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RESEARCH ARTICLE

A new weevil genus *Nefis* gen. nov. (Coleoptera: Curculionidae: Lixinae): systematics and taxonomic revision

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Abstract: The new genus *Nefis* **gen. nov.** is described within the tribe Lixini (Coleoptera: Curculionidae) and its systematic position is discussed. The new genus is recognized by short rectangular rostrum, trapezoidal female tergite VIII with truncate apex and long setaceous posterolateral margins, visible 2-segmented labial palpi and protruding sinuate dorsal apex of protibiae. *Nefis* **gen. nov.** is close to *Larinus* Dejean, 1821, *Rhinocyllus* Germar, 1817, and *Bangasternus* Gozis, 1882. Three new species are described from Turkey and Afghanistan: *Nefis attilai* **sp. nov.**, *Nefis kabakovi* **sp. nov.** and *Nefis korotyaevi* **sp. nov.** Lectotypes are designated for *Larinus brevirostris* Hochhuth, 1851, *Larinus capiomonti* Faust, 1885, *Larinus reitteri* Faust, 1889, *Larinus liliputanus* Faust, 1890, *Larinus exclusus* Faust, 1891, *Larinus ochroleucus* Capiomont v. *pachyrrhinus* Petri, 1907, and *Larinus ochroleucus* ssp. *carthami* Hoffmann, 1957. New synonyms and new combinations are proposed for *Nefis brevirostris* Hochhuth, 1851 **comb. nov.** [= *Larinus reitteri* Faust, 1889 **syn. nov.**], *Nefis liliputanus* Faust, 1890 **comb. nov.** [= *Larinus exclusus* Faust, 1891 **syn. nov.**], *Nefis pachyrrhinus* Petri, 1907 **stat. rev.** & **comb. nov.** [= *Larinus badghysensis* Ter-Minasian, 1982 **syn. nov.** = *Larinus turcmenus* Khnzorian, 1990 **syn. nov.**], *Nefis ochroleucus* Capiomont, 1874 **comb. nov.**, *Nefis capiomonti* Faust 1885 **comb. nov.** *Nefis afghanicus* Ter-Minasian, 1987 **comb. nov.**, *Larinus inflatirostris* Petri, 1907 is a **nomen nudum**. *Larinus brevirostris* Hochhuth is selected as the type species of the new genus. In total, nine species are included in *Nefis*. All species are described or redescribed, illustrated, and a key is provided. Host plant data and brief ecological observations are presented.

Key words: New genus, new species, revision, taxonomy, systematic, Lixini, Curculionidae

Introduction

With about 62,000 species, weevils (Coleoptera: Curculionoidea) are the most diverse animal superfamily (Oberprieler *et al.* 2007). The subfamily Lixinae Schoenherr, 1823 is represented by about 1200 species globally, divided into the two tribes Cleonini Schoenherr, 1826 and Lixini Schoenherr, 1823 as recognized by Aslam (1963) and Ter-Minasian (1967). Species within Lixini are strictly phytophagous and are economically important. The tribe comprises 700 species (Csiki 1934) with 15 genera and 24 subgenera worldwide (Alonso-Zarazaga & Lyal 1999; Talamelli 2008; Gültekin 2012). The Lixini are most diverse in the Palaearctic with about 325 species. The largest genera are *Lixus* Fabricius, 1801 with about 150 species, and *Larinus* Dejean, 1821 with approximately 100 species in the Palaearctic region (Gültekin 2013).

There is insufficient phylogenetic information on the Lixini. Ter-Minasian (1967) divided Lixinae into two tribes: Cleonini (scrobes extending almost to the apex of rostrum) and Lixini (scrobes are not usually reaching the apex of rostrum). Csiki (1934) and Alonso-Zarazaga & Lyal (1999) included a third tribe, Rhinocyllini Lacordaire, 1863. In contrast, Colonnelli (2003) synonymised Rhinocyllini with Lixini, noting that no clear morphological or ecological boundaries exist between the two. However, two main ecological groups are distinguished by larval feeding habits. The herein labelled Group-I is comprised of *Larinus* and allied genera. These have an oblong ovate body shape and inhabit inflorescences. Group-II is comprised of *Lixus* and allied genera. These have a long and cylindrical body shape and inhabit stems, roots, and petioles.

Recent taxonomic research on Lixini has been conducted by Gültekin (2006a, 2008, 2010, 2012, 2013); Gültekin & Perrin (2006, 2011), Gültekin & Podlussány (2012), and ecological investigations by Gültekin (2005a, 2007); Gültekin & Korotyaev (2005, 2011) and Gültekin *et al.* (2008). To find new reliable morphological characters for the classification of inflorescence-inhabiting Lixini, the internal morphology of Palaearctic genera has been investigated. From the results of this research, six previously described species of *Larinus* and three undescribed species have been found to form a monophyletic group with the following characters: the female tergite VIII with very peculiar truncated apex with a trapezoidal form and long setaceous posterolateral margins; labial palpi visible 2-segmented; dorsal apex of protibiae protruding sinuate. Based on these characters, a new genus of Lixini and three new species are described. Comparisons with related genera, a taxonomic revision, redescriptions, keys to the nine species, host plants of species, figures, and a brief discussion of the ecology of the *N. ochroleucus* are presented.

Material and Methods

Morphological terminology follows Morimoto (1962) and Aslam (1963) for general characters; Lyal (1995) for the ventral surface of the head and rostrum; Zherikhin and Gratshev (1995) for mesothoraxic wing venation; Velázquez de Castro (1998) for metendosternite characters; Korotyaev *et al.* (2000) for the mesothorax, metathorax and genitalia; and Thompson (1992) for characters of the abdominal tergite, ventrite and tibiae. Measurements were taken using a stereomicroscope Leica MZ7.5 with an ocular micrometer. The body length was measured from the anterior margin of the eye to the posterior margin of the elytra; the rostrum length from the apex of the rostrum to the anterior margin of the eye; and prothoracic length from the anterior margin to the posterior margin.

For morphological dissections, dry adult samples were placed in lukewarm clean water overnight. For the female, all sclerotized body parts were dissected completely. For the male, generally only the abdomen was removed and dissected. Specimens were cleared in 10% KOH overnight, cleaned with distilled water, and rinsed in 70% ethanol. Observations and photographs were made in glycerine under a stereomicroscope for genitalic structures, mouthparts, proventriculus, tergite and wings. All genitalia and cleared structures were kept in microvials or were glued dry on cards and mounted under the pinned specimen from which they were dissected. Photographs were taken with a Leica DFC 420 digital camera through the microscope using LeicaLAS software for montage. The digital images were then imported into Adobe Photoshop 8.0 and CorelDRAWX4 for labelling and plate composition.

Type material and specimens examined during the course of the study are deposited in the following museums and private collections:

BNHM – The Brukental Natural History Museum, Sibiu, Romania
EMET – Entomology Museum, Erzurum, Turkey
HNHM – Hungarian Natural History Museum, Budapest, Hungary
MNCN – Museo Nacional de Ciencias Naturales, Madrid, Spain
MNHN – Muséum National d'Histoire Naturelle, Paris, France
BMNH– British Museum of Natural History, London, England
NHMD – Natural History Museum of Denmark, Copenhagen, Denmark
NMPC – National Museum Prague, Prague, Czech Republic
RBINS – Royal Institute of Natural Sciences, Brussels, Belgium
SMNH – The Swedish Museum of Natural History, Stockholm, Sweden
SDEID – Senckenberg Deutsches Entomologisches Institut, Dresden, Germany
SDEIM – Deutsches Entomologisches Institut, Münheberg, Germany
ZINRAS – Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia
AP – Attila Podlussány Collection (Budapest, Hungary)
RB – Roman Borovec Collection (Sloupno, Czech Republic)

Abbreviations are used for label data "hw" =handwritten and "pr" =printed.

For taxonomic actions, the International Code of Zoological Nomenclature (1999) is followed.

Host plant associations were recorded and biological observations were performed during collecting trips in Anatolia in 2002–2010; observations for *N. ochroleucus* were conducted 24 km W. of Iğdır, in a lowland area of Ağrı Mountain (Iğdır Province) at an elevation of 1020 m a.s.l. during the summer of 2003. Larvae (mostly late instars) and pupae were collected with plant material and held in cages in order to rear adults. Part of the observations were also made in the laboratory.

Results

***Nefis* gen. nov.**
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Type species: *Larinus brevirostris* Hochhuth, 1851, present designation

Diagnosis: The new genus is close to *Larinus* Dejean, 1821 and *Rhinocyllus* Germar, 1817, and is also related to *Bangasternus* Gozis, 1882. *Nefis* is recognized by the following characters: trapezoidal female tergite VIII with truncate apex and long setaceous

posterolateral margins (Figs. 1D–E); visible 2-segmented labial palpi; and protruding sinuate dorsal apex of protibiae. The short rectangular rostrum and two deep rounded ventral fovea of rostrum are shared with *Bangasternus* and *Rhinocyllus*, and the trapezoidal prothorax with *Larinus*. The rostrum of *Rhinocyllus* is laterally keeled, having a median longitudinal keel on the dorsal margin and a wide sulcus along each lateral margin; the rostrum is distinctly contracted apicad to antennal insertion; the dorsal rostrum of *Larinus* is bisulcate on the basal half and with a central keel between the sulci. *Bangasternus* is distinguished from the other genera by having prominent prosternal ridges which form a deep prosternal channel. The female tergite VIII of *Nefis* is clearly different than other genera: Tergite VIII of *Rhinocyllus* is crescentic with subrounded apical margin and, lacks setae on the posterolateral margins (Figs. 1B–C). Tergite VIII of *Bangasternus* is subcrescentic shape with a deeply emarginate apex, and posterior margins bearing long and dense setae (Fig. 1A). The female tergite VIII is semicircular in the genera *Larinus* (Fig. 1F), *Lachnaeus* Schoenherr, 1826 (Fig. 1H) and *Microlarinus* Hochhuth, 1847 (Fig. 1I); it is semielliptical in the genus *Lixus* Fabricius, 1801 (Fig. 1G).

Description

Medium sized weevils: Length 4.2–11.5 mm. Body oblong-ovate. Integument dark piceous; antennae, tarsi, apex of tibiae and dorso-apical margin of pronotum dark brown. The species with milky-white to greyish wax powder secretion on body. Pubescence hair-like on body; ventral surface of head, mesoventrite, and coxae with bifid to pentafid scales.

Rostrum stout, thicker than fore femur, quadrangular in cross-section, in dorsal view rectangular, parallel-sided, weakly dilated after antennal insertion on some species, always distinctly shorter than prothorax. In lateral view straight to weakly curved, scrobes narrow, deep and angularly arched to ventral of rostrum. In ventral view (Fig. 2A) scrobes not connected to each other at base of rostrum, neither scrobe nor scape reach ventral eye margin; subgenal suture weakly visible, occipital suture invisible, submentum narrow trapeziform, two rounded deep fovea located mid length of submentum. Prementum distinctly convex with erect setae, labial palpi visible 2-segmented, very small, located at anterolateral corner of prementum, ventral in position under ligula, first segment bears one or two erect setae, second segment strongly reduced, ligula transverse and flat; galea and lacinia fused with spines, maxillary palpi 3-segmented; mandibles with 2 teeth, a pair of setae located on lower part.

Antenna short and thick with 11 segments, inserted slightly below middle of length of rostrum. Funicle with 7 antennomeres, compact from antennomeres II-VII, antennomere I asymmetric at the base and longer than antennomere II; antennomeres III-VII transverse and gradually widened; club elongate-oval, with 3 segments, club with short sparse erect setae. Scape short and slender in basal 2/3, but abruptly widened at apical 1/3 and twice as wide as at base.

Head capsule spherical (Fig. 2A), large, diameter of head approximately twice as wide as rostrum at widest part; punctured finely. Eyes ellipsoid, slightly convex, dorsal part wider than ventral. Frons flat to weekly depressed, with a centrally located foveola.

Prothorax subtrapezoidal, moderately convex, greatest width near base, anteriorly narrowed, anterior margin convex, lateral margins curving evenly, postocular lobes weakly to moderately developed, and area behind postocular lobes constricted. Dorsum flat, lacking any distinct central line or keel, with moderately dense punctures, interspaced with sparse to dense micropunctation. Prosternum short, anterior margin distinctly emarginate (Fig. 2B) and weakly depressed; intercoxal process of narrow triangular form with sharp apex, raised

between coxae; procoxal cavities located centrally, contiguous (Fig. 2B), sternellum with tubercule.

Mesothorax (Fig. 2C) triangular, short, transverse, scutellum small with short stalk (Fig. 2C), strongly convex and truncated at apex. Mesoventrite (Fig. 2F) short, oblique, mesocoxal cavities located at posterior margin, separated by about 1/3 coxal diameter. Intercoxal process reaching middle part of mesocoxa and overlapping metaventrite (Fig. 2F). Mesepisternum triangular, mesepimeron rectangular.

Metathorax quadrangular (Fig. 3A), transverse; metanotum moderately sclerotized. Scutellar grove narrowly trapeziform, reaching to the near basal margin. Metaventrite (Fig. 2F) slightly longer and more convex than mesoventrite laterally, depressed centrally; anterior margin triangularly projected toward mesocoxal cavity and lying under posterior margin of mesoventrite; posterior margin sinuate, emarginated triangularly medially, lying under ventrite III of abdomen. Metepisternum transverse, anteriorly broadened with sharp projection antero-ventrally, posteriorly narrowed (Fig. 2D); metepimeron of small, narrow triangular form and fused with metepisternum (Fig. 2D); metacoxal cavities located at posterior margin, distinctly separated by approximately same distance as width of metacoxal cavity diameter. Metendosternite (Fig. 2E) in ventral view with stalk ½ times as long as furcal arms, gradually widened ventrally, weakly emarginated to flat; longitudinal flange sub-equal in length to stalk and between sheaths. Sheath triangular, apical margins of two sheaths straight or slightly ampliate between two anterior tendons. Lateral arms about 1/3 times as long as furcal arms.

Crop elongate, proventriculus with elongate blades, long and regularly tapering towards apex (Fig. 3F).

Elytra in dorsal view slightly to moderately broader than prothorax, elongate, subparallel-sided, apex rounded, base with wide angle V form, basal margin sinuate; humeral prominences slightly to moderately developed, located at the base of VI-IXth intervals; preapical prominences moderately developed and located at end of IV-VIIth intervals. Each elytron with 10 longitudinal striae, 11 intervals; intervals flat, about 3-5 times as wide as striae; striae narrow and superficially sulcate. Internal view (Fig. 3B); lock device on right elytron with round groove, left elytron with fitting sutural flange. Elytra completely closed to tergum VIII.

Wing (Figs. 3C-E) elongate, about 1.5 times as long as elytron, basal lobe of C well developed, lacking proximal and stigma setae; Sc with 4-5 small prominences ventrally before joining to R; C, Sc and R joined at basal ¼ part of wing, continue together to the level of first radial sclerite (rs1); radial sclerites triangular, rs1 smaller than rs2; radial fold present and visible, radial window (w) lacking, this area sclerotized, radiomedial sclerotization (rms) present but thin; R3 visible, short, not reached to apical margin of wing; anterior stripe (ast), postradial stripe (pst) and posterior part of postradial stripe (ppp) distinct; media radial (Mr) thin and short; M1 thin and reached ventral margin; Cu well developed, reaching apical half; Cu1 nearing ventral margin but not reached; Cu2 lacking; 1A1 and 1A2 present, short not connected to any vein, 2A full developed, 3A thin and joined with 2A at middle length constituting narrow anal cell.

Legs moderately long, stout. Procoxa and mesocoxa spherical, metacoxa elliptical; strongly, moderately and slightly convex, respectively; protrochanter larger than meso- and metatrochanter; femora stout, edentate, swollen medially, profemora stronger and slightly shorter than meso- and metafemora. Protibiae longer than other two, weakly dilated towards apex, apical margin of protibiae sinuate, passing base of uncus and overhanging it. Apical

comb of setae on protibiae about ½ times shorter than meso- and metatibiae; sub-equal in length on meso- and metatibiae; flange distinct, unci large, inner margin of tibiae dentate, these fewer and smaller on meso- and metatibiae. Length of tarsi about ¾ that of tibiae, tarsomere I asymmetrically triangular, tarsomere II trapeziform and transverse, tarsomere III bilobed; spongy pads underside of trasomeres I-III present; onychium curved, moderately widening apically, slightly shorter than total length of tarsomeres I-III; claws of equal length, connate at basal (separated on one species), divergent apically.

Abdomen. Venter (Fig. 2G) convex, length of sternum III slightly shorter than total length of sterna IV-VII. Intercoxal process of sternum III triangular with acute apex, sternum III longer than sternum IV, depression central in both genders, but in male more concave and continuing to middle level of sternum IV. Sternum V and VI sub-equal in length and about ½ times as long as sternum IV. Sternum VII trapeziform and slightly shorter than sternum IV. Tergum I moderately sclerotized, tergum VII strongly sclerotized, terga II-VI membranous. Tergum I shortest, terga II-VI sub-equal in length and each longer than tergum I, tergum VII transverse, sub-trapezoidal with dense punctuation (Fig. 3A).

Female terminalia segments and genitalia. Tergite VIII trapezoidal in dorsal view, truncate apex, posterolateral margins with dense, long erect setae projecting inwards (Figs. 1D-E). Sternum VIII of tulip shape, apodeme long, arms forming sclerotized plate, margins with erect setae (Fig. 12N). Gonocoxite (Fig. 12O) moderately sclerotized, triangularly narrowed towards apex, stylus short, bearing 2-3 erect setae. Spermatheca (Fig. 12P) crescentic shape, well developed, collum larger than ramus; cornu curved, apex blunt to sharp.

Male terminalia segments and genitalia. Tergite VIII sub-trapezoidal; sternite VIII with a range of short setae on dorso-lateral margin. Aedeagus (Figs. 12H-K) in dorsal view elongate, weakly to moderate narrowing apically, constricted medially on some species, ventral plate weakly to moderately developed at basal half, but not fused, ventral plate ending triangularly with acuminate apex; apodeme very short, curved mediad; aedeagus in lateral view distinctly curved and strongly convex medially. Tegmen with ring complete and apodeme short. Spiculum gastrale slender, curved, slightly shorter than aedeagus.

Variability: Vestiture variation can be present in all species as well as within individuals depending on the age of the adult (e.g. older adults have usually partially lost dorsal vestiture), collecting, preserving and preparation condition.

Etymology: The name of the new genus"*Nefis*" is an adjective from the Turkish language which means "beautiful". Gender is masculine.

Distribution: Palaearctic: only Asia; Afghanistan, Armenia, Azerbaijan, China, Iran, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, Turkmenistan, Turkey, Uzbekistan (Figs. 16-18).

Host plants: *Cousinia* Cass., *Cirsium* Miller*, Pulicaria* Gaertner*, Artemisia* L., all within the Asteraceae (Figs. 15A-F).

Lectotype designations and nomenclatural changes

***Larinus brevirostris* Hochhuth, 1851: 86**

Type. In the Hochhuth collection at SDEIM, a male (5.5 mm) specimen of *Larinus brevirostris* Hochhuth, 1851 (Fig. 4A) bearing the labels "Armenia" hw, "*L. brevirostris* Hochh., Hochh." hw and fitting the description, type locality is "Armenien". This specimen is here designated as lectotype and has been labelled "Lectotypus, ♂, *Larinus brevirostris* Hochh., L. Gültekin des. 2006". Pinned from right elytron, specimen is missing left hind leg completely, right middle tarsi beyond 1st segment, and hind claw segments. Lectotype re-mounted and genitalia dissected by author.

Remarks. A new combination is established: *Nefis brevirostris* (Hochhuth, 1851) **comb. nov.**

***Larinus reitteri* Faust, 1889: 205**

Type. In the Faust collection at SDEID, a female of *Larinus reitteri* Faust, 1889 (6.7 mm) (Fig. 4B) fitting the description, type locality Araxesthal, and bearing labels [golden square], "Araxes, Reitter" hw, "Reitteri, Faust" hw, is here designated as lectotype "Lectotype ♀, *Larinus reitteri* Faust, L. Gültekin des. 2005", "*Larinus brevirostris* Hochhuth, L. Gültekin det. 2005". Lectotype is in good condition, mounted on paper card with glue, and missing the left fore tarsus beyond second segment and middle left tarsus beyond first segment.

Remarks. The type of *L. reitteri* is the same species as that of *N. brevirostris* (Hochhuth), thus a new combination and synonym are here proposed: *Nefis brevirostris* (Hochhuth, 1851) [= *Larinus reitteri* Faust, 1889 **syn. nov.**]. Under the name "reitteri" there is a second specimen (♂) bearing labels "Araxes, Jh. Reitter", "Reitteri" hw, which is not typical because Faust (1889) mentioned in the description only female specimen(s).

***Larinus capiomonti* Faust, 1885: 169**

Type. In the Faust collection at SDEID, a female of *Larinus capiomonti* Faust, 1885 (8.1 mm) fitting the description, the type locality Taschkent, Pischpek (Balassoglo), bearing labels [golden square], "Taschkent, Balassoglo" hw, is here designated as lectotype "Lectotypus, ♀, *Larinus capiomonti* Faust, L. Gültekin des. 2008". Another female (8.2 mm) standing lectotype and bearing the labels [golden square], "Taschkent, akinin" hw, is probably not typical because the description does not mention specimens collected by Akinin. Both samples are identified and labelled as "*Nefis capiomonti* Faust, Gültekin det. 2008". The lectotype is pinned through its right elytron, the body is intact, the right hind leg is completely missing, the following tarsal segments are missing: right fore, middle and left hind beyond 3rd segment.

Remarks. This is a valid species, and a new combination is established: *Nefis capiomonti* (Faust, 1885) **comb. nov.**

***Larinus liliputanus* Faust, 1890: 259**

Type. In the Faust collection at SDEID, a male of *Larinus liliputanus* Faust, 1890 (4.2 mm) (Fig. 4D) fitting the description, the type locality China, and bearing labels [golden square], "China, v. Heyden" hw, "*liliputanus*, Faust" hw, is here designated as lectotype "Lectotypus ♂, *Larinus liliputanus* Faust, L. Gültekin des. 2005". The Lectotype was formerly pinned through the right elytron by a thick pin, thus a large part of the elytron was broken as a triangular hole. At some indefinite period the specimen was glued on a paper card, the fore left leg was broken and glued on the card. The tarsus on this leg is missing

beyond the first segment. In addition, the right funicle segments are missing beyond the 3rd segment. Labels and sample re-mounted with dissected aedeagus by the author.

Remarks. It is a valid species and a new combination is established: *Nefis liliputanus* (Faust, 1890) **comb. nov.**

***Larinus exclusus* Faust, 1891: 118**

Type. In the Faust collection at SDEID, a female of *Larinus exclusus* Faust, 1891 (5.2 mm) (Fig. 4C) fitting the description, the type locality Djizak, and bearing labels [golden square], "Djizak, Hauser" hw, "*exclusus*, Faust" hw, is recognized as the holotype. The specimen is glued on paper card. The left hind tarsus is missing, and the right one was broken and glued. Specimen and labels were re-mounted on paper with glue. There is a second female specimen standing under the name of "*exclusus*" bearing labels "Djizak, Hauser" hw, "*exclusus*" hw. It is not considered part of the type series because Faust (1891a) specified that the description originated from a single specimen.

Remarks. *Larinus exclusus* Faust, 1891 is the same species as *N. liliputanus* (Faust). Differences are a slightly larger body size and opposite sex. A new combination and synonym is established: *Nefis liliputanus* (Faust, 1890) **comb. nov.** [= *Larinus exclusus* Faust, 1891 **syn. nov.**].

***Larinus ochroleucus* Capiomont v. *pachyrrhinus* Petri, 1907: 79**

Type. In the Petri collection at the BNHM, a male of *Larinus ochroleucus* Capiomont v. *pachyrrhinus* Petri, 1907 fitting the description and bearing the labels "Turkestan" hw, "*Larinus pachyrrhinus* Petri" hw, is here designated as lectotype "Lectotypus, ♂, *Larinus ochroleucus* Cap. v. *pachyrrhinus* Petri, Gültekin des. 2008", "*Nefis pachyrrhinus* Petri Gültekin det. 2008". A female bearing the label "Thian-S., Tekesthal" pr, a female "Transcasp., Merv." hw, a female "Astrabad", "Erhaltenala, *aeruginosus* Hochh." hw, are here designated as paralectotypes "Paralectotypus, 3♀♀, *Larinus ochroleucus* Cap. v. *pachyrrhinus* Petri, Gültekin des. 2008". The first two paralectotypes are identified as "*Nefis pachyrrhinus* Petri Gültekin det. 2008", but the last one from Astrabad is identified as "*Nefis ochroleucus* Cap., Gültekin det. 2008". There is another sample placed near the lectotypes with the labels "Caucasus, Araxesthal, Leder.Reitter" which is not typical. It is "*Nefis ochroleucus* Cap., Gültekin det. 2008". The description mentioned that the type locations are Thian-Schan, Tekethal, Transcaspia, Merw, Turkestan and Astrabad. The lectotype is pinned through the right elytron, the body is intact. The paralectotype from "Thian-S" was mounted on a card. Samples from "Transcasp." are pinned through the right elytron, elytra are weakly divaricated.

Remarks. Currently, the name of *Larinus ochroleucus* Capiomont v. *pachyrrhinus* Petri, 1907 is a junior synonym of *Larinus ochroleucus* Capiomont. Examination of type material and lectotype designations revealed that there is a mistake; *Larinus ochroleucus* Capiomont v. *pachyrrhinus* Petri is a different species from *Larinus ochroleucus* Capiomont and can be distinguished from it by the distinctly wide tarsomere III and the shape of the protibiae. The name of *Larinus pachyrrhinus* Petri, 1907 is resurrected, the status is revised and combined with the new genus: *Nefis pachyrrhinus* (Petri, 1907) **stat. rev.** & **comb. nov.**

***Larinus ochroleucus* Capiomont ssp. *carthami* Hoffmann, 1957: 80**

Type. In the Hoffmann collection at MNHN, a male of *Larinus ochroleucus* Capiomont ssp. *carthami* Hoffmann, 1957 fitting the description of this variety and bearing

the labels "sp. *Carthamus*, G. Remaudiere, 10.VI.1955" hw, "Route de Chemchak, alt. 1800 m, IRAN, G. Remaudiere" hw, "typus" hw, is here designated as lectotype "Lectotypus ♂, *Larinus ochroleucus* Cap. ssp. *carthami* Hoffmann, Gültekin des. 2005", "*Larinus fucatus* Faust, Gültekin det. 2005. A male bearing labels "Mardabat, 12.VI.1955, (IRAN), sud Karadj. sp. *Calligonum*, (G. Remaudiere)" hw, "*Larinus ochroleucus* Cap. ssp. *carthami* m. A. Hoffmann det." hw, is here designated as paralectotype "Paralectotypus ♂, *Larinus ochroleucus* Cap. ssp. *carthami* Hoffmann, Gültekin des. 2005", "*Nefis liliputanus* Faust, Gültekin det. 2005". Samples are individually mounted on paper cards with glue. The body of the lectotype is intact; the left middle claw segment and hind tarsus beyond 2nd segment are missing on the paralectotype.

Remarks. Hoffmann was not aware that he had named the subspecies *Larinus ochroleucus carthami* Hoffmann, 1957, based on two specimens that were actually two different species previously named as *Larinus fucatus* Faust, 1891 and *Larinus liliputanus*. However, it is obvious that these two specimens represent two different species. The synonymization of *Larinus fucatus* Faust, 1891 with *Larinus ochroleucus carthami* Hoffmann, 1957 is proposed by Gültekin (2013). A new combination is established: *Nefis ochroleucus* (Capiomont, 1874) **comb. nov.**

***Larinus badghysensis* Ter-Minasian, 1982: 43**

Type. In the collection of ZINRAS, the male holotype of *Larinus badghysensis* Ter-Minasian, 1982 bears the labels "Turkmenistan, Badghys, Kepele, 30.VIII.1979, Atamuradov leg., from *Astragallus agameticus* and *Cousinia raddeana*".

Remarks. A new synonym is here established: *Nefis pachyrrhinus* (Petri, 1907) [=*Larinus badghysensis* Ter-Minasian, 1982 **syn. nov.**].

***Larinus turcmenus* Iablakov-Khnzorian, 1990: 131**

Type. According to the description of *Larinus turcmenus* Iablakov-Khnzorian, 1990, the holotype is a male and there are four paratypes (♂, ♀) from "Turkmenistan, Kuşka env., near Ağaçlı, near state border of USSR".

Remarks. Despite contacting the curator of the Zoological Institute of Armenia at Yerevan twice, the type could not be found. However, the description and drawings make clear that *Larinus turcmenus* Iablakov-Khnzorian, 1990 is the same species as *Nefis pachyrrhinus* Petri, 1907. Thus, a new synonymy is here proposed: *Nefis pachyrrhinus* (Petri, 1907) [= *Larinus turcmenus* Iablakov-Khnzorian, 1990 **syn. nov.**].

***Larinus afghanicus* Ter-Minasian, 1987: 119**

Type. In the collection of ZINRAS, the male holotype of *Larinus afghanicus* Ter-Minasian, 1987 bears the label "Afghanistan, Kherazan, Oruzgan, Kabakov, 2700 m, 26.9.[19]79"; a male paratype "Afghanistan, Yharni, NW Noguz, Kabakov, 3000 m, 28.5.1973"; and three females paratypes "Afghanistan, Oruzgan, Sahrestan, O. Kabakov, 6.VII.1970, 2200 m".

Remarks. This species clearly belongs to the new genus and thus a new combination is established: *Nefis afghanicus* (Ter-Minasian, 1987) **comb. nov.**

Descriptions of species

Nefis kabakovi sp. nov.

urn:lsid:zoobank.org/NomenclaturalActs/E868DF59-FED1-46A7-A3A2-0278CD4089B2

Diagnosis: Claws separate at base, body with semi-erect scales, body form elongate-elliptical. These characters allow a clear separation from other species of the genus.

Description

Measurement. Body length: 4.20-6.10 mm. Rostrum: length 0.65-0.80 mm, width 0.55-0.65 mm. Prothorax: length 1.30-1.80 mm, width 1.60-2.10 mm. Elytra: length 2.60-3.70 mm, width 2.00-2.80 mm. Holotype: Rostrum: length 0.80 mm, width 0.65 mm. Prothorax: length 1.80 mm, width 2.10 mm. Elytra: length 3.70 mm, width 2.80 mm.

Vestiture. Head with short trifurcate creamy-white scales; frons and all body densely covered with hair-like pubescence; semi-erect scales on legs, pronotum and rostrum sparser and shorter than on elytra; a simple row on each interval of elytra. Body covered with dirty-white wax powder secretion.

Body elongate-elliptical (Figs. 5A-B). Head spherical, vertex convex, bevelled towards frons with superficial depression; frontal foveola concealed by wax powder secretion and pubescence. Eyes elliptical, moderately convex, lower apex sub-acute (Fig. 5D). Rostrum stout, parallel-sided, weakly curved, slightly dilated after antennal insertion (Figs. 5C-D); Ventral margin of scrobes partly visible dorsally. Antenna inserted 0.44x from length of rostrum from apex. Scape shorter than funicle, apex of scape distinctly wider than antennomere I of funicle, antennomere I wider and 1.40x as long as antennomeres II, antennomeres III-VII gradually widened, antennomere VII widest; club elongate with acuminate apex, 1.35x as long as wide at widest part (Fig. 5E).

Prothorax sub-trapezoidal, lateral sides evenly narrowed from base to basal 1/3, continuing roundly to apical 1/8 and constricted with thin sulcus in this part forming short collar not continuing dorsally; apical margin evenly curving toward lateral sides, slightly emarginated before postocular lobes, postocular lobes weakly developed; apical margin of prosternum distinctly emarginate, collar sulcus continuing immediately behind margin. Pronotum moderately convex with rounded, coarse, separated punctures scattered densely on disc (Fig. 5F), smaller and lesser on declivity.

Elytra parallel-sided at basal ¼, constricted before middle length, widened after ½ length and widest at apical ¾, roundly and gradually narrowed toward apex; humeral prominences slightly developed and located at base of VIII-IX intervals; preapical prominences distinct and located on end of intervals IV-VII. Intervals flat, about 5x times as wide as striae, base of intervals III wider and convex than others, interval I slightly more convex than interval II at apical half; striae forming rounded and separated punctures anterior to the declivity, punctures partly confluent on declivity.

Legs: outer margin of protibiae nearly straight, inner margin sinuate, with 3-4 denticles, one nearest to uncus larger (Fig. 5G), meso- and metatibiae with single denticle near uncus. Tarsi narrow (Fig. 5H), tarsomere III 1.10x as wide as tarsomere II, lobes of tarsomere III 0.75x as long as wide. Spongy pads covering only ¼ of underside of tarsomeres I-III. Onychium stout, claws separate at base (Fig. 5I).

Female genitalia. Tergite VIII about 1.80x as wide as long, dorso-apical margin nearly straight (Fig. 5J). Apodeme of sternite VIII straight, sub-equal in length to lateral arms. Lateral arms wide, angularly arched outward, vertical arms with right angular turn upright (Fig. 5K). Posterior margins of vertical arms sclerotized and bearing a range of short

setae. Gonocoxite narrowed towards apex to produce a cylindrical base for stylus, base only is well sclerotized, stylus short (Fig. 5L).

Variability: Semi-erect setae very sparse on elytra, lacking on pronotum and head of paratype. Number of spines on apical comb and denticles on inner margin of tibiae variable.

Etymology: The new species name "*kabakovi*" is dedicated to Oleg N. Kabakov who collected the new species.

Type material: Holotype, ♀, AFGHANISTAN, Herat, Karukh, 1200 m, O. Kabakov, 14.XI.1969. Paratype, ♀, AFGHANISTAN, Kharezan, Oruzgan, 2700 m, O. Kabakov, 29.VI.[19]70. Holotype and paratype are deposited in the ZINRAS.

Distribution: Afghanistan (Figs. 16, 18).

Nefis korotyaevi sp. nov.

urn:lsid:zoobank.org/NomenclaturalActs/464BBF1B-C695-4830-B082-C5C17DBA926C

Diagnosis: This is a remarkable new species with a very peculiar milky-white pattern on the body. It is related to *N. brevirostris* and *N. capiomonti*, but differs clearly from the latter in the parallel-sided rostrum, the roundly ending ventral plate of aedeagus with obtuse apex; and the deep sulciform stria III-V and IX-X at base of the elytra. The rostrum of *N. capiomonti* is dilated in the apical half, the apex of the aedeagal ventral plate is triangular and sharp, and it lacks the deep sulciform stria III-V and IX-X at the base of the elytra. The new species shares the parallel sided rostrum, round-sided prothorax and general body form with *N. brevirostris,* but *N. korotyaevi* clearly differs by its wide milky-white body pattern.

Description

Measurement. Body length: 5.60-7.20 mm. Rostrum: length 1.00-1.30 mm, width 0.70-0.90 mm. Prothorax: length 1.80-2.20 mm, width 2.40-3.10 mm. Elytra: length 3.70-4.90 mm, width 2.90-3.60 mm. Holotype: Rostrum: length 1.30 mm, width 0.80 mm. Prothorax: length 1.80 mm, width 2.60 mm. Elytra: length 4.10 mm, width 3.00 mm.

Vestiture. Ventral and lateral surface of head with short trifurcate milky-white scales densely distributed; bifurcate scales on anterior eye margins denser and longer; of hair-like form on dorsal margin. Milky-white wax powder secretion and dense hair-like pubescence constitute large bands on dorso-lateral margins of prothorax and transversely on elytra (Figs. 6A-B). Two short branches of pronotal band reach area of postocular lobes; two branches extend dorsad, one towards preapical margin, second towards pronotal disc and outlines two obtuse central, shining black circles. Disc of pronotum with shining black integument, pubescence very short and sparse. Elytral band reaching basal margin only on interval II, rectilinearly reaching preapical area of elytra on intervals I-IV, short and interrupted on intervals V-VIII, again wider on intervals IX-XI. Surface of elytra with small milky-white wax powder patches, sparsely. Underside of body covered with same milky-white wax powder secretion, less densely on legs, rostrum and antenna.

Body elliptical (Figs. 6A-B). Head spherical, vertex not visible, frons weakly convex, bevelled towards frontal foveola, depressed around small rounded frontal foveola. Eyes elliptical, weakly convex, lower angle sub-acute (Fig. 6D). Rostrum stout, parallel-sided (Fig. 6C), nearly straight; dorsum more convex than frons, transverse depression at base of rostrum

and weakly constriction at the end of scrobes; two very rough interrupted triangular ridges on basal half and two similar smaller ones located on antennal insertion, four ridges lying between these with longitudinal depression; rostral foveola narrowly elliptical and deep. Ventral margin of scrobes partly visible dorsally. Antenna inserted 0.48x from apex of rostrum. Scape shorter than funicle, apex of scape distinctly wider than antennomere I of funicle, antennomere I wider and 1.50x as long as antennomere II, antennomeres III-VII gradually widened, antennomere VII widest; club elongate with acuminate apex, 1.80x as long as wide at widest part.

Prothorax sub-trapezoidal (Figs. 6A-B), sides weakly constricted immediately before base, roundly widened in basal 1/3, narrowing gradually towards apical 1/6 and indistinctly constricted, lacking sulcus in this part that would form short collar; anterior margin evenly curving toward sides, weakly emarginate before postocular lobes, postocular lobes weakly developed; anterior margin of prosternum distinctly emarginate. Pronotum moderately convex with round, coarse, separated punctures scattered densely on disc (Fig. 6E) at basal half, smaller and lesser on apical declivity.

Elytra subparallel-sided in basal half, weakly constricted before mid-length, roundly narrowed towards apex; humeral prominences moderately developed and located at base of VI-IX intervals; preapical prominences distinct and located on end of intervals IV-VII. Intervals flat, about 4x times as wide as striae, base of interval III wider and more convex than others; striae forming rounded and separated punctures to apical declivity, then punctures partly or completely confluent and constituting sulciform striae; striae III-V and IX-X deep and sulciform at the base.

Legs: outer margin of protibiae weakly curved, inner margin sinuate with 7-8 denticles, one nearest to uncus larger than others (Fig. 6F), meso- and metatibiae with 2-3 denticles near uncus; apical comb continuing to the lateral outer margin on protibiae. Tarsi wide (Fig. 6G), tarsomere III 1.30x as wide as tarsomere II, lobes of tarsomere III 1.10x as long as wide; spongy pads completely covering underside of lobes of tarsomere III, partly present on underside of tarsomere I-II and located near sides. Onychium stout, claws connate at base.

Female genitalia. Tergite VIII about 2.00x as wide as long, dorso-apical margin protruding medially and distinctly emarginate (Fig. 6N). Apodeme of sternite VIII straight, sub-equal length in length to basal arms, slightly widened in anterior half. Lateral arms arching with wide angle at outer side, vertical arms turning angularly inner-upright (Fig. 6P); posterior margin bearing a row of short setae. Gonocoxite narrowed to apex constituting a cylindrical base for stylus (Fig. 6O), well-sclerotized throughout, surface densely punctate, stylus short, bearing 1-2 erect setae. Spermatheca (Fig. 6Q): ramus very short, narrower than collum, apex of cornu obtuse.

Male genitalia. Aedeagus in dorsal view gradually narrowed from base to apex; ventral plate ends round with short obtuse apex (Figs. 6H-J). Aedeagus distinctly curved in lateral view (Fig. 6K). Tegmen of complete ring form (Fig. 6L); spiculum gastrale thin, curved, slightly shorter than aedeagus (Fig. 6M).

Variability: Median depression on dorsum of rostrum deep to superficial with ridges sharp to obtuse; lateral sides constricted on prothorax more distinct on larger specimens and less distinct on smaller specimens; apodeme of tegmen variously-shaped at apex, hook-shapeed curved internally or distinctly widened triangularly; milky-white wax powder secretion partly lost on dorsum of elytra in some old samples.

Etymology: This species is named in honour of Dr. Boris A. Korotyaev (Zoological Institute, Russian Academy of Sciences, St. Petersburg) who was my scientific supervisor and is a leading weevil specialist.

Type material: Holotype, ♂, TURKEY, Muş Prov., 41.7 km ENE of Muş, Otluk Dağları, 1740 m, 13.6.2006, 38˚52'13.0" N; 41˚56'33.8" E, L. Gültekin. Paratypes (29 ♂, 15 ♀) same labels as holotype. Holotype and 26 paratypes are deposited in the EMET, 6 paratypes in ZINRAS, 2 paratypes in each following institutions: BMNH, MNCN, SDEID, SDEIM, SMNH.

Distribution: Turkey (South East Anatolia) (Figs. 16-17).

Host plant: *Pulicaria dysenterica* (L.) Bernh (Fig. 15E).

Nefis capiomonti (Faust, 1885) comb. nov.

Larinus inflatirostris: Petri, 1907: 79 [**nom. nud.**]

Diagnosis: *Nefis capiomonti* can be recognized by: rostrum dilated from basal half to apex; rostrum with superficial and longitudinal medial depression on dorsum; Elytra with scattered small white spots; prothorax laterally with broadpale longitudinal patch; aedeagus with apex of ventral plate triangular and acuminate. It is related to *N. liliputanus* and *N. korotyaevi* but clearly differs from the latter by lacking a wide milky-white pattern on the elytra and shining black spots on the pronotal disc, by lacking sulciform striae III-V and IX-X at the base, and by the longer acuminate apex of the ventral plate of aedeagus. The body form of *N. capiomonti* more closely resembles that of *N. liliputanus*, but the latter has a distinct small body size, a different vestiture pattern, tarsi narrower with claws very divergent, ventral plate of aedeagal apex of different shape.

Redescription

Measurement. Body length: 6.00-8.30 mm. Rostrum: length 1.10-1.30 mm, width 0.80-0.90 mm. Prothorax: length 1.90-2.40 mm, width 2.70-3.10 mm. Elytra: length 4.20-5.10 mm, width 3.40-4.10 mm.

Vestiture. Ventral and lateral surface of head with densely distributed short trifurcate white scales; scales on anterior eye margins sparser and very short; hair-like form on dorsal margin of eye. White hair-like pubsecence thicker, longer and denser on lateral margins of prothorax with a short branch of white pubescence extending medially towards disc and apically to anterior 1/3 of pronotum, scattered as small patches on elytra and intervals VII-XI posterior to humeral prominences in basal half. Pubescence on other parts of body surface very thin and sparse with brownish wax powder; underside of body, legs and antenna longer and denser with dirty-white wax powder secretion, less on leg and antenna.

Body elliptical (Figs. 7A-C). Head spherical, vertex partly visible, frons weakly concave, bevelled towards frontal foveola, depressed around small rounded frontal foveola. Eyes elliptical, weakly convex, lower angle sub-acute. Rostrum stout, very weakly curved (Fig. 7E), parallel-sided in basal half, dilated towards apex (Fig. 7D); two rough interrupted triangular ridges on basal half and two similar smaller ones located on antennal insertion, between these four ridges depressed superficially and longitudinally; rostral foveola concealed by pubescence. Ventral margin of scrobes partly visible dorsally. Antenna inserted 0.42x from apex of rostrum. Scape shorter than funicle, apex of scape distinctly wider than

antennomere I of funicle, antennomere I distinctly wider and 1.80x as long as antennomere II, antennomeres III-VII gradually widened, antennomere VII widest; club elongate with acuminate apex, 1.60x as long as wide at widest part.

Prothorax trapezoidal, subparallel-sided at basal 1/4, gradually and roundly narrowed towards apex, constricted apical 1/6 forms short collar with thin sulcus; anterior margin evenly curving toward lateral sides, slightly emarginate before postocular lobes, postocular lobes moderately developed; anterior margin of prosternum distinctly emarginate. Pronotum moderately convex with round, coarse, separated punctures scattered densely on disc on basal half, smaller and less dense on apical declivity.

Elytra subparallel-sided in basal half, weakly constricted before mid-length of elytra, roundly narrowed towards apex; humeral prominences moderately developed and located at base of intervals VII-IX; preapical prominences distinct and located at end of intervals IV-VII. Intervals flat, about 4x times as wide as striae, base of interval III wider than others; striae formed of rounded and separated punctures anterior to declivity, then punctures partly or completely confluent constituting sulciform striae.

Legs: outer margin of protibiae weakly curved, inner margin sinuate with 7-8 denticles, nearest one to the uncus larger (Fig. 7F), meso- and metatibiae with 2-3 denticles near uncus. Tarsi wide, tarsomere III 1.25x as wide as tarsomere II, lobes of tarsomere III 1.10x as long as wide (Fig. 7G). Spongy pads covered completely by lobes of tarsomere III, partly present at underside of tarsomere I-II and located near sides. Onychium stout, claws connate at base.

Female genitalia. Tergite VIII about 2.20x as wide as long, dorso-apical margin weakly protruded and slightly emarginate medially (Figs. 7M-R). Apodeme of sternite VIII straight to somewhat curved (Figs. 7S-T), longer than lateral arms. Lateral arms with wide, angularly-arched outer side; vertical arms turning angularly inner-upright. Poserior margin of vertical arms sclerotized and bearing a range of short setae. Gonocoxite narrowed to apex constituting a cylindrical base for stylus with darker color, well sclerotized throughout, surface densely punctuate, stylus short with erect setae on apex (Figs. 7U-W). Spermatheca: ramus short, narrower than collum, apex of cornu obtuse to sharp (Figs. 7X-Y).

Male genitalia. Aedeagus in dorsal view elongate, gradually narrowed from base to apex, lateral margins slightly constricted medially, apex triangular, long and sharp (Figs. 7H-J). Aedeagus distinctly curved in lateral view (Fig. 7K). Tegmen with ring complete. Spiculum gastrale thin, curved, sub-equal in length to aedeagus (Fig. 7L).

Variability: Vestiture sometimes lost on surface of body depending on age of individuals and preparation process (Figs. 7A-C). Sample from Kyrgyzstan (Belovodskaya) with wider white pattern on pronotum and elytra (Fig. 7C). Some samples from central Asia with more convex sides to pronotum. One sample from Kazakhstan with very weak median carina on pronotum. Apex of aedeagus slightly shorter in some samples from Kazakhstan and Uzbekistan. Apodeme of sternite VIII of female somewhat curved in some samples (Fig. 7T); apex of spermathecal cornu obtuse to sharp (Figs. 7X-Y).

Material Examined: KAZAKHSTAN, Akkırtube, Moyynkum, 4.VI.[1]931, Veltisef leg, 1♀, on *Cousinia resinosa* Juzepczuk; [Southern Kazakhstan], Fl. Tschıl, [Chu River Valley], [Konstantinovka village (43.01' N, 74.40 E)], Matthhiessen, 1♂, *Larinus* Germ. *capiomonti* Fst., G. Suvorov. det., (ZINRAS). KYRGYZSTAN, Bishkek, 2.VI.[1]928, Belgouski leg, 1♂; 2.VI.[1]959, 1♀; Kyrgyzstan, Bishkek, 4.VI.1943, Arnoldi leg, 1♀, on *Cousinia triflora* Schrenk., Locality: s. [railway station] Belovodskaya [~42.50' N, 74.06' E], Turksib

[Turkestan-Siberia railway], 6.VIII.1931, 1♀, L. Zimin [lgt.]. (ZINRAS); Alexander GBG, Tokmak, Coll. Hauser, 1899, 1♀, Hauser Coll., 1904-63, *Larinus inflatirostris* Rtt., Type "on purple paper" (BMNH); Tokmak, Turkestan, 4ex, *L. inflatirostris* Reitter; Alexander Gebirge, 4ex (BNHM); Tokmak, J. Sahlb., *capiomonti* Fst. Coll. Reitter, 1♀, (AP). TAJIKISTAN, Dushanbe, Gusakovski, 23.V.[1]934, 1♂; Tajikistan, Gissar environ, 28-29.VI.[1]934, Ivanov leg., 1♂; Zeravshan, 2.V.1869, *Larinus kirschii* Cap., *Kirschii* Cap., *Larinus capiomonti* Fst., Petri det., 1♀; Zeravshan mountain range, Pencenkent environ, Guriva leg., 1♀, 2♂♂, (ZINRAS); Ganischou, Mt. Petra, Pervogo, Pamir occ., Vallis Saphedou, 2200 m, 12-22.VI.1990, leg. Székely, 1♀; Karateghin Mts., Sary-pul, 1482 m, F. Hauser, 1898, 1♂, (AP). TURKMENISTAN, Badghyz Reserve, Morgunovka, 6 km ENE of Kushka, 12.V.1990, M. G. Volkovitsh, 1♀, 1♂; SE Turkmenistan, Kugitangtau Ridge, 5 km E of Svintsovyi Rudnik (37.52' N, 66.26 E), 1500 m, 28.VIII.1973, M. G. Volkovitsh, 2♂♂, (ZINRAS); Kopet-Dagh, Germab, Coll. Hauser, 1894, 1ex, *Larinus darsi* Cap., Khnzorian det., (HNHM). UZBEKISTAN, Buchara occ., Tykallik, Glasunov, 1892, 1♂; Samarkand Region, Kattakurgan, 18.V.1904, Suvorov leg., *Larinus* Germ. *inflatirostris* Rttr., G. Suvorov. det. 1♀; Samarkand, Reitter, 318, *Larinus inflatirostris* Rtt., Samar., 1♂; Tashkent, 28.IV.1930, Gussakovskij, 1♂ on *Artemisia kopetdaghensis* (Poljak.) Y.R.Ling., (ZINRAS); Karakum, Mu. Alexu 1ex, (RBINS); Buchara, Baba-Tau, 2ex, (BNHM).

Distribution: Kazakhstan, Kyrgyzstan, Russia, Tajikistan (new record), Turkmenistan, Uzbekistan (Figs. 16, 18).

Host plants: *Cousinia resinosa* Juzepczuk (new record), *Cousinia triflora* Schrenk (new record), *Artemisia kopetdaghensis* (Poljak.) Y.R.Ling. This last record should perhaps best be considered a refuge plant until further information becomes available.

Nefis ochroleucus (Capiomont, 1874) comb. nov.

Diagnosis: This species can be recognized by its oblong oval body form, the indistinct stripes on elytral interval III, the moderate size of the tibiae and tarsi, and the triangularly emarginate dorso-apical margin of tergite VIII of female. It is closely related to *N. pachyrrhinus* and differences are presented in detail in the key.

Redescription

Measurement. Body length: 5.50-8.30 mm. Rostrum: length 1.00-1.30 mm, width 0.70-0.90 mm. Prothorax: length 1.80-2.10 mm, width 2.20-3.50 mm. Elytra: length 3.30-5.70 mm, width 2.80-4.30 mm.

Vestiture. Ventral and lateral surface of head with short trifurcate white scales densely distributed; scales on anterior eye margins bifurcate, and of short, hair-like form and sparsely distributed on dorsal margin. Dirty-white pubescence longer and denser on lateral margins of prothorax, on intervals III, IX-XI of elytra and apical ¼ of pronotum centrally constituting indistinct stripes (Figs. 8A-B). Pubescence on underside of body sparse; denser and longer on legs and antennae. Dirty-white wax powder secretion condensed on stripes and underside of body, other parts brownish.

Body oblong ovate (Figs. 8A-B). Head spherical, vertex partly visible, frons weakly concave, bevelled towards frontal foveola, depressed around small rounded frontal foveola. Eyes elliptical, slightly convex, lower apex weakly sub-acute. Rostrum (Figs. 8C-D) stout, straight, basal 2/3 parallel-sided, weakly dilated after antennal insertion; dorsum irregularly

sculptured; lateral surface with deep, large and partly confluent punctuation on basal half; rostral foveola concealed by pubescence. Ventral margin of scrobes partly visible dorsally. Antenna inserted 0.35x from apex of rostrum. Scape shorter than funicle, apex of scape wider than antennomere I of funicle, antennomere I 2.00x as long as antennomere II, antennomeres III-VII gradually widened, antennomere VII widest; club elongate with acuminate apex, 1.80x as long as wide at widest part.

Prothorax trapezoidal (Figs. 8A-B), sub-parallel-sided at basal 1/3, gradually and roundly narrowed towards apex, constricted apical 1/6 appearing as short collar with thin sulcus behind postocular lobe area; anterior margin evenly curving toward lateral sides, slightly emarginated before postocular lobes; postocular lobes moderately developed, anterior margin of prosternum distinctly emarginate. Pronotum convex with rounded, coarse, separated punctures scattered densely on disc (Fig. 8E) at basal half, smaller and fewer on apical declivity.

Elytral lateral margins sub-parallel in basal 2/3, weakly constricted before mid-length of elytra, roundly narrowed towards apex (Figs. 8A-B); humeral prominences moderately developed and located at base of intervals VII-IX; preapical prominences distinct and located at end of intervals IV-VII. Intervals flat, about 4x width of striae, base of intervals III wider than others; striae formed apically of rounded and separated punctures to the declivity, then punctures partly or completely confluent constituting sulciform striae.

Legs: tibiae moderately long, protibiae 0.80x as long as prothorax length, outer margin weakly curved, inner margin sinuate with 5-7 denticles, nearest one to the uncus larger (Figs. 8F-G), mesotibiae with 4-5 denticles, metatibiae with 2-3 denticles at apical half. Tarsi short and narrow, tarsomere III 1.15x as wide as tarsomere II, lobes of tarsomere III 0.85x as long as width (Fig. 8H). Spongy pads covered completely by lobes of tarsomere III, partly present at underside of tarsomere I-II and located near sides. Onychium stout, claws connate at base, moderately divergent at apical half.

Female genitalia. Tergite VIII about 2.10x as wide as long, dorso-apical margin triangularly emarginated medially (Figs. 8O-P). Apodeme of sternite VIII nearly straight, slightly longer than lateral arms. Lateral arms with wide angularly-arched outer side; vertical arms turning angularly inner-upright (Fig. 8Q). Posterior margin of vertical arms sclerotized and bearing a row of short setae. Gonocoxite narrowed to apex constituting a cylindrical base for stylus with darker color, well sclerotized throughout, surface densely punctuated at basal half, stylus short (Fig. 8R). Spermatheca (Fig. 8S): ramus moderate size, narrower than collum, apex of cornu obtuse.

Male genitalia. Aedeagus in dorsal view elongate, gradually narrowing from base to apex, ventral plate ends triangularly with moderately long sharp apex (Figs. 8I-K). Aedeagus in lateral view distinctly curved (Fig. 8L). Tegmen of complete ring form (Fig. 8M), spiculum gastrale (Fig. 8N) thin, curved, sub-equal in length to aedeagus.

Variability: Wax powder secretion is partly lost depending on age of adults and preparation process. Body size variation as in the measurements above; samples from Tajikistan of larger body size. Elytra of sample from Iran (Zangan) with uniform elytral vestiture.

Material examined: ARMENIA, Vedi District, Goravan, VI.1987, P. Kazaryan, 1♀, 1♂, (ZINRAS); Echmiadzin, Cauc., 11VI.1016, 1♀, (RBINS). AZERBAIJAN, Nakhichevan Republic, Culfa, 27.V.[1]974, Volkovitsh, 1♀; Ordubad, 30.V.[19]57, V. A. Richter, 1♂ (ZINRAS); Ordubad, Araxes, 1♂, ex. Coll. Obenberger (MNCN). Caucasus, Araxesthal, Leder.Reitter, Mus. Pragonse, Col. Kambersky, 2♂♂; Kavkaz, Mus. Pragonse, Col.

Kambersky, 2♂♂, 1♂, (NMPC); Caucasus, Araxesthal, Leder.Reitter, 1♀ (RBINS). IRAN, Kurtistan, 13.X.54, E. S. Brown, 1♀, (BMNH); North Persien, Scharud, 1ex, (BNHM); Zangan Prov., Sebdan Mt., 50 km SW from Gilvan, 2400 m, 48˚43'55" E, 36˚41'37" N, 19.VI.2000, Fábián Gy., Szécsényi L., Székely K., 1♀, (AP). TAJIKISTAN, Nurek Lake, Surhku, 12.VI.1983, Korotyaev, 1♀, 1♂ (ZINRAS). TURKEY, Erzurum Prov. 9 km S of Çat, 1900 m, 30.VII.2002, L. Gültekin, 1♀, on *Cousinia* sp., 21 km SE of Horasan, along Eleşkirt road, 1900 m, 12.VII.2003, L. Gültekin, 2♀♀, 5♂♂, on *Cousinia urumiensis* Bornm; 39˚55'913" N, 42˚18'976" E, 1786 m, 18.VI.2009, L. Gültekin, 2♀♀, 3♂♂, on *Cousinia urumiensis*; Iğdır Prov., 24 km W of Iğdır, 1020 m, 12.VI.2003, L. Gültekin, 14♀♀, 16♂♂, on *Cousinia macroptera* C. A. Meyer; Kars Prov., 24.8 km E of Kağızman, 40˚07'36.5" N; 43˚23'41.8" E, 1070 m, 7.VII.2005, L. Gültekin, 3♀♀, on *Cousinia urumiensis* (EMET). TURKMENISTAN, Kopet-Dagh Mts., 2200 m, Dushak, 57˚54' E, 37˚57' N, 1-2.X.1991, leg., A. Podlussány, L. Ronkay, Z. Varga, 1♀, (AP). UZBEKISTAN, Kızılorda, Mişenko leg., 4.VIII.[19]28, 1♂, *Larinus ochroleucus* Cap., Th. Lukjanovitsh det., (ZINRAS).

Distribution: Azerbaijan, Armenia, Iran, Kyrgyzstan, North China, Tajikistan (new record), Turkmenistan, Turkey (new record), Uzbekistan (Figs. 16-18).

Host plants: *Cousinia macroptera* C. A. Meyer (Fig. 15D)*, Cousinia urumiensis* Bornm (new record) (Fig. 15F).

Ecology: The association of this weevil with *Cousinia macroptera* (Fig. 9A) was observed in the lowland area of Ağrı Mountain, a stony semi-desert habitat, in the second week of June. Adults were feeding on the upper tissue of leaves (Figs. 9C,E); eggs were laid on bracts of young buds in a shallow hole bored by the female; these holes were subsequently closed by an abundant secretion that hardened and turned a black color (Fig. 9D). On the same date and in the same habitat, eight individuals were found aggregated under stone (Fig. 9B); some were not completely active. In the host plant, 10 eggs were observed on one capitulum, and the black oviposition mark was clearly seen from the outside (Fig. 9D). The larva enters inside and feeds on the flower organs, receptacle tissue and seeds. A single larva was able to develop in each capitulum (Fig. 9F), wherein the pupal stage was also observed (Fig. 9G) in the third week of July. During a survey of this habitat in 2003, the number of individuals of the population appeared to be very high, as randomly collected plants of *N. ochroleucus* were all infested, and most of the capitula were host to nearly mature larvae or pupae. New generation adults emerged from cultured capitula in the first week of August and continued to emerge till first week of September. These adults opened a round hole in the capitulum for eclosion. The aggregation behavior observed in the field was duplicated in the culture cage as these newly emerged adults congregated under objects such as stones. *N. ochroleucus* completed its life cycle in September and thus appears to be univoltine.

Nefis pachyrrhinus (Petri, 1907) stat. rev. & comb. nov.

Larinus badghysensis Ter-Minasian, 1982
Larinus turcmenus Iablakov-Khnzorian, 1990

Diagnosis: This species can be recognized by its oblong ovate body form, indistinct stripes on elytral intervals III, strongly convex prothorax distinctly sloping at apical half; long tibiae and tarsi with distinctly wide tarsomere III. It is closely related to *N. ochroleucus* from which it differs by having distinct wide and long tarsi (especially tarsomere III), straight and long

protibiae and a larger body. Indistinct stripes on elytral intervals III are similar between *N. pachyrrhinus* and *N. ochroleucus*.

Redescription

Measurement. Body length: 7.40-7.90 mm. Rostrum: length 1.20-1.30 mm, width 0.80-0.90 mm. Prothorax: length 2.20-2.40 mm, width 3.20-3.40 mm. Elytra: length 4.80-5.20 mm, width 4.10-4.30 mm.

Vestiture. Ventral and lateral surface of head with short trifurcate white scales densely distributed; scales on apical eye margins bifurcate, on dorsal margin short, hair-like scales sparsely distributed. Dirty-white pubescence thicker, longer and denser on lateral margins of prothorax and dispersed on intervals III, IX-XI of elytra rectilinearly. Pubescence on the surface of body with hair-like form, thinner and lesser on underside of body, denser and longer on legs and antennae.

Body oblong ovate (Figs. 10A-B). Head spherical, vertex partly visible, frons concave, bevelled towards frontal foveola, depressed environ of small rounded frontal foveola. Eyes elliptical, large, convex, lower apex sub-acute. Rostrum (Figs. 10C-D) stout, straight, parallel-sided in basal 2/3, weakly dilated after antennal insertion; dorsum irregularly sculptured; lateral surface with deep, large and partly confluent punctuation at basal half; rostral foveola short, narrowly sulciform. Ventral margin of scrobes partly visible dorsally. Antennae inserted 0.40x from apex of rostrum. Scape shorter than funicle, apex of scape wider than antennomere I, antennomere I 2.00x as long as antennomere II, antennomeres III-VII gradually widened, antennomere VII widest; club elongate with acuminate apex, 2.00x as long as wide at widest part.

Prothorax trapezoidal, sides weakly constricted immediately after base, gradually and roundly narrowed towards apex, apical 1/6 constricted like short collar with thin sulcus behind postocular lobe; anterior margin evenly curving toward lateral sides, slightly emarginated before postocular lobes; postocular lobes moderately developed, anterior margin of prosternum distinctly emarginated. Pronotum strongly convex, distinctly sloped in apical half to the apex; surface with rounded, coarse, separated punctures scattered densely on disc (Fig. 10E) at basal half, smaller and lesser on apical declivity.

Elytra with lateral margins in dorsal aspect sub-parallel in basal 2/3, weakly constricted before mid-length of elytra, roundly narrowed towards apex; humeral prominences moderately developed and located at base of intervals VII-IX; preapical prominences distinct and located on end of intervals IV-VII. Intervals flat, about 4x as wide as stria, base of interval III wider than others; striae formed by rounded and separated punctures to the declivity on apex, then punctures partly or completely confluent constituting sulciform striae.

Legs: tibiae long, length of protibiae sub-equal with length of prothorax, outer margin straight, inner margin weakly sinuate with 7-8 denticles, nearest one to the uncus larger (Fig. 10F), mesotibiae with 2-3 denticles, metatibiae with 1 denticle near uncus. Tarsi long and wide, tarsomere III 1.30x as wide as tarsomere II, lobes of tarsomere III 1.20x as long as width (Fig. 10G). Spongy pads covered completely under lobes of tarsomere III, partly present at underside of tarsomere I-II and located near sides. Onychium stout, claws connate at base and strongly divergent at apical half.

Female genitalia. Tergite VIII about 2.60x as wide as long, dorso-apical margin weakly protruded medially (Figs. 10K-L). Apodeme of sternite VIII weakly curved, longer than lateral arms (Fig. 10M). Lateral arms with wide angularly-arched outer side; vertical

arms turn angularly inner-upright. Posterior margin of vertical arms sclerotized and bearing a row of short setae. Gonocoxite narrowed to apex constituting a cylindrical base for stylus with darker color, well sclerotized throughout, surface densely punctuated at basal half, stylus short (Fig. 10N). Spermatheca (Fig. 10O): ramus developed; collum with short protuberance near vein, apex of cornu sharp with short hook.

Male genitalia. Aedeagus in dorsal view elongate, gradually narrowed from base to apex, ventral plate ends triangularly with moderately long sharp apex (Figs. 10H-I). Aedeagus in lateral view distinctly curved (Fig. 10J). Tegmen of complete ring form.

Variability: Wax powder secretion mostly lost on examined specimens.

Material examined: TURKMENISTAN, Badghyz, Yezgidayrnt, 31.III.1992, 1♂, *Larinus ochroleucus*, Det. F. Talamelli, 1994 (RB Coll.); Turkmenistan, S Badghyz Reserve (Kushka Region), Akar Çeşme Point, 1-2.V.1990, M. G. Volkovitsh, 2♂ (EMET); Turkmenistan, Badghyz, 9.VIII.1979, Atamuradov, 1♂; 30.VII.1979, Atamuradov, 1♂; Akar Çeşme, Tedjan River, 5.V.95, Korjinski leg., 1♀, *Lar. ochroleucus* Cap., Petri det., (ZINRAS).

Distribution: Turkmenistan (Figs. 16, 18).

Host plant: *Cousinia raddeana* C. Winkl.

Nefis liliputanus (Faust, 1890) comb. nov.

Larinus exclusus Faust, 1891

Diagnosis: *Nefis liliputanus* can be recognized by the narrow trapeziform prothorax, the slightly dilated rostrum after the antennal insertion, the weakly developed humeral prominences, the narrow tarsi and claws strongly divergent at apical half, the aedeagus gradually narrowing from base to apex in dorsal view, and the small size of the body. It is related to *N. brevirostris, N. capiomonti*, and *N. kabakovi* but clearly differs from the last of these by lacking semi-erect scales on the body and having the claws connate at their base.

Redescription

Measurement. Body length: 4.20-5.50 mm. Rostrum: length 0.60-0.70 mm, width 0.50-0.60 mm. Prothorax: length 1.30-1.60 mm, width 1.60-2.10 mm. Elytra: length 2.70-3.50 mm, width 2.10-2.70 mm.

Vestiture. Ventral and lateral surface of head with short trifurcate and tetrafurcate white scales densely distributed; bifurcate on apical eye margins and hair-like form on dorsal margin. Creamy-white hair-like pubsecence longer and denser on rostrum, lateral margins of prothorax, intervals IX-XI and middle parts on interval VIII. Creamy-white wax powder secretion more condensed on above parts and less on other parts of body.

Body elongate elliptical (Figs. 11A-B). Head spherical, vertex partly visible, frons nearly flat, frontal foveola round, shallow and very small. Eyes elliptical, weakly convex, lower apex sub-acute. Rostrum (Figs. 11C-D) stout, nearly straight, parallel-sided at basal half, weakly widened after antennal insertion; on dorsum transverse depression very shallow at base of rostrum; ridges on dorsum very obtuse and weakly visible; rostral foveola concealed by pubescence. Ventral margin of scrobes partly visible dorsally. Antenna inserted 0.40x from apex of rostrum. Scape shorter than funicle, apex of scape distinctly wider than

antennomere I of funicle, antennomere I distinctly wider and 1.80x as long as antennomere II, antennomeres III-VII gradually widened, antennomere VII widest; club elongate with acuminate apex, 1.50x as long as wide at widest part.

Prothorax narrowly trapezoidal, sub-parallel-sided at basal 1/4, gradually narrowed towards apex, constricted apical 1/6 like short collar with thin sulcus at lateral side; anterior margin evenly curving toward level of dorsal eye margin, emarginated before poorly-developed postocular lobes; anterior margin of prosternum distinctly emarginated. Pronotum moderately convex with rounded, small, separated punctures scattered densely on disc (Fig. 11E) at basal half, smaller and lesser on apical declivity.

Elytra parallel-sided at basal 3/5, slightly constricted before mid-length of elytra, roundly narrowed from apical 2/5 towards apex; humeral prominences weakly developed and located at base of VII-IX intervals; preapical prominences distinct and located on end of intervals IV-VII. Intervals flat, about 4x times as wide as striae, intervals II-V protruded on base of pronotum; striae formed of rounded and separated punctures to the apical declivity, then punctures partly or completely confluent constituting sulciform striae.

Legs: outer margin of protibiae weakly curved, inner margin sinuate with 3-4 small serrate obtuse denticles, nearest one to the uncus long, larger and very sharp (Figs. 11F-G), meso- and metatibiae with only one denticle near uncus, smaller on mesotibiae, and very obtuse on metatibiae. Tarsi narrow, tarsomere III 1.15x as wide as tarsomere II, lobes of tarsomere III 0.90x as long as width (Fig. 11H). Spongy pads covered completely by lobes of tarsomere III, partially visible under tarsomere I-II and located near sides. Onychium stout, claws connate at base, strongly divergent at apical half.

Female genitalia. Tergite VIII about 2.30x as wide as long, dorso-apical margin widely emarginate medially (Figs. 11N-O). Apodeme of sternite VIII straight, widened at basal half, sub-equal in length with lateral arms. Lateral arms with wide angularly-arched outer side; vertical arms turning angularly inner-upright (Fig. 11P). Posterior margin of vertical arms sclerotized and bearing a range of short setae. Gonocoxite (Fig. 11Q) narrowed to apex constituting a short cylindrical base for stylus with darker color, moderately sclerotized throughout, surface densely punctuated at basal half, stylus short. Spermatheca: ramus small size, shorter and narrower than collum, apex of cornu obtuse (Fig. 11R).

Male genitalia. Aedeagus in dorsal view elongate, gradually narrowed from base to apex, ventral plate ending triangularly (Figs. 11I-K). Aedeagus in lateral view distinctly curved (Fig. 11L). Tegmen of complete ring form, spiculum gastrale (Fig. 11M) thin, curved, bended at apical 1/3, sub-equal in length with aedeagus.

Variability: Wax powder secretion is partly lost depending on age of adults and preparation process (Fig. 11B).

Material examined: TURKMENISTAN, S Badghyz Reserve (Kushka Region), Akar Çeşme Point, 1-2.V.1990, M. G. Volkovitsh, 2♀♀, 2♂♂; S Badghyz Reserve (Kushka Region), Eroilanduz point (lake), 8-10.V.1995, M. G. Volkovitsh, 1♂; (EMET); S Badghyz Reserve, Nerdylanly Spring, Gezgyadky Mts., 28 km SE of Polykhatum, 6.VII.1991, M. G. Volkovitsh, 8♀♀, 2♂♂; Badghyz Reserve, Kızıl-Car, 25.VIII.1980, G. E. Davidian, 12♀♀, 8♂♂, under *Artemisia* sp.; Badghyz, 12.X.1982, Atamuradov, 3♀♀, 2♂♂, under *Artemisia badhysi* Krasch et. Lincz. ex. Poljak.; Badghyz, 26.VIII.1990, G. E. Davidian, 1♂, (ZINRAS); Kopet-Dagh Mts., 700-800 m, 5 km S of Chull, 58˚01' E, 37˚56' N, 10.VII.1992, leg., Gy. Fábián, B. Herczig, A. Podlussány, Z. Varga, 2ex, (AP). UZBEKISTAN, Samarkand, 1♀, *Larinus ochroleucus* Cap., (MNCN).

Distribution: Iran, China, Kyrgyzstan, Uzbekistan, Turkmenistan (new record) (Figs. 16, 18).

Host plants: *Artemisia cina* O. Berg & C. F. Schmidt, *Artemisia badhysi* Krasch. et Lincz. (new record).

Nefis brevirostris (Hochhuth, 1851) comb. nov.

Larinus reitteri Faust, 1889

Diagnosis: *Nefis brevirostris* can be recognized by the elongate elliptical body form, the sub-trapezoidal round-sided prothorax, the parallel-sided rostrum, the poorly-developed humeral prominences, and the aedeagus distinctly narrowed from base to apex in dorsal view, and the uniform vestiture. *N. brevirostris* is related to *N. liliputanus, N. kabakovi* and *N. korotyaevi*. It shares the shape of the prothorax with *N. korotyaevi* but clearly differs by lacking the milky-white pattern on the body and by the shape of the aedeagus. It shares the general body form with *N. kabakovi* but lacks the semi-erect vestiture on the body, does not have claws connate at the base, and has a straight rostrum compared to a weakly curved rostrum. The narrow trapeziform pronotum, the weakly dilated rostrum, and the different shape of the aedeagus clearly distinguish it from *N. liliputanus*.

Redescription

Measurement. Body length: 4.80-6.50 mm. Rostrum: length 0.70-0.90 mm, width 0.50-0.70 mm. Prothorax: length 1.50-2.00 mm, width 2.10-2.70 mm. Elytra: length 3.10-4.00 mm, width 2.60-3.10 mm.

Vestiture. Ventral and lateral surfaces of head with densely distributed short trifurcate white scales; trifurcate and bifurcate on anterior eye margins and hair-like on dorsal margin. Vestiture of body surface with grayish-white hair-like pubescence, slightly more dense on lateral sides of prothorax and intervals of striae IX-XI; wax powder secretion grayish to yellowish.

Body (Figs. 12A-B) elongate-elliptical. Head spherical, vertex not visible, frons flat, frontal foveola round, shallow and very small. Eyes elliptical, weakly convex, lower apex sub-acute. Rostrum (Figs. 12C-D) stout, straight, parallel-sided; dorsum flat to irregularly very obtuse sculptured; rostral foveola narrow, shallow, short sulciform, partly concealed by pubescence. Ventral margin of scrobes partly visible dorsally. Antenna inserted 0.45x from apex of rostrum. Scape shorter than funicle, apex of scape distinctly wider than antennomere I, antennomere I distinctly wider and 1.45x as long as antennomere II, antennomeres III-VII gradually widened, antennomere VII widest; club elongate with acuminate apex, 1.55x as long as wide at widest part.

Prothorax sub-trapezoidal, sub-parallel-sided at basal 1/3, roundly and gradually narrowed towards apex, constricted at apical 1/7 like short collar with thin sulcus at lateral sides; dorso-apical margin shortly and weakly protruded on vertex of head, evenly curving towards level of the dorsal eye margin, emarginated before poorly-developed postocular lobes; apical margin of prosternum distinctly emarginated. Pronotum moderately convex with rounded, small, separated punctures scattered densely on disc (Fig. 12E) in basal half, smaller and less dense on apical declivity.

Elytra parallel-sided in basal 3/5, sligtly constricted before mid-length of elytra, roundly narrowed from apical 2/5 towards apex; humeral prominences weakly-developed, obtuse, located at base of intervals VII-IX; preapical prominences weakly developed and located on end of intervals IV-VII. Intervals flat, about 4x times as wide as stria; striae formed of rounded and separated punctures to the apical declivity, then partly or completely confluent punctures constitute sulciform striae. Venter as typical of the genus.

Legs: outer margin of protibiae straight, inner margin weakly sinuate with 4-7 denticles, nearest one to the uncus wider and longer (Fig. 12F); mesotibiae with 3-4 denticles and metatibiae with 2-3 obtuse denticles, nearest one to uncus larger than others; apical comb not continuing to lateral outer margin on protibiae. Tarsi of moderate width, tarsomere III 1.25x as wide as tarsomere II, lobes of tarsomere III 0.80x as long as width (Fig. 12G). Spongy pads covered completely by lobes of tarsomere III, partially visible under tarsomere I-II and located near sides. Onychium stout, claws connate at base, moderately divergent at apical half.

Female genitalia. Tergite VIII about 1.70x as wide as long, dorso-apical margin straight (Figs. 12L-M). Apodeme of sternite VIII straight, sub-equal in length with lateral arms, weakly widened at basal half. Lateral arms with wide angularly-arched outer side; vertical arms turning angularly inner-upright (Fig. 12N). Posterior margin of vertical arms sclerotized and bearing a range of short setae. Gonocoxite (Fig. 12O) narrowed to apex, stylus base wide and short with darker color, well sclerotized throughout, surface sparsely punctuated at distal sides, stylus short. Spermatheca: ramus small size, distinctly narrower and shorter than collum; apex of cornu obtuse (Fig. 12P).

Male genitalia. Aedeagus in dorsal view elongate, gradually but distinctly narrowed from base to apex, ventral plate ending triangularly (Figs. 12H-J). Aedeagus in lateral view distinctly curved (Fig. 12K). Tegmen of complete ring form; spiculum gastrale thin, curved, sub-equal in length with aedeagus.

Variability: Wax powder secretion partly lost depending on age of adults and preparation process. Most examined individuals with grayish coloured secretion (Fig. 12A), but specimens collected from Fırat Valley with yellowish coloured secretion (Fig. 12B). In same population, body is somewhat shorter and broader than is found in other populations and apex of ventral plate of aedeagus with slightly rounded margins. Dorsum of rostrum flat on most specimens, but some with obtusely and irregularly sculptured dorsum of rostrum.

Material examined: AZERBAIJAN, Nakhichevan Republic, Il'ichevsk (=Norashen) District, 6 km NW of Arpachai lake (water storage basin), 4.VI.1988, G. E. Davidian, 3♀♀, 3♂♂; Ordubad District, between Akulis (=Aylis) and Nyusnyus Villages, 6.V.1987, G. E. Davidian, 1♀. Caucasus, Kavkaz, Mus. Pragonse, Col. Kambersky, 1♂, (NMPC); Araxesthal, Leder.Reitter, 1♂, (BNHM). IRAN, Isfahan Prov., Sibak, Kuhhã-ya-Zagros, 32˚52'285" N; 50˚02'291" E, 2500 m, 11.VI.2007, leg. Nádai L., 1♀, 1♂, (AP). TURKEY, Adana Prov., Tufanbeyli Distr., 5-6 km W of Hanyeri, Gezbeli Pass, 38˚11'41.3" N; 35˚57'75.1" E, 1899 m, 29.V.2010, L. Gültekin, 6♀♀, 4♂♂, on *Cousinia* sp1.; Elazığ Prov., Harput, 6.[19]92, S. Kadlec lgt., 2♀♀, (RB Coll.); Kayseri Prov., 29-30 km W of Develi, 38˚27'01.1" N; 35˚11'61.5" E, 1077 m, 29.V.2010, L. Gültekin, 1♀, on *Cousinia* sp3.; Malatya Prov., 10 km NE of Doğanşehir, Mt. Bozdağ, 10.VI.1999, B. A. Korotyaev, 2♀, 1♂; 20 km NE of Doğanşehir, 1150 m, 31.V.2005, L. Gültekin, 1♀, on *Cousinia* sp1.; 20 km NW of Malatya, along Sultansuyu creek on slope, 850 m, 29.V.2005, L. Gültekin, 2♀♀, 1♂, on *Cousinia* sp2.; 36 km SW of Malatya, 38˚09'02.7" N; 37˚58'14.0" E, 1221 m, 2.VII.2005, L. Gültekin, 1♀, on *Cousinia* sp1.; Ankara Prov., 32 km SE of Şereflikoçhisar, semidesert, 13.VI.1999, B. A.

Korotyaev, 1♂; Nevşehir Prov., 5-15 km N of Gülşehir, steppe slope along road near river, 15.VI.1999, B. A. Korotyaev, 1 ♀; Niğde Prov., 10.7 km SW of Niğde, 37˚54'33.4" N; 34˚39'30.0" E, 1215 m, 28.VI.2005, L. Gültekin, 7♀♀, 3♂, on *Cirsium baytopae* Davis et Parris; Gaziantep Prov., Fırat River Valley, 7.2 km N of Karkamış, 36˚53'58.1" N; 38˚00'49.8" E, 362 m, 7.VI.2006, L. Gültekin, 2♀♀, 1♂; Konya Prov., 64.7 km NE of Ayrancı, 37˚38'16.6" N; 34˚19'57.6" E, 1155 m, 27.VI.2005, L. Gültekin, 2♀♀, 4♂♂ on *Cirsium baytopae* (EMET).

Distribution: Azerbaijan, Armenia, Iran (new record), Turkey (Figs. 16-17).

Host plants: *Cousinia macroptera* C. A. Meyer (Fig. 15D)*, Cirsium baytopae* Davis et Parris (new record) (Fig. 15A), *Cousinia* sp. 1. (Fig. 15B), *Cousinia* sp. 2. (Fig. 15C), *Cousinia* sp. 3.

Nefis afghanicus (Ter-Minasian, 1987) comb. nov.

Diagnosis: *Nefis afghanicus* can be recognized by the broadly ovate body, by lacking an obtuse keel and sulcus on the rostrum, by lacking a pre-apical tubercle on the pronotum, by the sparse, dull and irregular micropunctation on the interspace of the pronotum, by the equal length and width of tarsomere III, and by the regularly curved ring of the tegmen. It is closely related to *N. attilai* but clearly different latter one by lacking keel on dorsal rostrum and two obtuse pre-apical tubercles on pronotum.

Redescription

Measurement. Body length: 9.10 mm. Rostrum: length 1.30 mm, width 1.00 mm. Prothorax: length 2.30 mm, width 3.40 mm. Elytra: length 6.10 mm, width 4.40 mm.

Vestiture. Ventral and lateral surface of head with densely distributed short trifurcate white scales; scales on apical eye margins very short, sparse and bifurcate, on dorsal eye margins hair-like. White hair-like pubsecence longer and denser on lateral margins of prothorax; rectilinearly distributed on central apical 1/3 of pronotum, surface of rostrum, legs, and strial intervals IX-XI; irregularly condensed on elytra as transverse patches.

Body broad ovate (Fig. 13A). Head spherical, vertex partly visible, frons nearly flat, frontal foveola not visible. Eyes elliptical, convex, lower apex sub-acute. Rostrum (Fig. 13B) stout, very weakly curved, parallel-sided at basal half, dilated towards apex; dorsum with transverse depression at base of rostrum and weak constriction at end of scrobes; two obtuse interrupted triangular ridges on basal half and two similar ones located on antennal insertion, between these four longitudinally flat ridges; rostral foveola short and thinly sulciform; lateral sides of rostrum with coarse punctation. Ventral margin of scrobes partly visible dorsally. Antenna inserted 0.35x from apex of rostrum. Scape shorter than funicle, apex of scape distinctly wider than antennomere I, antennomere I distinctly wider and 1.80x as long as antennomere II, antennomeres III-VII gradually widened, antennomere VII widest; club elongate with acuminate apex, 1.85x as long as wide at widest part (Fig. 13C).

Prothorax trapezoidal, subparallel-sided at basal 1/3, gradually narrowed towards apex, constricted apical 1/6 like short collar with thin sulcus; dorso-apical margin very weakly and shortly protruded on vertex of head, emargined towards area of postocular lobes behind eyes, postocular lobes weakly developed; apical margin of prosternum distinctly emarginated. Pronotum moderately convex with rounded, coarse, partly confluent punctures

scattered densely on disc at basal half, smaller and lesser on apical declivity, micropunctation on interspaces sparse and irregular (Figs. 13D-E).

Elytra parallel-sided at basal 3/5, weakly constricted before mid-length of elytra, roundly narrowed towards apex; humeral prominences moderately developed, wide and obtuse, located at base of VI-IX intervals; preapical prominences distinct and located on end of intervals IV-VII. Intervals flat, about 4x times as wide as striae, striae formed of rounded and separated punctures to the apical declivity, then punctures partly or completely confluent constituting sulciform striae.

Legs: outer margin of protibiae nearly straigt, inner margin sinuate with 7-8 denticles, nearest one to the uncus larger (Fig. 13F); mesotibiae with 4-5 and metatibiae with 2-3 denticles near uncus; apical comb not continuing to the lateral outer margin. Tarsi wide, tarsomere III 1.15x as wide as tarsomere II, lobes of tarsomere III 1.00x as long as width (Fig. 13G). Spongy pads covered completely by lobes of tarsomere III, partly visible under tarsomere I-II and located near sides. Onychium stout, claws connate at base, moderately divergent at apical half.

Male genitalia. Aedeagus in dorsal view elongate, gradually narrowed from base to apex, lateral margins slightly constricted medially, ventral plate ending triangularly with moderately long sharp apex (Figs. 13H-J). Aedeagus in lateral view distinctly curved (Fig. 13K). Tegmen of complete ring form (Fig. 13L).

Variability: Single specimen examined.

Material examined: AFGHANISTAN, 2200 m, Oruzgan, Šahrestan, O. Kabakov, 6.VII.1970, 1 ♂, (ZINRAS).

Distribution: Afghanistan (Figs. 16, 18).

Nefis attilai sp. nov.

urn:lsid:zoobank.org/NomenclaturalActs/5967CA1A-86D5-48CC-BF39-F240F5A5927B

Diagnosis: The new species can be recognized by the broad ovate body; the median dorsal keel of rostrum with two shallow sulci, two obtuse pre-apical tubercles; dense, shining and regular micropunctation on interspaces of pronotum and gonocoxite with swollen area on inner surface near stylus. This species is closely related to *N. afghanicus* which differs by lacking an obtuse keel and sulci on the rostrum; lacking a pre-apical tubercle on the pronotum; by having sparse, dull and irregular micropunctation on the interspace of the pronotum; and by the equal length and width of tarsomere III.

Description

Measurement. Body length: 10.10-10.60 mm. Rostrum: length 1.60-1.70 mm, width 1.10-1.20 mm. Prothorax: length 2.90-3.10 mm, width 4.00-4.20 mm. Elytra: length 6.80-7.30 mm, width 5.10-5.30 mm.

Vestiture. Ventral and lateral surface of head with short densely distributed bifurcate scales and very sparsely distributed trifurcate white scales; scales on apical eye margins extremely short and bifurcate, scales on dorsal margin hair-like. White hair-like pubsecence longer and denser on lateral margins of prothorax, surface of rostrum and legs, and strial intervals IX-XI; irregularly condensed on elytra.

Body broad ovate (Figs. 14A-B). Head spherical, vertex partly obscured, frons longitudinally depressed, frontal foveola small, superficially rounded. Eyes elliptical, weakly convex, lower apex sub-acute. Rostrum (Figs. 14C-D) stout, very weakly curved, parallel-sided at basal half, dilated towards apex; dorsum with obtuse keel delimiting frontal foveola from rostral foveola with two shallow sulci, dorso-lateral margin weakly raised, transverse depression interrupted medially, and weakly constricted at the end of scrobes; two obtuse interrupted triangular ridges on base of sulcus and two smaller ones located on antennal insertion; rostral foveola short and thinly sulciform; lateral sides of rostrum with coarse punctation. Ventral margin of scrobes partly visible dorsally. Antenna inserted 0.40x from apex of rostrum. Scape shorter than funicle, apex of scape distinctly wider than antennomere I, antennomere I distinctly wider and 1.75x as long as antennomere II, antennomeres III-VII gradually widened, antennomere VII widest; club elongate with acuminate apex, 1.50x as long as wide at widest part (Fig. 14E).

Prothorax trapezoidal, subparallel-sided at basal 1/3, weakly constricted after immediate base, gradually narrowed towards apex, constricted apical 1/6 like short collar with thin sulcus; dorso-apical margin weakly and shortly protruded on vertex of head, emarginated towards area of postocular lobes behind eyes, postocular lobes weakly developed; anterior margin of prosternum distinctly emarginated. Pronotum moderately convex, two obtuse tubercles present pre-apically (Fig. 14F), area between these weakly depressed, rounded on surface; coarse, partly confluent punctures scattered densely on disc at basal half, smaller and less dense on apical declivity, micropunctation on interspace dense, shining and regular (Fig. 14G).

Elytra parallel-sided at basal 3/5, weakly constricted before mid-length of elytra, roundly narrowed towards apex; humeral prominences well developed, located at base of intervals VII-IX; preapical prominences distinct and located on end of intervals IV-VII. Intervals flat, about 4x times as wide as striae, striae formed of rounded and separated punctures to the apical declivity, then punctures partly or completely confluent constituting sulciform striae.

Legs: outer margin of protibiae nearly straight, inner margin sinuate with 9-10 denticles, nearest one to the uncus larger (Figs. 14H-I), mesotibiae with 4-5 denticles and metatibiae with 3-4 denticles near uncus. Tarsi wide, tarsomere III 1.15x as wide as tarsomere II, lobes of tarsomere III 0.80x as long as width (Fig. 14J). Spongy pads covered completely by lobes of tarsomere III, partly visible under tarsomere I-II and located near distal sides. Onychium stout, claws connate at base, moderately divergent at apical half.

Female genitalia. Tergite VIII about 1.85x as wide as long, dorso-apical margin with wide medial triangular emargination (Figs. 14P-Q). Apodeme of sternite VIII straight, twice as long as lateral arms, base widened. Lateral arms with narrow angularly-arched outer side; vertical arms turning angularly upright (Fig. 14R). Posterior margin of vertical arms sclerotized and bearing a range of short setae. Gonocoxite (Fig. 14S) narrowed to apex, inner margin crenate prior to stylus base and forming a protuberance; stylus base swollen internally, well sclerotized throughout, stylus long.

Male genitalia. Aedeagus in dorsal view elongate, gradually narrowed from base to apex, lateral margins slightly constricted medially, ventral plate ending triangularly with moderately long, sharp apex (Figs. 14K-M). Aedeagus in lateral view distinctly curved (Fig. 14N). Tegmen of complete ring form (Fig. 14O).

Variability: Lateral constrictions on prothorax immediately apicad to base are indistinct to moderate.

Etymology: Name of the new species "*attilai*" is dedicated for Attila Podlussány (Hungarian Natural History Museum, Budapest).

Type Material: Holotype, ♀, TURKEY, [Van] Prov., Yüksekova mts., 2.5 km E of Güzeldere Pass, 2600 m, 38˚11' N; 43˚56' E, 3.6.2002, leg. B. Benedek & T. Csövári; Paratypes, 1♀, 1♂, the same label as holotype. Holotype (♀) and one paratype (♂) are deposited in the Hungarian Natural History Museum, Budapest, and one paratype (♀) in the Entomology Museum, Erzurum.

Distribution: Turkey (South East Anatolia) (Figs. 16-18).

Key to the species of *Nefis* gen. nov.

1- Tarsal claws separated at base (Fig. 5I); body surface with semi-erect hair-like scales; tarsi narrow (Fig. 5H), tarsomere III 1.10x as wide as tarsomere II, lobes of tarsomere III 0.75x as long as wide; spongy pads covering only ¼ parts of underside of tarsomeres I-III, located near distal sides; tergite VIII of female 1.80x as wide as long, dorso-apical margin nearly straight (Fig. 5J); body elongated-elliptical, body length 4.20-6.10 mm . . . . . ***kabakovi* sp. nov.**

– Tarsal claws connate at the base; body surface without semi-erect hair-like scales 2

2- Elytra and pronotum with wide white pattern or patches 3

– Elytra with stripes on the intervals III, IX-XI, or uniformly to irregulary vestitured 4

3- Rostrum parallel-sided (Fig. 6C) in dorsal view; milky-white band on elytra wide (Figs. 6A-B), extending from base to preapex along intervals I-IV, middle of elytra transversely and widely clothed by white wax powder; striae III-V and IX-X deeply sulciform at the base; pronotal disc with six round shining black spots; tergite VIII of female about 2.00x as wide as long, dorso-apical margin protruding medially and distinctly emarginate (Fig. 6N); ventral plate of aedeagus ending roundly with short obtuse apex (Figs. 6H-J); body length 5.60-7.20 mm; host plant *Pulicaria dysenterica* (L.) Bernh . . . . ***korotyaevi* sp. nov.**

– Rostrum dilatated from basal half to apex (Fig. 7D) in dorsal view; small white spots scattered on elytra (Figs. 7A-C); striae III-V and IX-X not sulciform at the base; pronotal disc without shinning black spots; female tergite VIII about 2.20 x as wide as long, dorso-apical margin weakly protruded and slightly emarginated medially (Figs. 7M-O); ventral plate of aedeagus ends triangularly with long sharp apex (Figs. 7H-J); body length 6.00-8.30 mm; host plants *Cousinia resinosa* Juzepczuk, *Cousinia triflora* Schrenk . . . . . ***capiomonti*** (Faust)

4- Elytra with stripes on intervals III 5

– Elytra without stripes on intervals III 6

5- Tarsi narrow and short (Fig. 8H), tarsomere III 1.15x as wide as tarsomere II, lobes of tarsomere III 0.85x as long as wide; tibiae moderately long, 0.80x as long as prothorax, protibiae weakly curved; female tergite VIII about 2.10x as wide as long, dorso-apical margin triangularly emarginated medially (Fig. 8O); body length 5.50-8.30 mm; host plants *Cousinia macroptera* C. A. Meyer*, Cousinia urumiensis* Bornm . . . . . ***ochroleucus*** (Capiomont)

– Tarsi wide and long (Fig. 10G), tarsomere III 1.30x as wide as tarsomere II, lobes of tarsomere III 1.20x as long as wide; tibiae long, sub-equal in length to prothorax, protibiae straight; female tergite VIII about 2.60x as wide as long, dorso-apical margin weakly protruding medially (Figs. 10K-L); body length 7.40-7.90 mm; host plant *Cousinia raddeana* C. Winkl . . . . . ***pachyrrhinus*** (Petri)

6- Elytra slightly wider than prothorax, body < 7 mm 7
– Elytra distinctly wider than prothorax, body > 9 mm 8
7- Prothorax narrow trapeziform (Figs. 11A-B); rostrum slightly widened after antennal insertion in dorsal view; humeral prominences weakly developed; tarsi narrow, tarsomere III 1.15x as wide as tarsomere II, lobes of tarsomere III 0.90x as long as width, claws strongly divergent in apical half (Fig. 11H); aedeagus gradually narrowed from base to apex (Figs. 11I-K); body length 4.20-5.50 mm; host plants *Artemisia cina* O. Berg & C. F. Schmidt, *Artemisia badhysi* Krasch. et Lincz. . . . . ***liliputanus*** **(**Faust)
– Prothorax sub-trapezoidal (Figs. 12A-B), round-sided; rostrum parallel-sided in dorsal view; humeral prominences weakly developed; tarsi of moderate width, tarsomere III 1.25x as wide as tarsomere II, lobes of tarsomere III 0.80x as long as width (Fig. 12G), claws moderately divergent in apical half; aedeagus gradually but distinctly narrowed from base to apicad (Figs. 12H-J); body length 4.80-6.80 mm; host plants *Cousinia macroptera* C. A. Meyer*, Cirsium baytopae* Davis et Parris, *Cousinia* sp. . . . . ***brevirostris*** (Hochhuth)
8- Rostrum lacking obtuse keel and sulcus; frons flat; pronotum without pre-apical tubercle (Fig. 13D); micropunctation on interspace sparse, dull and irregular (Fig. 13E); tarsomere III 1.15x as wide as tarsomere II, equal length and width; body length 9.10 mm . . . . . ***afghanicus*** (Ter-Minasian)
– Rostrum with obtuse keel delimited between frontal foveola to rostral foveola by two shallow sulci; pronotum with two obtuse pre-apical tubercles (Fig. 14F); micropunctation on interspace dense, shining and regular (Fig. 14G); tarsomere III 0.80x as long as width; body length 10.10-10.60 mm . . . . . ***attilai*** **sp. nov.**

Discussion

The length of the rostrum of *Bangasternus*, *Rhinocyllus*, *Nefis* and *Microlarinus* is always shorter than the prothoracic length. This feature is variable in the genus *Larinus*. Possession of a central keel on the dorsum of the rostrum is most commonly seen in the genus *Larinus* except for subgenus *Phyllonomeus* Gistel, 1856. This character appears to be in a transitional stage in a few species of *Bangasternus* (e.g. *B. villosus* Capiomont, 1873). Ridges on the rostrum appear in several shapes and forms: *Bangasternus*, *Rhinocyllus* and *Larinus* usually have rectilinear dorso-lateral ridges on the rostrum, *Nefis* posesses such ridges but they are interrupted; *Eustenopus* Petri, 1907*, Microlarinus, Phyllonomeus* and Palaearctic *Lachnaeus* all lack the ridges. Many species of *Larinus* s.str., and few *Cryphopus* Petri, 1907 (subgenus) species have two deep foveae on the basal half of the dorsum of the rostrum; these appear in trace form only in one species of *Nefis* (*N. attilai*); there is a wide concave depression on most of the species of *Rhinocyllus* and some *Bangasternus*; species of *Phyllonomeus* (subgenus)*, Eustenopus* and Palaearctic *Lachnaeus* all lack foveae and depressions. The rostrum of *Bangasternus* is distinctly contracted after the antennal insertion at its apex; *Rhinocyllus* has an elongated wide canaliculate sulcus somewhat hidden by a rough dorso-lateral ridge of the rostrum at its basal half; a similar but narrow and shallow sulcus is observed in the species *Larinus affinis* Fremuth, 1987. Genera with a short rostrum all have two small, deep and rounded fovea located in the midlength of the underside of rostrum. This character is shared between *Bangasternus*, *Rhinocyllus*, *Nefis* and *Microlarinus*. Large, deep and elliptical ventral fovea located at the apical one third of the rostrum, are seen in *Larinus* s. str. and *Cryphopus* but not in *Phyllonomeus*. Genera with a long and rounded rostrum have ventral fovea that appears only as a shallow trace their apex. This is typical for *Phyllonomeus* and *Eustenopus*. The prementum is flat in *Bangasternus*,

Rhinocyllus, *Eustenopus*, *Lachnaeus* and *Microlarinus*; it is strongly convex in *Nefis* and weakly convex in *Larinus* (except for *Phyllonomeus*).

The shape of the prothorax is presumably a significant character for discriminating relationships among these genera. The prothorax is subquadrate in *Bangasternus* and *Rhinocyllus*; trapezoidal in *Nefis*, *Larinus*, *Eustenopus* and *Lachnaeus*; subcylindrical in *Microlarinus* and *Lixus* sensu lato. The prothorax of the Afrotropical genus *Sublarinus* Petri, 1914 is distintly constricted medially; this feature is also shared with *Gasteroclisus* Desbrochers, 1904. A few Central African species that were described under *Larinus* have a very rough central keel, two deep rectilinear sulci on the pronotum, and a wrinkled integument. These characters are not visible in *Larinus*. The presence of a prosternal ridge and a deep rostral channel is only available in the genus *Bangasternus* within the Lixini; all other genera lack these.

The elytral structure is not so informative for Palaearctic inflorescence inhabitants, however Afrotropical ones have some characters such as shape of elytra and structure of surface. The presence or absence of individual veins and cells in the metathoraxic wings are likely to provide informative characters. The anal cell and A1, A2 veins are present in *Bangasternus*, *Rhinocyllus*, *Nefis*, *Larinus* and *Eustenopus*; they are absent in *Lachnaeus* and *Microlarinus*.

The femora lack teeth in the Paleartic Lixini; in contrast, the Oriental *Larinodontes* Faust 1898 bears a small tooth on the femora, while the Afrotropical *Sublarinus* and some other groups of Lixini bear one or two large teeth on the femora (e.g. *Allolixus* Voss, 1962; *Allolarinus* Gültekin, 2012). The structure of the tibiae is also presumably significant for classification. A sinuate and protruding dorso-apical margin of the protibiae is apparently peculiar to *Nefis*. A cornered expanded latero-outer margin of the protibiae at its apex is typical for the subgenus *Cryphopus*; a round and slightly apically expanded protibiae is present in some species of *Bangasternus* and is most distinct on *B. villosus*. The structure of the claws is apparently an important character for the generic classification of the Lixini. Most of the species of Lixini have claws connate near the basal half, a few species possessing claws that are not connate (e.g. *Nefis kabakovi*, *Lixus kraatzi* Capiomont, 1875). Distinct unequal length claws are seen commonly in *Bangasternus* and the subgenus *Cryphopus*.

The structure of female tergite VIII is investigated for the first time in this study. The results reveal that this is likely to be of very significant value for classification. A subcrescentic female tergite VIII with deeply emarginated apex is unique in *Bangasternus*; a crescentic female tergite with subrounded apical margin is apparently peculiar for *Rhinocyllus*; a trapezoidal female tergite with truncate apex is apomorphic for *Nefis*. A semicircular female tergite VIII is commonly seen in *Larinus, Eustenopus, Lachnaues, Microlarinus* and also some other genera of Lixini. *Bangasternus* and *Nefis* possess long setae on the dorso-lateral margins of tergite VIII.

The female tergite VIII probably plays a role during the oviposition process and the structure is likely to be correlated with rostrum length and oviposition behavior. Species of *Bangasternus* lay eggs externally on the host plant and the tergite with long setae may have an important function in placing the egg safely. *Nefis* species lay eggs in a shallow ovipositon hole and have long setae on the tergites that may have a similar role in safely transferring eggs during oviposition. The somewhat protruding tergite VIII of *Rhinocyllus* and other genera may have the same role as the long setae mentioned above. It appears that the structure of sternite VIII of female is important for classification: the pentagonal form of sternite VIII is presumable unique for *Bangasternus*; the Y-shaped sternite is common in Palearctic Lixini; the V-form sternite is present in *Lachnaeus* and several groups of

Afrotropical Lixini. The apodeme length of sternite VIII is usually correlated with rostrum length; groups possessing a long rostrum such as *Eustenopus* and *Phyllonomeus* all have a longer apodeme.

Most genera of Lixini possess a vestiture of leaning hair-like pubescence and/or mixed furcate scales on their dorsal surface. Furcate scales are more densely present on *Bangasternus*, *Eustenopus* and some species groups of *Phyllonomeus*. Furcate scales are always more commonly present on the ventral surface. Erect and semi-erect setaceus hairs are one of the generic characters for *Eustenopus*; usually those with a semi-erect position are denser than those with an erect position. However, this character is transitional in some species of North African *Pyllonomeus* (e.g. *Larinus villosicollis* Desbrochers, 1892) and erect and semi-erect setaceus hairs shorter and sparse in Middle Asian species of *Eustenopus* (e.g. *E. abbreviatus* Faust, 1891). Erect setaceous hairs are very typical for *Lachnaeus*. Semi-erect ensiform setae on *Microlarinus* are short and arranged in a row on the elytral intervals. *Nefis kabakovi* is exceptional in possessing semi-erect, short setaceous hairs. Several species of *Hovalarinus* Hustache, 1956 from Madagascar posess bunches of long-erect seta especially on the elytra.

Host plant associations

According to our current knowledge on the ecology of Lixini, *Bangasternus* species lay eggs externally on host plant inflorescences, leaves and stems; they then cover the eggs completely with a secretion that eventually hardens. *Rhinocyllus, Nefis* and *Lachnaeus* species lay eggs in bracts of inflorescenses in shallow holes opened by females; these holes enclose the eggs after be covered by an abundant sectretion that hardens in time (Zwölfer *et al.* 1971; Gültekin 2005a). *Larinus* and *Eustenopus* species possess a longer rostrum and therefore are able to lay eggs usually more deeply in inflorescences. *Eustenopus* and *Phyllonomeus* are able to deposit eggs deeper in host tissue by using their thinner and longer rostrum (Gültekin *et al.* 2008). Again the eggs are enclosed when the females cover these holes using a similar secretion, but less secretion is used by females from groups of species that have longer and thinner rostra. There are four trehala building *Larinus* species associated with *Echinops* that lay eggs in petioles and stems (Gültekin 2008). Some species of *Microlarinus* lay eggs in stems while others lay eggs in seed capsules. *Lixus* species have a fairly broad host range spectrum and oviposition niches usually include rootcrowns, petioles and stems (Gültekin 2007), and only *Lixus obesus* Petri, 1904 oviposits in seed capsules (Gültekin 2005b). The name "inflorescence-inhabiting" applied to the group is based on the habits of the larvae and pupae. Larvae of *Bangasternus*, *Rhinocyllus, Nefis*, *Larinus*, *Eustenopus* and *Lachnaeus* develop in flowerheads of host plants and pupal stages occur in the same locations (Zwölfer *et al.* 1971; Gültekin 2005a, 2006bc, Gültekin & Korotyaev 2005; Gültekin *et al.* 2003). Four species of *Larinus* have rather unusual habits: the larvae construct trehala on stems in order to live endophagously, and pupal development occurs in the same place (Gültekin 2008). Larvae and pupae of species of *Microlarinus* develop in stems or in seed capsules of their host plant.

Major host plant groups for inflorescence inhabiting Lixini are Cardueae (Asteraceae) in the Palearctic (Ter-Minasian 1967; Zwölfer *et al.* 1971; Gültekin 2008; Gültekin *et al.* 2008): the four genera *Bangasternus*, *Rhinocyllus*, *Larinus* and *Eustenopus* are associated with this tribe. *Nefis* species are associated with the tribes Carduea and Inulae (Asteraceae). One important remaining question is whether *Artemisia* L. is a normal host plant for *Nefis liliputanus* or only a refuge plant, as several collection labels indicate *Artemisia* as the host. However, this plant genus has no flowerhead for larval development and this calls into question *Artemisia* as a host. If it is, then this raises the question as to whether *N. liliputanus* larvae build trehala or

inhabit stems. In order to answer these questions, it will be necessary and interesting to confirm the larval host of this species. Apparently, the host range of Palearctic *Lachnaeus* species is restricted to the tribe Inulae (Asteraceae) (Ter-Minasian 1967; Gültekin 2005a). *Microlarinus* species are mainly associated with plants in the genus *Tribulus* L. (Zygophyllaceae). Afrotropical inflorescence-inhabiting Lixini are associated with Arctoteae, Mutisieae and Vernonieae (Asteraceae).

Biogeography

Inflorescence-inhabiting Lixini are distributed in the Palearctic, Afrotropical (including Madagascar) and Oriental Regions (Alonso-Zarazaga & Lyal 1999; Csiki 1934, Winkler 1932; Gültekin 2013); they have been introduced into the Nearctic (Lang *et al.* 1996; O'Brien & Wibmer 1982; Sobhian & Fornasari 1994; McClay 1990) and Australian Regions (Woodburn & Briese 1996) for biological control of asteracean weeds. Many species are distributed in the Mediterranean region and this seems to be their center of diversity (Ter-Minasian 1967; Gültekin 2013). *Bangasternus, Rhinocyllus, Eustenopus* and *Lachnaeus* (an Oriental species within this latter genus is apparently not congeneric with Palearctic *Lachnaeus*) are distributed naturally only within the Palearctic; *Microlarinus* and *Larinus* sensu lato are distributed in the Palearctic and Afrotropical Regions (Csiki 1934; Gültekin 2013) (several groups from the latter region are not likely to be congeneric with *Larinus s. str.*); the subgenus *Cryphopus* is distributed in the western Mediterranean (Csiki 1934; Gültekin 2013); *Sublarinus* is found in the Afrotropical Region (Talamelli 2008); and *Larinodontes* in the Oriental Region (Faust 1898). According to data presented in this paper, *Nefis* is distributed from northwestern China to the central Anatolian Plateau in the Palearctic. Apparently Middle Asia (four species) and Anatolia (four species) are two centers of diversity for the genus *Nefis*. Afghanistan is next with two species. *Nefis korotyaevi* and *N. attilai* have only an eastern Anatolia distribution; the latter one is allopatric with the closely related species *N. afghanicus*.

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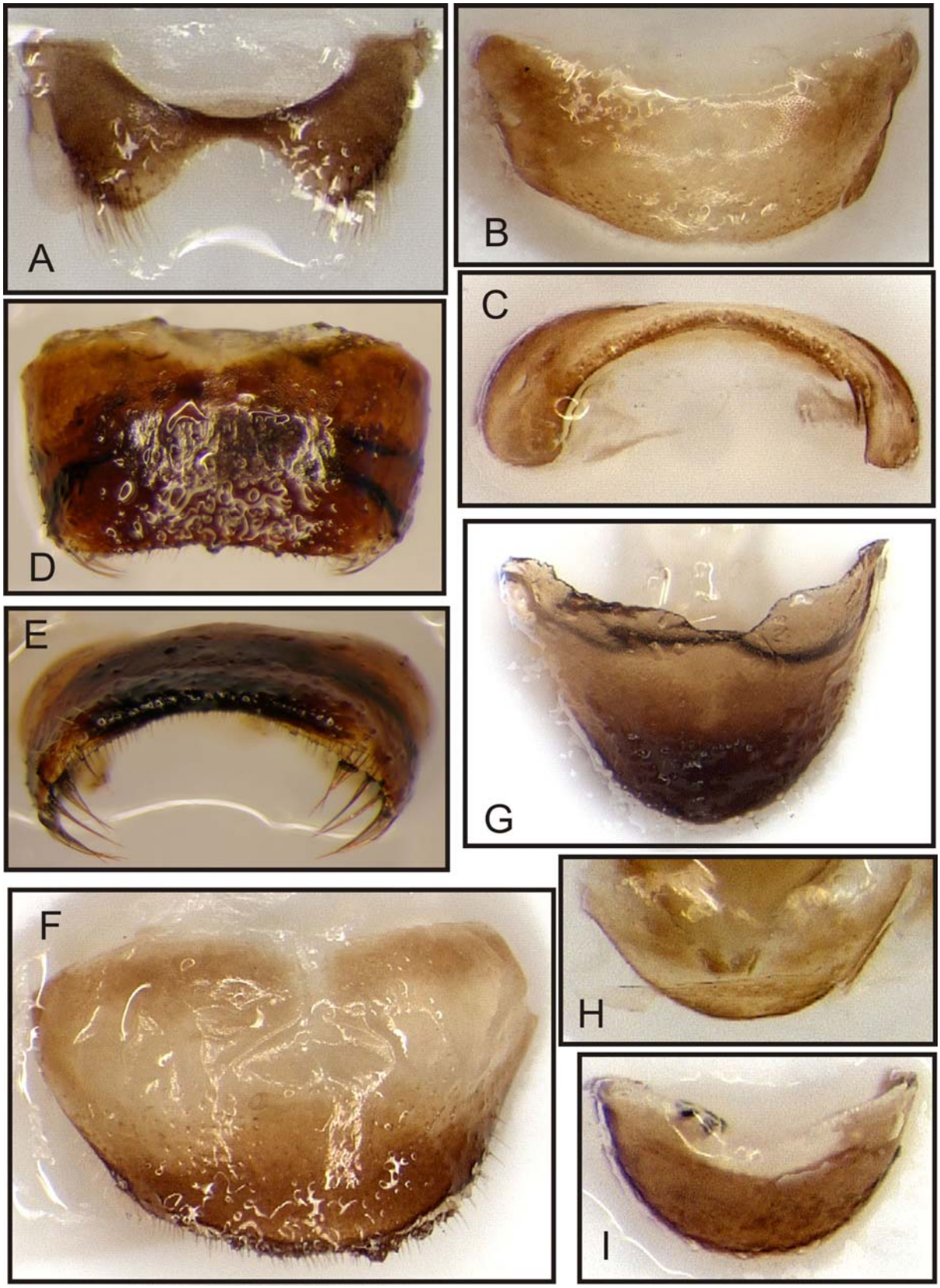

Figure 1. Female tergite VIII. **A,** *Bangasternus*; **B–C,** *Rhinocyllus*; **D–E,** *Nefis* **gen. nov.**; **F,** *Larinus*; **G,** *Lixus*; **H,** *Lachnaeus*; **I,** *Microlarinus*.

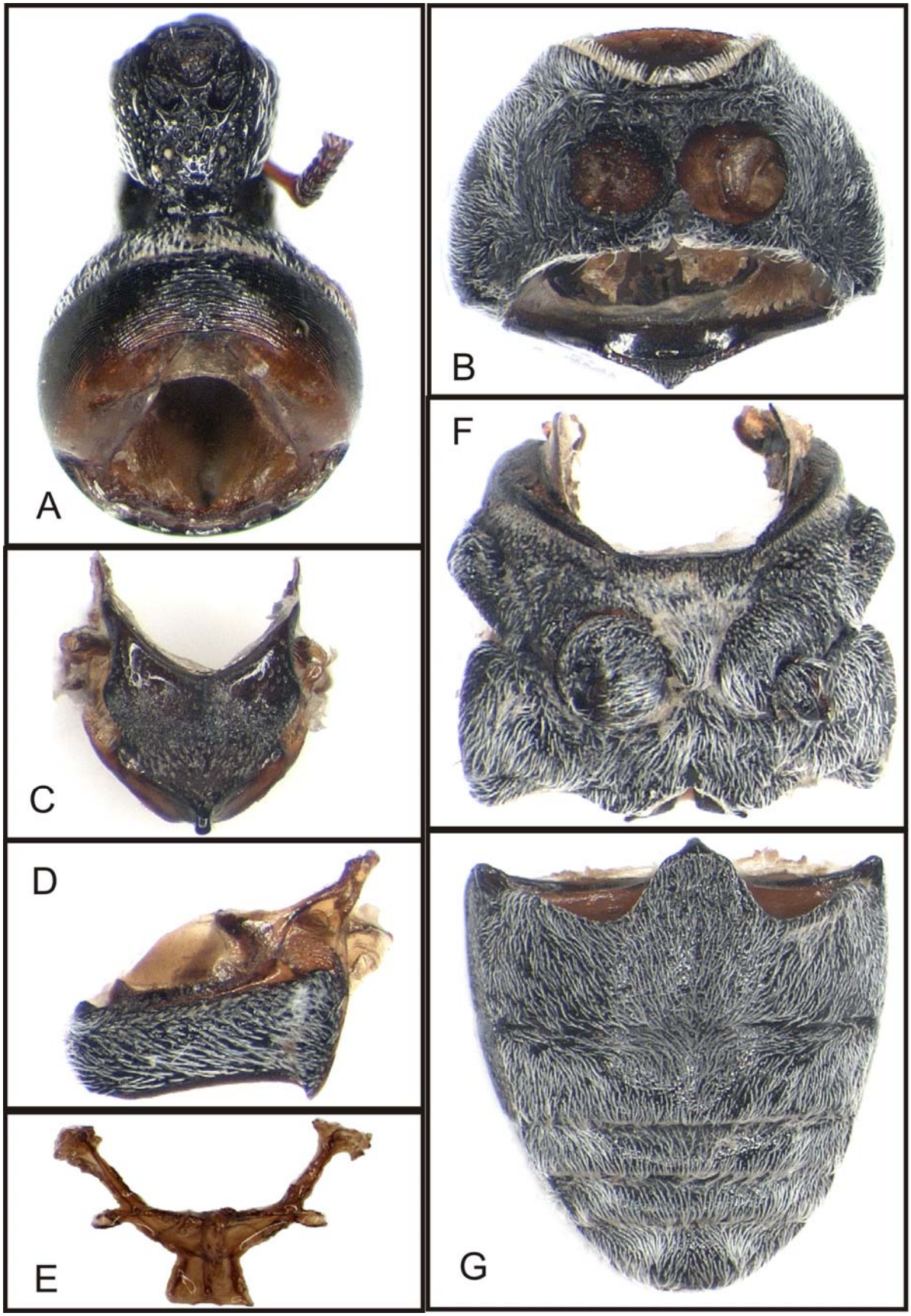

Figure 2. Body parts of *Nefis brevirostris* (Hochhuth), female. **A,** head and rostrum, ventral view; **B,** prosternum; **C,** mesothorax; **D,** metepisternum; **E,** metendosternite; **F,** mesoventrite and metaventrite; **G,** abdominal ventrite.

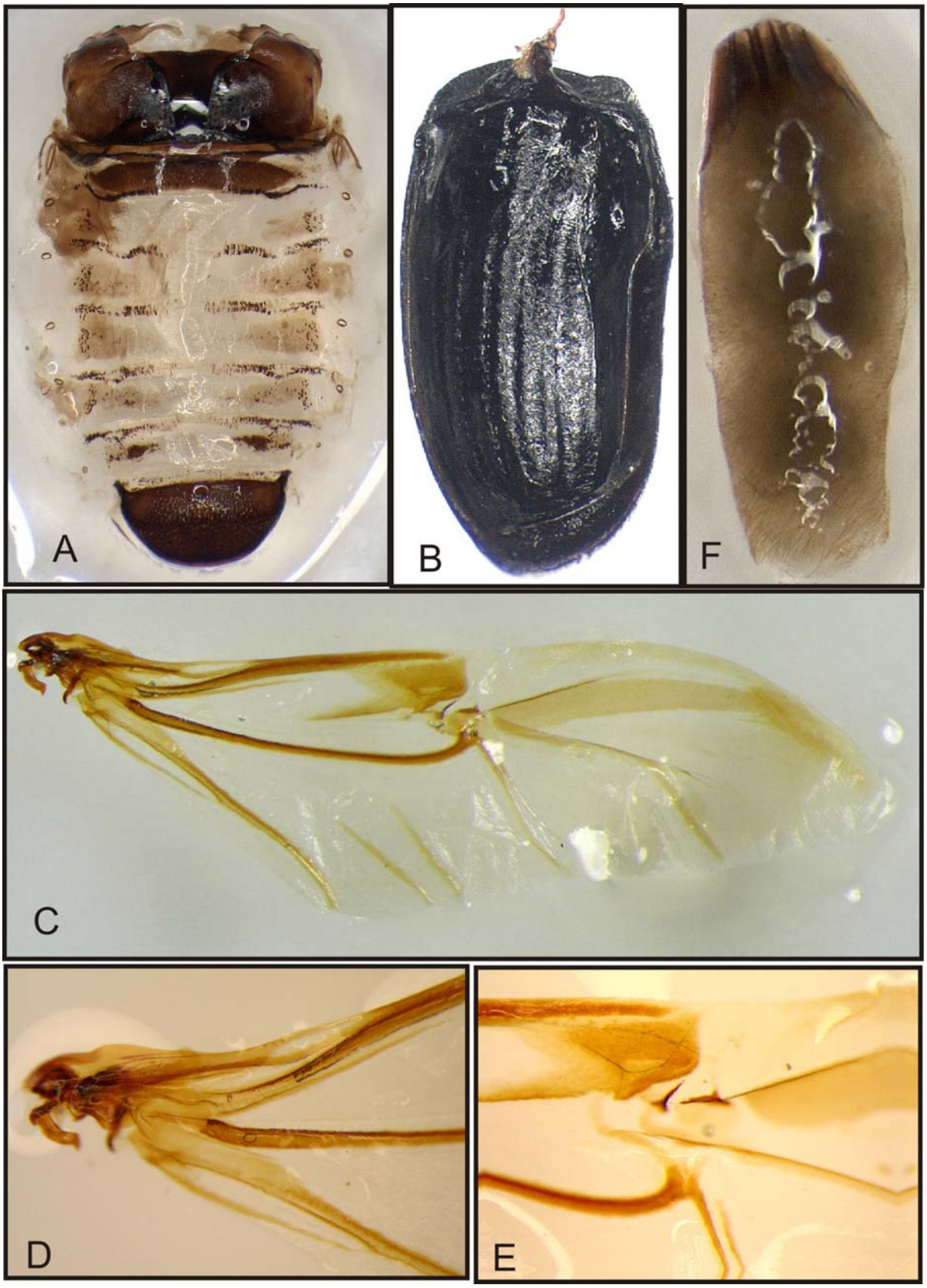

Figure 3. Body parts of *Nefis brevirostris* (Hochhuth), female. **A,** metanotum and tergite of abdomen; **B,** elytra internal view; **C,** metathoraxic wing; **D,** basal part of wing; **E,** central part of wing; **F,** proventriculus and crop.

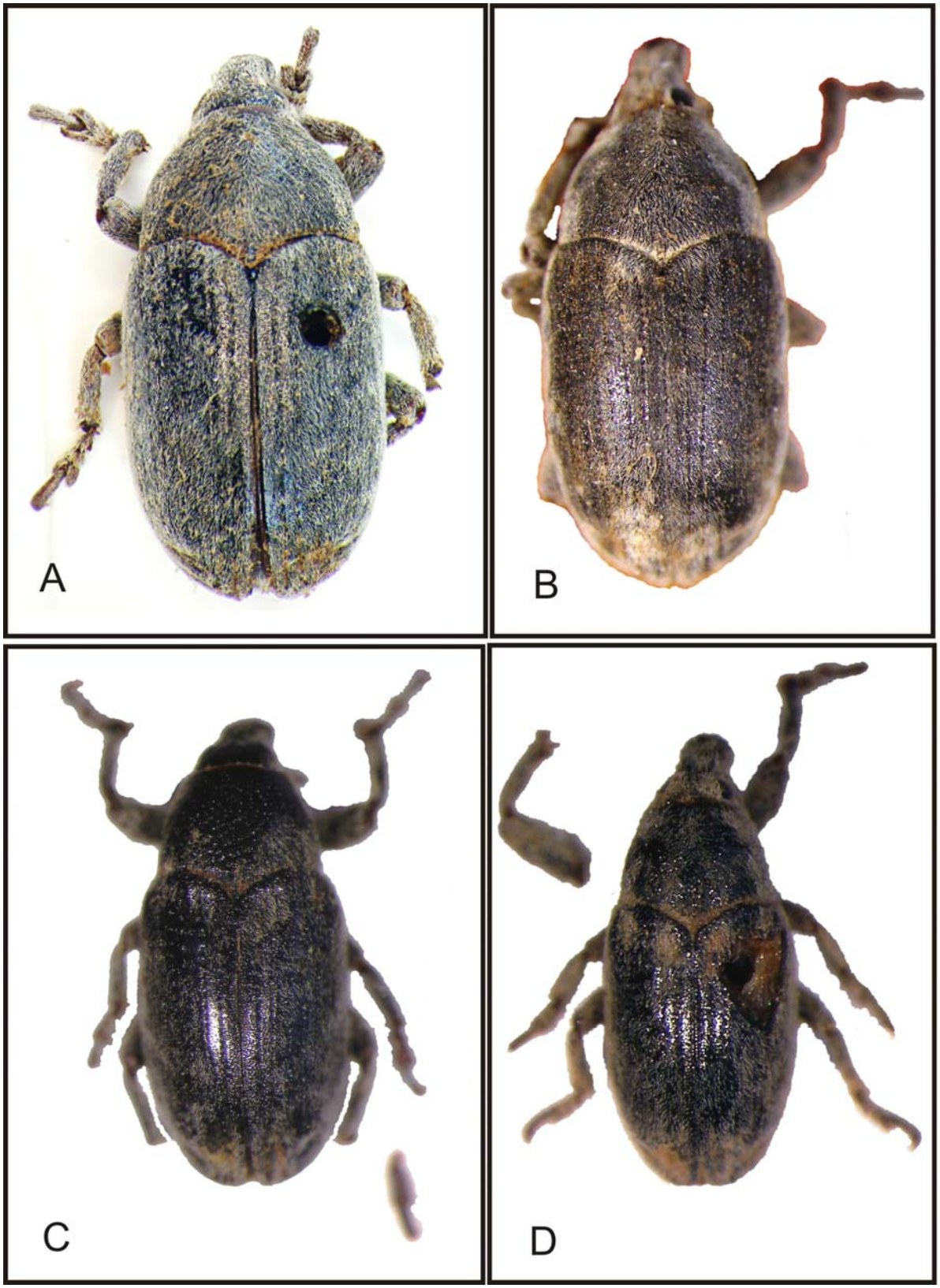

Figure 4. Dorsal view of holotype and lectotypes. **A,** *Larinus brevirostris* (Hochhuth), lectotype; **B,** *Larinus reitteri* (Faust), lectotype; **C,** *Larinus exclusus* (Faust), holotype; **D,** *Larinus liliputanus* (Faust), lectotype.

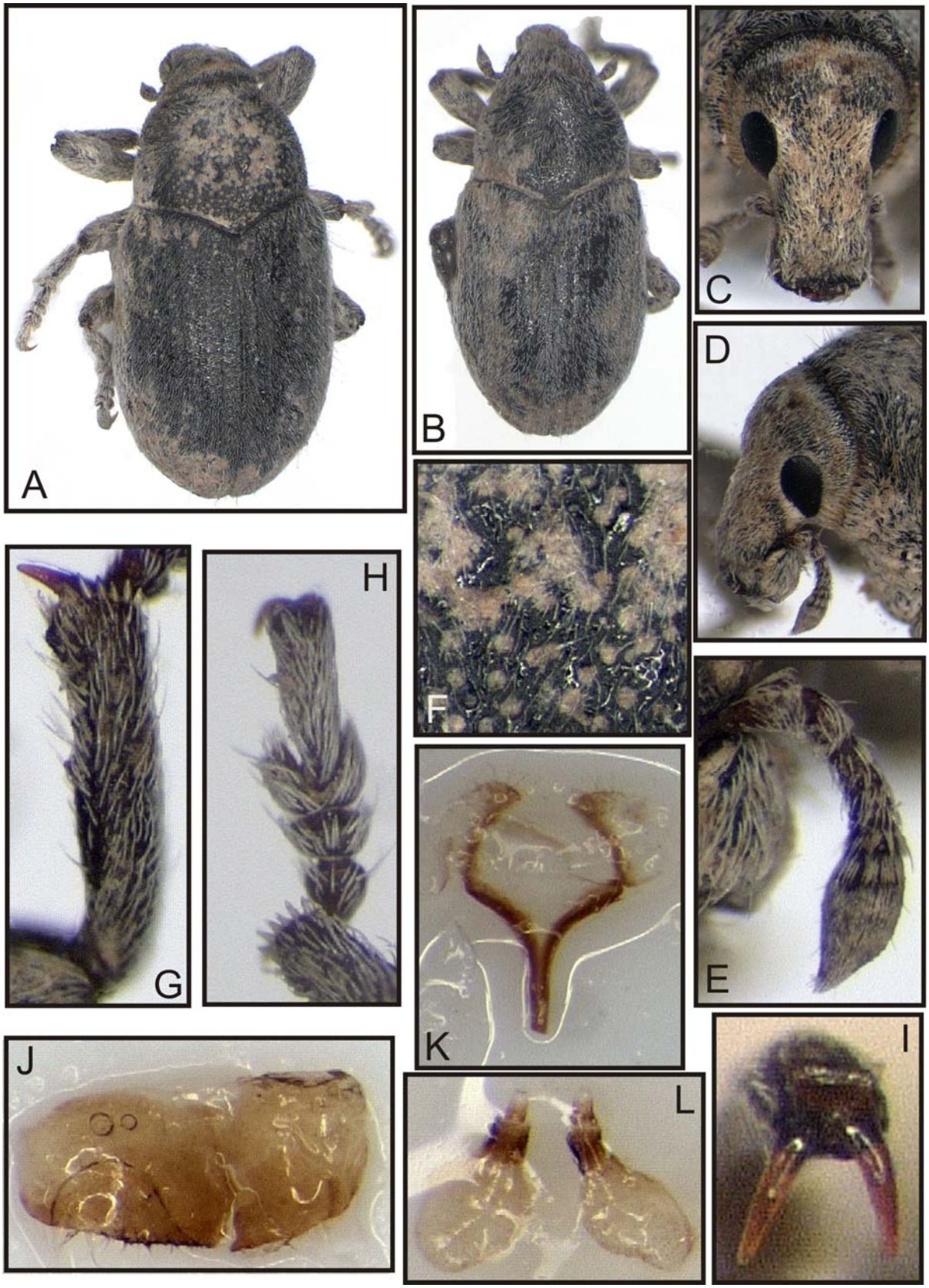

Figure 5. *Nefis kabakovi* **sp. nov.**, female. **A,** holotype, female; **B,** paratype, female; **C,** rostrum, dorsal view; **D,** rostrum, lateral view; **E,** antenna; **F,** punctuation of pronotum; **G,** fore tibia; **H,** fore tarsus; **I,** tarsal claw; **J,** tergite VIII; **K,** sternite VIII; **L,** gonocoxite.

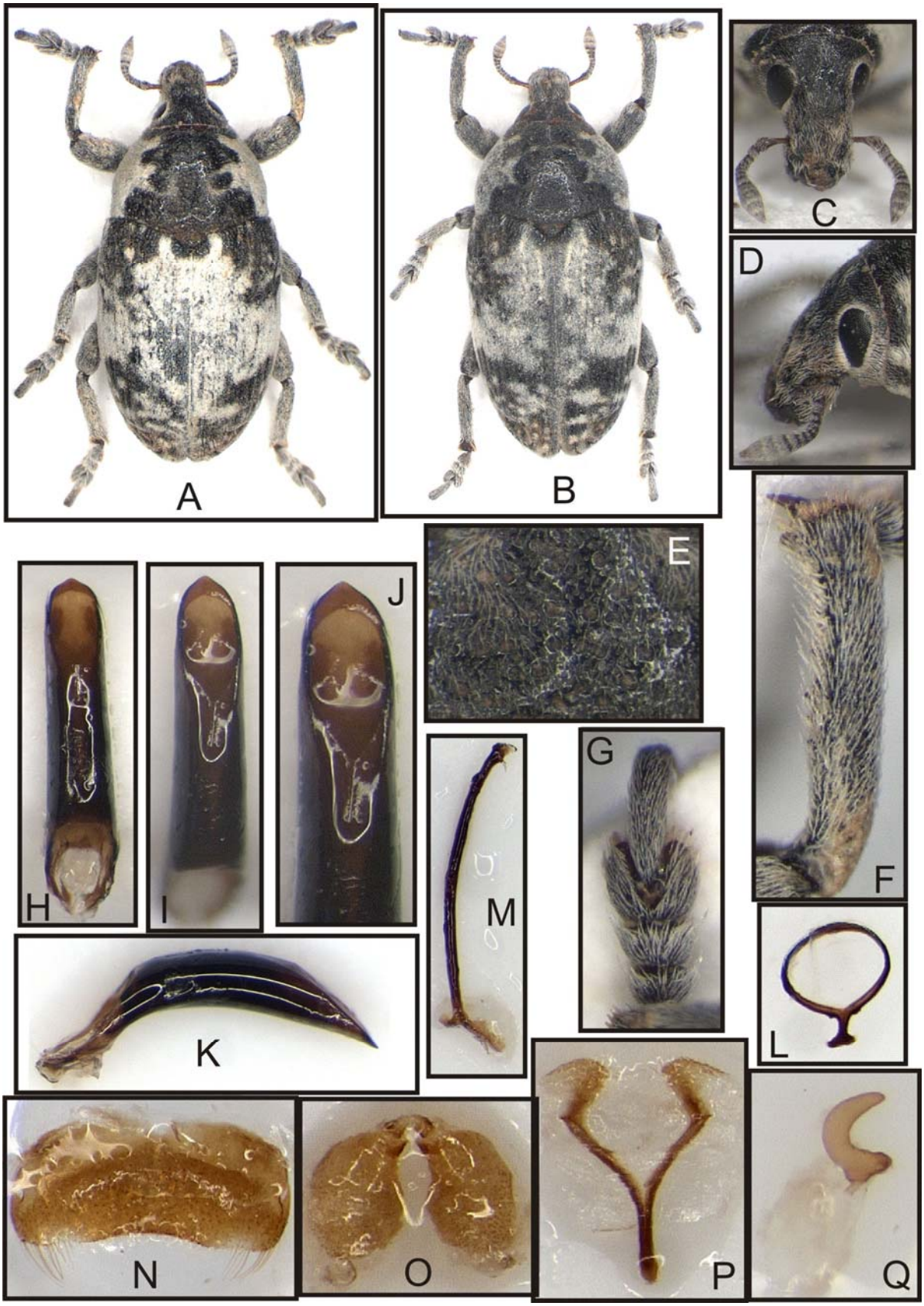

Figure 6. *Nefis korotyaevi* **sp. nov. A,** holotype, male; **B,** paratype, female; **C,** rostrum, dorsal view; **D,** rostrum, lateral view; **E,** punctuation of pronotum; **F,** fore tibia; **G,** fore tarsus; **H–J,** aedeagus, dorsal view; **K,** aedeagus, lateral view; **L,** tegmen; **M,** spiculum gastrale, **N,** tergite VIII; **O,** gonocoxite; **P,** sternite VIII; **Q,** spermatheca.

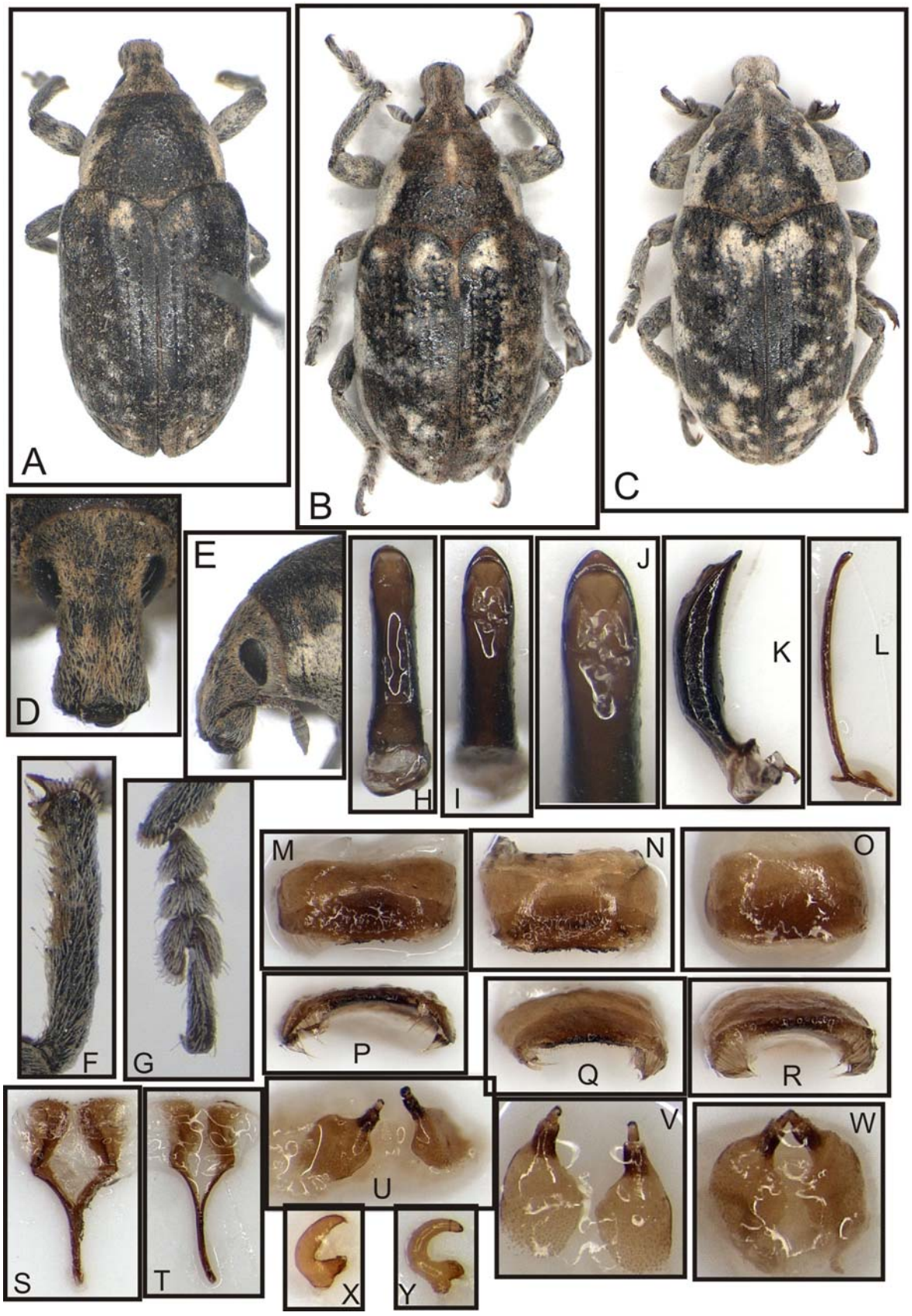

Figure 7. *Nefis capiomonti* (Faust). **A,** lectotype, female; **B,** adult from Karateghin-Tajikistan; **C,** adult from Bishkek; **D,** rostrum, dorsal view; **E,** rostrum, lateral view; **F,** fore tibia; **G,** fore tarsus; **H–J,** aedeagus, dorsal view; **K,** aedeagus, lateral view; **L,** spiculum gastrale; **M–R,** tergite VIII; **S–T,** sternite VIII; **U–W,** gonocoxite; **X–Y,** spermatheca.

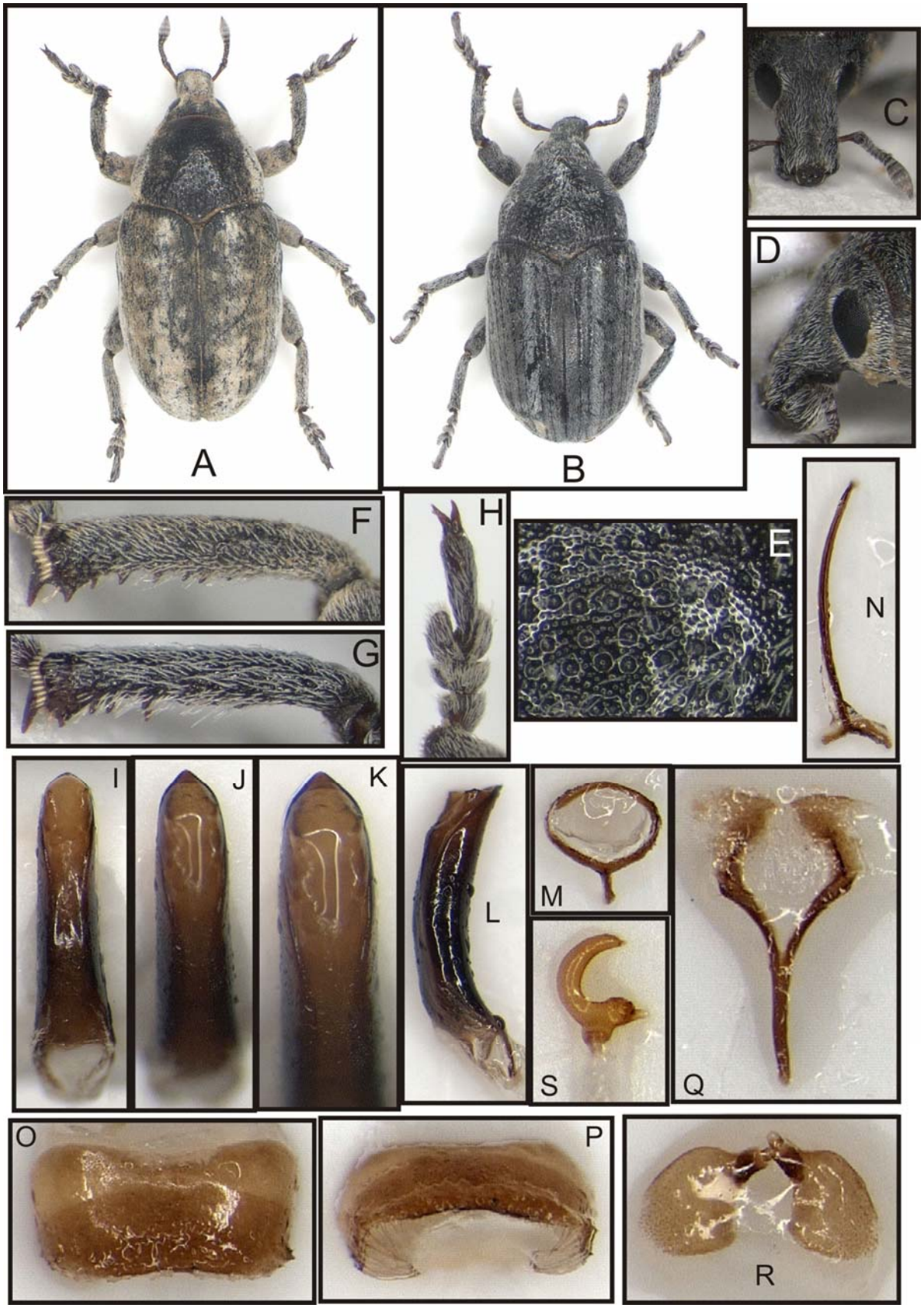

Figure 8. *Nefis ochroleucus* (Capiomont). **A,** female; **B,** male; **C,** rostrum, dorsal view; **D,** rostrum, lateral view; **E,** punctuation of pronotum; **F,** fore tibia, female; **G,** fore tibia, male; **H,** fore tarsus; **I–K,** aedeagus, dorsal view; **L,** aedeagus, lateral view; **M,** tegmen; **N,** spiculum gastrale; **O–P,** tergite VIII; **Q,** sternite VIII; **R,** gonocoxite; **S,** spermatheca.

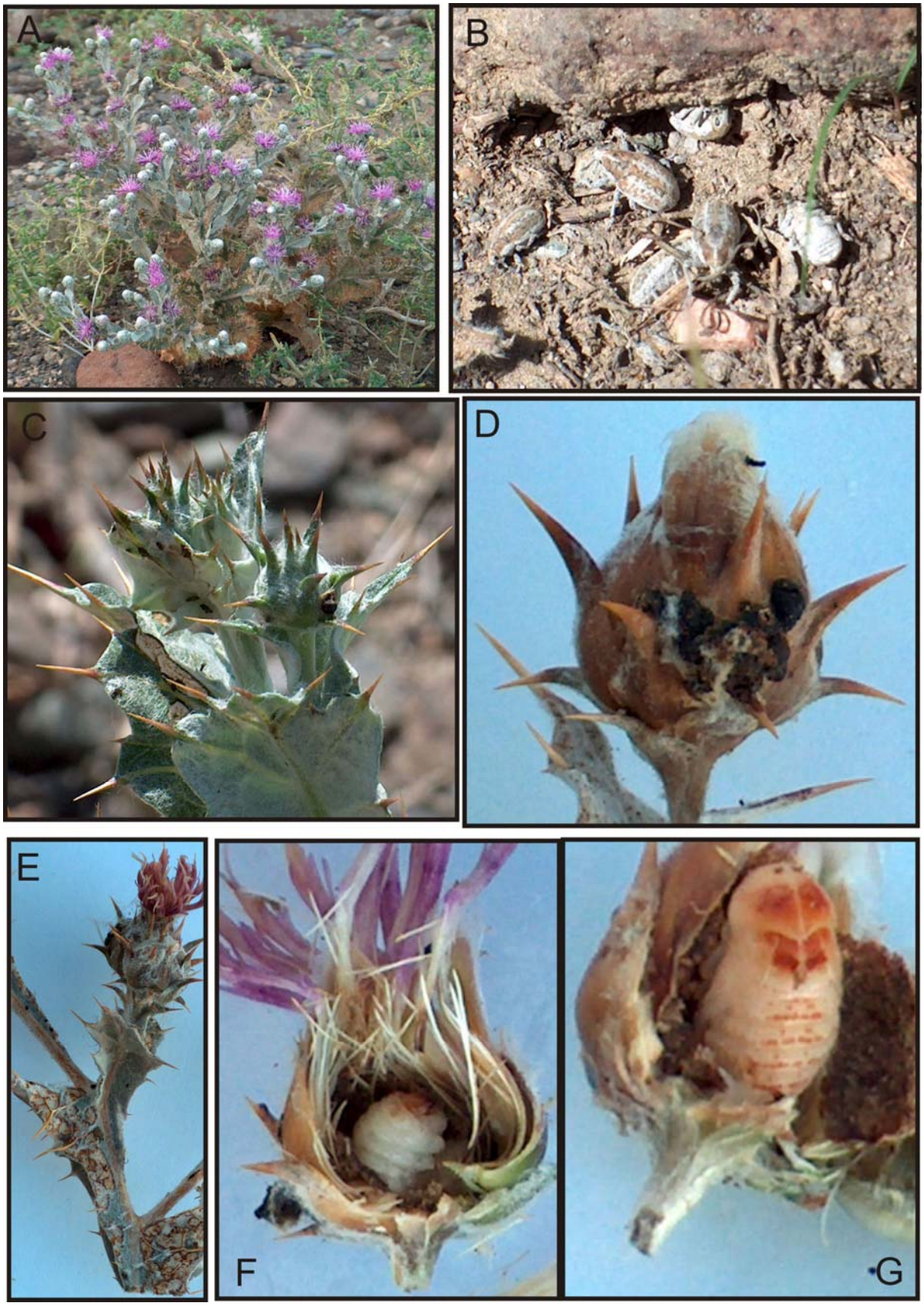

Figure 9. Host plant and ecology of *Nefis ochroleucus* (Capiomont). **A,** *Cousinia macroptera*; **B,** aggregated adults; **C–D,** oviposition mark; **E,** adult feeding damage; **F,** larva and larval niche; **G,** pupa and pupal niche.

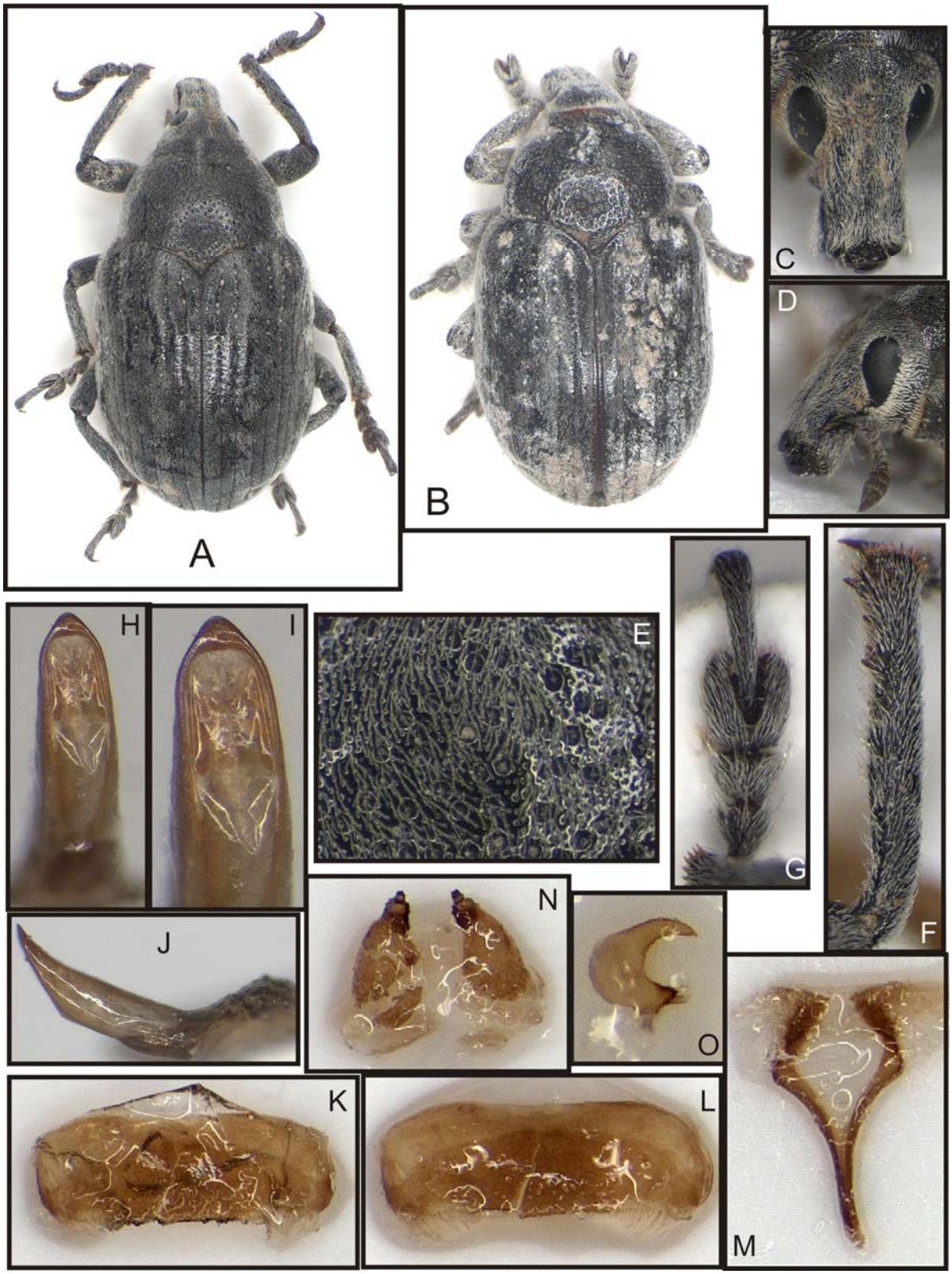

Figure 10. *Nefis pachyrrhinus* (Petri). **A,** male; **B,** female; **C,** rostrum, dorsal view; **D,** rostrum, lateral view; **E,** punctuation of pronotum; **F,** fore tibia, male; **G,** fore tarsus; **H–I,** aedeagus, dorsal view; **J,** aedeagus, lateral view; **K–L,** tergite VIII; **M,** sternite VIII; **N,** gonocoxite; **O,** spermatheca.

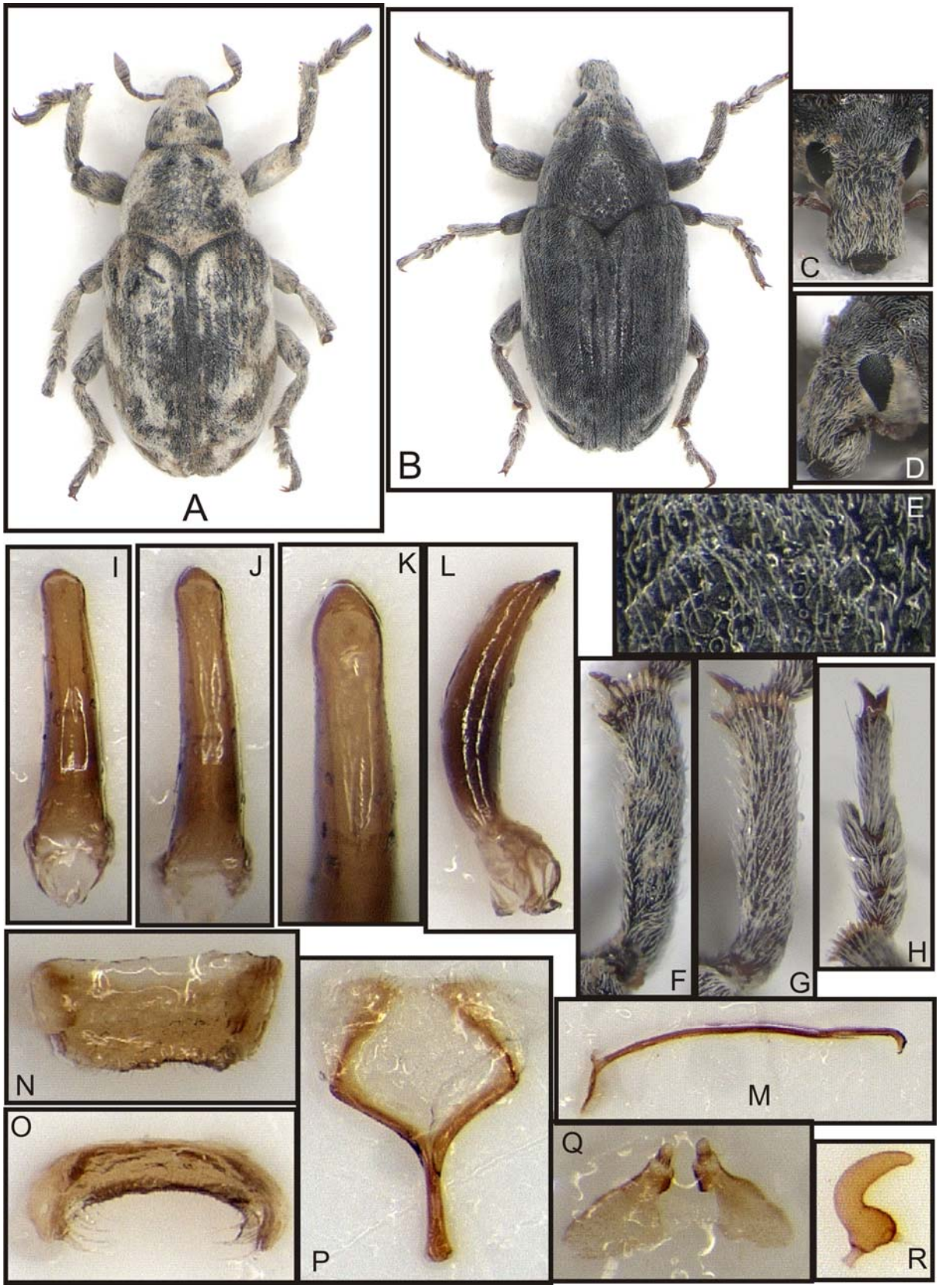

Figure 11. *Nefis liliputanus* (Faust). **A,** male; **B,** female; **C,** rostrum, dorsal view; **D,** rostrum, lateral view; **E,** punctuation of pronotum; **F,** fore tibia, female; **G,** fore tibia, male **H,** fore tarsus; **I–K,** aedeagus, dorsal view; **L,** aedeagus, lateral view; **M,** spiculum gastrale; **N–O,** tergite VIII; **P,** sternite VIII; **Q,** gonocoxite; **R,** spermatheca.

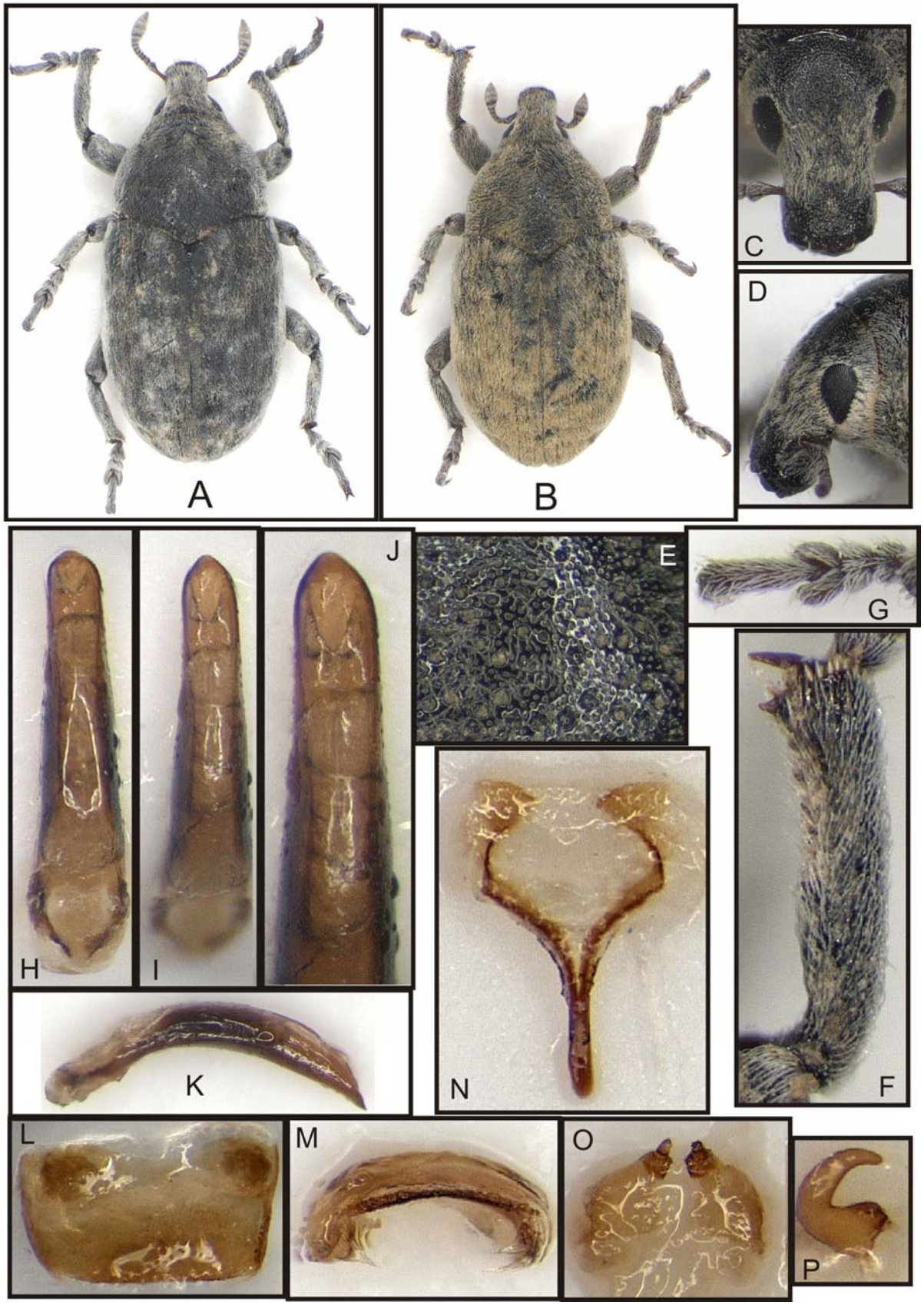

Figure 12. *Nefis brevirostris* (Hochhuth). **A,** male; **B,** female; **C,** rostrum, dorsal view; **D,** rostrum, lateral view; **E,** punctuation of pronotum; **F,** fore tibia, male; **G,** fore tarsus; **H–J,** aedeagus, dorsal view; **K,** aedeagus, lateral view; **L–M,** tergite VIII; **N,** sternite VIII; **O,** gonocoxite; **P,** spermatheca.

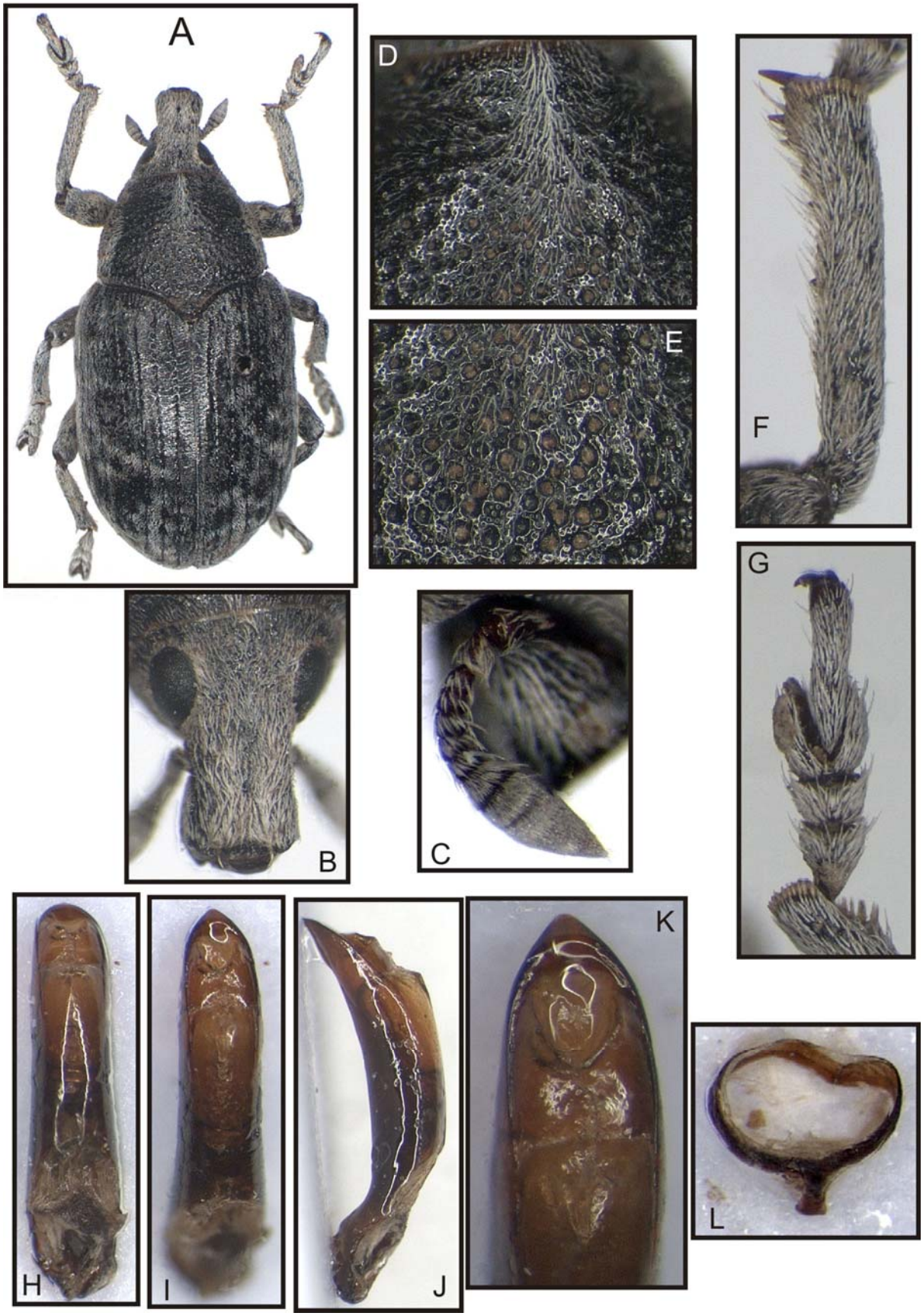

Figure 13. *Nefis afghanicus* (Ter-Minasian). **A,** male; **B,** rostrum, dorsal view; **C,** antenna; **D–E,** punctuation of pronotum; **F,** fore tibia; **G,** fore tarsus; **H–J,** aedeagus, dorsal view; **K,** aedeagus, lateral view; **L,** tegmen.

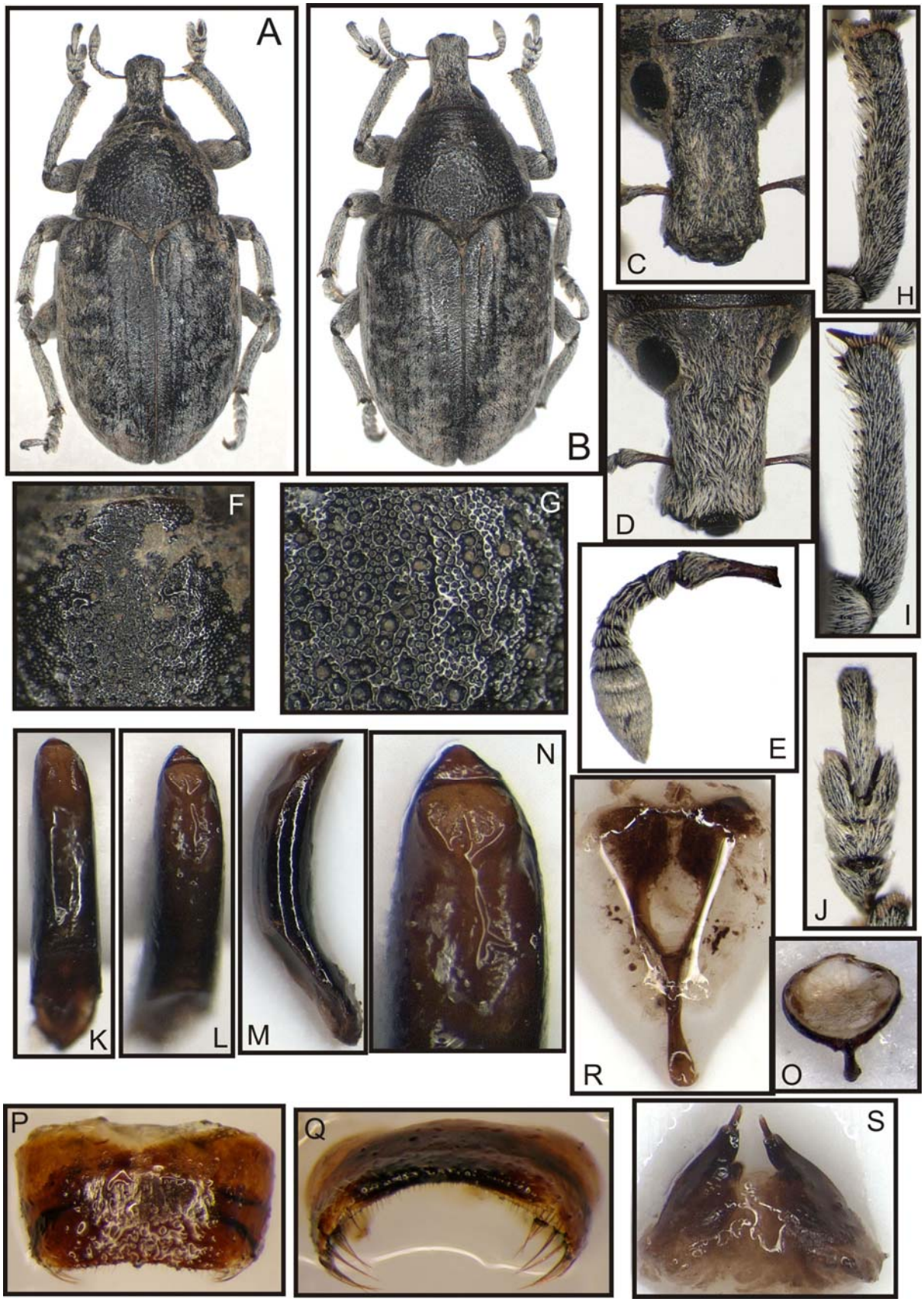

Figure 14. *Nefis attilai* **sp. nov. A,** holotype, male; **B,** paratype, female; **C,** rostrum, dorsal view, male; **D,** rostrum, dorsal view, female; **E,** antenna; **F–G,** punctuation of pronotum; **H,** fore tibia, male; **I,** fore tibia, female; **J,** fore tarsus; **K–M,** aedeagus, dorsal view; **N,** aedeagus, lateral view; **O,** tegmen; **P–Q,** tergite VIII; **R,** sternite VIII; **S,** gonocoxite.

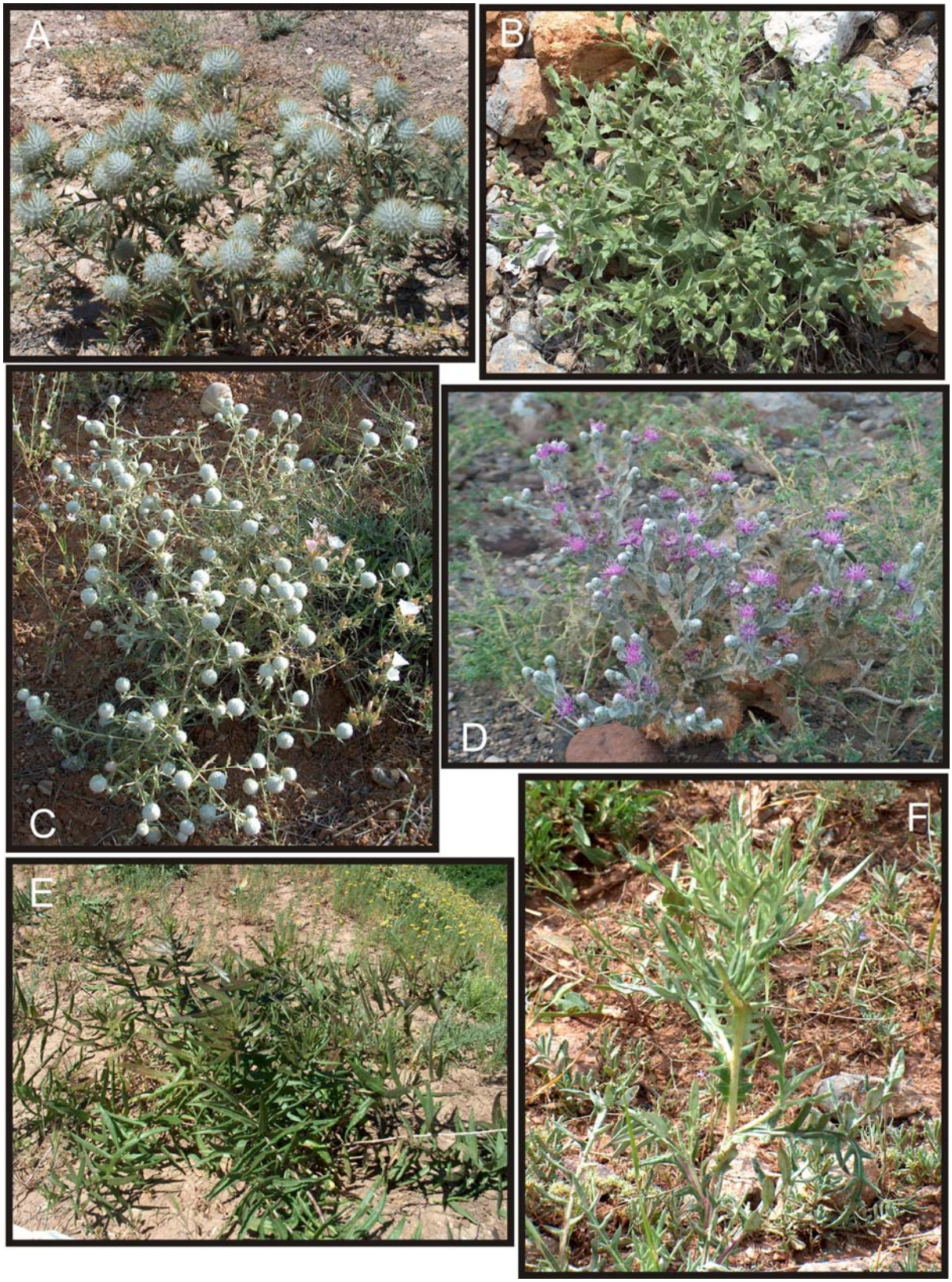

Figure 15. Host plants of *Nefis* species. **A,** *Cirsium baytopae*; **B,** *Cousinia* sp1.; **C,** *Cousinia* sp2; **D,** *Cousinia macroptera*; **E,** *Pulicaria dysenterica*; **F,** *Cousinia urumiensis*.

Figure 16. Distribution map of *Nefis* species according to confirmed locations – Complete view (**A**: *N. kabakovi* **sp. nov.**; **B**: *N. korotyaevi* **sp. nov.**; **C**: *N. capiomonti*; **D**: *N. ochroleucus*; **E**: *N. pachyrrhinus*; **F**: *N. liliputanus*; **G**: *N. brevirostris*; **H**: *N. afghanicus*; **I**: *N. attilai* **sp. nov.**)

Figure 17. Distribution map of *Nefis* species according to confirmed locations – Anatolia, Caucasus and Middle East view (**B**: *N. korotyaevi* **sp. nov.**; **D**: *N. ochroleucus*; **G**: *N. brevirostris*; **I**: *N. attilai* **sp. nov.**).

Figure 18. Distribution map of *Nefis* species according to confirmed locations – Central Asia view (**A**: *N. kabakovi* **sp. nov.**; **C**: *N. capiomonti*; **D**: *N. ochroleucus*; **E**: *N. pachyrrhinus*; **F**: *N. liliputanus*; **G**: *N. brevirostris*; **H**: *N. afghanicus*).

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