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New species of *Epuraea* (*Haptoncus*) from New Caledonia (Coleoptera: Nitidulidae, Epuraeinae)

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Abstract: New species *Epuraea* (*Haptoncus*) *oedipoda* sp. nov. from New Caledonia is decribed and its relationship to closely related invasive cosmopolitan species *E*. (*H*.) *ocularis* Fairmaire, 1849 is discussed.

Key words: Coleoptera, Nitidulidae, *Epuraea*, *Epuraea* (*Haptoncus*) *oedipoda* sp. nov., taxonomy, new species, New Caledonia.

INTRODUCTION

Haptoncus Murray, 1864 was described by Murray (1864) as a distinct genus of Nitidulidae with the type species *Haptoncus tetragonus* Murray, 1864 (=*Epuraea ocularis* Fairmaire, 1849) subsequently designated by Parsons (1943), to be later downgraded to the subgenus of *Epuraea* Erichson, 1843 by Kirejtshuk (1992). *Haptoncus* contains mostly small species of *Epuraea* associated as a rule with ripen or decaying fruits, being thus preadapted for introduction in remote areas by trade or by human migrations in the past. The centre of diversity of the subgenus is in southern Asia and western Pacific. Key to the species of *Haptoncus* with descriptions of new species was published by Gillogly (1982) and even though his results were partly reexamined by Kirejtshuk (1998), the taxonomy of the subgenus is not yet satisfactorily resolved. Kirejtshuk (2008) synonymized with *Haptoncus* also the subgenus *Haptoncurina* Jelínek, 1977.

So far the following species of *Haptoncus* have been reported from New Caledonia:

1) *Haptoncus brunneus* Gillogly, 1982 was transferred in the *Epuraea* subgenus *Blackburnea* Kirejtshuk & Kvamme, 2001 (Kirejtshuk & Kvamme 2001).

2) *Haptoncus decoratus* Reitter, 1873 (Fauvel 1903, Heller 1916). This species, described from Madagascar, is junior synonym of *Epuraea ocularis* Fairmaire, 1849

(synonymy by Grouvelle, 1913). Nevertheless the brief but exact characteristic of *H. decoratus* sensu Fauvel (1903) suggests that it corresponds in fact to a new species closely related to *Epuraea* (*Haptoncus*) *ocularis* and described below as *E.* (*H.*) *oedipoda* sp. nov.

3) *Haptoncus levigatus* Gillogly, 1982. Paratypes from New Caledonia revised by Kirejtshuk (1998) belonged to *E.* (*H.*) *gestroi* (Grouvelle, 1906).

4) *Haptoncus luzonensis* Gillogly, 1982. Paratypes from New Caledonia revised by Kirejtshuk (1998) belonged to *E.* (*H.*) *motschulskii* Reitter, 1873.

5) *Haptoncus magnoculi* Gillogly, 1982.

6) *Haptoncus ocularis* (Fairmaire, 1841) (Fauvel 1903, Heller 1916).

7) *Haptoncus subquadratus* Reitter, 1877 (Fauvel 1903, Heller 1916). It is junior synonym of *E.* (*H.*) *luteola* Erichson, 1843 (synonymy by Grouvelle, 1908), to which also refer the above data.

MATERIAL AND METHODS

Examination, dissection and measurements were completed with the use of stereomicroscope Olympus SZX7 with an ocular micrometer. Body length was measured from anterior margin of clypeus to the apex of elytra, body width as maximum width of elytra combined. The following acronyms are used for morphological terms: ANCL – length of antennal club; ANCW – width of antennal club; ANLE – length of antenna; HEAW – width of head across eyes; LELY – length of elytra from the tip of scutellar shield to the tip of elytra; LEPR – length of pronotum along median axis; WELY – maximum width of elytra combined; WPR1 – width of pronotum between posterior angles; WPR2 – maximum width of pronotum; WPR3 – width of pronotum between anterior angles.

Exact label data are cited for the type material. Individual labels are separated by a double slash (//), different rows by simple slash (/). Additional comments and/or explanatory notes are given in square brackets and following abbreviations are used: hw – handwritten, p – printed.

Material studied is deposited in the following institutional and private collections:

ALBC – collection Andrzej Lasoń, Białystok, Poland;

MHNP – Muséum National d´Histoire Naturelle, Paris, France;

MNHUW – Museum of Natural History, Wroclaw University, Poland;

NMPC – National Museum, Prague, Czech Republic;

SMNS – Senckenberg Museum für Naturkunde, Stuttgart, Germany;

USMB – Upper Silesian Museum, Bytom, Poland.

TAXONOMY

Epuraea (***Haptoncus***) ***oedipoda*** sp. nov.

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(Figs. 1–2; 5–13)

Type material. **Holotype**, m*: NEW CALEDONIA (N)/-20.9500/165.2921/ Pic d´Amoa (Povila)/ 17.11.2010 rainforest/ 450 m night (lamp and beating)/leg. R. Ruta, M. Wanat [laser printed]// (MHNP). **Paratypes**: 3 f*f*, NEW CALEDONIA (N)/-20.9502/165.2921/ Pic

d´Amoa (Povila)/ 17.11.2010 rainforest/ 400-450 m/leg. R. Ruta, M. Wanat [laser printed]// (ALBC, MNHWU); 2 m*m*, 3 f*f*, Nouvelle Calédonie/ La Foa Pocquereux m 50/ 10/24. II.2006/ P.M.Giachino leg. [laser printed]//, (SMNS); 2 m*m*, 6 f*f*, Nouvelle Calédonie/ La Foa Col d´Amieu m 500/ 8/20.II.2006/ P.M.Giachino leg. [laser printed]//; 35 m*m*, 24 f*f*, Nouv. Caledonie S.P./ Mt. Koghi,22.-23.III./ S. Bílý lgt., 1999 [laser printed]// (ALBC, NMPC, USMB).

Description. Holotype, male. Length 2.3 mm, width 1.1 mm. Body oval, flatly convex, yellow; scutellum infuscate, brown; each elytron with black square spot behind humeral bulge and common black cuneiform apical area reaching anteriorly to the midlength of suture. Explanate sides of elytra completely yellow, dull. Pubescence on the body surface fine, long, recumbent, inconspicuous.

Head transverse, constricted, almost as wide as anterior pronotal margin (ratio WPR3/HEAW = 1.09). Temples straight, converging posteriad, acutely projecting behind eyes. Punctures equal in size to eye-facet, separated mostly by one diameter or less; interspaces with traces of reticulation, moderately shining. Antennal furrows clearly outlined, rectilinear, strongly converging posteriad with their ends narrowly separated. Postmentum with large setiferous pore developed at anterior margin, subtrapezoidal, distinctly punctate, punctures somewhat smalller than eye-facet, separated by one diameter; interspaces with traces of reticulation. Antennae (Fig. 9) almost as long as width of head across eyes, ratio ANLE/HEAW = 0.93. Antennal club oval, ratio ANCL/ANLE = 0.41, ANCL/ANCW = 1.50. Antennal flagellum slender, antennomere IV shorter than III and v respectively, VI nearly as long as wide, VII and VIII transverse, becoming gradually wider.

Pronotum twice as wide as long (ratio WPR2/LEPR = 2.00), widest behind its midlength, more strongly narrowed anteriad than posteriad (ratio WPR1/WPR2 = 0.88, WPR3/WPR2 = 0.65.) Anterior margin with deep trapezoidal emargination. Anterior angles broad, obtuse, prominent, with rounded tips. Lateral margins arcuate, narrowly explanate, near posterior corners hardly as wide as antennal flagellum, gradually narrowed anteriad. Basal margin not bordered, truncate in the middle, shallowly concave besides posterior angles, which are obtuse, nor projecting posteriad. Pronotal disc broadly flatly convex, punctures shallower and closer than on frons, mostly separated by less than one diameter; interspaces reticulate, dull.

Scutellum triangular, punctate like frons, punctures separated by one diameter.

Elytra widest at their midlength, slightly narrowing anteriad, strongly converging posteriad, separately asymmetrically rounded at their apex, reaching their maximum length in sutural half; Ratio LELY/WELY = 1.09; base nearly as wide as the base of pronotum, humeral angles obtuse, not prominent sides explanate, as wide as antennal flagellum. Sutural angles broadly obtuse, almost indistinct; sutural lines indistinct; surface flatly vaulted, punctate like pronotum.

Pygidium finely densely punctate and reticulate, truncate apically. Tergite VIII exposed, semicircular.

Prosternum transversely convex, reticulate with diffuse indistinct punctures; anterior margin bordered. Prosternal process broad, only moderately depressed behind procoxae, broadly rounded apically. Hypomera punctate and reticulate like prosternum. Mesosternum transversely convex, reticulate, obsoletely indistinctly punctate like prosternum. Marginal line of prepectus interrupted in the middle, the gap nearly as wide as prosternal process between procoxae. Posterior intercoxal process separated from the rest of mesosternum by fine arcuate furrow. Meso-metasternal suture between mesocoxae indistinct. Metasternum

broadly transversely convex, somewhat depressed in posterior half between metacoxae, reticulate and shallowly obsoletely punctate; punctures in the middle small, separated by 1.0-1.5 diameters, becoming gradually larger laterally, at sides nearly equal in size to eye-facet and separated by one diameter. Discrimen indistinct. Mesocoxal lines fine, running close at posterior margins of mesocoxal cavities and ending in anterolateral corners of metasternum; neither their outer recurrent portions nor axillary spaces developed. Posterior intercoxal margin of metasternum broadly v-shaped. Abdominal sterna punctate like metasternum, metacoxal lines closely bordering metacoxal cavities, with extremely short outer recurrent portion. Hypopygium broadly rounded apically.

Distances between pro-, meso- and metacoxae as 1:1:2. Pro- and mesofemora oval, 2.5x and 2.7x longer than wide respectively. Metafemur 3x as long as wide, its posterior margin twice concave with obsoletely angulate convexity at its distal fourth (Fig. 10). Protibia straight, becoming gradually wider distad, outer subapical angle obtuse, not prominent. Protarsomeres 1-3 bilobed, dilated, 0.70x the width of tibia. Tarsal claws simple. Mesotibia simple, ca 4x longer than wide. Mesotarsomeres bilobed, narrow, 0.5x the width of tibia. Metatibia ca 6x longer than wide, before its midlength abruptly dilated and swollen, in distal half parallel-sided (Fig. 12). Metatarsomeres simple.

Male genitalia as figured (Figs 5–7). Tegmen ca 2.5x longer than wide, parallel-sided in proximal two thirds, lateral lobes arcuately curved mesad in distal portion, with narrowly rounded/ bluntly pointed tips. Median lobe ca 3.3x longer than wide, subparallel-sided, broadly truncate apically.

Female. Generally corresponding to male. Protarsomeres 1-3 narrower, 0.6x the width of tibia. Posterior margin of metafemur less waved (Fig. 11). Metatibiae only feebly dilated at basal third (Fig. 13). Pygidium broadly rounded apically, abdominal tergite VIII not exposed. Ovipositor as figured (Fig. 8).

Variation. Black pattern on dorsal surface sometimes less contrasting. Ratio WPR1/WPR2 = 0.88-0.94; WPR3/WPR2 = 0.63-0.69; WPR2/LEPR = 1.83-2.00; LELY/WELY = 0.88-1.09. Body length 1.9-2.4 mm, body width (=WELY) = 0.9-1.2 mm.

Differential diagnosis. As suggested by the contrasting colour pattern, temples acutely projecting behind eyes and by the presence at anterior margin of male postmentum of the setiferous pore, first described by Gillogly (1962) in *Haptoncus barbulus* Gillogly, 1962 (junior synonym of *Epuraea* (*Haptoncus*) *ocularis* Fairmaire, 1849), *E. oedipoda* sp. nov. is closely related to *E. ocularis*. Both species differ in the following traits:

E. ocularis Fairmaire	***E. oedipoda*** sp. nov.
Explanate pronotal sides narrow, nearly as wide as antennal flagellum (antennomere III), gradualy dilated posteriad, besides posterir angles nearly twice as wide as in anterior half.	Explanate pronotal sides narrow, nearly as wide as antennal flagellum (antennomere III), hardly dilated besides posterior angles.
Punctures of frons almost the size of eye-facet, mostly separated by less than one diameter; interspaces with traces of reticulation.	Punctures ca. the size of eye-facet, mostly separated by one diameter; interspaces smooth and shining.
Punctures on the disc of pronotum as large as eye-facet, seldom separated by less than one diameter; interspaces microscopically punctulate.	Punctures on the disc of pronotum mostly separated by less than one diameter; interspaces microscopically punctulate.

E. ocularis Fairmaire	*E. oedipoda* sp. nov.
Colour pattern: black elytral spots of variable shape situated at the midlength of elytra, far from humeral bulges; apical black area transverse, sometimes black pigmentation more extended (Fig. 3)	Colour pattern: black elytral spots as a rule oblong subquadrangular, situated immediately behind humeral bulges; apical black area cuneiform, with its tip reaching the midlength of suture.
Posterior margin of metafemur broadly regularly waved.	Posterior margin of metafemur in male with prominent convexity at distal fourth (Fig. 10), in female obtusely angulate (Fig. 11)
Metatibiae in both sexes simple.	Metatibiae in male abruptly dilated and obtusely angulate at about 2/5 of their length, then parallel-sided to distal end. The angulation in female only feebly developed, yet distinct (Figs 12–13).
Tegmen ca 3.5x longer than wide, ventral margin rectilinear in median portion (lateral view), lateral lobes obliquely truncate apically (Figs 14, 16).	Tegmen ca 2.5x longer than wide, regularly arcuate in lateral view, lateral lobes narrowly rounded apically (Figs 5, 7).
Median lobe ca 6x longer than wide, subparallel-sided, truncate apically (Fig. 15).	Median lobe ca 3.3x longer than wide, subparallel-sided, truncate apically (Fig. 6).

Apart from characteristic species *E. concolor* and E. luteola, all other species of *Epuraea* (*Haptoncus*) reported from New Caledonia (see above) belong to former subgenus *Haptoncurina* with enlarged eyes, which markedly differ from the species discussed.

Type locality. Pic d´Amoa, New Caledonia.

Etymology. Latinized from the ancient Greek „*oidipus*“, meaning „with swallen or tumid legs“. Referring to the modified metatibiae in males.

Discussion. *E. ocularis* was originally described from Tahiti by Fairmaire (1849), but it is widely distributed throughout the Paleotropics, eastern Palaearctic region (Japan, China, Korea), Australia (Kirejtshuk 1998) and Pacific: Micronesia (Gillogly 1962), Tahiti (Fairmaire 1849), New Caledonia (Fauvel 1903, Kirejtshuk 1998), Hawaii (Gillogly 1982, Ewing & Cline 2004). In the last decades it became an invasive species rapidly dispersed in the Mediterranean as well as southern and Central Europe (for the summary of data see Jelínek 2007 and Jelínek *et al.* 2016) and recently appeared also in North America (Cline & Audisio 2011). Due to its current cosmopolitan distribution it is difficult to determine the original range of *E. ocularis*. Most probably it originated from southern Asia and/or western Pacific and it may have been partly dispersed by men already in the past throughout this area.

On the contrary, *E. oedipoda* is currently known only from the New Caledonia, where it occurs in sympatry with *E. ocularis*, with which it may have been confused in the past. Kirejtshuk (1998), discussing the variation of *E. ocularis*, wrote that „ other specimens from southern parts of Polynesian region and New Caledonia demonstrate blackish elytral spots more acutely projecting forward“ (Kirejtshuk 1998: 105), which may, at least partly, concern *E. oedipoda*. On the other hand, it may indicate the occurrence of *E. oedipoda* also outside New Caledonia.

On the contrary, Fauvel (1903) apparently distinguished the two species, since his exact description of „*Haptoncus decoratus*“ („Elytres avec trois taches noires, dont une carrée derrière chaque épaule, et une très grande en coeur renversé suturale-apicale“ - p. 301) fits perfectly to *E. oedipoda*.

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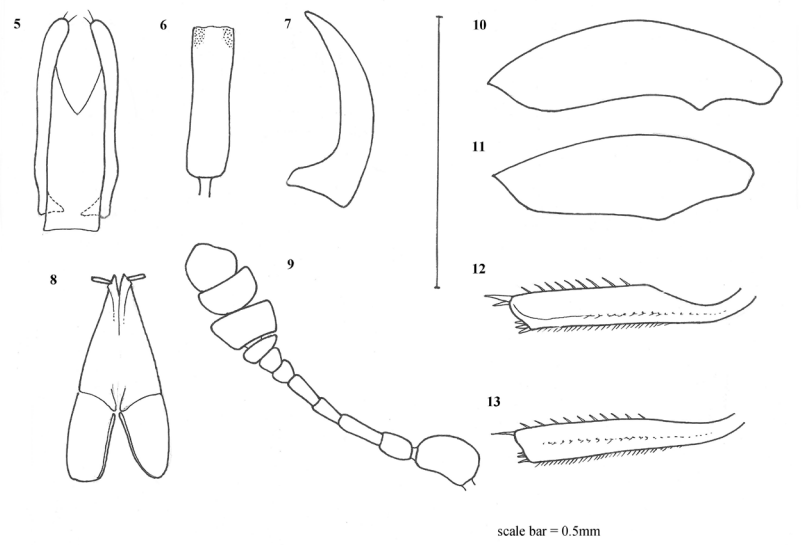
Fig. 1. *Epuraea oedipoda* sp. nov., male, Paratype, New Caledonia, Mt. Koghi. Body length 2.6 mm.

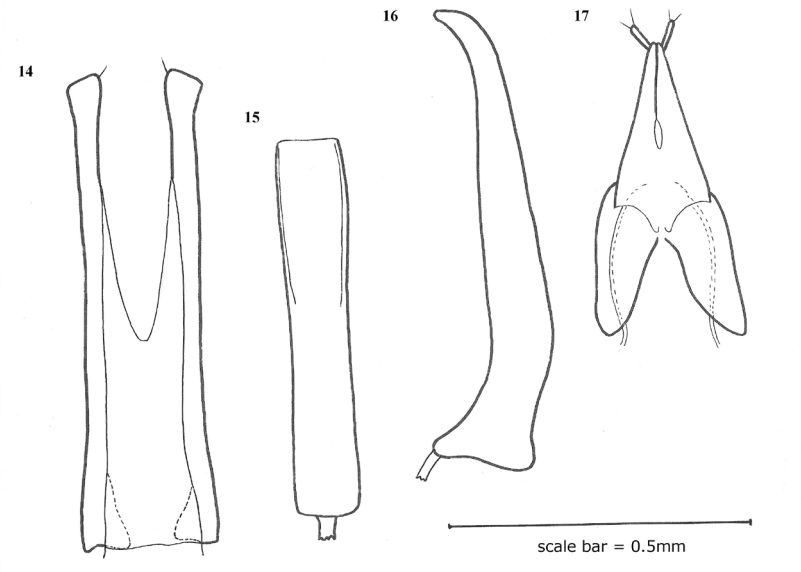
Fig. 2. *Epuraea oedipoda* sp. nov., female, Paratype, New Caledonia, Mt. Koghi. Body length 2.3 mm.

Fig. 3. *Epuraea ocularis* Fairmaire, male, Malaysia, Tanah Rata. Body length 3.0 mm.

Fig. 4. *Epuraea ocularis* Fairmaire, female, India, W. Ghats. Body length 2.2 mm.



Figs 5–13. *Epuraea oedipoda* sp. nov.: 5. tegmen (dorsal view); 6. aedeagus; 7. tegmen (lateral view); 8. ovipositor; 9. left antenna; 10. metafemur, male; 11. metafemur, female; 12. metatibia, male; 13. metatibia, female.



Figs 14–17. *Epuraea ocularis* Fairmaire: 14. tegmen (dorsal view); 15. aedeagus; 16. tegmen (lateral view); 17. ovipositor.