Revision of the subgenus *Kabakovia* Kirejtshuk, 1979 of the genus *Cryptarchopria* Jelínek, 1975 (Coleoptera: Nitidulidae) and notes on systematics and evolution of the subfamily Meligethinae

Ревизия подрода *Kabakovia* Kirejtshuk, 1979 рода *Cryptarchopria* Jelínek, 1975 (Coleoptera: Nitidulidae) с замечаниями по систематике и эволюции подсемейства Meligethinae

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The new studies revealed two new species of the subgenus *Kabakovia* Kirejtshuk, 1979, **stat. nov.** [*Cryptarchopria* (*K.*) *nepalensis* **sp. nov.** from Nepal and *C.* (*K.*) *ivoriensis* **sp. nov.** from the Republic of Côte d'Ivoire] and made it possible to revise the subgenus and the composition of the genus *Cryptarchopria* Jelínek, 1975 including the subgenera *Kabakovia* and *Horakia* Jelínek, 2000, **stat. nov.**, and also to make some assumptions on evolution of the groups related to this subgenus associated with palm inflorescences, and to offer some proposals on systematics of the subfamily. Also, the synonymy of *Cornutopria* Endrödy-Younga, 1978 and *Palmopria* Endrödy-Younga, 1978, **syn. nov.** as well as the synonymy of *Microporum* C. Waterhouse, 1876 and *Lucanopria* Audisio et Cline, 2009, **syn. nov.** were proposed, while other "genera" erected by Audisio et al., 2009 are still regarded as problematic.

Новые исследования выявили два новых вида подрода *Kabakovia* Kirejtshuk, 1979, **stat. nov.** [*Cryptarchopria* (*K.*) *nepalensis* **sp. nov.** из Непала и *C.* (*K.*) *ivoriensis* **sp. nov.** из Республики Кот-д'Ивуар], позволившие осуществить ревизию подрода и состава рода *Cryptarchopria* Jelínek, 1975, включающего подроды *Kabakovia* and *Horakia* Jelínek, 2000, **stat. nov.**, а также выдвинуть предположения об эволюции близких к этому подроду групп, связанных с соцветиями пальм, и сделать некоторые предложения по систематике подсемейства. Предложена синонимия *Cornutopria* Endrödy-Younga, 1978 и *Palmopria* Endrödy-Younga, 1978, **syn. nov.**, а также синонимия *Microporum* C. Waterhouse, 1876 и *Lucanopria* Audisio et Cline, 2009, **syn. nov.**, тогда как другие "роды" установленные Аудизио с соавторами (Audisio et al., 2009) по-прежнему рассматриваются как неясные.

Key words: Indo-Malayan Region, Nepal, The Republic of Côte d'Ivoire, Coleoptera, Nitidulidae, Meligethinae, *Kabakovia*, revision, new species, new synonymy

Ключевые слова: Индо-Малайская область, Непал, Республика Кот-д'Ивуар, Coleoptera, Nitidulidae, Meligethinae, *Kabakovia*, ревизия, новые виды, новая синонимия

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INTRODUCTION

The subfamily Meligethinae represents a comparatively large and more or less uniform group with completely anthophagous bionomy during larval and imaginal instars. The genus *Kabakovia* Kirejtshuk, 1979 was initially proposed for a single species which was registered in association with male inflorescences of palms (Arecaceae), in particular *Phoenix humilis* Royle (=*P. hanceana* Naud.) (Kirejtshuk & Kabakov, 1997; Jelínek, 2000). The recent study revealed new species and made it possible to revise the group. The mosaic distribution of characters among species of *Cryptarchopria* Jelínek, 1975, *Kabakovia* and *Horakia* Jelínek, 2000 formerly regarded as diagnostic for these three genera (Jelínek, 1975, 2000; Kirejtshuk, 1979) gave a ground to lower the rank of them to subgeneric one within the genus *Cryptarchopria*. Besides, both new species demonstrate the peculiar conditions in the depressions at base of the hypopygidium, which were initially considered as the diagnostic character of this genus. A somewhat analogous situation has been found in some species of the genus *Meligethinus* Grouvelle, 1906 (in particular, *M. zimbabwensis* Kirejtshuk, 2011 with bisinuate depressions at the base of its pygidium). This circumstance allows to suppose that such variability in the related species is an evidence of the recency of transformations of arcuate depressions at the base of both pygidium and hypopygidium and that the differentiation of the group including these relatives has happened quite recently The consideration of this circumstance made it also possible to put forward some ideas on the phylogeny and proposals for the systematics of the subfamily.

MATERIAL AND METHODS

Depositories. CNC, Canadian National Collections of Insects, Arachnids and Nematodes, Ottawa; MNHN, Muséum National d'Histoire Naturelle, Paris; ZIN, Zoological Institute of the Russian Academy of Sciences, St Petersburg.

Optical equipment. Usual optic equipment was used for material study, in particular the stereomicroscope Olympus SCX9 and inverted microscope Olympus CK 40 in MNHN, and also the stereomicroscope Leica MZ 16.0 in ZIN.

RESULTS

Family **NITIDULIDAE** Latreille, 1802

Subfamily **MELIGETHINAE** C.G. Thomson, 1859

Genus ***Cryptarchopria*** Jelínek, 1975

Type species: *Cryptarcha infima* Grouvelle, 1895, recent (by monotypy).

Subgenus ***Kabakovia*** Kirejtshuk, 1979, **stat. nov.**

Type species: *Pria latipes* Grouvelle, 1908, recent (by monotypy).

Diagnosis. Body medium-sized (body length 1.9–3.6 mm), suboval and usually more narrowing posteriorly than anteriorly, slightly convex to subdepressed dorsally and moderately convex ventrally. Body coarsely and sparsely punctured, elytra with regular, somewhat obliquely transverse striae and extremely small punctures disposed behind them; alutaceous to finely microreticulated; uniformly pubescent and with sparse and short cilia along pronotal and elytral sides. Head moderately projecting anteriorly and with anterior edge of frons truncate (without a separate stripe along anterior edge); with antennal grooves behind subpentagonal mentum. 11-segmented antennae bearing 3-segmented compact club in females and 3–7-segmented compact to more or less loose club in males. Pronotum slightly convex at disk and gently sloping at subexplanate sides, widest at base and arcuately narrowing anteriorly, its posterior angles with distinct top and slightly projecting posteriorly, base not bordered. Elytra with subexplanate and bordered sides, expressed

adsutural lines and separately rounded to oblique or truncate apices leaving only apex or entire pygidium uncovered. Pygidium with a pair of arcuate depressions at base. Prosternal process flattened, not curved along procoxae, more or less widened apically, with subtruncate or excised apex. Mesoventrite medially flattened and not excavate. Metepisterna somewhat widened anteriorly. Hypopygidium with a pair of bisinuate or slightly arcuate depressions at base. Protibiae subtriangular and rather thick, finely crenellate along outer edge; either both meso- and metatibiae subtrapeziform or metatibia narrowing at apex along inner edge, flattened and with a row of thick setae along outer edge. Femora of usual shape or curved and with a pointed process at apical part of posterior edge of male. Tarsi with strongly lobed tarsomeres 1–3 and short subcylindrical tarsomere 4; tarsomere 5 with strong simple claws. Tegmen with deeply excised apex and somewhat thickened lateral lobes. Penis trunk rather long and acuminate at apex. Ovipositor of usual structure.

Comparison and notes on systematic position. Some characters of the African new species make the distinctness of the generic taxa *Cryptarchopria*, *Kabakovia* and *Horakia* not quite clear, namely the dilatation of the frons over the antennal insertions, nearly straight inner edges of the antennal grooves on head and almost straight depressions at the base of hypopygidium (neither plain arcuate nor bi-sinuate). Following the previous tradition, this species could be erected in a new generic taxon. However, in addition to the dissonances in former "diagnostic" characters mentioned in the introduction, the new species from Nepal demonstrates some reduction of curve in the bisinuate depressions at the base of hypopygidium and also rather peculiar sexual dimorphism in the antennae and femora. Futhermore, the prosternal process in each species demonstrates so great peculiarity, which is usually characteristic of a generic level of group separation. These features make it more reasonable to lower the rank of *Kabakovia* and *Horakia*, because only few characters remain diagnostic for these taxa (see the key to subgenera below). Jel nek (2000) mentioned as diagnostic also the "dorsal articulation of scape" and separated "clypeus" which can be scarcely traced in many specimens. In particular, *C.* (*K.*) *nepalensis* **sp. nov.** has the isolated "clypeus" viewed as a distinct stripe, while the frons of *C.* (*K.*) *ivoriensis* **sp. nov.** has no trace of it. Finally, Jelínek (2000) used for diagnostics also the explanate sides of the pronotum, but this structural feature is rather variable in species of *Cryptarchopria* sensu str. and *C.* (*K.*) *nepalensis* **sp. nov.** which is in accordance with manifesting a considerable variability in body size.

Notes on bionomy. The type species of the subgenus is quite common and some data on the bionomy has already obtained. It is known in particular from the male palm inflorescences of *Phoenix humilis* Royle (=*P. hanceana* Naud.) (Kirejtshuk & Kabakov, 1997). Jelínek (2000) described alone species of *Horakia* collected in forests of the northern Thailand with a local species of *Castanopsis* (D. Don) Spach (Fagaceae) and probably mountain forest palm (some suppositions on this topic were published by Audisio et al., 2009). There is no data on bionomy of the new species described here, however, it can be supposed that both could be also associated with male inflorescences of palms. All palm species, which are known as host plant of *Cryptarchopria* sensu lato, belong to the endemic Indo-Malayan groups, while the only species of *Phoenix* could present a group common for the Paleotropics in general. This plant genus can be more usual for inhabitance of *C.* (*K.*) *latipes*.

Key to subgenera of the genus *Cryptarchopria*

1. Antennal grooves on prosternum well raised and with very distinct inner edge; hypopygidium without distinct depressions at base; elytra combined wider than long. Figs 27–28 . . . . . ***Cryptarchopria*** sensu str.

[*C.* (*C.*) *infima* (Grouvelle, 1895); *C.* (*C.*) *kabakowi* Kirejtshuk, 1979; *C.* (*C.*) *ponomarenkoi* Kirejtshuk, 1989]

– Antennal grooves on prosternum not expressed 2

2. Frons emarginate at anterior edge; hypopygidium without distinct depressions at base; elytra combined wider than long. Figs 29–30 . . . . . ***Horakia*, stat. nov.** [*C.* (*H.*) *kubani* (Jelínek, 2000), **comb. nov.**]

– Frons truncate at anterior edge; hypopygidium with distinct depressions at base; elytra as long as or longer than wide combined. Figs 1–26 . . . . . ***Kabakovia*, stat. nov.** [see key to species below]

Key to species of the subgenus *Kabakovia*, stat. nov.

1. Body subquadrate; elytra combined about as wide as pronotum and twice as long as pronotum; frons dilated over antennal insertions; postocular depressions behind eyes distinct; pronotosternal sutures traced at procoxal cavities; prosternal process at apex about twice as wide as in the narrowest place between procoxae; hypopygidium with nearly straight depressions along base; pygidium almost completely uncovered by elytral apices; meso- and metatibiae about half as wide as corresponding femora; mesofemora at base only slightly narrower than at the middle. Male: antennal club 5-segmented. Body length 3.3 mm. Figs 1–5, 8–9, 14–16. The Republic of Côte d'Ivoire . . . . . ***C.* (*K.*) *ivoriensis* sp. nov.**

– Body suboval and more narrowing posteriorly than anteriorly; elytra combined more or less narrower than pronotum and markedly less than twice as long as pronotum (about 1.5 times as long as pronotum); postocular depressions behind eyes not expressed; frons not dilated over antennal insertions; prosternal process at apex markedly less than twice as wide as in the narrowest place between procoxae; hypopygidium with bi-sinuate depressions along base; pygidium almost completely covered by elytra or only its apex remains uncovered 2

2. Pronotal and often head integument with transversely undulate rows of punctures; prosternal process narrow and subtruncate at apex; pronotosternal sutures distinct beginning from procoxal cavities and reaching to anterior edge of prothorax; meso- and metatibiae about half as wide as corresponding femora. Male: antennal club 3–7-segmented; meso- and metafemora with nearly straight to emarginate posterior edge and at base about as wide as at the middle; metafemur widest at apex and with a sharply acuminate subapical process along posterior edge. Female: antennal club 3–4-segmented; meso- and metafemora with convex posterior edge. Larger: body length 1.8–3.6 mm. Figs 10–13, 20–26. Nepal . . . . . ***C.* (*K.*) *nepalensis* sp. nov.**

– Head and pronotal integument with diffuse punctures; prosternal process wider and deeply excised at apex; pronotosternal sutures not traced; meso- and metatibiae more than half as wide as corresponding femora; mesofemur of both sexes with convex posterior edge and at base much narrower than at the middle; metafemur of both sexes widest at the middle and with convex posterior edge. Male: antennal club 3–4-segmented; metafemur without subapical process along posterior edge. Female: antennal club 3–4-segmented. Smaller: body length 1.9–2.6 mm. Figs 6–7, 17–19. East India, Sri Lanka, Vietnam (? Nepal) . . . . . ***C.* (*K.*) *latipes*** (Grouvelle, 1908), **comb. nov.**

Cryptarchopria (*Kabakovia*) *ivoriensis* sp. nov.

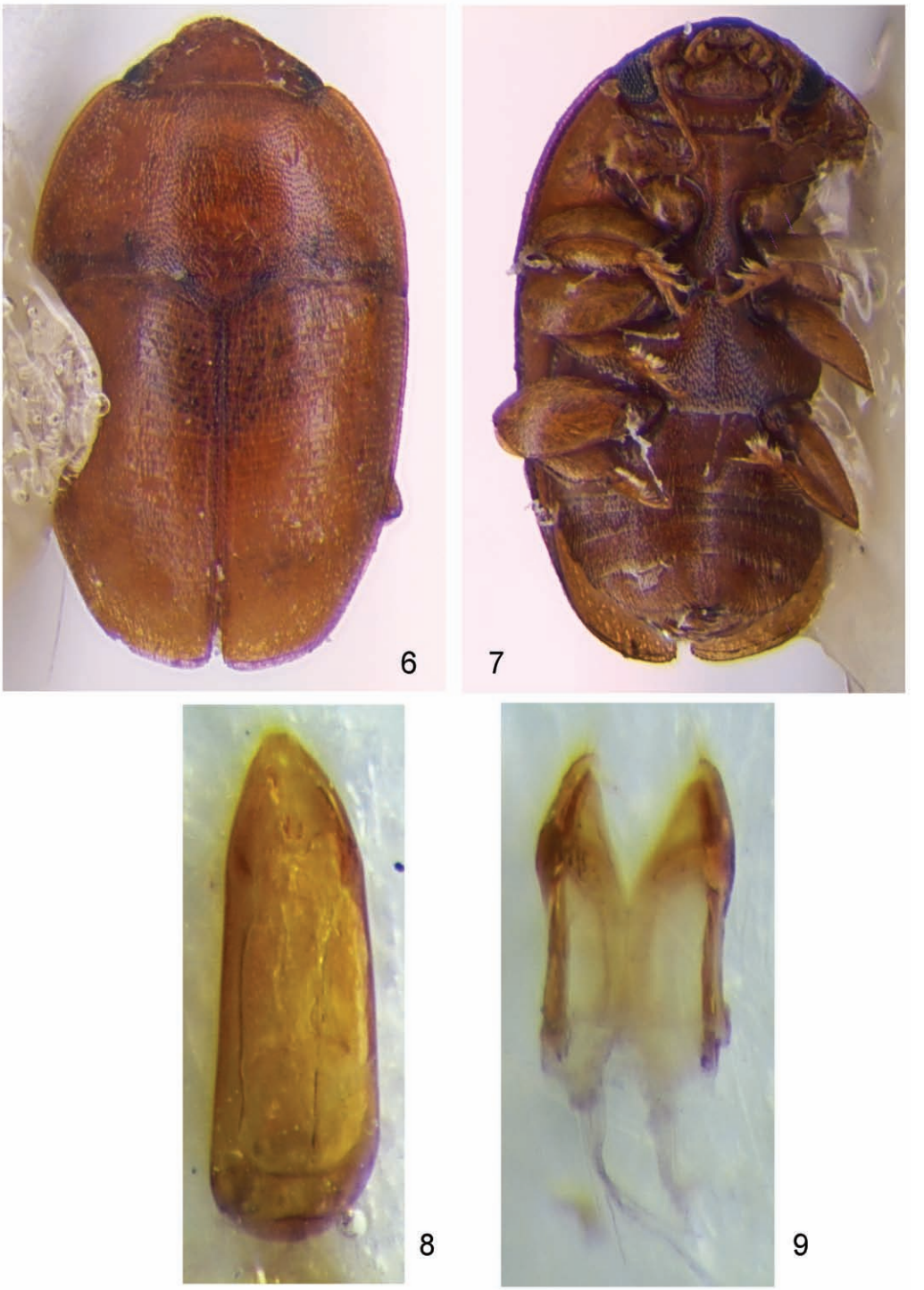
(Figs 1–5, 8–9, 14–16)

Material examined. Holotype, male (MNHN) – "**Côte d'Ivoire**, P. 12, loc. Lamto, date 25-11-69, A. POLLET Réc.".

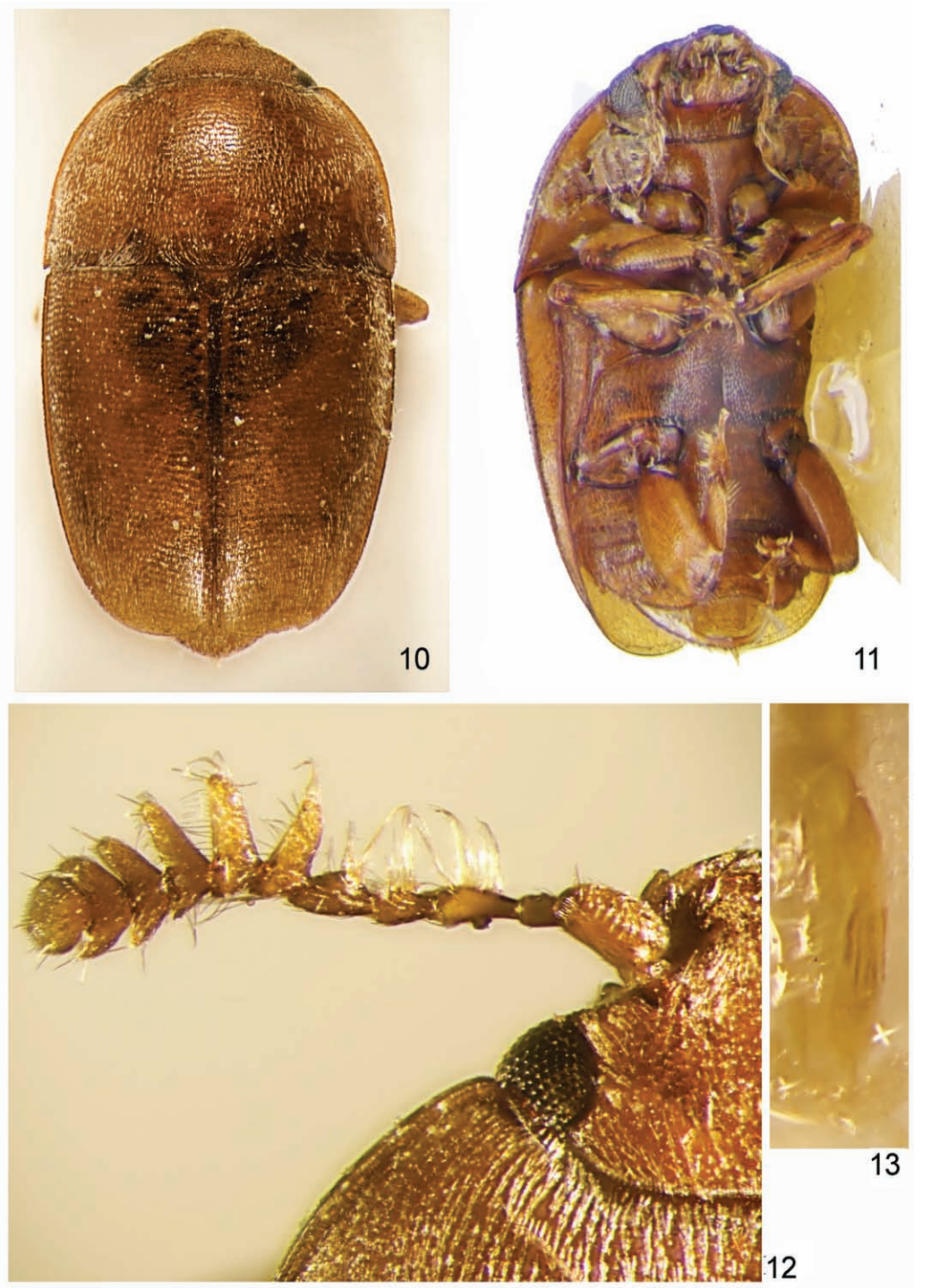
Diagnosis. See the above key to species of *Kabakovia*, **stat. nov.** Besides, this new species, in contrast to *C.* (*K.*) *nepalensis* **sp. nov.**, is somewhat lighter, more shining, nearly inconspicuously pubescent and more finely punctured; its head is somewhat longer, with larger eyes and without anterior stripe ("clypeus"); elytra are somewhat shorter and narrower at base; meso- and metatibiae are wider. This new species also differs from *C.* (*K.*) *latipes* in the subtruncate apices of elytra, inconspicuous pubescence, more shining integument, shape of antennal club, shape of meso- and metafemora.

Description of male (*holotype*). Length 3.3, width 1.3, height 0.7 mm. Moderately

Figs 1–5. *Cryptarchopria* (*Kabakovia*) *ivoriensis* **sp. nov.** Holotype, male: body, dorsal **(1)**; idem, ventral **(2)**; anterior part of body, ventral **(3)**; head, dorsal **(4)**; median base of pronotum, scutellum and median base of elytra, dorsal **(5)**. Body length 3.3 mm.



Figs 6–9. *Cryptarchopria* (*Kabakovia*) *latipes* (Vietnam), male: body, dorsal **(6)**; idem, ventral **(7)**. Body length 2.3 mm. *Cryptarchopria* (*Kabakovia*) *ivoriensis* **sp. nov.** Holotype, male: penis trunk, dorsal **(8)**; tegmen, ventral **(9)**. Penis trunk length 0.6 mm.



Figs 10–13. *Cryptarchopria* (*Kabakovia*) *nepalensis* **sp. nov.** Holotype, male: body, dorsal **(10)**; idem, ventral **(11)**; left antenna, dorsal **(12)**; armature of inner sac of penis, dorsal **(13)**. Body length 3.5 mm.

convex dorsally and ventrally; subunicolourous straw reddish; integument rather shining and covered with extremely fine yellowish, slightly conspicuous, hairs: on head, pronotum and thoracic underside hairs about twice as long as distance between their insertions; on elytra with somewhat longer and denser hairs inserted behind obliquely transverse striae; on ventrites with rather long and dense diffuse hairs.

Head, pronotum, metaventrite and abdominal ventrite 1 with rather small and distinct punctures much smaller than eye facets in diameter, interspaces between them about as great as puncture diameter. Elytra with not quite regular, somewhat obliquely transverse striae and extremely small punctures disposed behind them, interspaces between striae somewhat less than two diameters of eye facets, striae becoming gradually denser towards apices. Pygidium and abdominal ventrites with small, shallow, but distinct punctures, interspaces between them very narrow and very smoothly microreticulated. Prosternum with extremely fine and not quite clear punctation or smooth.

Head subflattened and about ¾ as long as the distance between moderately large eyes (consisting of moderately fine facets), transverse diameter of latter about one-fifth of distance between eyes, its anterior edge straight and not bordered and with rounded lateral angles. Lobes of labrum not exposed and mandibles slightly exposed from frons. Antennae slightly longer than head width, antennomere 3 almost as long as scape and about twice longer than antennomere 2 or antennomere 4; their 5-segmented club composing nearly half of total antennal length, somewhat elongate and with ultimate antennomere transversely truncate at apex. Pronotum widest in posterior third and regularly rounded at sides, with evenly vaulted disk and gently sloping to narrowly subexplanate sides, anterior edge moderately trapezoidally excised, posterior edge subtruncate and with a shallow sinuation at each posterior angle, which is slightly projecting posteriorly. Scutellum subtriangular to subsemicircular, with rounded apex, almost twice as wide as long. Elytra slightly shorter than wide combined, with maximum width in anterior third, distally gradually narrowing to subobliquely truncate apices, which are forming very small and shallow sutural angle, gently sloping to rather widely subexplanate lateral edges, adsutural lines distinct in distal half. Pygidium slightly convex, widely rounded at apex and with pair of slightly arcuate depressions at base. Arcuate apex of anal sclerite scarcely exposed from under pygidial apex.

Ultimate labial palpomere about 3.5 times as long as thick and somewhat narrowing at apex. Mentum subpentangular, more than twice as wide as long, lateral edges about half as long as mentum at midline. Antennal grooves distinct along inner edge; postocular depressions distinct and moderately deep. Prosternum gently convex along the middle and with process subflattened and strongly widened at subtruncate apex, its maximum width somewhat less than width of antennal club. Distance between mesocoxae about 1.5 times and that between metacoxae about 2.5 times as great as that between procoxae. Metaventrite subflattened and with weak and narrow median suture. Abdominal ventrite 1 almost twice as long as each of ventrites 2–4 and nearly 1.5 times as long as hypopygidium, which is shallowly and widely emarginate at apex. Epipleura gradually narrowing distally, subhorizontal and somewhat narrower than antennal club at base.

Protibia about 2/3 as wide as antennal club, finely crenellate along outer edge widened along outer edge at base; meso- and metatibiae markedly wider, subtrapeziform and with a row of small very short and dense hairs along outer edge, spurs comparatively small and stout. Femora with nearly usual outline and rather wide, 2.5–3.0 times as wide as prosternal process, although mesofemur strongly widened at base of posterior edge and metafemur with regularly convex

posterior edge. Tarsi rather long (about 2/3 as long as tibiae), tarsomeres 1–3 moderately strongly lobed, claws simple and narrow; protarsus about 2/3 as wide as protibia, meso- and metatarsi somewhat narrower.

Aedeagus. Tegmen and penis trunk well sclerotised and very long.

Etymology. The epithet of this new species is formed from the name of country of its origin, the Republic of Côte d'Ivoire.

Cryptarchopria (*Kabakovia*) *nepalensis* sp. nov.

(Figs 10–13, 20–26)

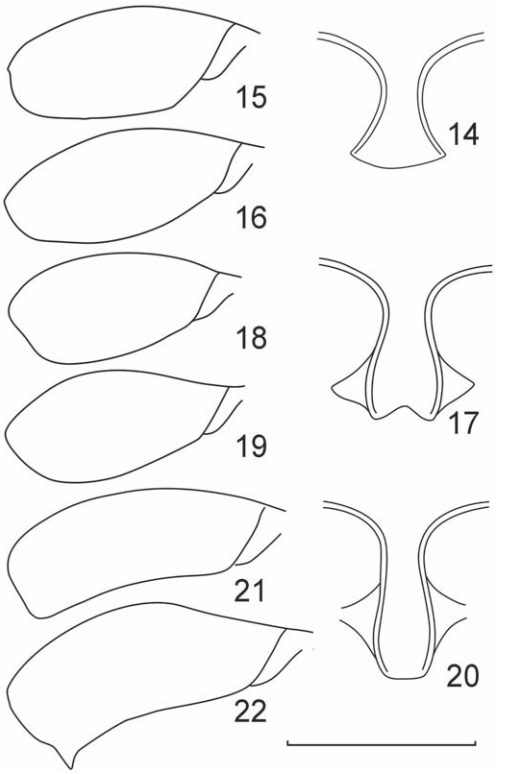
Material examined. Holotype, male (CNC) – "**NEPAL**, nr. Simra, Abhabhar, 600 ft, 24 Aug.1967, Can. Nepal Exped."; 22 paratypes, males and females (CNC, ZIN) – same data as for holotype and "25 Aug. 1967"; 1 specimen (CNC) – "**NEPAL**, Ktmd., 600', Adhabhar, 4 mi. N. Simra, 27.VIII.1967, Can. Nepal Exped."; 1 specimen (CNC) – "**NEPAL**, nr. Birganj, Lothar, 450 ft, 8.IX.1967, Can. Nepal Exped.".

Diagnosis. See the above key to species of *Kabakovia*, **stat. nov.** and the diagnosis of the previous new species. This new species, in contrast to its consubgeners, has the distinct "clypeus", transverse rows of punctures on head and pronotum, and distinctly expressed secondary sexual dimorphism in the characters of meso- and metafemora, and metatibia.

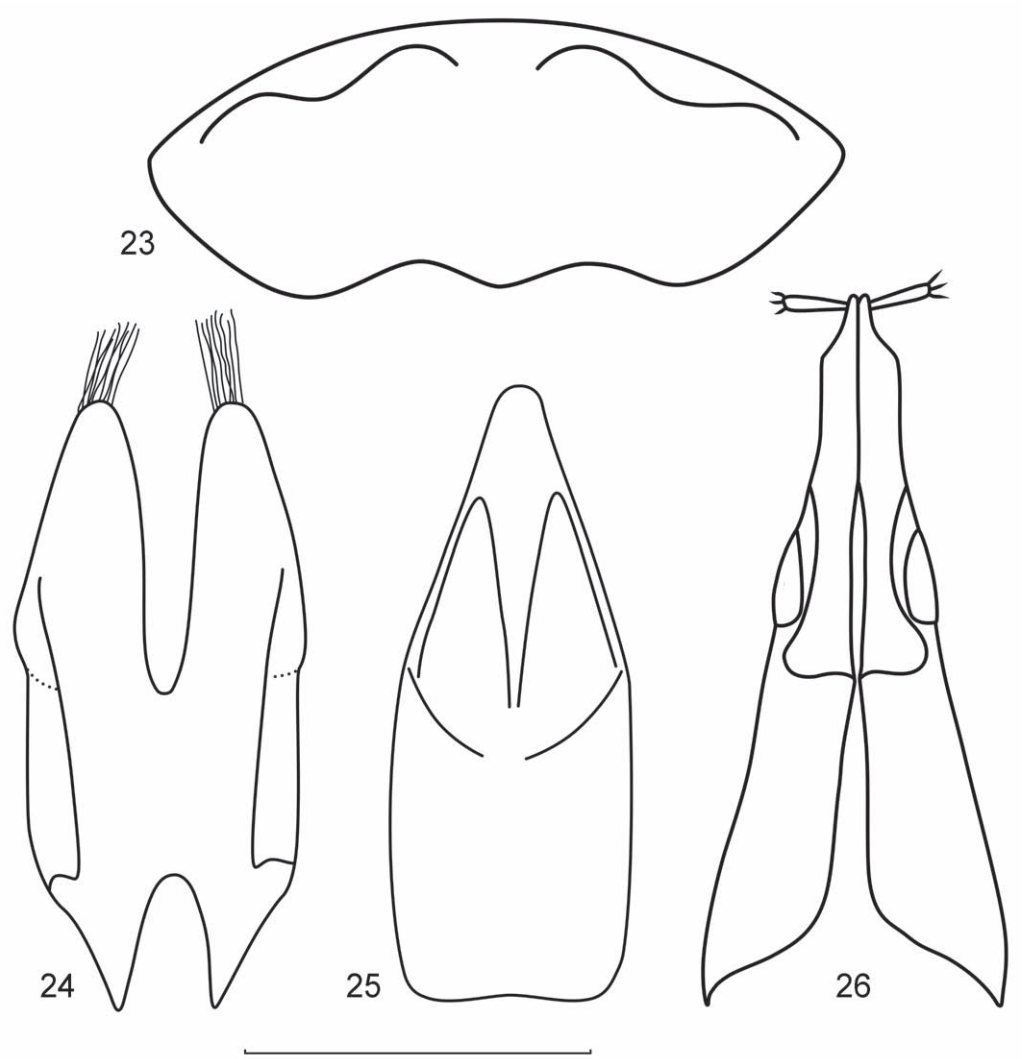
Note. The characters of this new species, which are shared with the previous new species, are omitted in the description below.

Description of male (*holotype*). Length 3.6, width 1.6, height 0.8 mm. Rather convex dorsally and moderately convex ventrally; subunicolourous straw reddish; integument dully shining and covered with extremely fine, rather conspicuous, yellowish hairs: on head, pronotum and thoracic underside hairs 3–4 times as long as distance between their insertions; on elytra with somewhat longer and denser hairs, their insertions located behind obliquely transverse striae.

Head and pronotum with distinct punctures slightly smaller than eye facets in diameter and arranged in transversely undulate rows, punctures in rows (sub)contiguous and interspaces between rows about as great as a puncture diameter. Prosternum and abdominal ventrite 1 with indistinct punctures much smaller than eye facets in diameter, interspaces between them about as great as puncture diameter or smaller and alutaceous. Metaventrite with distinct and somewhat elongate punctures much smaller than eye facets in diameter, interspaces between them less than puncture diameter. Elytra with not quite regular, somewhat obliquely transverse striae and



Figs 14–22. *Cryptarchopria* (*Kabakovia*) *ivoriensis* **sp. nov.** Holotype, male: prosternal process, ventral **(14)**; right mesofemur, ventral **(15)**; right metafemur, ventral **(16)**. *Cryptarchopria* (*Kabakovia*) *latipes* (Vietnam), male: prosternal process, ventral **(17)**; right mesofemur, ventral **(18)**; right metafemur, ventral **(19)**. *Cryptarchopria* (*Kabakovia*) *nepalensis* **sp. nov.** Paratype, male: prosternal process, ventral **(20)**; right mesofemur, ventral **(21)**; right metafemur, ventral **(22)**. Scale bar: 0.5 mm.



Figs 23–26. *Cryptarchopria* (*Kabakovia*) *nepalensis* **sp. nov.** Paratypes: hypopygidium, ventral **(23)**; tegmen, ventral **(24)**; penis trunk, dorsal **(25)**; ovipositor, ventral **(26)**. Scale bars: 0.5 mm (23), 0.3 mm (24–26).

extremely small punctures disposed behind them, interspaces between striae somewhat less than two diameters of eye facets, striae becoming gradually denser towards apices.

Head subflattened and about half as long as distance between eyes (consisting of moderately fine facets), transverse diameter of the latter about one-fourth of distance between eyes, its anterior edge straight, with isolated stripe ("clypeus") and rounded lateral angles. Antennae about 1.5 times as long as head width and reaching mesocoxae; antennomere 3 markedly shorter than scape, about twice as long as antennomere 2 and about 1.5 times as long as antennomere 4; their 6-segmented and rather loose club slightly longer than antennomeres 2–5 combined, and with ultimate antennomere rounded at apex. Pronotum widest at base and regularly rounded at sides, with evenly vaulted disk and gently sloping to narrowly subexplanate sides, an-

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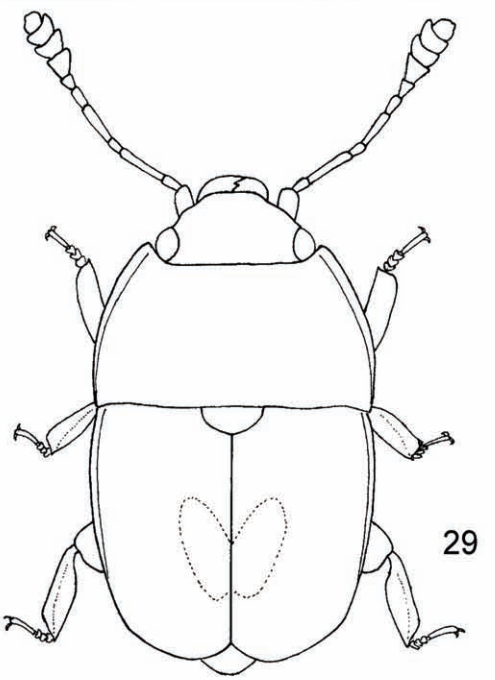

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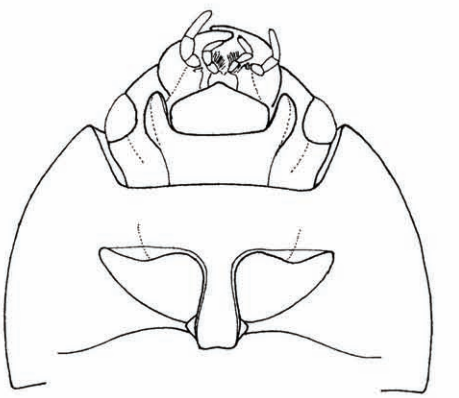

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Figs 27–30. *Cryptarchopria* (*Cryptarchopria*) *kabakowi*, paratypes, males: body, dorsal **(27)**; idem, ventral **(28)**. Body length 3.9 mm. *C.* (*Horakia*) *kubani*, male (after Jelínek, 2000): body, dorsal **(29)**; head and prothorax, ventral **(30)**. Body length 2.5 mm.

terior edge shortly trapezoidally excised, posterior edge subtruncate with shallow sinuation at each posterior angle, which is slightly projecting posteriorly. Elytra about as long as wide combined, with maximum width in anterior third, distally gradually narrowing to subobliquely truncate apices, which are forming a very small and shallow sutural angle, adsutural lines distinct in distal 2/3. Pygidium narrowly rounded to subacute at apex and with a pair of slightly bi-sinuate depressions at base. Antennal grooves distinct along inner edge; postocular depressions not expressed. Prosternum with process slightly widened at subtruncate apex, maximum width of its lateral lobes about as great as that of antennal club. Distance between mesocoxae about twice and that between metacoxae about four times as great as that between procoxae. Abdominal ventrite 1 almost twice as long as each of ventrites 2–4 and nearly 1.5 times as long as hypopygidium, which is shallowly and widely bi-emarginate at apex.

Protibia about 2/3 as wide as antennal club, meso- and metatibiae slightly wider than protibia; mesotibia subtrapeziform and metatibia distinctly narrowing along inner edge from the middle. Profemur with nearly usual outline and rather wide, mesofemur subparallel-sided and curved, nearly twice as wide as mesotibia; metafemur similar to mesofemur, but with strong sharp process before apex and somewhat wider than metatibia. Tarsi rather long (about 2/3 as long as tibiae), tarsomeres 1–3 moderately strongly lobed, claw simple and narrow; protarsus about 2/3 as wide as protibia, meso- and metatarsi somewhat narrower.

Aedeagus. Tegmen and penis trunk well sclerotised and moderately long.

Female. Differs from the male in somewhat shorter antennae (slightly longer than head width) with 3-segmented club, widely rounded apex of pygidium, slightly convex posterior edge of meso- and metafemora, trapeziform metatibia and markedly narrower tarsi. Ovipositor weakly sclerotised.

Variations. Length 1.8–3.6 mm. The females examined are smaller in general, and the smaller males demonstrate less expressed secondary sexual dimorphism. The elytral apices vary in both sexes in curve and some paratypes have almost arcuately oblique ones forming a join arc and completely covering the abdominal apex, while others show truncately oblique ones forming a small sutural angle. The punctation of the head in some paratypes is almost or completely diffuse (not arranged in transversely undulate rows as that in the holotype). Some variation is also observed in the punctation of other sclerites and pubescence.

Etymology. The epithet of this new species is formed from the name of country of its origin, Nepal.

DISCUSSION

The complete anthophagy on palms is known in three subfamilies of Nitidulidae. Members of these groups feed on flowers (inflorescences) and keep there almost during their entire life circle, except pupal stage. There are known as anthophagous species of the subgenus *Apria* Grouvelle, 1919 (genus *Epuraea* Erichson, 1843) spread in Equatorial and South Africa (Jelínek, 1992 etc.) from the subfamily Epuraeinae Kirejtshuk, 1986; some small heterogenous groups distributed mostly in subtropical and tropical areas of Eurasia and Africa from the subfamily Meligethinae (Endrödy-Younga, 1978 etc.) and all genera from the tribe Mystropini Murray, 1864 endemic of Central and South America (Kirejtshuk & Couturier, 2010 etc.). Among the Meligethinae the genera *Meligethinus* and *Cryptarchopria* sensu lato (see above) have some evident relationship, although the first could be recognised as more archaic and maintaining many plesiomorphic features (Kirejtshuk, 2011a). The characters of both make it possible also to find some less clear links with the other two genera including the species associated with palm inflorescences, *Cornutopria* Endrödy-Younga, 1978 (in-

cluding *Palmopria* Endrödy-Younga, 1978, **syn. nov.**) and *Microporodes* Endrödy-Younga, 1978. The palm Meligethinae and Mystropini demonstrate a higher level of structural variability in comparison with other groups closely related to them. It is believed that this could correlate with the diversity of the flower structure in different host plants, although some palm species are inhabited by groups of closely related species and groups of species without a close common ancestry (Kirejtshuk & Couturier, 2009, 2010). Structural variability in species of Meligethinae associated with palm inflorescences (composing slightly over 1 % of total members of the subfamily) is comparable with that in the rest recent representatives of the subfamily. The parallel trends in structural changes among the not closely related groups associated with palms observed in some genera of Meligethinae (Palaeotropics) and Mystropini (Central and South America) give some ground to suppose a homoplasy caused by the similar mode of life. Another thing is that the level of structural variability of these groups of palm inhabitants is markedly higher than that in other anthophagous groups of both subfamilies Meligethinae and Nitidulidae.

The genus *Meligethinus* with the most generalised characters among the recent members of the subfamily includes some dozen of species. Some of its species of it are rather aberrant and demonstrating the features of the more advanced genera, such as the longer antennae with longer antennal club, transversely striate sculpture of the elytra (as in representatives of *Cryptarchopria* sensu lato) or bi-sinuate depressions at the base of pygidium (analogous to those at the base of hypopygidium of some species of *Cryptarchopria* sensu lato). Interestingly, *Meligethinus zimbabwensis* Kirejtshuk, 2011 has the male genitalia similar to those in *Cyclogethes* Kirejtshuk, 1979, although the latter genus shares most similarities with some subgenera of *Meligethes* Stephens, 1829 sensu lato. As in some forms of *Cryptarchopria* sensu str., *Microporodes dispar* (Murray, 1864) has no depressions at the base of its hypopygidium. Besides, the palm meligethin inhabitants show also many structural analogies with those in the species of the genera *Microporum* C. Waterhouse, 1876 and *Pria* Stephens, 1829, recent species of which are associated with flowers of the plant families other than Arecaceae (and frequently not related) or have still unknown bionomy. In particular, these analogies concern the structure of antennae, mouthparts, tibiae etc., being partly homoplasies, but partly synapomorphies of the groups of different taxonomic levels.

Audisio et al. (2009) proposed 22 generic names for groups of the subfamily Meligethinae without providing with neither proper diagnoses nor comparison for them. As a result, many theoretical and practical difficulties appeared for classification and identification of species of the subfamily (Kirejtshuk, 2011a). Besides, these co-authors proposed a cladogram without any list of characters or matrix of them, which could make it possible to analyze the author's opinion. This phylogenetic construction seemed to be expected a support from a comparison of nucleotide sequences of some representatives and some ideas on history of the subfamily. These co-authors wrote that their conclusions were grounded by "the cladistic analysis based on available morphological data, coupled with those of molecular analyses", which "seem to support two main clades within Meligethinae" and referred to the publication by Trizzino et al. (2009), which considered the molecular methods applied to Meligethinae and stated in turn that "this result supports a strict relationship among these groups of species as already evidenced on the basis of morphological and ecological characters". Thus, the origin of the proposed cladogram is still not explained. At the same time this cladogram does not coincide with real historic data, and the genus described from the Eocene can scarcely be fit with this construction without essential changes in the latter (Kirejtshuk, 2011b). Futhermore, some undescribed fossil meligethins are also

scarcely fit with it. Taking into consideration of these circumstances, it seems inexpedient now to consider this phylogenetic reconstruction till new additional data will make it possible. Nobody of these many coauthors demonstrate how their application can be used. The practical difficulties in an application of it discussed in detail by Kirejtshuk (2011a) were distinctly illustrated by A. Lompe in "Die Käfer Europas. Ein Bestimmungwerk im Internet", in which the taxa proposed by Audisio et al. (2009) were applied for a comparatively simple fauna of Europe after Spornraft (1967). Even for this fauna to define proper diagnostic syndromes for the proposed "genera" seems to be impossible in a way that allows the readers to discriminate "genera" in the European fauna and to find any order in key couplets in respect of coincidence of them with these "genera". The "genera" can be gathered only from different places of the keys. Identification of them in representatives of more complex faunas, such as the Capean or Indo-Malayan ones could become even much more complicated, if it is conceivable at all. As to some dissonances in the traditional taxonomic interpretation and the results of comparison of nucleotide sequences (Audisio et al., 2009; Trizzino et al., 2009), they need to be studied in a more detail before introducing into taxonomic interpretations. At the same time, supposedly the taxa *Bolbocerogethes* Audisio et Cline, 2009 and *Rubiogethes* Audisio et Cline, 2009 can be considered as separate subgenera within the genus *Meligethes* sensu lato mostly because of abnormal combinations of their structural characters, although every of these characters seems to be not unique.

Thus, the phylogenetic and systematic construction proposed by Audisio et al. (2009) would be better for now not to use until a proper analysis of the phylogeny of the subfamily becomes possible or at least before publication of proper argumentation for this construction. Nevertheless, the name *Lucanopria* Audisio et Cline in Audisio, Cline, de Biase, Antonini, Mancini, Trizzino, Costantini, Strika, Lamanna et Cerretti, 2009, **syn. nov.** was initially used for the species ("*Lucanopria*" *wagneri* Audisio et Cline in Audisio, Cline, de Biase, Antonini, Mancini, Trizzino, Costantini, Strika, Lamanna et Cerretti, 2009, alone species of the genus) which differs from the species of *Microporum* only in the somewhat elevated dilatations of the frons over the antennal insertions and comparatively long pubescence on the antennal club. The names of *Cornutopria* (for one species) and *Palmopria* **syn. nov.** (for three species) were proposed for the African species manifesting differences mostly in the characters of sexual dimorphism, while females of both have not these characters (Endrödy-Younga, 1978), and, therefore, it is thought not advisable to regard these species in composition of separate genera and correspondingly the last pair of the names should be regarded as synonyms. According to this, the taxonomic combination of the species formerly considered within *Palmopria* should be changed in the following way: *Cornutopria congolensis* (Grouvelle, 1915), **comb. nov.** (*Pria*); *Cornutopria elaeidis* (Endrödy-Younga, 1978), **com. nov.** (*Palmopria*); *Cornutopria tomentosa* (Endrödy-Younga, 1978), **com. nov.** (*Palmopria*).

As a result, it is possible to conclude the following taxonomic composition of the subfamily Meligethinae:

Genus *Melipriopsis* Kirejtshuk, 2011;
Genus *Meligethinus* Grouvelle, 1906 (=*Prianella* Reitter, 1919);
Genus *Pria* Stephens, 1829 (=*Laria* Scopoli, 1763; *Cormyphora* Laporte de Castelneau, 1840; *Strychnobia* Gistel, 1857; *Allopria* Kirejtshuk, 1980);
Genus *Microporodes* Endrödy-Younga, 1978;
Genus *Anthystrix* Kirejtshuk, 1984 (?=*Sebastiangethes* Audisio, Kirk-Spriggs et Cline, 2008; ?=*Tarchonanthogethes* Audisio et Cline, 2009; ?=*Xenostrongylogethes* Audisio et Cline, 2009);
Genus *Micropria* Grouvelle, 1899 (=*Metapria* Grouvelle, 1908);
Genus *Cyclogethes* Kirejtshuk, 1979;
Genus *Cryptarchopria* Jelínek, 1975;

Subgenus *Kabakovia* Kirejtshuk, 1979, **stat. nov.**;
Subgenus *Cryptarchopria* Jelínek, 1975;
Subgenus *Horakia* Jelinek, 2000, **stat. nov.**;
Genus *Microporum* C. Waterhouse, 1876 (=*Probaenus* C. Waterhouse, 1876; *Prianella* Lechanteur, 1955, non Reitter, 1919; *Microporellus* Endrödy-Younga, 1978; *Lechanteuria* Endrödy-Younga, 1978; *Lucanopria* Audisio et Cline, 2009, **syn. nov.**);
Genus *Cornutopria* Endrödy-Younga, 1978: 303, 305 (=*Palmopria* Endrödy-Younga, 1978: 303, 312, **syn. nov.**);
Genus *Meligethes* Stephens, 1829;
Subgenus *Chromogethes* Kirejtshuk, 1989;
Subgenus *Lariopsis* Kirejtshuk, 1989 (?=*Asterogethes* Audisio et Cline, 2009; ?=*Odontholariopsis* Audisio et Cline, 2009; ?=*Neolariopsis* Audisio et Cline, 2009);
Subgenus *Clypeogethes* Scholtz, 1932 (=*Idiogethes* Kirejtshuk, 1977; ?=*Afrogethes* Audisio et Cline, 2009; ?=*Aristogethes* Audisio et Cline, 2009; ?=*Boragogethes* Audisio et Cline, 2009; ?=*Brassicogethes* Audisio et Cline, 2009; ?=*Fabogethes* Audisio et Cline, 2009; ?=*Genistogethes* Audisio et Cline, 2009; ?=*Indogethes* Audisio et Cline, 2009; ?=*Jelinekigethes* Audisio et Cline, 2009; ?=*Lamiogethes* Audisio et Cline, 2009; ?=*Paleogethes* Audisio et Cline, 2009; ?=*Sagittogethes* Audisio et Cline, 2009; ?=*Stachygethes* Audisio et Cline, 2009; ?=*Thymogethes* Audisio et Cline, 2009; ?=*Xerogethes* Audisio et Cline, 2009);
Subgenus *Meligethes* Stephens, 1829 (=*Odontogethes* Reitter, 1871);
Subgenus *Astylogethes* Kirejtshuk, 1992;
Subgenus *Acanthogethes* Reitter, 1871;
? Subgenus *Bolbocerogethes* Audisio et Cline, 2009;
? Subgenus *Rubiogethes* Audisio et Cline, 2009;
Genus *Restiopria* Audisio, Jelinek et Cline, 2011.

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