specimen.
Distribution. Tajikistan.
Differential diagnosis. *N. strejceki* sp. n. differs from all related species by the conspicuously long, slender parameres as well as by many details in the form of penis.

Notoxus cechovskyi sp. n.
(Figs 12-14, 23, 26, 29)

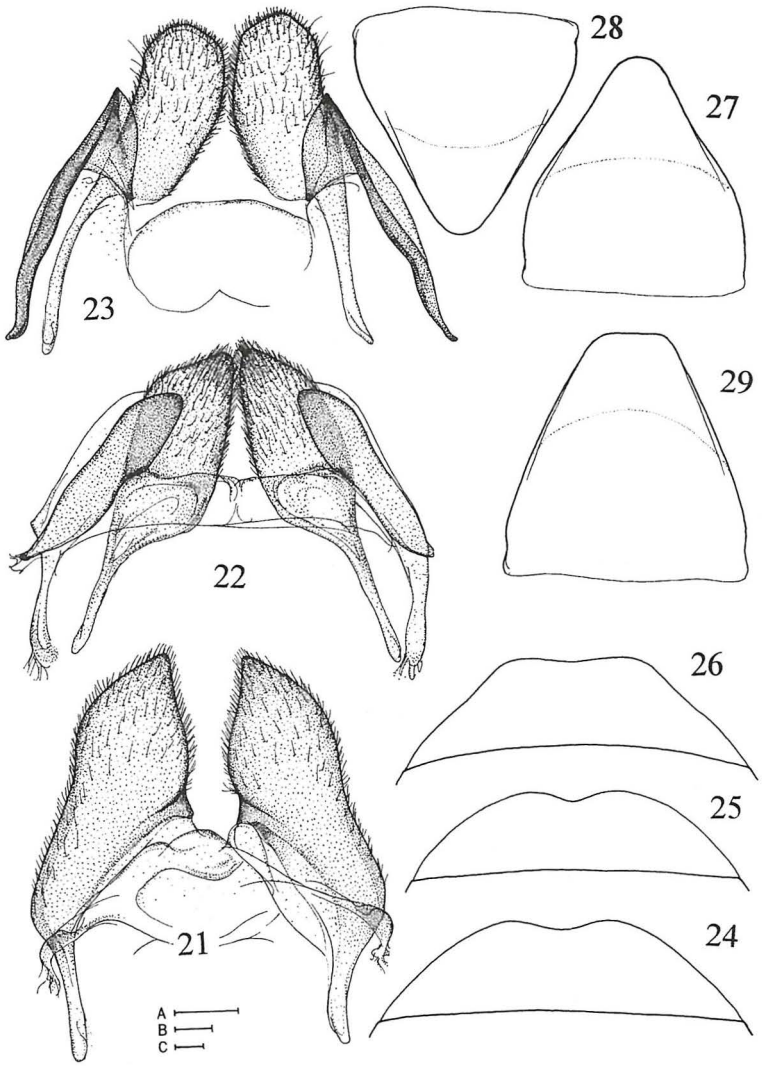
Type material. Holotype ♂: "TURKMENIA mer.-or., GHINDUKUSH Mts. (Paropamiz ridge), Badghiz height, 800 m, 20 km N of KUSHKA, CHEMENIBIT, 30.3.-6.4.1992, Čechovský Petr lgt." (NMPC). Paratypes: 1 ♂, "N. Afghanistan Prov. Herat, coll. O. Jakeš; Bala Murghab; Collectio Moravské museum Brno" (MMBC); 1 ♂, same data only "Bala Murghab, 20.3.-1.4.1964, 470 m (7)" (MMBC); 1 ♂, "BUCHARA, Repetek, 5.1900, Coll. Hauser" (NHMW); 1 ♂, same data, except "♂"; Collect. Hauser; 4-maculatus det. v. Krekich; 4-maculatus Heyd. Buchara" (NHMW); 7 ♀♀, "TRANSCASPIA, Saramsakli" (NHMW); 4 ♀♀, same data, except "Coll. Hauser; Zool. Mus. Berlin; Notoxus quadrimaculatus Heyden det. G. Uhmann 1983" (ZHMB); 1 ♀, "TRANSCASP. Merw, 5.1900, Coll. Hauser." (NHMW); 1 ♂ [genitalia dissected, mounted in slide], "Transcasp., Murghabtal; 1288 [number of slide]; ♂; 4-maculatus det. v. Krekich" (NHMW); 1 ♂, "Bucharia Repetek; ex Hauser; Muséum Paris Coll. M. Pic" (MNHN).
Description. Body length 3.6-4.1 mm. In most of external characters identical with *N. quadrimaculatus*, but differing as follows:

Dark brown to piceous black, pronotum sometimes lighter with rufous tinge, legs, antennae, mouthparts and palpi brown, tibia lighter. Tempora with lateral outlines nearly straight, moderately converging posteriad. Male sternite VII (Fig. 14) with posterior margin sinuous, not emarginate. Aedeagus as in Figs 12, 13; apical portion of penis long, rather strong, curved distally; lateral projections of penis conspicuously short, finger-like, moderately curved laterad; parameres not exceeding apex of penis, rather stout proximally, their apices stout, truncate, moderately curved laterad. Female sternite VII (Fig. 26) with posterior margin feebly emarginate; female tergite VII (Fig. 29) with posterior margin broadly rounded apically; sternite VIII (Fig. 23) in female rather distinct, composed of two well sclerotized plates, pointed apically; styli somewhat divergent, flattened, widely rounded apically.
Etymology. Patronymic, dedicated to Petr Čechovský (Brno), the collector of the holotype.
Distribution. Turkmenistan, Afghanistan.
Differential diagnosis. *N. cechovskyi* sp. n. is easily recognised by the sinuous posterior margin of male sternite VII, by the parameres being obtusely shortened apically as well as by many details in the form of penis.

Notoxus montivagus sp. n.
(Figs 18-20)

Type material. Holotype ♂: "UZBEKISTAN or., Nuratau Mts., P. Košťál lgt.; Farish 15 km S, 1800 m, 12.V.1985" (KMVC).
Description. Body length 3.8 mm. In most of external characters identical with *N. quadrimaculatus*, but differing as follows:

Black; pronotum, especially horn, with brown tinge, legs, antennae and palpi dark brown; anterior elytral spots comparatively small, longitudinally oval, not reaching humeri. Male sternite VII (Fig. 20) with posterior margin deeply emarginate. Aedeagus as in Figs 18, 19; apical portion



Figs 21-29. 21-23: Female sternite VIII and styli: 21 - *N. quadrimaculatus* Heyden, 1887; 22 - *N. centralasiae* sp. n.; 23 - N. *cechovskyi* sp. n.; 24-26: Female sternite VII: 24 - *N. quadrimaculatus* Heyden, 1887; 25 - *N. centralasiae* sp. n.; 26 - *N. cechovskyi* sp. n. 27-29: Female tergite VII: 27 - *N. quadrimaculatus* Heyden, 1887; 28 - *N. centralasiae* sp. n.; 29 - N. *cechovskyi* sp. n. Scale (0.1 mm): A - 21-23; B - 24-26; C - 27-28.

Obr. 21-29. 21-23: Sternit VIII a styli samice: 21 - *N. quadrimaculatus* Heyden, 1887; 22 - *N. centralasiae* sp. n.; 23 - N. *cechovskyi* sp. n. 24-26: Sternit VII samice: 24 - *N. quadrimaculatus* Heyden, 1887; 25 - *N. centralasiae* sp. n.; 26 - *N. cechovskyi* sp. n. 27-29: Tergit VII samice: 27 - *N. quadrimaculatus* Heyden, 1887; 28 - *N. centralasiae* sp. n.; 29 - N. *cechovskyi* sp. n. Měřítko (0,1 mm): A - 21-23; B - 24-26; C - 27-29.

of penis slender, less curved distally, pointed, with distinct, thorn-like dent at midlength; lateral projections of penis as long as its apical portion, robust, conspicuously curved mesad; parameres moderately exceeding penis, their apices pointed, curved laterad.

Female unknown.

Etymology. From the Latin "montivagus" (strolling on mountains), referring to the location of the type locality. Compared to other species treated in this paper, *N. montivagus* sp. n. was found at the highest altitude.

Distribution. Uzbekistan.

Differential diagnosis. *N. montivagus* sp. n. resembles *N. quadrimaculatus* in certain male characters. For their separation, see the differential diagnosis of the latter.

ACKNOWLEDGEMENTS. My thanks are due to all who enabled me to study material in their care, namely Nicole Berti (MNHN), J. Jelínek (NMPC), P. Lauterer (MMBC), M. Mikát (KMVC), H. Schönmann (NHMW), M. Uhlig (ZHMB) and L. Zerche (DEIC). I am obliged to D. S. Boukal for critical comments on the manuscript.

REFERENCES

BONADONA P. 1971: Les Notoxinae de France. *L'Entomologiste*, 27 (6): 132-148.

BONADONA P. 1989: Les espèces françaises du genre Notoxus Geoffroy (Coléoptères, Anthicidae). *L'Entomologiste*, 45 (1): 9-13.

BONADONA P. 1991: Les Anthicidae de la faune de France: compleménts aux Notoxus. *Bull. Mens. Soc. Linn. Lyon*, 60: 93-104.

BUCCIARELLI I. 1989: *Fauna d'Italia, Coleoptera: Anthicidae*. Calderini, Bologna, 240 pp.

HEBERDEY R. F. 1936: Revision der paläarktischen Arten de Gattung Notoxus Geoffr. I. Die Verwandten des Notoxus monoceros L. *Koleopt. Rundschau*, 22: 125-180.

HEYDEN L. von 1887: XI. Beitrag zur Coleopteren-Fauna von Turkestan. *Deutsche Entomol. Zeitschrift*, 31: 305-336.

PIC M. 1890: Contribution a l'etude des Notoxus (Coléopteres) d'Europe et des régions avoisinantes. *Feuille Jeun. Nat.*, 30: 64-68, 89-91.

PIC M. 1902: Coléoptères asiatiques nouveaux. *L'Échange*, 17: 1-3.

SOUHRN

Práce se zabývá taxonomií rodu *Notoxus* z čeledi Anthicidae a podává popisy pěti nových druhů (*N. centralasiae*, *N. golestanus*, *N. strejceki*, *N. cechovskyi* a *N. montivagus* spp. n.) ze Střední Asie, Íránu a Afghánistánu, spolu s redeskripcí blízce příbuzného druhu *N. quadrimaculatus*. Autor též designoval lektotypy *N. quadrimaculatus* Heyden, 1887 a *N. quadrimaculatus* var. *bangi* Pic, 1902 a na základě studia typového materiálu obou taxonů synonymizoval *N. quadrimaculatus* var. *bangi* s *N. quadrimaculatus*.

Klíč k určení samců druhů příbuzných s *N. quadrimaculatus* Heyden, 1887

1 Zadní okraj sternitu VII (obr. 14) zvlněný, nevykrojený na vrcholu; aedeagus (obr. 12, 13), paramery na konci tupě zkrácené.. ..... *N. cechovskyi* sp. n.

- Zadní okraj sternitu VII více nebo méně vykrojený na vrcholu; paramery na konci špičaté. 2

2 Aedeagus (obr. 1, 2); postranní výběžky penisu paličkovité, na konci zaoblené; paramery nápadně dlouhé, přesahující penis; sternit VII (obr. 3). ..... *N. quadrimaculatus* Heyden

- Postranní výběžky penisu špičaté; paramery krátké, stejně dlouhé nebo mírně delší než penis. 3

3 Aedeagus (obr. 18, 19); apikální část penisu štíhlá, s malým ale zřetelným subapikálním zubem; zadní okraj sternitu VII hluboce vykrojený (obr. 20). ..... *N. montivagus* sp. n.

- Apikální část penisu silnější, bez zubu; zadní okraj sternitu VII nanejvýš lehce vykrojený (obr. 8, 11, 17). 4
4 Aedeagus (obr. 15, 16); paramery dosti dlouhé a štíhlé; postranní výběžky penisu na konci štíhlé. ..... *N. strejceki* sp. n.
- Paramery silnější, kratší; postranní výběžky penisu na konci rozšířené a poněkud zploštělé. 5
5 Aedeagus (obr. 6, 7); paramery na konci zřetelně rozšířené a zploštělé. ..... *N. centralasiae* sp. n.
- Aedeagus (obr. 9, 10); paramery na konci tenké a válcovité. ..... *N. golestanus* sp. n.