

## A new species of soft-winged flower beetle of the genus *Tibipectinus* Tshernyshev, 2020 (Coleoptera: Malachiidae: Apalochrini) from South Africa

### Новый вид жуков малашек рода *Tibipectinus* Tshernyshev, 2020 (Coleoptera: Malachiidae: Apalochrini) из Южной Африки

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**КЛЮЧЕВЫЕ СЛОВА:** Coleoptera, Malachiidae, Apalochrini, *Tibipectinus seawardi*, новый вид, таксономия, Квазулу Наталь, Южная Африка

**ABSTRACT.** A new soft-winged flower beetle species, *Tibipectinus seawardi* Tshernyshev **sp.n.** (Coleoptera: Malachiidae) from KwaZulu-Natal, South Africa is described. The new species is similar to *T. caeruleoviolaceus* Tshernyshev, 2020 but differs in the following characters: 1st to 3rd in part and base of 4th antennomeres yellow; anterior tibiae at base and femora in apical part brown beneath, basal 2/3 of intermediate femora yellow, remaining part black; intermediate tibiae stout, but not wide, with thin slightly dilated distally appendage, and inner side of the tibia in front of the appendage slightly impressed. External appearance, special characters and genitalia of male of the new species are illustrated, and a distribution map is provided.

**РЕЗЮМЕ.** Из провинции Квазулу-Наталь Южно-Африканской Республики описан новый вид жуков малашек трибы Apalochrini *Tibipectinus seawardi* Tshernyshev **sp.n.** (Coleoptera: Malachiidae). Новый вид близок к *T. caeruleoviolaceus* Tshernyshev, 2020 и отличается следующими признаками: базальные членики усиков с 1 по 3 частично жёлтые, основание 4 членика осветлено; основание передних голеней и вершины бёдер снизу коричневые, 2/3 от основания средних бёдер жёлтые, остальная часть чёрная; средние голени утолщенные но не широкие, с тонким слегка расширенным сверху придатком, внутренняя сторона у придатка слегка вдавленная. Представлены иллюстрации внешнего вида, специфических структур и гениталий самца.

### Introduction

The genus *Tibipectinus* Tshernyshev, 2020 was recently described for the species of Apalochrini distributed in Africa [Tshernyshev, Shcherbakov, 2020]. Species of the genus are comparable with representatives of *Hapalochrops* Bourgeois, 1908, and differ in the smaller size (4–5 mm), anterior tibiae dilated and provided with flattened lobe, not reaching distal fourth, 1st tarsomere subquadrate, slightly enlarged, not flattened and widened, 2nd tarsomere with a simple black comb above, not velum-shape, antennae not flabellate, slightly dilated upwards, intermediate femora excavate in inner side, not thin, weakly swollen, intermediate tibiae moderately widened and with a thin elongate appendage on outer side near the apex, aedeagus not thin and elongate, but wide, with a small and weakly curved ventral lamella and easily visible strong black horn-like bristles from both sides of endophallus near the distal lobe of the aedeagus.

Six species from different regions of Africa have been provisionally transferred to the *Tibipectinus* Tshernyshev, namely *T. appendicifer* (Pic, 1904), (East Africa: Mozambique, Zanzibar; South Africa: Cape Province, KwaZulu-Natal), *T. fissipes* (Champion, 1920), (Democratic Republic of Congo, Ethiopia, Kenya, Sudan, Uganda), *T. caeruleoviolaceus* Tshernyshev, 2020 (Tanzania, Coastal Region), *T. claripes* (Evers, 1990), (Congo, Parc National de l'Upemba), *T. dilaticornis* (Champion, 1920), (Nigeria, Onitsha) and *T. testaceicornis* (Pic, 1914), (Congo, Nyangwe; Uganda) [Pic, 1904, 1914; Champi-

on, 1920; Evers, 1990; Tshernyshev, 2020]. Two of these species, *T. dilaticornis*, and *T. testaceicornis*, possess a completely different shape of appendage in intermediate tibiae and, probably, belong to different genus, as determined after a study of the holotypes.

Amongst Apalochrini material from different regions of Africa purchased at the 1995 Prague Entomological Fair (Insektenbörse), a small group of beetles from KwaZulu-Natal was found that look very similar in external appearance with the type species of *Tibipectinus*, *T. caeruleoviolaceus*. The South African species differs in its darker colouration of the body and anterior and posterior legs, namely anterior tibiae at base and femora in apical part brown beneath, basal 2/3 of intermediate femora yellow, remaining part black; yellow colouration of the 1st to 3rd in part and base of 4th antennomeres; stout, but not wide, intermediate tibiae provided with thin slightly dilated distally appendage with the inner side of the tibia in front of the appendage slightly impressed.

The characters mentioned above are unknown in any *Tibipectinus* species, and the comparison is shown in the key below. In fact, the complex of male special characters presents a new species, which is described below.

For descriptions, special male structures and genitalia were studied. "Special male structures" here refers to the emarginate anterior and intermediate femora, anterior tibiae widened flattened and excavated in apical portion, intermediate tibiae stout, impressed apically and possessing thin parallel appendage on apex of inner side, 1st tarsomere in intermediate legs enlarged and pubescent, and a comb above 2nd tarsomere in anterior legs.

The beetles were studied using an Amscope trinocular stereomicroscope ZM-2TY and digital photographs were taken using a Carl Zeiss Stemi 2000 trinocular microscope and the AxioVision programme. Male genitalia, embedded in DMHF (Dimethyl hydantoin formaldehyde), were mounted on a transparent card and pinned under the specimen. Specimens have been deposited at the author's collection (SCH), which is kept in the Institute of Animal Systematics and Ecology, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia.

Malachiidae Fleming, 1821

Malachiinae Fleming, 1821

Apalochrini Mulsant and Rey, 1867

*Tibipectinus* Tshernyshev, 2020

*Tibipectinus seawardi* Tshernyshev, **sp.n.**

Figs 1–14.

**MATERIAL.** **South Africa:** Holotype, ♂, KwaZulu-Natal Province, Ugu District, Ray Nkonyeni Municipality, 20 km SW Port Shepstone, Margate Town on the KwaZulu-Natal South Coast, 30°51'S; 30°22'E; 20.XI.1991, Richter leg. Paratypes, 3 ♂♂ and 3 ♀♀, idem.

**DESCRIPTION.** Holotype, male (Figs 1–2). Body elongate, subparallel, slightly expanded posteriorly.

Ventral side of 1st and 2nd antennomere and base of 3rd antennomere, 1st and 2nd palpomeres, intermediate femora (except for dark margination of dorsal and distal sides) yellow,

other body parts dark brown with a violet-blue metallic lustre. Surface evenly and sparsely covered with erect light pubescence, and on head are visible semi-erect light short and fine hairs. Vesicles yellow-brown, and thoracic mesepimera black.

Head slightly narrower than pronotum, flat, not impressed; eyes slightly protruding, small, round, frons flat; genae short and straight; clypeus narrow, transverse, straight; labrum narrow, transverse; palpi simple with apical segment slightly flattened, oval-rectangular, penultimate palpomere subtriangular; surface of head dull, densely punctured, evenly covered with fine adpressed light pubescence and singular long and strong black erect hair behind eyes.

Antennae filiform (Fig. 3), slightly widened towards apex, 1.7 mm long, expanded over the base of pronotum (Fig. 1); 1st antennomere subconic, wide, 2nd small, round almost completely hidden by the 1st, 3rd antennomere elongate and subtriangular, 4th antennomere suboval, slightly shorter than the 3rd which is half the length of the 1st, 5th to 10th antennomeres subquadrate, each following being slightly wider than the preceding one, apical antennomere ovoid, as long as the 3rd antennomere, slightly constricted in apical half; surface evenly covered with short, dark erect pubescence.

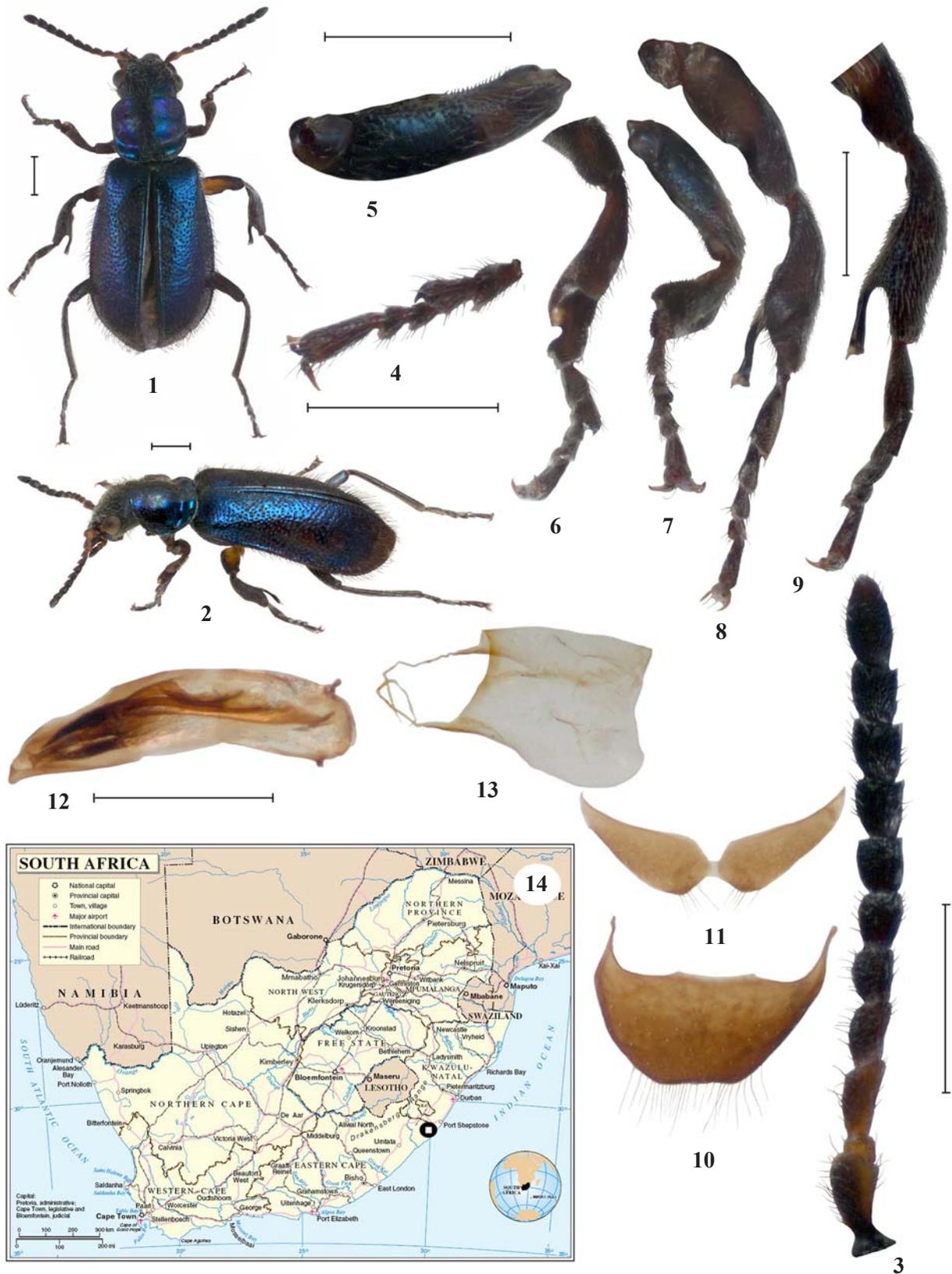
Pronotum quadrate with evenly rounded angles, not narrowed apically, strongly impressed near base with posterior margin elevated and swollen (Figs 1–2); sides straight; margination of sides distinct; surface almost completely lacking punctures, with only traces of puncturation, shining, sparsely covered with light fine semi-erect hairs on sides and distal part of the disc.

Scutellum rectangular, small, distinct and narrow, transverse, finely and densely punctured, and evenly covered with fine light adpressed pubescence, margination of sides indistinct.

Elytra subparallel, evenly widened posteriorly just behind the base and narrowed and rounded at apices, at base slightly wider than pronotum (Fig. 1); humeri small, distinct and protruding; apices evenly rounded, simple; disc distinctly marginate on external sides, slightly elevate and flattened in middle, suture wide, slightly elevated in middle of elytra, distinct from scutellum to the elytral apices; surface shining, densely punctured, with smooth microsculpture, evenly and densely covered with thin brown erect pubescence.

Hind wings normally developed.

Legs short and strong; posterior femora not reaching elytral apex; anterior tibiae widened and excavate, possess curved lamellate widened lobe above, apical fourth depressed, elongate and emarginate ventrally (Figs 6–7); intermediate tibiae widened posteriorly, stout, with thin strong elongate appendage in outer side of the apical fourth, which is weakly widened at apex, elongate and parallel to tibia (Figs 8–9); inner side of the tibiae oval-shaped impressions (Fig. 8); femora in anterior and posterior legs slightly swollen, anterior with depression in outer side with row of short erect setae (Fig. 5), intermediate femora with semi-circular emargination on inner side near middle (Fig. 8); posterior legs simple, thin, straight; all tarsi 5-segmented, slightly compressed, not long, anterior tarsi with small transverse comb above the 2nd segment, 1st and 2nd tarsomeres subtriangular, enlarged, equal in length and each twice as large as 3rd or 4th tarsomeres, claw-segment as long as 1st and 2nd tarsomeres together, and half as wide in anterior and posterior legs, and of the same length as 1st tarsomere in intermediate legs; claws short, thin, narrow, with small plate possessing curved setae above; 1st tarsomere in intermediate legs enlarged, suboval or subcylindrical, densely pubescent with grey semi-erect fine hairs.



Figs 1–14. *Tibipectinus seawardi* Tshernyshev *sp.n.*, holotype, male. 1 — habitus, dorsal view; 2 — habitus, lateral view; 3 — right antenna; 4 — left anterior tarsus; 5 — femur of right anterior leg; 6 — left anterior leg, ventral view; 7 — left anterior leg, dorsal view; 8 — left middle leg, ventral view; 9 — tibia and tarsus of left middle leg, dorsal view; 10 — pygidium (apical tergite); 11 — ultimate abdominal ventrite (apical sternite); 12 — aedeagus, dorsal view; 13 — tegmen; 14 — locality map. Scale bars: 0.5 mm.

Ventral body surface with smoothed sparse and fine punctures, shining, evenly covered with fine adpressed goldish pubescence; metathorax swollen, slightly bituberculate because of longitudinal short stria in middle covered with adpressed hairs, lacking appendage or hair tuft. Pygidium undivided, narrow, evenly narrowed distally, with straight distal side (Fig. 10); 8th ultimate abdominal ventrite bilacinate, lateral lobes thin, indistinctly adjoined, narrowed distally, with oval emargination in middle (Fig. 11); aedeagus almost completely straight, slightly curved dorsally, wide, with small, short and slightly down-curved lamella; two to three strong black horn-like bristles visible in distal half of the aedeagus from both sides of inner sack and two bristles, one short and curved, and another one long and straight are located in the middle of the inner sac (Fig. 12). Tegumen equilateral, wide, with short and very thin parameres (Fig. 13).

Length 4.1 mm, width (at elytral base) 1.3 mm.

Female body somewhat longer and wider, antennae slender, 1st tarsomere as wide as the other tarsomeres, not enlarged, 2nd tarsomere lacking comb; all tibiae and femora simple, lacking excavations or appendages. Length 4.2 mm, width (at elytral base) 1.3 mm.

ETYMOLOGY. The species is named in honour of the British ecologist, Professor Mark Seaward, my good friend whose recommendations always make my publications correct and understandable.

DISTRIBUTION. Known from type locality only, South Africa: Holotype, male, KwaZulu-Natal Province (Fig. 14).

DIFFERENTIAL DIAGNOSIS. Characters allowing differentiation of the new species from its congeners are given in the key below.

#### KEY TO THE SPECIES OF THE GENUS *TIBIPECTINUS* OF AFRICA (males only)

1. Upperside black, pronotum with a weak metallic lustre. Legs yellow excepting brown external sides of posterior femora, antennae yellow with brown apical spots in 9th and 10th antennomeres; intermediate tibiae with protruding triangular edge above, thinly narrowed distally, and bi-appendiculate appendage, which is longer than the distal side of the tibia in front ..... *T. claripes* (Evers, 1990)
- Upperside of head, pronotum and elytra blue or green with metallic lustre ..... 2
2. Upperside of head, pronotum and elytra with green, green-blue or green-bronze metallic lustre ..... 3
- Upperside of head, pronotum and elytra with deep blue or violet-blue metallic lustre ..... 5
3. Thin appendage in outer distal side of the intermediate segment parallel to tibia, distal side of tibia straight, not hollowed between appendage and inner lobe ..... 4
- Thin appendage in outer distal side of the intermediate segment perpendicular to tibia, strongly curve inwardly at apex, distal side of tibia strongly hollowed between appendage and inner lobe; basal four antennomeres dorsally, anterior tibiae (except at the base and apex) and the

- intermediate femora at the base yellow .....  
 ..... *T. fissipes* (Champion, 1920)
4. 1st to 5th antennomeres, palpi, intermediate femora yellow at the base beneath, remaining parts dark brown; antennae strongly dilated, anterior tibiae with wide dilated plate above ..... *T. dilaticornis* (Champion, 1920)
  - 1st to 6th antennomeres, palpi, all tibiae and femora in anterior and intermediate legs yellow, remaining parts black; antennae weakly dilated, anterior tibiae with narrow dilated plate ..... *T. testaceicornis* (Pic, 1914)
  5. Antennae yellow, anterior tibiae yellow-brown, remaining parts of all legs dark brown; intermediate tibiae with thin dilated distally appendage, inner side of the tibia in front of the appendage not impressed .....  
 ..... *T. appendicifer* (Pic, 1904)
  - Basal antennomeres yellow in part, remaining black ... 6
  6. 1st to 4th in part and base of 5th antennomeres yellow; anterior tibiae and intermediate femora yellow except brown apical part, remaining parts of all legs dark brown; intermediate tibiae stout and wide, with thin dilated distally appendage, inner side of the tibia in front of the appendage strongly impressed .....  
 ..... *T. caeruleoviolaceus* Tshernyshev 2020
  - 1st to 3rd in part and base of 4th antennomeres yellow; anterior tibiae at base and femora at apical part brown beneath, basal 2/3 of intermediate femora yellow, remaining part black; intermediate tibiae stout, but not wide, with thin slightly dilated distally appendage, inner side of the tibia in front of the appendage slightly impressed .....  
 ..... *T. seawardi* Tshernyshev, **sp.n.**

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Рис. 1–14. *Tibipectinus seawardi* Tshernyshev **sp.n.**, holotype, male: 1 — внешний вид, дорзально; 2 — внешний вид, латерально; 3 — правый усик; 4 — левая передняя лапка; 5 — бедро передней правой ноги; 6 — левая передняя нога, вентрально; 7 — левая передняя нога, дорзально; 8 — левая средняя нога, вентрально; 9 — голень и лапка средней ноги, дорзально; 10 — пигидий (апикальный тергит); 11 — восьмой терминальный абдоминальный вентрит (апикальный стернит); 12 — эдеагус, дорзально; 13 — тегмен; 14 — карта распространения. Масштаб: 0,5 мм.