TWO NEW SPECIES OF TRIGONOPUS MULSANT ET REY, 1853 FROM SOUTH AFRICA (COLEOPTERA: TENEBRIONIDAE: PLATYNOTINII)

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Abstract.—Trigonopus bellamyi sp. nov. and T. natalensis sp. nov. are described and illustrated. The species belong to the generic group trigonopoid Platynotina from South Africa. Key for species determination is provided.

Key words.—Coleoptera, Tenebrionidae, Platynotini, Trigonopus, new species, South Africa.

In my recent revision (Iwan 1997) of Trigonopus Mulsant et Rey, 1853 I preserved Koch’s (1956) interpretation of this genus. Trigonopus is classified in the trigonopoid Platynotina, where it is closely related to Amblychirus Koch, Bantodemus Koch, Melanopterus Mulsant et Rey and Selinopodus Koch (broad male fore tibia with an apical concavity on the inner side, as in Figs 3–4, 15–16). The presence of flat tubercles on the elytra and epipleura distinguishes Trigonopus from above-mentioned genera (Fig. 2).

Further two new species of this genus have recently been discovered among the specimens sent by Dr. Charles L. Bellamy (Transvaal Museum of Natural History, Pretoria, Republic of South Africa) and in the Coleoptera collection of the Museum and Institute of Zoology Polish Academy of Sciences (Warsaw, Poland).

At present the genus Trigonopus includes 9 species, which occur only in Southern Africa (Lesotho and Republic of South Africa – SE part of Cape Province and Natal) (Fig. 31).

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TMNH – Transvaal Museum of Natural History, Pretoria, Republic of South Africa (C. L. Bellamy);

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Methods and Abbreviations

Means and ratios are based on all specimens listed under “Type(s)” (measures of the genitalia – 1 or 2 specimens). Measurements were made as follows: width of lateral pronotal border – in the middle of lateral pronotal margin; width of anterior elytral margin – from humeral angle to scutellum; length of body – from anterior margin of labrum to elytral apex; width of body – maximum elytral width. The following abbreviations have been used in the descriptions:

pl/pb – pronotal length/breadth ratio;
el/eb – elytral length/breadth ratio;
el/pl – length ratio elytra/pronotum;
eb/pb – breadth ratio elytra/pronotum;
pkp/st – breadth ratio anterior margin of elytra/scutellum;
ft/ftb – fore tibia length/breadth ratio;
lbp/lap – length ratio basal/apical parts of aedeagal tegmen;
c1/c2/c3/c4/c4-c3 – length ratios coxites1/coxites2/coxites3/coxites4/coxites4-coxites3;
bcl/lcl – coxites1 breadth/length ratio;
lp/lc1 – length ratio paraproct/coxites1;
lmb/la – length ratio male body/aedeagus;
lfh/lo – length ratio female body/ovipositor.

Systematics

Trigonopus bellamyi sp. nov. (Figs 1–13, 31)

Name derivation. In honour of Dr Charles L. Bellamy from Transvaal Museum of Natural History, Pretoria, Republic of South Africa.

Locus typicus. Katbergpass near Fort Beaufort (Republic of South Africa, Cape Province).

Diagnosis. The species belongs to the group with T. flexipes Koch, 1956, T. capicola Mulsant et Rey, 1853, T. similis Iwan, 1997 and T. natalensis sp. nov. by similar structure of male hind tibia and male mid femora (see diagnosis T. natalensis).
Figures 1–13. *Trigonopus bellamyi* sp. nov.: (1) pronotum; (2) anterior part of elytron (inset, tubercles); (3) dorsal and (4) ventral view of male fore tibia; (5) dorsal and (6) ventral view of male mid tibia; (7) dorsal and (8) ventral view of male hind tibia; (9) male mid femur; (10) dorsal and (11) ventral view of male fore tarsus; (12) ovipositor; (13) aedeagus.
Figures 14–26. *Trigonopus natalensis* sp. nov. (14–23), *T. capicola* (24–26): (14) pronotum; (15) ventral and (16) dorsal view of male fore tibia; (17) ventral and (18) dorsal view of male mid tibia; (19, 26) male mid femur; (20, 24) dorsal and (21, 25) ventral view of male hind tibia; (22) ventral and (23) dorsal view of aedeagus.

*T. bellamyi* sp. nov. is close to *T. similis* Iwan, 1997 (male fore tibia without denticle), but distinguished from this species by the punctuation of pronotum (cf. Figs 1 and 27).

**Description.** Body length 18.0–18.6 mm, pl/pb = 0.61–0.63, el/eb = 1.18–1.29, el/pl = 2.04–2.23, eb/pb = 1.07–1.09. Head and pronotum very densely but evenly punctate, punctures not very large, regular. Eyes laterally narrowed, between gena and tempus 1–2 facets visible. Mentum with narrow median part and well visible lateral wings. Antennal segment 3 ca. 2.4–2.6 × longer than segment 2. Pronotum as in Fig. 1; anterior angles rounded, produced anteriad, posterior angles distinctly produced posteriad; sides weakly rounded, subparallel at 2/3 from base, slightly emarginated anterior to posterior angles; pronotal disc slightly convex, with wide and shallow longitudinal concavity along lateral borders; base bisinuately emarginate; lateral border about 0.7 × as wide as antennal segment 3. Scutellum of medium width, pkp/st ratio ca. 2.6–2.8. Elytral intervals practically flat, covered with distinct tubercles; rows shallow and irregular, without punctuation (Fig. 2). Male legs, fore tarsus strongly widened (Figs 10–11); fore tibia gradually widened to broad apex (ftl/ftb ca. 3.2), inner side with an apical concavity which is pubescent at bottom, inner margin strongly widened at level of concavity, passing as a gentle arc towards apex and disappearing just before (Figs 3–4); mid tibia with sharp apical denticle (Figs 5–6); hind tibia slightly flattened on inside (Figs 7–8); mid femur with denticle (Fig. 9). Aedeagus as in Fig. 13, lmb/la ca. 6.9, lap/lbp/1l = 1.0/2.3/0.5; ovipositor as in Fig. 12, lfb/lo ca. 6.6, paraproct longer than coxites, lp/le1 = 3.8, bcl/le1 = 2.1, el/eb/c3/c4/c4-c3 = 1.0/0.9/1.4/1.3/0.4, internal genitalia as in *T. similis*.

**Types.** Holotype (male), TMNH: “Z. A. 64, Katberg F., Beaufort D.; Humus I. 1961”.

Paratypes: Z. A. 64, Katberg F., Beaufort D.; Humus I. 1961, (TMNH) 4 m, 1 f.

**Distribution.** Republic of South Africa (SE Cape Province) (Fig. 31).

*Trigonopus natalensis* sp. nov. (Figs 14–23, 31)

**Name derivation.** From terra typica.

**Terra typica.** Natal (Republic of South Africa).

**Diagnosis.** The species is similar to *T. flexipes* Koch, 1956, *T. capicola* Mulsant et Rey, 1853, *T. similis* Iwan, 1997 and *T. bellamyi* sp. nov. in the structure of male hind tibia (modified) and male mid femora (with denticle).

The presence of the denticle on male fore tibia places *T. natalensis* sp. nov. close to *T. capicola* Mulsant et Rey, 1853, *T. similis* Iwan, 1997 and *T. bellamyi* sp. nov. in the structure of male hind tibia (modified) and male mid femora (with denticle).

**Description.** Body length 20.5.0 mm, pl/pb = 0.62, el/eb = 1.29, el/pl = 2.14, eb/pb = 1.03. Head and pronotum
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Figure 31. Distribution of Trigonopus bellamyi sp. nov. (open circle), T. capicola Mulsant et Rey, 1853 (solid/open circle), T. cochraneae Iwan, 1997 (solid circle), T. danielssoni Iwan, 1997 (open triangle), T. flexipes Koch, 1956 (solid/open triangle), T. natalensis sp. nov. (solid triangle), T. signus Iwan, 1997 (open square), T. sigillatus Iwan, 1997 (solid/open square) and T. similis Iwan, 1997(solid square).

densely but evenly punctate, punctures not very large, regular. Eyes laterally narrowed, between gena and temples 3 facets visible. Mentum with narrow median part and well visible lateral wings. Antennal segment 3 ca. 2.5 x longer than segment 2. Pronotum as in Fig. 14; anterior angles rounded, produced anterad, posterior angles slightly produced posterad; sides weakly rounded, emarginated just anterior to posterior angles; pronotum widest at 2/3 length from base; pronotal disc slightly convex, with wide and shallow longitudinal concavity along lateral borders; base moderately bisinuately emarginate; lateral border as wide as antennal segment 3. Scutellum of medium width, pkp/st ratio ca. 2.6. Elytral intervals practically flat, covered with distinct tubercles; rows shallow and irregular, without puncturation. Legs, fore tarsi strongly widened as in T. bellamyi; fore tibia gradually widened to broad apex (ftl/ftb = 2.8), inner side with an apical concavity which is pubescent at bottom, inner margin at forms right angle at level of concavity and disappears at ca. 1/2 length before apex (Figs 15-16); mid tibia with blunt apical denticle (Figs 17-18); hind tibia flattened and slightly bent on inside (Figs 20-21); mid femur with denticle (Fig. 19). Aedeagus as in Figs 22-23, lmb/la ca. 6.8, lap/lbp/lb = 1.0/2.8/0.5.

**Types.** Holotype (male), MIZPAN: "Natal; Muz. Zool. Polonicum, Warszawa 12/45".

**Distribution.** Republic of South Africa (Natal) (Fig. 31).

### Key for determination of Trigonopus

1. Male mid femur with denticle (Fig. 26) ................. 2
   - Male mid femur without denticle .......................... 6
2. Pronotal disc with two symmetrical, smooth, irregular patches ................................................................. T. similis Iwan, 1997
   - Pronotal disc with regular puncturation ......................... 3
3. Inner margin of male fore tibia simple (not forming denticle), reaching almost apex (Figs 7-8 and 29-30) . . . 4
   - Inner margin of male fore tibia forms a denticle, disappearing just before apex ................................................................. 5
4. Male hind tibia slightly flattened on inside (Figs 7-8) ................. T. bellamyi sp. nov.
   - Male hind tibia distinctly flattened and bent on inwards (Figs 29-30) ......................................................... T. flexipes Koch, 1956
5. Male mid tibia with blunt apical denticle; male hind tibia as in Figs 17-18 ......................................................... T. natalensis sp. nov.
   - Male mid tibia with sharp apical denticle; male hind tibia as in Figs 24-25 ......................................................... T. capicola Mulsant et Rey, 1853
6. Pronotal disc without patches; elytral intervals 1, 3, 5 and 7 clearly convex, forming longitudinal, smooth, shiny, irregular ribs, all tubercles covering their surface fused ......................................................... T. danielssoni Iwan, 1997
   - Pronotal disc with two symmetrical, smooth, irregular patches; elytral intervals 1, 3, 5 and 7 only slightly rounded, generally only in posterior part of elytra, always covered with distinct tubercles, which sometimes fuse in groups ...................................................................... 7
7. Male fore tarsi very wide, segment 3 more than twice as wide as 4 (Figs 10-11) ............................................... T. sigillatus Iwan, 1997
   - Male fore tarsi narrow, segment 3 ca. 1.5 x as wide as 4 .................................................................................. 8
8. Inner margin of male fore tibia with deep, transverse pit and denticle; pronotum regularly punctate ......................................................... T. cochraneae Iwan, 1997
   - Inner margin of male fore tibia with a longitudinal, shallow concavity, without denticle; pronotal punctures irregular, enlarged ............................................... T. sigus Iwan, 1997

### References


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