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FOUR NEW SPECIES OF *ENDOMIA* FROM AFRICA

(COLEOPTERA, ANTHICIDAE)

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INTRODUCTION

To date, the genus *Endomia* Castelnau, 1840 consisted of 50 species: 9 from Palaearctic, 26 from Afrotropical, 15 from Indo-Malayan and 1 from Australasian region. Most of these have been revised by Bonadona 1960 (Afrotropical species) and Kejval 1998 (Palaearctic and Indo-Malayan species). A single African species has not been considered in the above listed revisions: *Endomia piciana* (Hawkins, 1957).

In this paper four new African species are described, all belonging to the genus *Endomia* Castelnau, 1840: *E. arnosti* n. sp. and *E. telnovi* n. sp. from Zambia, *E. kejvali* n. sp. from Burkina Faso and *E. nardii* n. sp. from Kenya. New records for an already known species (*E. australis* Nardi, 2004) are also quoted.

MATERIALS AND METHODS

The terminology used for the external morphology follows those of Bonadona (1960) and Kejval (1998). The genitals are mounted with Euparal, glued on acetate label placed under the specimen in the same pin. Indications of localities and dates have been printed on a white bristol label; the words "Holotype" or "Paratype" have been printed on another red bristol label, still on the same pin.

Photos of the habitus were made with a Pentax K20D SLR Digital Camera mounted on a tripod, armed with an Apochromatic Zeiss 3.5x lens, while photos of aedeagi were made with a Pentax K20D SLR Digital Camera, mounted on a biological microscope

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Nikon Labophot 1, armed with a Zeiss Epiplan HD 16/0.35 lens. For each image, 40 frames have been taken at different levels, later assembled with the CZM software. Measurements were performed by micrometer with a Nikon SMZ-U microscope.

ABBREVIATIONS

CD : Author's private collection (Bubano, Italy);

LAB: base width of pronotum;
LAC: maximum width of the head without eyes;
LAE: maximum elytra width;
LAO: width of the head including the eyes;
LAP: maximum width of pronotum;
LU: overall length, from the apex of the jaws to the elytral apex;
LUA: antennal length;
LUC: length of the head, from the apex of the jaws to the apex of the occiput;
LUE: elytral length, measured from the base of scutellum to the elytral apex;
LUP: maximum length of pronotum;
RMC: maximum length / maximum width of the head ratio;
RME: maximum length / maximum width of elytra ratio.
RMP: maximum length / maximum width of pronotum ratio;

SYSTEMATIC PART

***Endomia arnosti* n. sp.** (figs. 1-4)

Holotype ♂: Zambia, Southern province, 10 km S Mazabuka, 17-18.XII & 28-29.XII.2002, A. Kudrna jr. leg. (CD).

Endomia arnosti	LU	LUC	LAC	LAO	LUA	LUP	LAP	LAB	LUE	LAE	RMC	RMP	RME
Holotype ♂	2,75	0,6	0,45	0,5	1,28	0,55	0,4	0,36	1,58	0,8	1,33	1,38	1,98

D i a g n o s i s . *Endomia arnosti* n. sp. is morphologically very close to *E. australis* (Nardi, 2004), from which can be easily dis-

tinguished by the arched occiput (subtruncated in *E. australis*), the length of elytra (shorter in *E. australis*), and the apex of tegmen without reverse asymmetric bristles. Finally, *E. arnosti* n. sp. has a U-shaped sclerite at the base of the median lobe of aedeagus, which is missing in *E. australis*.

D e s c r i p t i o n . Medium size species (fig. 1), head brown, pronotum and elytra light brown, the latter with a darker lanceolate spot along the suture in the third posterior and a darker triangular pre-scutellary area; antennae, legs and palps light brown.

Head elongated (RMC 1.33), frons with a faint but large depression, frontal prominences above antennae short and salient; eyes small and very protruding; temples longer than eyes and clearly round; occiput round-shaped with a slight depression and with a short but clear occipital groove.

Antennae slender, long and thin (fig. 2); first antennomere very long, slender and cylindrical, second antennomere as long as the third, antennomeres four, five, six, seven longer, but equal to each other, antennomeres eight, nine, ten dilated, but still longer than wide, the final antennomere 1.5 longer than wide.

Pronotum longer than wide (RMP 1.38), sub-cylindrical, with a lateral sinuation placed approximately in the middle of its length, convex, slightly wider on the front than below.

Elytra about twice longer than wide (RME 1.98), the greatest width in the third posterior, elytral apex clearly attenuated, humeri weak.

Legs long, male foretibiae simple.

Head and pronotum punctuation simple, punctures of equal size; the ones of elytra twice bigger.

Pubescence short and whitish.

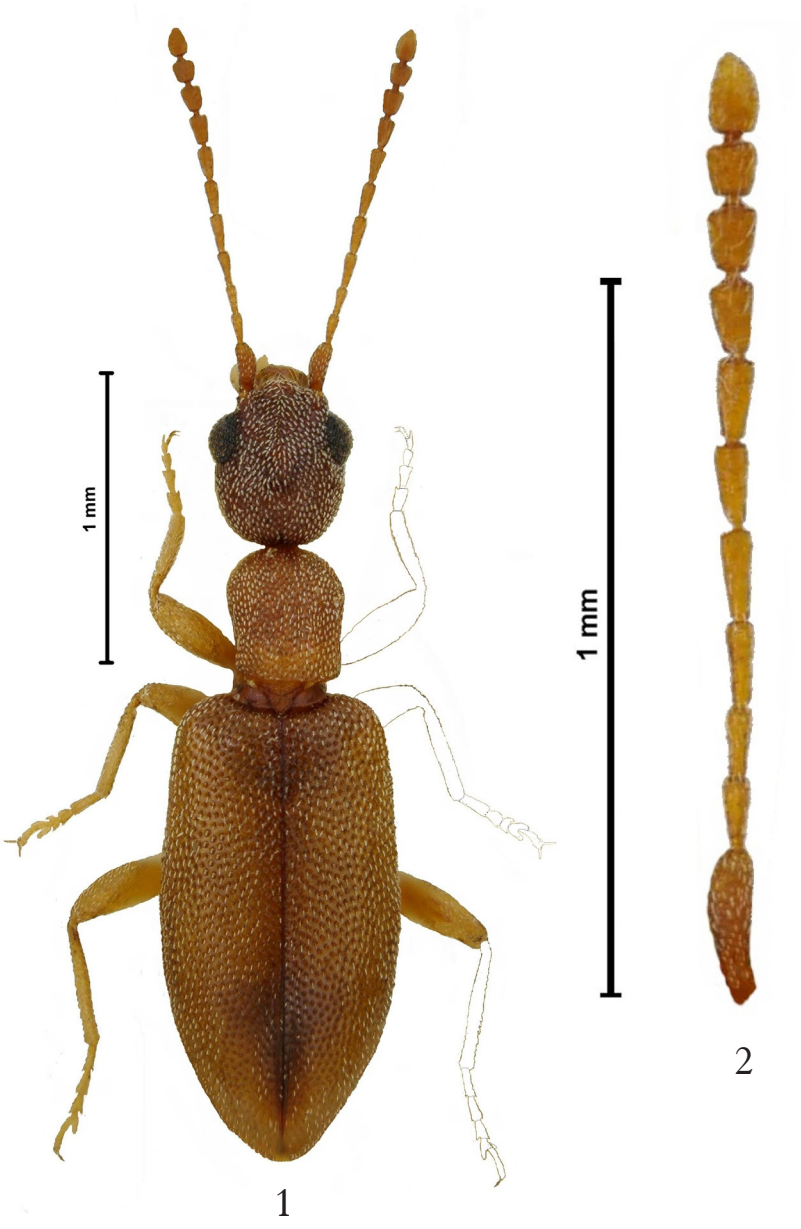
Abdomen simple.

Aedeagus, in ventral view, elongate with apex of tegmen asymmetric, its median lobe with a U-shaped sclerite at base (fig. 3). Gastral spiculum as in (fig. 4).

Female unknown.

Body length (♂ holotype): 2.75 mm.

E t y m o l o g y . The new species is dedicated to Arnošt Kudrna jr., from Czech Republic, who is credited for its discovery.



Figs. 1-2 - *Endomia arnosti* n. sp., holotypus, from Mazabuka, Zambia. 1: habitus; 2: antenna.

Figs. 3-4 - *Endomia arnosti* n. sp., holotypus, from Mazabuka, Zambia. 3: aedeagus in ventral view; 4: gastral spiculum.

D i s t r i b u t i o n . This species is known only from its type locality, in southern Zambia.

Endomia k e j v a l i **n. sp.** (figs. 5-8)

Holotype ♂: Burkina Faso, Boromo, 264 m, 11°47'44"N - 02°53'25"W, VIII.2005, leg. P. Moretto (CD).

Paratypes: 2 ♀♀, same data as holotype (CD).

Endomia kejvali	LU	LUC	LAC	LAO	LUA	LUP	LAP	LAB	LUE	LAE	RMC	RMP	RME
Holotype ♂	2,03	0,48	0,36	0,38	-	0,38	0,33	0,26	1,18	0,6	1,33	1,15	1,97
Paratype ♀ 1	2,1	0,48	0,37	0,4	-	0,39	0,33	0,25	1,23	0,63	1,3	1,18	1,95
Paratype ♀ 2	2,13	0,5	0,38	0,39	0,83	0,4	0,33	0,25	1,23	0,63	1,31	1,21	1,95

D i a g n o s i s . *Endomia kejvali* n. sp. is distinguished from all the other species belonging to the genus mainly because both sexes of the new species have the body covered by long white pubescence, while generally in the other species the pubescence is formed by scales or very short hairs.

D e s c r i p t i o n . Small species (fig. 5). Light brown, with head slightly darker.

Head a little longer than wide, in the holotype (RMC 1.33); forehead with a slight depression (barely visible for the presence of a considerable pubescence), frontal above-antennal protuberances very small, short and slightly protruding; eyes slightly protruding, barely shorter than temples; the latter parallel and regularly round; occiput sub-truncated, with a slight apical depression and a very light midline.

Antennae short (fig. 6), length 0.83 mm in the paratype 2, not reaching the base of the elytra; first antennomere very short, only twice longer than wide, third antennomere the shortest, antennomeres two and four very short and equal to each other, antennomeres five, six, seven longer but equal to each other, antennomeres eight, nine, ten wide, final antennomere, in the paratype 2, 1.54 longer than wide.

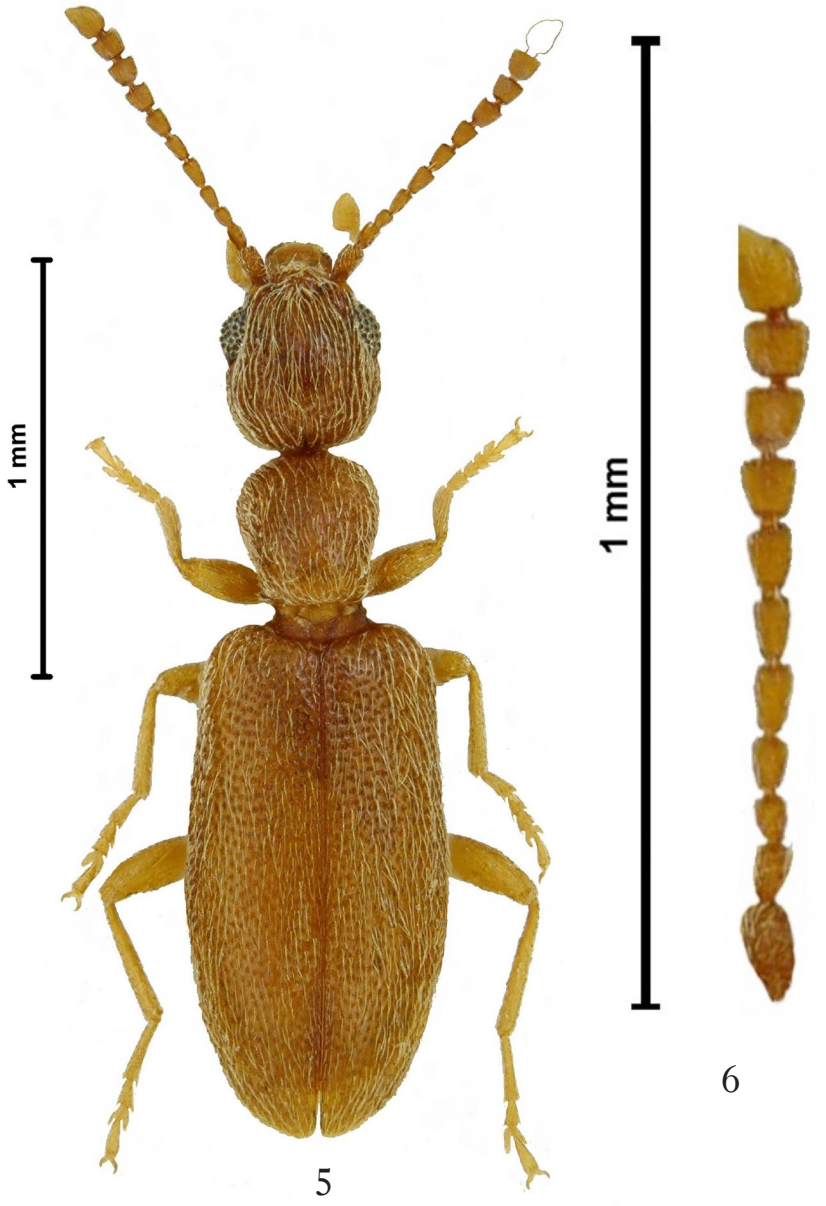
Pronotum slightly convex (in holotype: RMP 1.15), much wider on the front than at base, with a lateral sinuation which is at about 2/3 of the latter.

Elytra almost twice as long as wide (in holotype: RME 1.97), sub-parallel, with distinctly round apex with a scutellar depression and a smaller, lighter but clear preapical sutural depression.

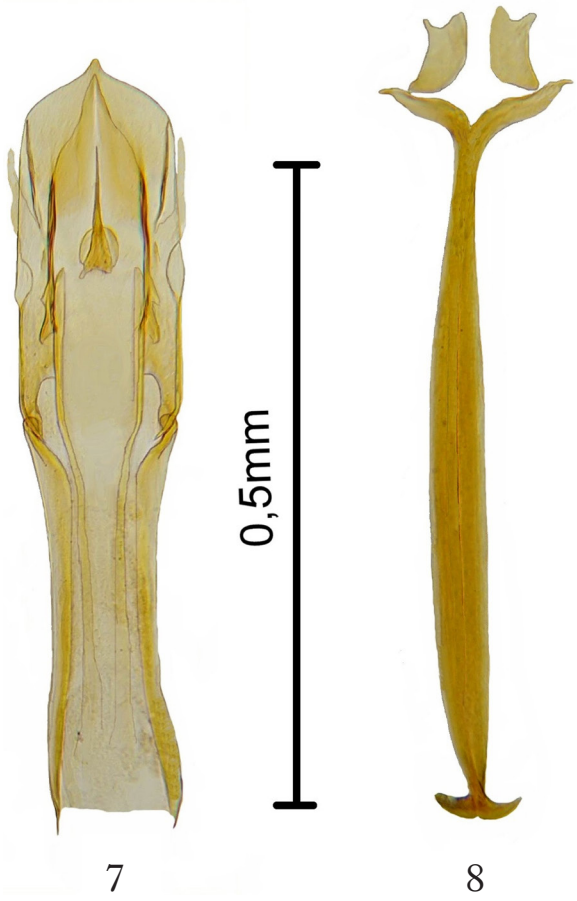
Humeri very noticeable.

Legs normal, with simple hind tibiae.

Head punctuation very fine and sparse on a glossy background, pronotum punctuation with punctures twice as large as those of the head and more dense, on glossy background; elytra punctuation



Figs. 5-6 - *Endomia kejvali* n. sp., paratypus from Boromo, Burkina Faso. 5: habitus; 6: antenna.



Figs. 7-8 - *Endomia kejvali* n. sp., paratypus from Boromo, Burkina Faso. 7: aedeagus in ventral view; 8: gastral spiculum.

with punctures twice as large as those of the pronotum and even more dense, which sometimes intersect, still on glossy background.

Pubescence of head, pronotum and elytra long and woolly.

Abdomen simply in both sexes.

Aedeagus in ventral view as in fig. 7. Gastral spiculum as in fig. 8.

Female. Externally similar to the male, but bigger.

Body length (♂,♀): 2.03-2.13 mm (holotype 2.03 mm).

E t y m o l o g y . This species is dedicated to my friend and colleague Zbyněk Kejval, from Domazlice (Czech Republic), specialist of Anthicidae, as a sign of esteem and friendship.

D i s t r i b u t i o n . This species is known only from its type locality, in Burkina Faso.

Endomia n a r d i i **n. sp.** (figs. 9-14)

Holotype ♂: Kenya, C.S. Mwingi, Mguni, 7.IV.2004, leg. M. Snižek (CD).

Paratype ♂: same data as holotype (CD).

Endomia nardii	LU	LUC	LAC	LAO	LUA	LUP	LAP	LAB	LUE	LAE	RMC	RMP	RME
Holotype ♂	2,72	0,61	0,44	0,49	1,45	0,48	0,4	0,33	1,63	0,8	1,39	1,2	2,04
Paratype ♂	2,6	0,59	0,41	0,46	-	0,48	0,38	0,32	1,53	0,75	1,44	1,26	2,04

D i a g n o s i s. *Endomia nardii* n. sp. is close to *E. telnovi* n. sp. from Zambia, but it differs from the latter mainly for the ovoid head (square in *E. telnovi*), the much shorter pronotum, the less parallel elytra, the bicolor livery and the different shape of aedeagus.

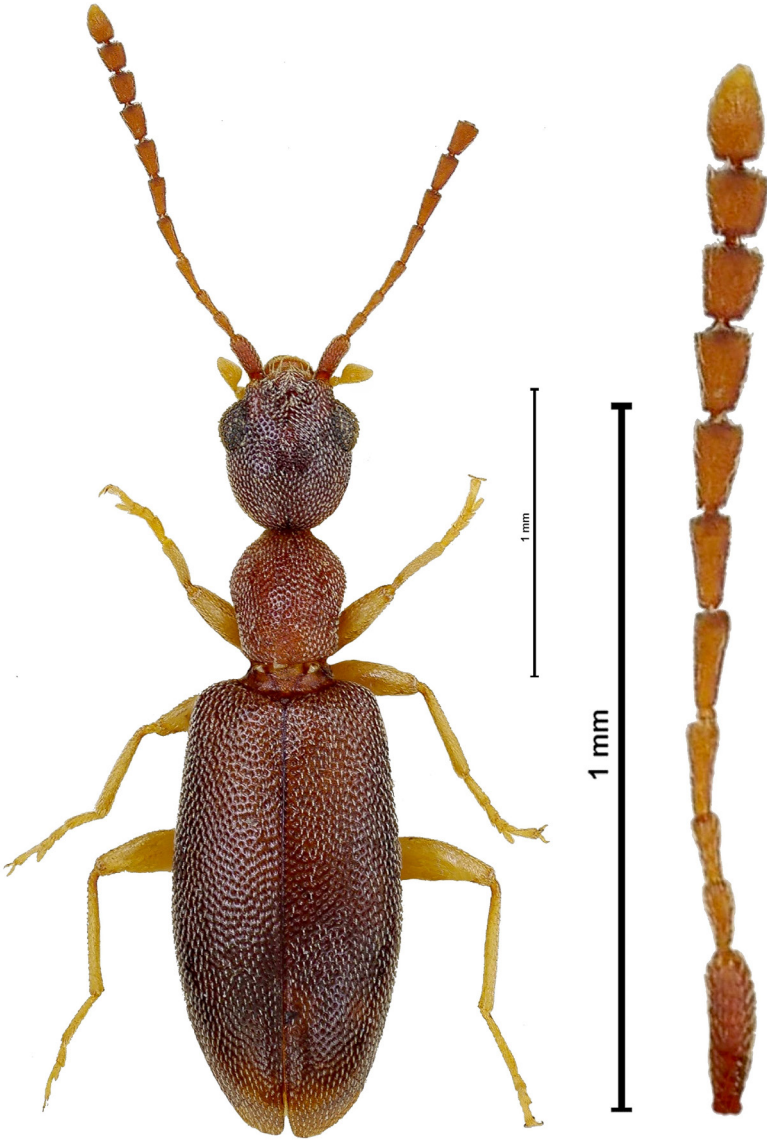
D e s c r i p t i o n . Species of medium size (fig. 9), bicolored, head and elytra dark brown, pronotum, antennae, elyral apex, palps and legs light brown.

Head small and oval-shaped (in holotype RMC 1.39), frons with a light but wide depression; frontal above-antennal protuberances short and salient; eyes protruding, long 1.2 times than temples, the latter clearly jointed; occiput narrow, with a small but clear groove.

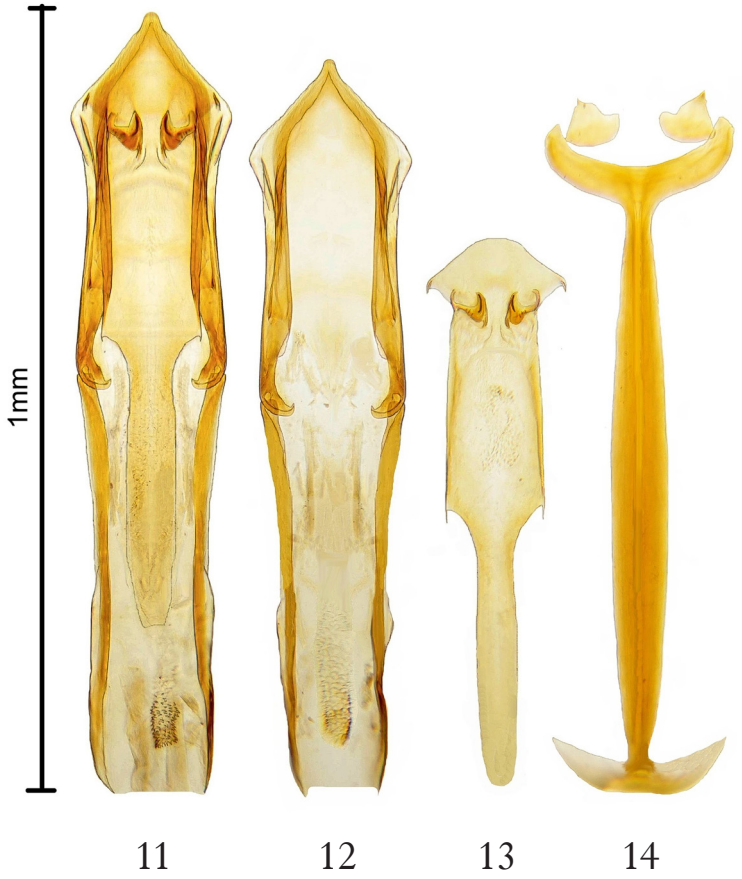
Antennae as in fig. 10 (length in holotype 1.45 mm), their length clearly exceeds base of elytra; first antennomere three times longer than wide, antennomeres two and three shorter but equal to each other, antennomeres four, five, six equal to one another but longer than the antennomeres two and three; antennomeres gradually dilated from the seventh to the tenth, but all longer than wide, terminal antennomere 1.69 longer than wide.

Pronotum convex, slightly longer than wide, in holotype RMP 1.2.

Elytra ovoid (in holotype RME 2.04), twice as long as wide,



Figs. 9-10 - *Endomia nardii* n. sp., holotypus from Mwingi, Mguni, Kenya. 9: habitus; 10: antenna.



Figs. 11-14 - *Endomia nardii* n. sp., holotypus from Mwingi, Mguni, Kenya. 11: aedeagus in ventral view; 12: tegmen in ventral view; 13: median lobe in ventral view; 14: gastral spiculum.

with the greatest width just below the middle and with long attenuated apex; base of elytra with visible humeri.

Legs strong, hind tibiae sinuate in ♂♂.

Head and pronotum punctuation shallow, punctures of equal size; elytral punctures twice as large of those of the head and pronotum. Pubescence short, scaly and whitish.

Abdomen in the ♂ with a wide dimple at the apex of the last abdominal sternite.

Aedeagus (figs. 11, 12, 13) cylindrical, with apex of tegmen resembling the shape of a rhombus, median lobe cylindrical, with the shape of a capital at its top, and with two triangular spines, one per side, right below. Gastral spiculum as in (fig. 14).

Female unknown.

Body length (♂♂): 2.6-2.72 mm (holotype 2.72 mm).

E t y m o l o g y . The new species is dedicated to Gianluca Nardi as a sign of great friendship and gratitude for his help in the study of Anthicidae.

D i s t r i b u t i o n . This species is known only from Kenya, Mwingi, Mguni.

Endomia t e l n o v i **n. sp.** (figs. 15-18)

Holotype ♂: Zambia, Southern Province, 20 km E. Kalomo, 26-27.XII.2002 leg. A. Kudrna jr. (CD).

Paratypes: 1 ♂ and 1 ♀, same data as holotype (CD).

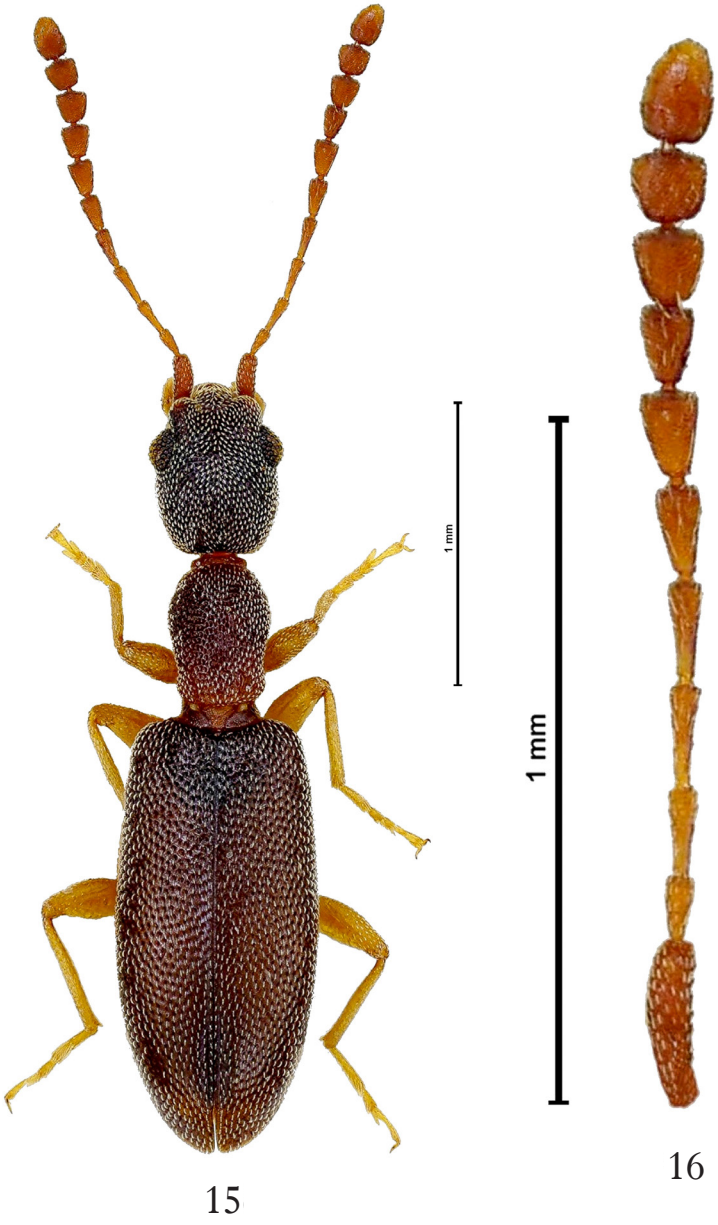
Endomia telnovi	LU	LUC	LAC	LAO	LUA	LUP	LAP	LAB	LUE	LAE	RMC	RMP	RME
Holotype ♂	2,71	0,63	0,43	0,48	1,48	0,53	0,35	0,31	1,55	0,7	1,47	1,51	2,21
Paratype ♂	2,77	0,65	0,44	0,49	1,48	0,53	0,38	0,31	1,59	0,76	1,48	1,39	2,09
Paratype ♀	2,67	0,64	0,43	0,47	1,53	0,53	0,36	0,31	1,5	0,73	1,49	1,47	2,05

D i a g n o s i s . *Endomia telnovi* n. sp., is very similar to *E. nardii* n. sp.; it differs from the latter for the truncate occiput, more parallel elytra, the generally more uniform coloration and the different shape of aedeagus.

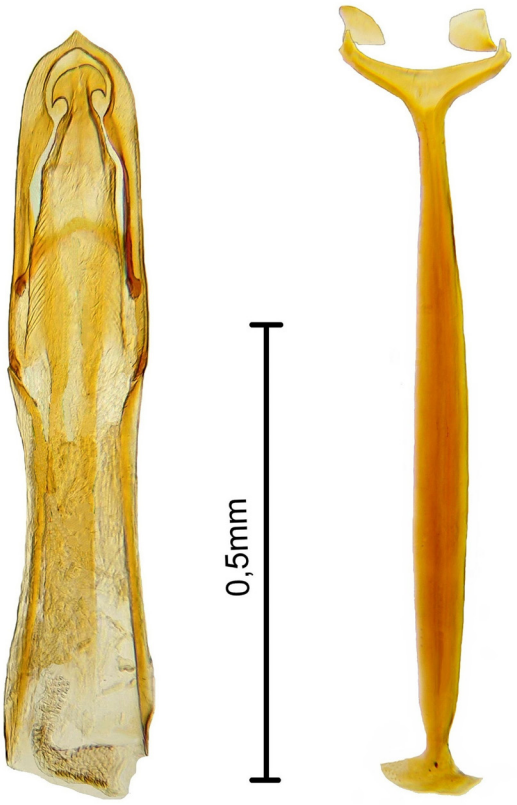
D e s c r i p t i o n . Species of medium size (fig. 15), pitch-black, with elytral apex a little clearer, antennae reddish, palps and legs lighter.

Head clearly square-shaped, 1/3 longer than wide (in the holotype RMC 1.47) truncated on the back, with a well impressed groove at the occiput; above antennal frontal protrusions very prominent; eyes small and slightly protruding, 2 times the length of the temples, which are subparallel.

Antennae (fig. 16) with first antennomere as long as the second and third joined; second antennomere shorter than the third; third,



Figs. 15-16 - *Endomia telnovi* n. sp., holotypus, from 20 km E Kalomo, Zambia. 15: habitus; 16: antenna.



Figs. 17-18 - *Endomia telnovi* n. sp., holotypus, from 20 km E Kalomo, Zambia. 17: aedeagus in ventral view; 18: Gastral spiculum.

fourth, fifth and sixth antennomerese of the same length, antennomeres seven, eight, nine and ten dilated; tenth antennomere wider than long; terminal antennomere 1.5 longer than wide.

Pronotum longer than wide (in holotype RMP 1.51), sinuated at base, collar at the base of pronotum very prominent.

Elytra twice as long as wide (in holotype RME 2.21), parallel with humeri prominent and with the greater width in the third posterior; apex not round and clearly connected.

Legs strong, hind tibiae slightly sinuate in both sexes.

Head, pronotum and elytra punctuation discreetly impressed; punctures of elytra twice the size of those of head and pronotum; pubescence very short, scaly.

Aedeagus inkwell-shaped, with tip of tegmen mushroom-shaped (fig. 17). Gastral spiculum as in fig. 18.

Last sternite in male with no significant differences.

Female: morphologically similar to the male.

Body length (♂,♀): 2.67-2.77 mm (holotype 2.71 mm).

E t y m o l o g y . This species is dedicated to my friend and colleague Dmitry Telnov from Riga (Latvia), specialist of Anthicidae, as a sign of esteem and friendship.

D i s t r i b u t i o n . This species is known only from the type locality, in Zambia, 20 km east of Kalomo.

Endomia australis (Nardi, 2004)

Material examinated (all in CD): RSA, Eastern Transvaal SW of Komatipoort, 7.II.2003, M. Snižek leg., 3 ♂♂, 6 ♀♀; RSA, Limpopo prov., Nwanedi N. R., 25 km E Tshipise, 550 m, 13.XII.2009, A. Kudrna leg., 1 ♂, 3 ♀♀; ZIMBABWE, S. Bubi env., Bubi river, 8.XII.1998, S. Bečvář leg., 1 ♂.

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Finally, a great thank goes to my friends Stefano Ziani (Meldola, Forlì) and Matteo Mingazzini (Barbiano, Ravenna) for the English translation of this paper and to Gianluca Nardi (Centro Nazionale per lo Studio e la Conservazione della Biodiversità Forestale di Bosco Fontana, Mantova) for the critical reading of the manuscript and helpful tips.

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ABSTRACT

In the present paper four new African species, belonging to the genus *Endomia* Castelnau, 1840, are described: *E. arnosti* n. sp., from Zambia, for the external morphology very similar to *E. australis* (Nardi, 2004), from which it differs for the greater length of the body, the arcuate occiput and the shape of aedeagus; *E. kejvali* n. sp., from Burkina Faso, which differs from all congeners for being the only species with the body covered by a long pubescence; *E. nardii* n. sp., from Kenya, which is morphologically similar to *E. telnovi* n. sp., from which differs mainly for the oval-shaped occiput (truncate in *E. telnovi*), the much shorter pronotum, the less parallel elytra and the different shape of the aedeagus; *E. telnovi* n. sp., from Zambia, which is similar to *E. nardii* n. sp. and from which differs mainly for the truncate-shape occiput (oval in *E. nardii*), the longer pronotum and the more parallel elytra, other than the different shape of aedeagus.

Some new records of *E. australis* Nardi, 2004 are lastly added.

RIASSUNTO

Quattro nuove specie di *Endomia* dell'Africa (Coleoptera, Anthicidae).

Nel presente lavoro sono descritte ed illustrate quattro nuove specie africane del genere *Endomia* Castelnau, 1840: *E. arnosti* n. sp., dello Zambia, con morfologia esterna molto simile a *E. australis* Nardi, 2004, dalla quale differisce per la maggiore lunghezza del corpo, per l'occipite arcuato e per la forma dell'edeago; *E. kejvali* n. sp., del Burkina Faso, che differisce da tutte le congeneri per essere l'unica specie ad avere il corpo ricoperto da una lunga peluria; *E. nardii* n. sp., del Kenya, morfologicamente affine a *E. telnovi* n. sp., che differisce da quest'ultima principalmente per l'occipite di forma ovale (troncato in *E. telnovi*), il pronoto molto più corto, le elitre meno parallele e per la diversa forma dell'edeago; *E. telnovi* n. sp., dello Zambia, che è affine a *E. nardii* n. sp. e se ne differenzia principalmente per l'occipite di forma troncata (ovale in *E. nardii*), il pronoto più lungo e le elitre più parallele, oltre alla diversa forma dell'edeago.

Sono infine elencati nuovi reperti di *E. australis* Nardi, 2004.

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