

Key to the genera of Ceutorhynchinae living on *Ephedra*, with description of a new genus and two new species (Coleoptera: Curculionidae)

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Abstract

The genera of Ceutorhynchinae living on *Ephedra* are keyed. A new genus, *Notoxyonyx* gen.n., and two new species, *Notoxyonyx impressus* sp.n. [Algeria] and *Theodorinus hispanicus* sp.n. [Spain] are described. *Platypteronyx* KOROTYAEV, *Macrosquamonyx* KOROTYAEV and *Fossoronyx* KOROTYAEV are promoted to generic rank. New combinations are: *Platypteronyx auritus* (KIRSCH), *Fossoronyx kaszabi* (BAJTENOV) and *F. remaudierei* (HOFFMANN), all transferred from *Platygasteronyx* REITTER; *Neoxyonyx strigatirostris* (HOCHHUT) and *Paroxyonyx imitator* (WAGNER), both transferred from *Coeliodes* SCHÖNHERR; *Barioxyonyx beryticus* (SCHULTZE) and *Notoxyonyx pici* (SCHULTZE), both transferred from *Paroxyonyx* HUSTACHE; *Paroxyonyx coelioidoides* (REITTER) from *Oprohinus* REITTER; *Macrosquamonyx kaplini* (KOROTYAEV), *M. macrosquamosus* (KOROTYAEV), *Paroxyonyx lunatus* (REITTER), *P. mesasiaticus* (KOROTYAEV), *P. mongolicus* (KOROTYAEV), *P. seriatus* (VOSS) and *P. subfenestratus* (VOSS), all transferred from *Protoxyonyx* VOSS. *Paroxyonyx japhoensis* (SCHULTZE) is revived from synonymy with *P. cinctus* (CHEVROLAT, 1861) [*Coeliodes*] not *Coeliodes cinctus* (FOURCROY, 1785). The following new synonymies are established: *Paroxyonyx* HUSTACHE (= *Protoxyonyx* VOSS syn.n.); *Neoxyonyx strigatirostris* (HOCHHUT) (= *N. massageta* (KIRSCH) syn.n.; = *N. monticola* (DESBROCHERS) syn.n.); *Paroxyonyx fallaciosus* (DESBROCHERS) (= *P. hispanicus*: HOFFMANN pars not (HUSTACHE) [misidentification] syn.n.); *P. japhoensis* (SCHULTZE) (= *Coeliodes cinctus* CHEVROLAT not *Coeliodes cinctus* (FOURCROY) syn.n.; = *Micrelus usambaricus*: SCHULTZE, 1906 not SCHULTZE, 1899 [misidentification] syn.n.; = *Oxyonyx fallaciosus*: TENENBAUM not (DESBROCHERS) [misidentification] syn.n.; = *Ceuthorrhynchus* (*Oprohinus*) *coelioidoides* REITTER syn.n.; = *Ceuthorrhynchus rufirostris* TORRES SALA [nomen nudum] syn.n.). Lectotypes of the following species are designated or validated: *Notoxyonyx pici* (SCHULTZE); *Paroxyonyx japhoensis* (SCHULTZE); *Paroxyonyx coelioidoides* (REITTER); *Eremonyx abeillei* (SCHULTZE); *Neoxyonyx strigatirostris* (HOCHHUT). *Ceutorhynchus zurlo* C. BRISOUT is selected as the type-species of *Eremonyx* PEYERIMHOFF. An alphabetical checklist of all the taxa dealt with is included.

Key words: Coleoptera, Curculionidae, Ceutorhynchinae, *Ephedra*, key to genera, new genus, new species, taxonomy

Introduction

Descriptions of three new taxa, new synonymies, changes of rank and new combinations in the group of Ceutorhynchinae whose species live on *Ephedra* (Ephedraceae) made evident that their taxonomy was in need of rearranging.

These genera were comprised by HOFFMANN (1956) in his subtribe Oxyonyxina. The name was incorrectly spelled Oxyonicina by KOROTYAEV (1982), who later (KOROTYAEV 1990) rightly named them Oxyonychina (ICZN 1985: art. 29). KOROTYAEV (1982) pointed out the difficulty in separating the Palaearctic and the African species of Oxyonychina from Coelioidina (KOROTYAEV 1982). This is not surprising since the characters listed by HOFFMANN (1956) are inadequate to delimit Oxyonychina, having HOFFMANN (1956) mixed the Palaearctic species predatory on *Ephedra* together with other Palaearctic and Ethiopian Ceutorhynchinae sharing with them only

the reddish integumental colour and the often strongly developed tubercles on the upper side.

The tribe Egrini was erected by PAJNI & KOHLI (1982) to include the Ethiopian (plus some Indian) genera close to *Egrius* PASCOE, 1865. To this tribe belong the Ethiopian genera *Oxyonyxus* HOFFMANN, 1956 and *Hustacheoxyonyx* HOFFMANN, 1956, this last later synonymized with *Egrius* PASCOE, 1865 by COLONNELLI (1984), originally comprised in Oxyonychina by HOFFMANN (1956). Egrini are phylogenetically widely separate from the Palearctic Ceutorhynchinae living on *Ephedra*, as well as from *Pseudocoeliodes* sensu HOFFMANN, 1956 and *Neoplatygaster* WAGNER, 1941 also comprised in Oxyonychina by HOFFMANN (1956). The place of *Neoplatygaster* is among Hypurini, as was rightly pointed out by WAGNER (1937).

COLONNELLI (1984) promoted Oxyonychina to tribal rank, it being evident that all Hoffmann's subtribes must be regarded as tribes, since he considered the subfamily Ceutorhynchinae itself as a tribe (HOFFMANN 1954, 1956). In the same paper (COLONNELLI 1984) Oxyonychini (and Coeliadini LACORDAIRE, 1866) were synonymized with Ceutorhynchini THOMPSON, 1859, being impossible to separate *Oxyonyx* FAUST, 1885 (type-genus of Oxyonychini), and all the related genera containing species living on *Ephedra*, from other Ceutorhynchini.

The great majority of *Ephedra* spp., and thus of the insects developing on them, can be found in the arid zones of the Palearctic. They are particularly numerous in the desertic or subdesertic belt of North Africa, the Middle East and Central Asia. Larval development taking place in Gymnospermae is uncommon in Curculionidae and unique among Ceutorhynchinae. Shifting from the usual host plants in Angiospermae to Ephedraceae can be supposed as a relatively recent event, and the quite large number of genera and species of *Ephedra*-feeders appears to be a consequence of adaptative radiation. One should not forget that both in the Mediterranean and in Central Asia the aridity of many regions has greatly increased in the last geological period: this surely made it easier for *Ephedra*-feeders to spread in a new environment and to have a peculiar evolution toward unusual features such as those shown by *Theodorinus* KOROTYAEV, 1982, *Platygasteronyx* REITTER, 1913, *Perioxyonyx* HUSTACHE, 1931 etc. The coincidence of this way of evolution with that of many tropical Ceutorhynchinae can also be noted.

Taxonomy

It is evident that the genera dealt with herein are related, and that they appear to form a natural group. They share the following characters: a) host plants in the genus *Ephedra*; b) integument, at least in part, ferrous-red; c) elytra usually with at least one transverse dark stripe or dark patch (figs. 1, 6, 9 - 11, 13, 16 - 22); d) comb of setae of tibial apex never concave as in fig. 23; e) thorax usually with complete dorsal channel; f) claws simple, usually divaricate; g) teeth or tubercles at least on humeral and preapical calli strongly developed (figs. 1, 6, 9 - 22); h) eyes usually lateral, and frons often depressed (figs. 6, 10, 13, 20 - 22).

The above features distinguish these genera from the rest of Ceutorhynchini; a detailed study would be necessary in order to establish whether they truly form a monophyletic group. For the moment it appears better to call them by the informal term of "*Ephedra*-feeders" in this paper.

In accordance with KOROTYAEV (1982), useful characters for generic separation are: type of scaling, form of sternal channel, shape of tibial apical comb of setae ("corbel"), development of the clusters of tubercles on elytral humeral and preapical calli, shape of the tarsus.

Fossoronyx KOROTYAEV, 1982 and *Macrosquamonyx* KOROTYAEV, 1982, considered by KOROTYAEV (1982) subgenera of *Platygasteronyx* REITTER, 1913 are here promoted to genera (stat.n.); their morphological features have indeed the same value of the differences invoked by KOROTYAEV (1982) to distinguish other genera of *Ephedra*-feeders. Similar reasons force one to give full generic rank to *Platypteronyx* KOROTYAEV, 1982 (stat.n.). On the contrary, the separation of *Protoxyonyx* VOSS, 1969 from *Paroxyonyx* HUSTACHE, 1931 appears artificial:

neither the general shape nor that of the aedeagus indicate a clear separation between them (figs. 16 - 22, 26 - 30, 40 - 45); thus it is necessary to establish the following new synonymies: *Paroxyonyx* HUSTACHE, 1931 (= *Protoxyonyx* VOSS, 1967, nomen nudum [type species not fixed] **syn.n.** = *Protoxyonyx* VOSS, 1969; **syn.n.**). The great majority of the species of *Paroxyonyx* appear closely related, except *P. cailloli* (PEYERIMHOFF, 1919), *P. crassipes* (SCHULTZE, 1899) and *P. latipennis* (PIC, 1905), which are much more densely scaled than the remaining species of the genus: the systematic position of these three species among *Paroxyonyx* is still unclear.

KOROTYAEV (1982), rightly considering *Eremonyx* PEYERIMHOFF, 1927 a good genus, did not select its type species. *Ceutorhynchus zurlo* C. BRISOUT, 1869 is herewith designated as the type species of *Eremonyx*.

Descriptions of new taxa

Notoxyonyx gen.n.

Type-species: *Notoxyonyx impressus* sp.n.

Description. Integument entirely concealed by rounded, embricate, iridescent, polished, unimpressed scales. Pronotum strongly constricted in front; fore margin, in frontal view, with double edge, but with no evidence of lobes; disc with longitudinal channel, flanked by 2 more or less evident impressions. Sternal channel deep, reaching the base of metasternum. Femora grooved for reception of tibia; tibial apex with several very small spines not extending outwards; all male tibiae with apical hook; joint 3 of tarsus only slightly wider than 2.

Etymology. The generic masculine name refers to the uneven surface of the pronotal disc.

Remarks. The new genus is closely related with *Oxyonyx*. It can be easily differentiated by the shining unimpressed scales, by the elytra less convergent toward apex and by the double edge of the fore margin of pronotum without lobes (fig. 7). See the key to the genera below for differences from other genera.

Examination of the type of *Oxyonyx pici* SCHULTZE, 1900 from Israel allows it to be transferred from *Paroxyonyx* HUSTACHE to *Notoxyonyx* (**comb.n.**).

Notoxyonyx impressus sp.n.

Diagnosis. *Ab alia specie generis statura majore, corpore planatiore, elytris longioribus, signatura alia, fossulis thoracis multo evidentioris et forma maris abdominis subito diversus.*

Type series. ALGERIA: Béchar province, Igli-Touzzit, 30°27'N 2°15'W, m 300, 4.IV.1988, 1 male (holotype), and 4 males and 1 female (paratypes), E. Colonnelli leg. on *Ephedra alata* DEC. ssp. *alenda* (STAFF.). Holotype in the University "La Sapienza" Zoological Museum, Rome; 5 paratypes in the author's collection, Rome.

Holotype. Length: 3 mm. Integument ferrous-red, antenna and tarsi paler. Upper surface very densely clothed by rounded embricate unimpressed shining scales, which are whitish, yellowish, beige, dark brown and form a distinct pattern comprising two anterior, small, triangular, elongate, brown spots and two big, dark, basal patches on thorax, plus a transverse medial and a basal dark brown band (this last formed by short stripes on intervals 1, 3, 5 and 7) on elytra; humeral and preapical calli clothed by dark scales. Under side with adpressed, pale, beige, scales. Rostrum 1.87 times as long as pronotum, curved, parallel-sided; dorsum scaled and thinly carinate proximad of antennal insertion which is situated immediately beyond middle. Antenna thin; scape slightly and gradually clavate apically; club lengthened, acuminate-oval. Frons very slightly convex, with extremely narrow longitudinal sulcus; eyes lateral, their upper margin slightly raised. Pronotum 1.25 times wider than long, constricted in front; one basal and one subapical deep impression form the longitudinal furrow, which is flanked in the middle by a fovea on each side; fore margin evidently raised and with double edge. Elytra 1.37 times longer than wide, rather flat basally, widest at prominent humeri; subapical calli formed by 4 strong acute teeth disposed in a row on intervals 4, 6 and 7, while the tooth of interval 5 is larger and more basal. Striae in the form of narrow furrows; intervals rather flat. Legs elongate;

femora mutic, grooved beneath for reception of tibia; these straight, all with minute apical hook; tarsi not very elongate; claws divergent, edentate. Urosternites 1 and 2 with common depression; 5 with very shallow fovea. Pygidium with extremely fine carina. See also figs. 1, 2, 7.

Paratypes. Males are very similar to the holotype. The single female differs only by its abdomen being flat. The pattern may be more evident than that of the type: in one specimen the basal band of elytra is composed of dark stripes on all intervals; in another paratype the basal 4/5 of the suture is dark. Length: 3 - 3.6 mm. Aedeagus: figs. 3, 4.

Etymology. The name of the species refers to the lateral impressions of its prothorax.

Remarks. The new species is somewhat similar to *Notoxyonyx pici* from Israel. It differs from *N. impressus* as follows: smaller size (2.6 - 2.8 mm instead of 3 - 3.6 mm), tricarinate rostrum, weaker frontal constriction of pronotum, no evident lateral impressions on each side of the pronotal disc, rather convex elytral sides, no definite pronotal pattern, entire elytral suture black, evident tubercles of male urosternite 5 (figs. 5, 6). A single male in the Schultze collection (Museum G. Frey) is here selected as the lectotype; it bears the labels: "♂/[golden square label]/Type [pink, printed, subsequently added]/Sammlung Aug. Schultze/Ox. *Pici* Jaffa Schultze/Lectotypus ♂, *Oxyonyx pici* SCHULTZE, E. Colonnelli des., 1993 [red, partly printed]/*Notoxyonyx pici* (SCHULTZE), E. Colonnelli det., 1993".

Ecology. All type specimens were collected in the sandy desert beating branches of *Ephedra alata* DEC. ssp. *alenda* (STAPF.) TRABUT together with numerous specimens of *Eremonyx zurlo* (C. BRISOUT, 1869).

Theodorinus hispanicus sp.n.

Diagnosis. *A reliquas duabus species generis differt statura majore, rostro antennisque fuscis, signatura alia.*

Type series. SPAIN: Lubrín, Sierra de los Filabres (Almería province), m 700, V.1989, 1 female (holotype) and 1 female (paratype), Günther leg. Holotype in the Deutsches Entomologisches Institut, Eberswalde; paratype in the Sprick collection, Hannover.

Holotype. Length: 2.7 mm. Cuticle shining; rostrum, antenna (base of scape excepted), head, prothorax (ocular lobes excepted), abdomen, preapical tubercles and tibial hooks dark brown; elytra (sutural apex darker) and legs ferrous-red. Upper side rather densely clothed by white oval large recumbent scales which are condensed in two large spots in the antero-lateral region of pronotum and in a common apical patch on elytra, and form a line along the dorsal channel of prothorax, a transverse belt (laterally enlarged) in the basal 2/5 of elytra. White scales are also arranged in small spots on distal half of intervals 3, 5 and 7, whereas they cover the whole distal half of intervals 9 and 10. Brown triangular elongate recumbent scales clothe frons, sides of pronotal disc, elytral base, and form a dark stripe in the middle of the elytra. Recumbent triangular yellow scales are intermixed with brown ones on frons and form two patches in the anterior lateral region of the pronotum (behind the white spot), and cover the zones of the distal half of the elytra which are free from white scales. Legs clothed by intermingled white and yellowish scales. Under side with large oval adpressed white scales in the middle of sternites 1 and 2; triangular sparse whitish ones cover sides of urosternites 1 and 2, and the remaining abdominal segments. Rostrum cylindrical, gently curved, 1.28 times as long as pronotum; dorsum smooth and shining, very finely punctured, tricarinate. Antenna inserted immediately proximad of middle of rostrum; scape clubbed; first 2 funicular joints having about the same length, and longer than the diminishing in length remaining ones; club large, oval-acuminate. Pronotum transverse ($l/w = 0.737/1$), constricted in front, with curved sides; dorsal channel entire, wide, not deep. Elytra as long as wide; sides convergent behind from the middle. Humeral tubercles evident; preapical calli bearing strong rasp-like teeth. Legs robust; femora mutic; tibia almost straight; tarsi relatively robust, joint 3 evidently bilobed. See also fig. 9.

Paratype. Very similar to the holotype: cuticle slightly darker, transverse white stripe on basal 2/5 of elytra slightly more obvious, left fore tarsal joint 4 missing. Length: 2.68 mm.

Etymology. The species is named after the country in which it was collected.

Remarks. *T. multidentatus* (PIC, 1914) from southeastern Russia, Turkmeniya and Kazakhstan, and *T. transcausicus* KOROTYAEV, 1989 from Gruzija, Armenia and Azerbaidzhan are very

similar to the new species; both differ from it by the ferrous-red colour of antenna and rostrum, smaller size (*T. multidentatus*: 1.9 - 2.2 mm; *T. transcausicus*: 2.1 - 2.45 mm), elytra with 3 dark transverse stripes and without transverse white fascia (PIC 1914; KOROTYAEV 1982; KOROTYAEV & CHOLOKAVA 1989). *T. transcausicus* also differs from *T. hispanicus* by the smaller preapical teeth and the more convex odd-numbered intervals.

Ecology. Nothing is known about the circumstances in which the new species was collected: it can be supposed that the host plant is some *Ephedra*.

Remarks on taxonomy and distribution of selected species

Paroxyonyx cinctus (CHEVROLAT, 1861: 122)

Coeliodes cinctus CHEVROLAT, 1861 was originally (HUSTACHE 1931) selected as the type species of *Paroxyonyx* HUSTACHE, 1931. *Coeliodes cinctus* CHEVROLAT, 1861 is, however, a primary homonym of *Coeliodes cinctus* (FOURCROY, 1785). The homonymy was noted by HOFFMANN (1956), who did not change the name of the present species. The first available synonym of *Coeliodes cinctus* CHEVROLAT not (FOURCROY) is *Oxyonyx japhoensis* (SCHULTZE, 1899), described from Jaffa (Israel) and Ain-Sefra (Algeria) (SCHULTZE 1899). In the Schultze collection (Museum G. Frey) there are only 2 specimens: the female from "Jerico" is not typical. The aedeagus of the male lectotype (here designated) was mounted (together with the abdomen and the right hind leg) at the base of the point on which the insect is glued; it bears the labels: "♂/A. Sefra/Sammlung Aug. Schultze/Lectotypus ♂, *Oxyonyx japhoensis* SCHULTZE, E. Colonnelli des., 1993 [red, partly printed]/*Paroxyonyx japhoensis* (SCHULTZE), E. Colonnelli det., 1993". *Paroxyonyx japhoensis* (SCHULTZE), **resurrected name**, is thus the valid name of the species.

This weevil was reported by SCHULTZE (1906) from Jerusalem as *Micrelus usambaricus* SCHULTZE, 1899 (described from Tanzania!) by evident misidentification; the name was later misspelled *usambaricus* by SAHLBERG (1913). PIC (1923), considering (without comments) *japhoensis* (sic!) a good species, described a colour variety *piceonotatus* from Israel, which is, under the art. 45 g (i)(1) of the Code (ICZN 1985) an unavailable name. On the contrary, the "race" *albiplumis* (PEYERIMHOFF, 1926) from Morocco must be considered a subspecies, in accordance with the article 45 f (ICZN 1985).

The specimens of *albiplumis* from the southwestern Moroccan mountain localities of Asni (PEYERIMHOFF 1926, 1931) and Sous hills near Taroudant (personal record), all collected on *Ephedra altissima* DESF., are however specifically different from the northeastern Moroccan, Spanish, Algerian and Israeli ones which can be exclusively found on *Ephedra fragilis* DESF. (BREIT 1909; PEYERIMHOFF 1911, 1926, 1931; SIETTI 1931 sub *fallaciosus*; ALONSO-ZARAZAGA 1983): the collecting date of *P. japhoensis* on *E. altissima* DESF., reported by PEYERIMHOFF (1926) appears indeed extremely doubtful. *Paroxyonyx albiplumis* is a good species (**stat.n.**) much more closely related to *P. fallaciosus* (DESBROCHERS, 1896) than to *P. japhoensis*. *Paroxyonyx albiplumis* differs from *P. fallaciosus* by the plumper body and the different pattern (figs. 16, 17). Note that PEYERIMHOFF (1919), stating that *P. fallaciosus* and *P. japhoensis* are synonyms, evidently confused these species, which can be actually collected together on the same plants of *E. fragilis*, as demonstrated by specimens from Algeria: dunes of *Stidia* (Mostaganem province). Both weevils are very similar and quite variable, so it is not surprising that one can confuse them; the differences of the male characters, vestiture and body shape are however diagnostic (see below).

In the National Museum of Prague there is a male specimen labelled: "Hispania, Valencia (printed)/ Typus (red, printed)/*coelioidoides*, Type (handwritten)". Corresponding perfectly to the description, it was selected as the lectotype and the pertinent label "Lectotypus ♂, *Ceuthorrhynchus coelioidoides* REITTER, 1916, E. Colonnelli des., 1992 (red, partly printed)" was added. This species is another synonym of *P. japhoensis* (**syn.n.**). Further Spanish specimens from the Sierra de Gador: Felix (Almeria province) and Valldemosa (Mallorca) were studied.

The records by TORRES SALA (1962) for Dehesa (Los Valles sub *fallaciosus*, and Playa Pinedo), Valencia province, sub *Ceuthorrhynchus rufirostris*, nomen nudum refer to *P. japhoensis* (syn.n.).

The wide range of this weevil, recorded from Spain, northeastern Morocco, Algeria, Tunisia (Sidi Bou Saida; pers. rec.) and Israel is not surprising, since its host plant *Ephedra fragilis* DESF. has the same distribution (TUTIN & al. 1964).

The complete synonymy of this species is listed in the check list below.

***Paroxyonyx hispanicus* (HUSTACHE, 1926a: 155)**

This weevil was known only from the single Spanish locality of Albarracin: Val do Vecar (Teruel province). A specimen was collected by P. Audisio at Tibi (Alicante province). Note that HOFFMANN (1956) erroneously reported this weevil from Morocco by evident confusion with *P. fallaciosus* (DESBROCHERS).

***Paroxyonyx mesasiaticus* (KOROTYAEV, 1982: 68)**

Samples of this species from Chaktal Valley: Kaltakul pass (Uzbekistan), Vorukh (Kirgiziya), and Sarytog (Tazhikhstan) were examined. *Paroxyonyx mesasiaticus* was reported from Kazakhstan and Kirgiziya in the original description (KOROTYAEV 1982).

***Coeliodes imitator* WAGNER, 1928: 120**

The comprehensive description of this weevil by WAGNER (1928) allows it to be transferred to the genus *Paroxyonyx* HUSTACHE (comb.n.). *Paroxyonyx imitator* is very close to *P. japhoensis*, from which it differs by the half-lifted scales on the upper surface, by the male meso and metatibia with a bifid hook, by the elongate shape of aedeagal apex (figs. 37-39 and 44-45). *Paroxyonyx fallaciosus* is distinguished from *P. imitator* by the broader recumbent scales on the upper side, by a minute hook on the male protibia, by the rather small acute hook of the male mesotibia, by the large acute mucro of the male metatibia and by the lobate apex of the aedeagus (figs. 34 - 36 and 42 - 43). *Paroxyonyx japhoensis*, on the other hand, differs from *P. imitator* and *P. fallaciosus* by the prevalence of thin, almost recumbent scales on the upper surface which give it a more "naked" appearance, by relatively large mesotibial and trifold metatibial hooks of the male tibia and the blunt aedeagal apex (figs. 31 - 33 and 40 - 41).

Quite a long series of specimens from Los Monegros (Alicante Province, Spain), collected on *Ephedra major* HOST, were studied. The species was described from Albarracin: Val do Vecar (Teruel province, Spain); the types were collected on *Ephedra vulgaris* RICH. (WAGNER 1928).

***Oxyonyx major* KOROTYAEV, 1982: 60**

An additional locality for this species, described from Badchyzh (Turkmeniya), is Firjuza: Kopet Dagh (Turkmeniya).

***Neoxyonyx strigatirostris* (HOCHHUT, 1847: 569)**

The study of the female lectotype (much abraded, and lacking right antenna, middle left tarsus, joint 4 of left protarsus and right metatarsus) of *Coeliotes* [sic!] *strigatirostris* HOCHHUT, 1847 in the Deutsche Entomologische Institut (labelled: "Caucasus/coll. Stierlin/coll. Stierlin, *C. strigatirostris* HOCHH., Hochh./Scheuch det./vielleicht Type [red, printed]/ *C. strigatirostris* HOCHH Hochh./coll. DEI Eberswalde/*Oxyonyx strigatirostris* HOCHH./Lectotypus *Neoxyonyx strigatirostris* HOCHHUTH, design. Korotyayev, 1990 [red, partly printed; the designation, hitherto unpublished, is presently validated]) revealed that this species is a senior synonym of *Coeliodes massageta* KIRSCH, 1879. The synonymy is: *Neoxyonyx strigatirostris* (HOCHHUT, 1847) comb.n. (= *N. massageta* (KIRSCH, 1879) syn.n.; = *N. monticola* (DESBROCHERS, 1896) syn.n.). This species has an especially wide range, being recorded from southwestern France, Sicily, Morocco, Algeria, Tunisia, Iran, southeastern part of European Russia, Gruzija (= Georgia), Armenia (VITALE 1941; HOFFMANN 1962; KOROTYAEV 1982). The species was recently reported also from Greece (ANGELOV 1988). Other Ceutorhynchinae which do not feed on *Ephedra*, e.g. *Ceutorhynchus biskrensis* PIC, 1986, known from Algeria and Jordan (COLONNELLI 1987), and *C.*

letourneuxi DESBROCHERS, 1896, reported from Morocco to Jordan and Arabian peninsula (COLONNELLI 1985), have a similar distribution.

***Eremonyx abeillei* (SCHULTZE, 1899: 297)**

Two type specimens are in the Schultze collection (Museum G. Frey). The male lectotype (here designated) is labelled: "♂/[golden square label]/entre Biskra et Mraier, De Vauloger/Type [pink, printed, subsequently added]/Sammlung Aug. Schultze/C. *Abeillei* Alger Schultze/Lectotypus ♂, *Ceuthorrhynchus abeillei* SCHULTZE, E. Colonnelli des., 1993 [red, partly printed]/*Eremonyx abeillei* (SCHULTZE), E. Colonnelli det., 1993". The female paralectotype (here designated) is labelled: "♀/[golden square label]/*Abeillei* Biskra/Sammlung Aug. Schultze/Paralectotypus ♀, *Ceuthorrhynchus abeillei* SCHULTZE, E. Colonnelli des., 1993 [red, partly printed]/*Eremonyx abeillei* (SCHULTZE), E. Colonnelli det., 1993".

Key to the genera

- 1 Apical comb of setae of fore and middle tibia extended for more than half of the tibial length, and consisting of thin triangular spines (fig. 46). Legs stout. Joint 3 of tarsus twice as long as 2; joint 4 projects beyond 3 only 1/2 of its length; under side of tarsi without setae. Meso and metasternum deeply impressed. Rostrum thick, strongly curved, basal 2/3 carinate. Pronotum hardly narrower than elytra; anterior margin of pronotum slightly lifted in its central third. Elytral humeri without teeth. Elytral intervals 4 - 7 provided with obtuse tubercles with numerous, dark, closely arranged granules. Upper side densely clothed with separate oval white and lanceolate brownish scales forming an elytral stripe much enlarged in the middle. *Neoxyonyx* HOFFMANN
- 1' Apical comb of fore and middle tibia not extended apically for more than 1/3 of tibial length. Legs slenderer. Joint 3 of tarsus generally less than 1.5 times wider than 2; joint 4 projects beyond 3 at least 2/3 of its length. 2
- 2 Pronotum only slightly narrower than elytra, strongly constricted in front, and with transverse crest on disc interrupted by the longitudinal sulcus. Apical half of femora grooved inwards for reception of tibia. Elytra with bisinuous sides, and with preapical keel formed by combined teeth. Rostral channel deep, extended to the base of metasternum. Tarsi narrow. *Pseudoxyonyx* HOFFMANN
- 2' Pronotum without transverse crest. 3
- 3 Integument entirely concealed by the very thick clothing of (even) embricate scales, and elytral interspaces 4 - 7 preapically with a more or less regular elevation formed by large isolated teeth. Joint 3 of tarsus not or hardly wider than 2. 4
- 3' Integument usually not entirely concealed by the scales; if so, preapical area of elytra without large isolated teeth on intervals 4 - 7. 6
- 4 Scales of upper surface dull and concave. Intervals 4 - 7 with a regular ridge formed by 4 teeth. Pronotal disc without strong longitudinal sulcus flanked by tubercles; its surface rather regularly convex. Elytra only slightly longer than wide and strongly narrowed toward apex. 5
- 4' Scales of upper surface very large, embricate, not concave and shining. Pronotal disc with longitudinal sulcus, its surface irregularly convex. Rostral channel deep and extending to the base of metasternum. *Notoxyonyx* gen.n.
- 5 Joint 3 of tarsus bilobate and wider than 2. Prothorax with lateral tubercles. Elytral stria 3 deeper at apex. Elytral interval 2 with subapical tubercle at the level of ridge of teeth. Femora unarmed. *Suboxyonyx* HOFFMANN
- 5' Joint 3 of tarsus not bilobate and hardly wider than 2. Prothorax without lateral tubercles. Elytral stria 3 not deeper at apex. Elytral interval 2 without subapical tubercle. Elytra slightly longer than wide, with prominent humeri, and sides strongly narrowed toward apex. Apical margin of pronotum, in frontal view, with rounded lobes (like in fig. 8). Tibia not enlarged apically and without small teeth at apex on outer side. *Oxyonyx* FAUST

- 6 Elytra about as wide as long (fig. 9), with clusters of large teeth near the apex of intervals 3 - 8: these teeth are about as large as the one which is on interval 5 in more basal position. Suture with small apical tooth. Rostral channel strongly impressed and reaching the base of metasternum. Rostrum widened, carinate in its basal half. Apical margin of pronotum slightly but abruptly elevated, narrowly notched. Legs slender. Femora unarmed. Fore tibia not widened apically, and here without large spines (fig. 48). All tibiae with sharp mucro in both sexes. Tarsi slender. Joint 3 of tarsus slightly wider than 2. Under side of tarsus with clusters of thin light setae. Elytra clothed with slightly impressed white scales and with denticulate wide brownish scales in the form of a central stripe. *Theodorinus* KOROTYAEV
- 6' Elytra longer than wide, without isolated large tooth on apical fourth of interval 5, and with more or less numerous small teeth on preapical declivity. 7
- 7 Body slender (fig. 12). Integument piceous (only tarsi and elytral apex somewhat lighter). Rostrum 1.5 times wider than its thickness. Base of metasternum strongly impressed. Humeral calli with sharp tubercles formed by small clustered teeth; slightly smaller similar tubercles are on intervals 5 - 6 and 7. Pattern of upper surface clearly defined. Vestiture thick, the darker zones shining. Tarsi lengthened; under side of them without setae. Joint 3 of tarsus 1.5 times (or slightly more) wider than 2. Apex of tibiae of both sexes without mucro. Apical comb of fore tibia long, the small spines very thin and dense (fig. 47). Male legs very long and slender; female legs evidently shorter. Length: 2 - 2.2 mm. *Hemioxonyx* KOROTYAEV
- 7' Body stouter. Integument at least in part ferrous-red. If humeri bear acute tubercles, then apical comb with sparse large spines (figs. 50, 51) and joint 3 of tarsus not wider than 2. At least male middle and hind tibia with apical mucro. 8
- 8 Outer apical margin of fore tibia not widened, and not bearing large spines or teeth. Joint 3 of tarsus 1.5 - 2 times wider than 2. 9
- 8' Outer apical margin of fore tibia more or less widened in the form of a lobe, and/or bearing large spines or teeth (figs. 50 - 54). Joint 3 of tarsus not or hardly wider than 2 12
- 9 Disc of prothorax with 4 acute tubercles, and fore margin of pronotum bearing 2 acute tubercles (fig. 10). Femora toothed. At least a part of the scales on dorsal surface of prothorax with a brassy lustre. A rhomboidal dark patch in the middle of elytra. *Perioxonyx* HOFFMANN
- 9' Disc and fore margin of prothorax without acute tubercles. 10
- 10 Apex of sutural interval bearing a small tooth or tubercle. Humeri without granules. 11
- 10' Apex of sutural interval without tooth or tubercle (figs. 16 - 22). Humeri sometimes with granulate tubercles. Pygidium unimpressed beneath apex of elytra. Elytra with basal, central and apical stripes (sometimes confused in dark specimens). Rostral channel not extending behind prosternum. *Paroxyonyx* HOFFMANN
- 11 Apex of sutural interval bearing a large acute tooth (fig. 14). Pygidium impressed beneath elytral apex. Body slender; elytra evidently longer than wide. Fore margin of prothorax with 2 large lobes in frontal view (fig. 8). Elytra with basal dark triangular patches, and without transverse central dark stripe. Dorsal surface convex. Legs very long and slender. Length: 2 - 3 mm. *Platyteronyx* KOROTYAEV
- 11' Apex of sutural interval bearing a tubercle similar to that of a rasp (fig. 13). Pygidium not impressed beneath apex of elytra. Body stouter; elytra hardly longer than wide. Fore margin of prothorax with less developed lobes. Elytra with vague basal and narrow central stripes. Base of pronotum and elytra with a common large impression. Legs stout. Length: 2.6 - 4 mm. *Barioxyonyx* HUSTACHE
- 12 Outer margin of fore tibia abruptly widened toward apex (fig. 49). Almost all spines of apical comb are inserted on apex of tibia, and not on its outer margin. Basal edge of elytra prominent. Humeral and preapical calli bearing many small light coloured granules not condensed in the form of crest or teeth. Legs and elytra light brown. *Euoxonyx* KOROTYAEV
- 12' Outer margin of fore tibia gradually widened toward apex. Spines of apical comb inserted also on outer margin of tibial apex (figs. 50 - 54). 13
- 13 Elytral intervals bearing only one row of large oval slightly impressed scales. Striae not very

- deep, not much narrower than interspaces, and bearing scales similar to those on intervals. Head densely clothed with large scales. Rostrum thin, not convex; antenna inserted in the proximal half. Humeral and preapical calli with minute granules and large scales. Basal margin of elytra not prominent. Femora unarmed. Apex of all tibiae with large mucro in both sexes (figs. 24, 52, 53). Under side of tarsus spiny. Apex of fore tibia bearing large spines or semicircular tubercles (figs. 52, 53). Dorsal pattern vague..... *Macrosquamonyx* KOROTYAEV
- 13' Elytral intervals with more than one row of small scales; if the scales are arranged in one row, they are almost triangular and do not conceal integument. Vestiture of recumbent scales on head never concealing integument. Minute sharp teeth on humeral and preapical calli sometimes forming large toothed tubercles. Basal margin of elytra convex, and/or apex of fore tibia bearing large teeth (fig. 54). Dorsal pattern distinct. 14
- 14 Pronotal and base of elytral sides bearing erect scales or hairs. Femora with very long oval erect scales. Antenna inserted in the apical half of rostrum. Joint 4 of tarsus longer than the combined length of the 2 preceding joints. A scutellar spot of white scales. *Eremonyx* PEYERIMHOFF
- 14' Sides of pronotum and elytra, and femora without erect scales. Antenna inserted in the basal half of rostrum. Tarsal joint 4 not longer than the combined length of 2 preceding joints. 15
- 15 Humeral calli with a crest formed by condensed tubercles (fig. 11); preapical ones with 2 clusters of more or less isolated granules. Apex of fore tibia slightly widened and bearing relatively small spines (figs. 50, 51). Base of pronotum straight. Basal edge of elytra thin, convex. Dorsal pattern distinct, formed by dense scales; numerous white oval scales on elytral intervals. Femora not or hardly darker than tibia..... *Platygasteronyx* REITTER
- 15' Humeral and preapical calli with rather numerous isolated granules (fig. 15). Outer apical margin of fore tibia bearing very large teeth (fig. 54). Base of pronotum bisinuuous. Dorsal pattern usually not very sharp, and formed by rather sparse scales; oval, white scales (if present) are only on striae, or they are scattered, and much less numerous than apically truncate or notched scales. Femora with a dark central ring *Fossoronyx* KOROTYAEV

Check list

This alphabetical check list is intended as provisional, since material of some species of *Ephedra*-feeders was unavailable. An asterisk after a name means that the systematic position of the species must be verified. Names with expanded type are the type species of the genus. The following abbreviations are used (names of the former USSR countries are simply transliterated): Alg. (= Algeria); Ana. (= Anatolia); Arm. (= Armenia); Azb. (= Azerbaidzhan); Bal. (= Balearic Islands); c. (= central); Ca. (= Caucasus); Dag. (= Daghestan); F. (= France); Gr. (= Greece); Gru. (= Gruzija [Georgia]); Isr. (= Israel); Kaz. (= Kazakhstan); Kirg. (= Kirgiziya); m. (= southern); Mon. (= Mongolia); Mor. (= Morocco); Si. (= Sicily); Sp. (= Spain); Tad. (= Tadjikistan); Tun. (= Tunisia); Tur. (= Turkmeniya); Uzb. (= Uzbekistan)

Barioxyonyx HUSTACHE, 1931: 250

Barioxyonyx HUSTACHE, 1931: 250 [lapsus]

*beryticus** (SCHULTZE, 1899: 289) **comb.n.**

daghestanicus KOROTYAEV, 1992: 891

retractus (PEYERIMHOFF, 1925: 20)

retractus: HOFFMANN, 1956: 222 [misprint]

neglectus KOROTYAEV, 1992: 894

tourneri (FOURCROI, 1891: 192)

mayeti (SCHULTZE, 1902: 207) nomen nudum

Lebanon
Sp., Ana., Dag.
Morocco, Algeria

Morocco, Algeria

Eremonyx PEYERIMHOFF, 1927: 262

abeillei (SCHULTZE, 1899: 297)

zurlo (C. BRISOUT, 1869: 443)

zurlo: (GEMMINGER & HAROLD, 1871: 2611) [misprint]

subobscuricolor (PIC, 1910: 34), unavailable name [colour variety]

Algeria
Algeria

- Euoxyonyx** KOROTYAEV, 1982: 71
inornatus (SCHULTZE, 1903: 241) Tur., Tad.
intermedius KOROTYAEV, 1982: 74 Kaz., Mon.
lukjanovitshi KOROTYAEV, 1982: 72 Asia c., Irak
zaslavskii KOROTYAEV, 1982: 74 Kirg.
- Fossoronyx** KOROTYAEV, 1982: 78 stat.n.
kaszabi (BAJTENOV, 1978a: 15) comb.n. Asia c., Mon.
remaudierei (HOFFMANN, 1963: 91) comb.n. Asia c., Iran, Mon.
- Hemioxyonyx** KOROTYAEV, 1982: 65
acutangulus (SCHULTZE, 1903: 242) Kaz., Tur., Mon.
- Macrosquamonyx** KOROTYAEV, 1982: 76 stat.n.
kaplini (KOROTYAEV, 1982: 78) comb.n. Tur.
macrosquamosus (KOROTYAEV, 1982: 77) comb.n. Arm., Kaz., Mon.
- Neoxyonyx** HOFFMANN, 1930: 107
Reoxyonyx: ANONYMOUS, 1931: 226 [lapsus]
Neoxyonyx: MEQUIGNON, 1938: 424 [lapsus]
strigatirostris (HOCHHUT, 1847) comb.n. F.m., Mor., Alg., Tun., Si., Gr., Ca.
trigatirostris: (KOLENATI, 1859: 380) [misprint] comb.n.
massageta (KIRSCH, 1879: 43) syn.n.
massagetus: (WEISE, 1891: 311) [incorrect spelling] syn.n.
monticola (DESBROCHERS, 1895: 52) syn.n.
messageta: HOFFMANN, 1930: 107 [lapsus] syn.n.
messagetus: HOFFMANN, 1931: 156 [lapsus] syn.n.
- Notoxyonyx** COLONNELLI, hoc opus
impressus COLONNELLI, hoc opus Algeria
pici (SCHULTZE, 1900: 17) comb.n. Israel
- Oxyonyx** FAUST, 1885: 192
Oxyonyx: HUSTACHE, 1926b: 18 [misprint]
Oyonyx: MARCU, 1947: 15 [misprint]
Ohyonyx: KOROTYAEV, 1992: 895 [misprint]
brisouti (FAUST, 1885: 192) Asia c., Tur., Mon.
zoltani BAJTENOV, 1978b: 188
emeljanovi KOROTYAEV, 1982: 62 Mongolia
hexarthrinus KOROTYAEV, 1982: 61 Kaz., Uzb.
iliensis BAJTENOV, 1974: 209 nomen nudum Kaz.
kaszabi VOSS, 1967: 316 Altai, Mongolia
kerzhneri KOROTYAEV, 1982: 59 Kaz.
major KOROTYAEV, 1982: 60 Tur.
medvedevi KOROTYAEV, 1982: 60 Uzb., Tur., Tad.
pentarthrinus KOROTYAEV, 1982: 63 Kaz., Uzb.
- Paroxyonyx** HUSTACHE, 1931: 250
Paroxyonyx: MEQUIGNON, 1938: 424 [lapsus]
Protoxyonyx VOSS, 1967: 315 nomen nudum syn.n.
Protoxyonyx VOSS, 1969: 59 syn.n.
Paraoxyonyx: TEMPERE, 1977: 127 [lapsus]
albiplumis (PEYERIMHOFF, 1926: 372) stat.n. Morocco
*cailloli** (PEYERIMHOFF, 1919: 240) Morocco, Algeria
conicollis (SCHULTZE, 1898: 231) Morocco, Algeria
*crassipes** (SCHULTZE, 1899: 290) Israel
fallaciosus (DESBROCHERS, 1896: 55) Morocco, Algeria
hispanicus: HOFFMANN, 1956: 222 not (HUSTACHE, 1926) [misidentification] syn.n.

- gobbii* COLONNELLI, 1978: 80 Southern Italy
hispanicus (HUSTACHE, 1926a: 155) Spain
imitator (WAGNER, 1928: 120) **comb.n.** Spain
j a p h o e n s i s (SCHULTZE, 1899: 291), **resurrected name** Sp., Bal., Mor., Alg., Tun., Isr.
cinctus (CHEVROLAT, 1861: 122) [*Coeliodes*] not *Coeliodes cinctus* (FOURCROY, 1785) **syn.n.**
usambaricus: (SCHULTZE, 1906: 38) [*Micrelus*] not *Micrelus usambaricus* SCHULTZE, 1899
 [misidentification] **syn.n.**
usambaricus: (J. SAHLBERG, 1913: 220) [misprint] **syn.n.**
fallaciosus: (TENENBAUM, 1915: 129) not (DESBROCHERS, 1896) [misidentification] **syn.n.**
coelioidoides (REITTER, 1916: 165) **comb.n.** and **syn.n.**
japhaoensis: (PIC, 1923: 14) [misprint]
piceonotatus (PIC, 1923: 14), unavailable name [colour variety]
coelioidides: (DALLA TORRE & HUSTACHE, 1930: 141) [misprint] **syn.n.**
rufrostris (TORRES SALA, 1962: 408), nomen nudum, **comb.n.** and **syn.n.**
- latipennis** (PIC, 1905: 130) Morocco, Algeria
lunatus (REITTER, 1890: 162) **comb.n.** Ca., Arm., Gru., Tur.
maceratus (PEYERIMHOFF, 1926: 373) Algeria
mesasiaticus (KOROTYAEV, 1982: 68); **comb.n.** Kaz., Uzb.
mongolicus (KOROTYAEV, 1982: 67); **comb.n.** Mongolia
nigritarsis COLONNELLI, 1978: 86 Morocco
seriatus (VOSS, 1967: 315) **comb.n.** Mongolia
sicardi HUSTACHE, 1931: 251 F. m., Spain
subfenestratus (VOSS, 1967: 319) [in key] **comb.n.** Afghanistan
syriacus (SCHULTZE, 1899: 292) Syria, Israel
- Perioxyonyx* HUSTACHE, 1931: 250
s p l e n d i d u s (C. BRISOUT, 1889: CLVII) Morocco, Algeria
superbus (PEYERIMHOFF, 1911: 304) [lapsus]
mayeti (PEYERIMHOFF, 1911: 304) nomen nudum
- Platygasteronyx* REITTER, 1913: 67 [in key]
humeredens (VOSS, 1967: 317) Kaz., Mon.
medvedevi KOROTYAEV, 1990: 230 Mongolia
s o l s k y i (FAUST, 1885: 193) Ca., Gru., Asia c.
*spinalus** REITTER, 1913: 67
- Platypteronyx* KOROTYAEV, 1982: 69 **stat.n.**
a u r i t u s (KIRSCH, 1879: 45) **comb.n.** Russia m., Asia c.
faustinus (DESBROCHERS, 1896: 53) **comb.n.**
- Pseudoxyonyx* HOFFMANN, 1956: 218
a g h a d j a n i a n i HOFFMANN, 1956: 218 Anatolia
adhadjaniani: KOROTYAEV, 1990: 229 [misprint]
- Suboxyonyx* HOFFMANN, 1956: 223
p r i e s n i e r i (HUSTACHE, 1934: 144) Egypt
- Theodorinus* KOROTYAEV, 1982: 63
ibericus COLONNELLI, hoc opus Spain
m u l t i d e n t a t u s (PIC, 1914: 17) Tur., Kaz.
transcaucasicus KOROTYAEV, 1989: 171 Gru., Arm., Azb.

Acknowledgements

I wish to gratefully thank the following persons who made available material, and assisted me during the preparation of this paper: Paolo A. Audisio and Augusto Vigna-Taglianti, Dipartimento di Biologia Animale e dell'Uomo, Rome; Lutz Behne, Deutsches Entomologisches Institut, Eberswalde; Jan Fremuth, Hradec Kralove; Manfred Jäch and Heiner Schönmann, Naturhistorisches Museum, Vienna, Josef Jelínek, Národní Přírodovědecké Muzeum,

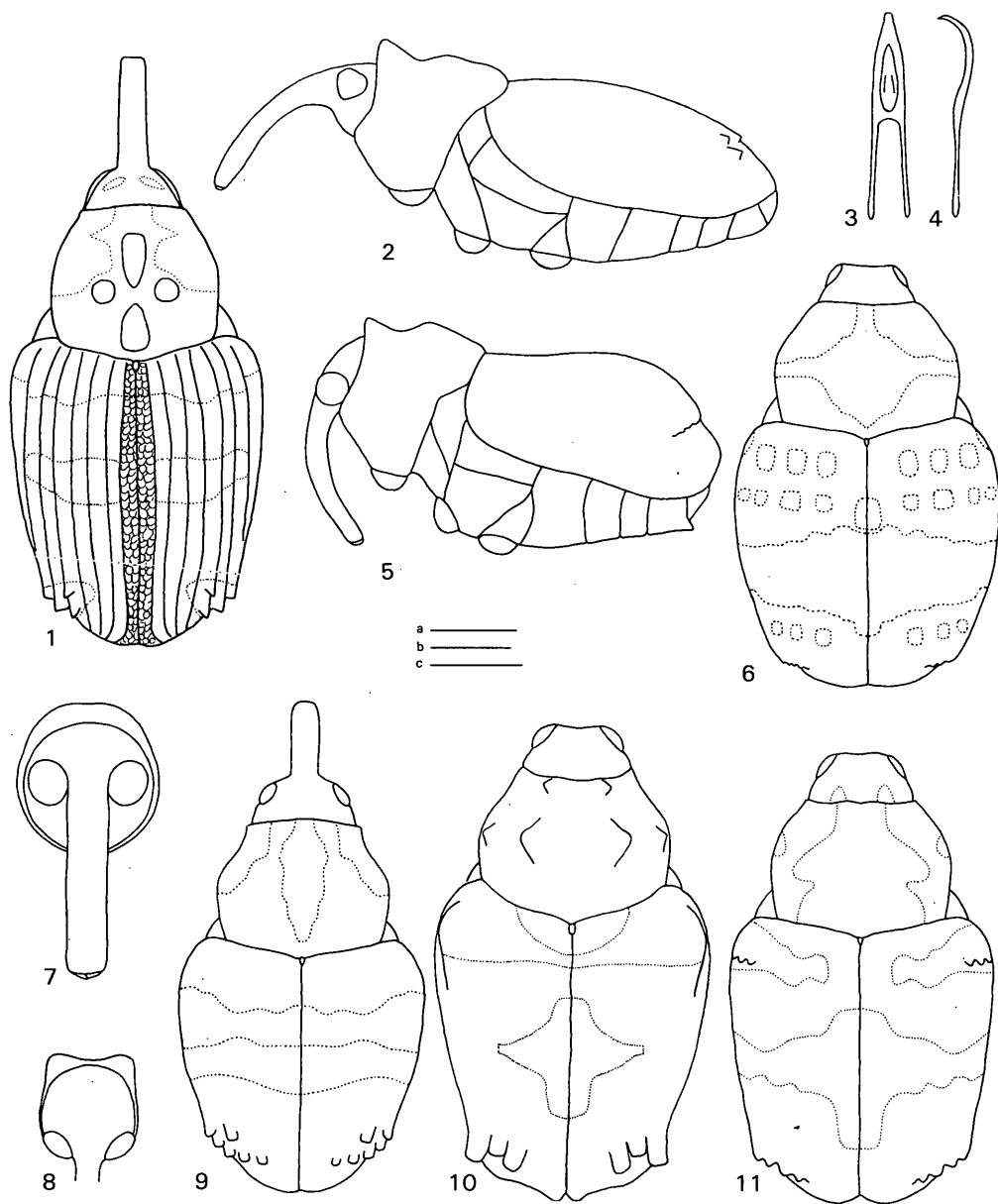
Prague; Boris A. Korotyaev, Rossiiska Akademiya Nauk, Saint Petersburg; Alexander Riedel, Friedberg; Gerhard Scherer, Zoologische Staatssammlung, Munich; Jaromír Strejcek, Prague; Peter Sprick, Hannover. I am particularly indebted to my friend Mark Russell, Peterborough for reading the English manuscript.

Zusammenfassung

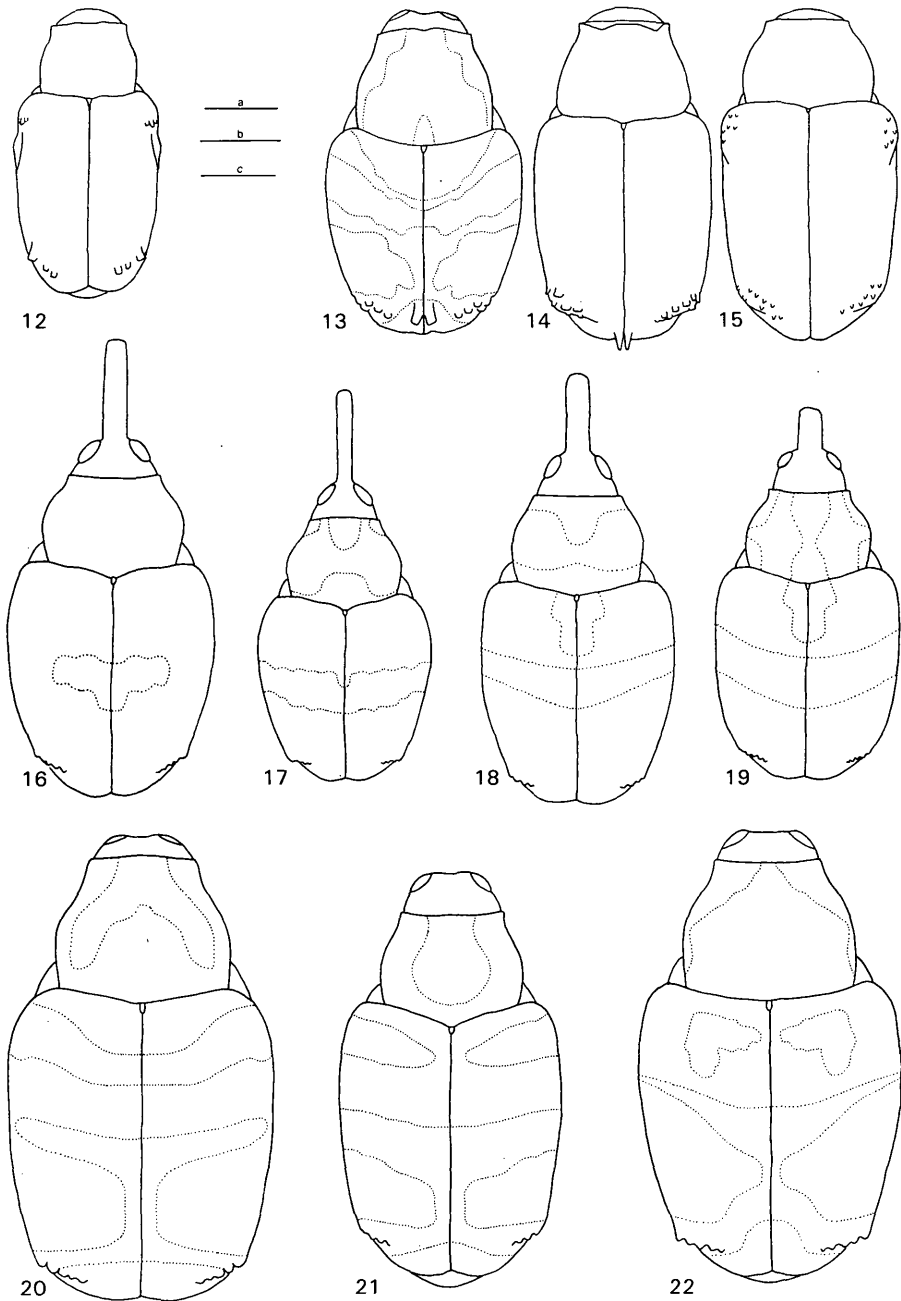
Ceutorhynchinen mit Futterpflanze in der Gattung *Ephedra* werden systematisch revidiert. Eine neue Gattung, *Notoxyonyx* gen.n., und zwei neue Arten, *Notoxyonyx impressus* sp.n. (Algerien) und *Theodorinus hispanicus* sp.n. (Spanien) werden beschrieben. *Platypteronyx* KOROTYAEV, *Macrosquamonyx* KOROTYAEV und *Fossoronyx* KOROTYAEV werden in den Gattungsrang erhoben. Neue Kombinationen sind: *Barioxyonyx beryticus* (SCHULTZE), *Fossoronyx kaszabi* (BAJTENOV), *F. remaudierei* (HOFFMANN), *Macrosquamonyx kaplini* (KOROTYAEV), *M. macrosquamosus* (KOROTYAEV), *Neoxyonyx strigatirostris* (HOCHHUT), *Notoxyonyx pici* (SCHULTZE), *Paroxyonyx coelioides* (REITTER), *Paroxyonyx imitator* (WAGNER), *Paroxyonyx lunatus* (REITTER), *P. mesasiaticus* (KOROTYAEV), *P. mongolicus* (KOROTYAEV), *P. seriatus* (VOSS), *P. subfenestratus* (VOSS), *Platypteronyx auritus* (KIRSCH). Neue Synonyme (jüngere Synonyme in Klammer): *Paroxyonyx* HUSTACHE (= *Protoxyonyx* VOSS); *Neoxyonyx strigatirostris* (HOCHHUT) (= *N. massageta* (KIRSCH); = *N. monticola* (DESBROCHERS)); *Paroxyonyx fallaciosus* (DESBROCHERS) (= *P. hispanicus*: HOFFMANN pars nec (HUSTACHE)); *P. japhoensis* (SCHULTZE) (= *Coeliodes cinctus* CHEVROLAT nec *Coeliodes cinctus* (FOURCROY); = *Micrelus usambaricus*: SCHULTZE, 1906 nec SCHULTZE, 1899; = *Oxyonyx fallaciosus*: TENENBAUM nec (DESBROCHERS); = *Ceuthorrhynchus (Oprohinus) coelioides* REITTER; = *Ceuthorrhynchus rufirostris* TORRES SALA, nomen nudum). Für folgende Arten werden Lectotypen designiert: *Notoxyonyx pici* (SCHULTZE), *Paroxyonyx japhoensis* (SCHULTZE), *Paroxyonyx coelioides* (REITTER), *Eremonyx abeillei* (SCHULTZE), *Neoxyonyx strigatirostris* (HOCHHUT). *Ceutorhynchus zurlo* C. BRISOUT wird als Typusart der Gattung *Eremonyx* PEYERIMHOFF festgelegt. Ein Katalog und ein Bestimmungsschlüssel für die Gattungen sind inkludiert.

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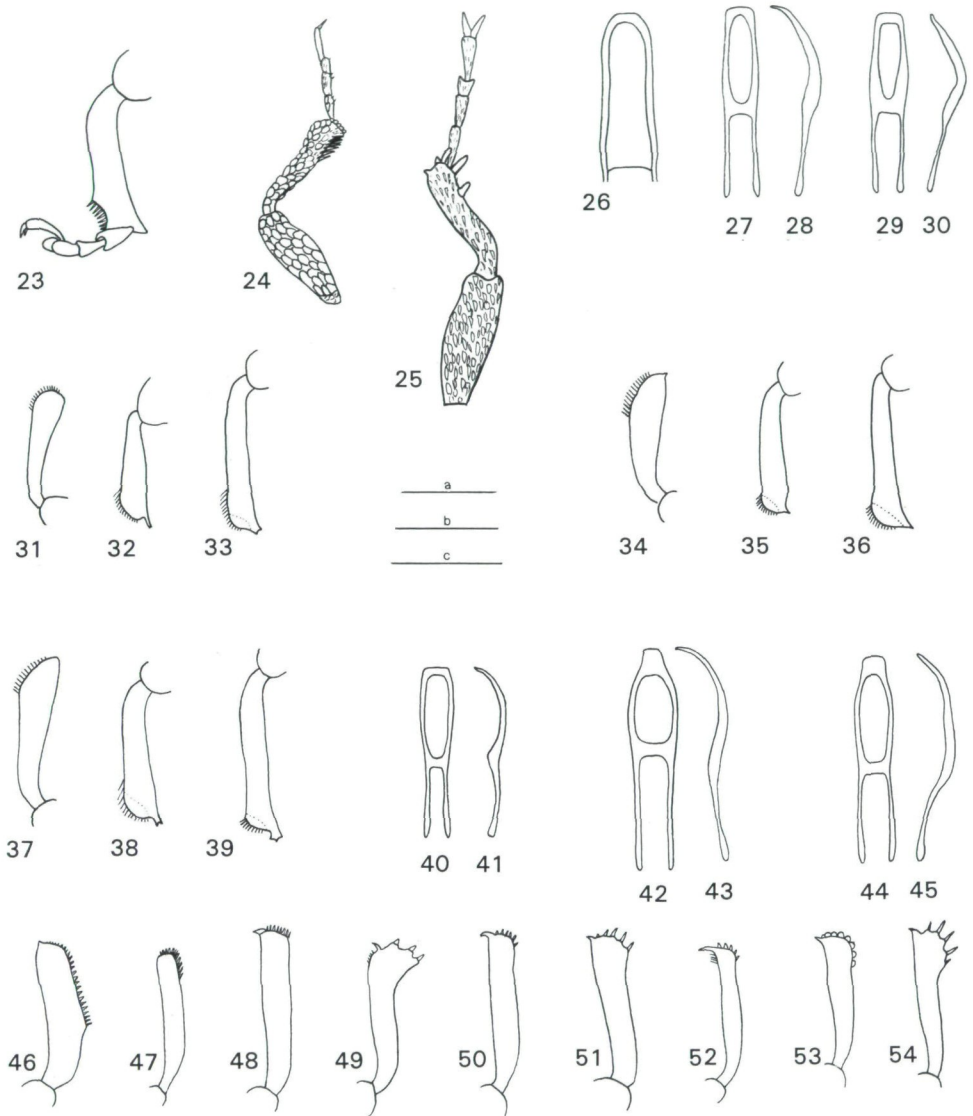
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Figs. 1 - 11: 1) *Notoxyonyx impressus* sp.n., holotype, dorsal, 2) same, lateral, 3) *N. impressus* sp.n., aedeagus of paratype, dorsal, 4) same, lateral, 5) *N. pici*, male lectotype, lateral, 6) same, dorsal 7) *Notoxyonyx impressus* sp.n., holotype, head in frontal view, 8) *Platypteronyx auritus* (after KOROTYAEV 1982), 9) *Theodorinus hispanicus*, holotype, dorsal, 10) *Perioxyonyx splendidus* (Algeria, Hussen Bey), dorsal, 11) *Platygasteronyx solskyi* (Azerbaijan), dorsal. Scale bars: a = 0.5 mm (figs. 1, 2, 5, 6) and 0.25 mm (figs. 3, 4, 7); b = 0.5 mm (figs. 10, 11); c = 0.5 mm (fig. 9).



Figs. 12 - 22: 12) *Hemioxyonyx acutangulus* (after KOROTYAEV 1982), 13) *Barioxyonyx tournieri* (Algeria, Oran), 14) *Platyteronyx auritus* (after KOROTYAEV 1982), 15) *Fossoronyx kaszabi* (after KOROTYAEV 1982), 16) *Paroxyonyx albiplumis* (Morocco, Taroudant), 17) *P. fallaciosus* (Algeria, Stidia), 18) *P. imitator* (Spain, Los Monegros), 19) *P. syriacus* (Israel, Rehovot), 20) *P. sicardi* (France, Carnon), 21) *P. mesasiaticus* (Tadzhikistan, Zeravshan Mts.), 22) *P. hispanicus* (Spain, Tibi). Scale bars: a = 1 mm (fig. 13); b = 0.5 mm (figs. 16, 18 - 22); c = 0.5 mm (fig. 17).



Figs. 23 - 54: 23) *Pseudocoeliodes rubricus*, left middle leg (Greece, Kalógría), 24) *Macrosquamonyx kaplini*, left fore leg (Turkmeniya, Repetek), 25) *Fossoronyx kaszabi*, right fore leg (Turkmeniya, Repetek), 26) *Paroxyonyx lunatus*, aedeagus (after KOROTYAEV 1982), 27) *P. syriacus* (Israel, Rehovot), aedeagus, dorsal, 28) same, lateral, 29) *P. sicardi* (France, Carnon), aedeagus, dorsal, 30) same lateral, 31 - 33) *P. japhoensis* (Tunisia, Tunis), male fore, middle and hind tibia, 34 - 36) *P. fallaciosus* (Algeria, Stidia), male fore, middle and hind tibia, 37 - 39) *P. imitator* (Spain, Los Monegros), male fore, middle and hind tibia, 40) *P. japhoensis* (Spain, Sierra de los Filabres), aedeagus, dorsal, 41) same, lateral, 42) *P. fallaciosus* (Algeria, Stidia), aedeagus, dorsal, 43) same, lateral, 44) *P. imitator* (Spain, Los Monegros), aedeagus, dorsal, 45) same, lateral, 46 - 54) right fore tibia (after KOROTYAEV 1982) of 46) *Neoxyonyx strigatirostris*, 47) *Hemioxyonyx acutangulus*, 48) *Theodorinus multidentatus*, 49) *Euoxyonyx inornatus*, 50) *Platygasteronyx humeridensis*, 51) *P. solskyi*, 52) *Macrosquamonyx macrosquamosus*, 53) *M. kaplini*, 54) *Fossoronyx remaudierei*. Scale bars: a = 0.25 mm (figs. 23 - 25, 27 - 30); b = 0.25 mm (figs. 31 - 41); c = 0.25 mm (figs. 42 - 45).

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Zeitschrift/Journal: [Koleopterologische Rundschau](#)

Jahr/Year: 1995

Band/Volume: [65_1995](#)

Autor(en)/Author(s): Colonelli Enzo

Artikel/Article: [Key to the genera of Ceutorhynchinae living on Ephedra, with description of a new genus and two new species \(Curculionidae\). 203-220](#)