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**TWO NEW SPECIES OF THE GENUS *SPHENOPTERA* DEJEAN, 1833,  
SUBGENUS *DEUDORA* JAKOVLEV, 1899 (COLEOPTERA:  
BUPRESTIDAE) FROM ARMENIA AND IRAN**

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**Summary.** *Sphenoptera (Deudora) volkovitshi* sp. n. from Armenia and Iran and *S. (D.) korotyaevi* sp. n. from southern provinces of Iran are described, illustrated and compared with related species. The species *S. (D.) inculta* Obenberger, 1929 is reported from Semnan Province of Iran and from Turkey for the first time.

**Key words:** jewel beetles, taxonomy, new species, new record, Palaearctic region.

**М. Ю. Калашян. Два новых вида рода *Sphenoptera* Dejean, 1833, подрода *Deudora* Jakovlev, 1899 (Coleoptera: Buprestidae) из Армении и Ирана // Дальневосточный энтомолог. 2026. N 553. С. 17-24.**

**Резюме.** Описаны, проиллюстрированы и сравнены с близкими видами *Sphenoptera (Deudora) volkovitshi* sp. n. из Армении и Ирана и *S. (D.) korotyaevi* sp. n. из южных провинций Ирана. Вид *S. (D.) inculta* Obenberger, 1929 впервые указывается из иранской провинции Семнан и из Турции.

**INTRODUCTION**

During my work on the jewel beetle genus *Sphenoptera* Dejean, 1834 (Coleoptera: Buprestidae) which was carried out in several institutional and private collections, many interesting findings were made. Some of them belonged to the subgenus *Deudora* Jakovlev, 1899. According to the Catalogue of Palaearctic Coleoptera this subgenus included 62 species and one subspecies distributed in the South-western Palaearctic region from the Mediterranean Basin to the Arabian Peninsula, Afghanistan and countries of Central Asia. (Kalashian, 2016); recently three more species were described (Kalashian & Karagyan, 2016; Kalashian & Kubáň, 2025). Two further new *Deudora* species from Armenia and Iran were revealed; the descriptions of these species are provided below.

**MATERIAL AND METHODS**

The presented study is based on the specimens housed in several institutional and private collections: BMNH – British Museum, Natural History, London, United Kingdom; HNHM –

Hungarian Natural History Museum, Budapest, Hungary; MKCY – research collection of Mark Kalashian, Yerevan, Armenia; MNCA – research collection of Manfred Niehuis, Albersweiler, Germany; NMPC – National Museum, Prague, Czech Republic.

Morphology of beetles was studied using Micromed MC-2 Zoom and MBS-10 stereo-microscopes, measurements were taken using an ocular micrometer. Photographs of habitus were taken using Canon EOS 800D digital camera, equipped with the Canon MP-E65 mm f/2.8 1–5x and Irix 150mm f/2.8 macro lenses and attached to Stack Shot Macro Rail package (Cognisys Inc.); Helicon Focus Pro software were used for stacking the photos.

Label data are cited verbatim; the following abbreviations are used: (h) – handwritten, (p) – printed; label lines are delimited by a slash (/) and the data from each label are separated by two slashes (//). If necessary, current geographical names and some other necessary data are given in square brackets. The depository of specimens is given in parentheses. Author's labels with a designation of the type's status (holotype, paratype) are not cited in the text.

## DESCRIPTIONS OF THE NEW SPECIES

### *Sphenoptera (Deudora) volkovitshi* Kalashian, sp. n.

<https://zoobank.org/NomenclaturalActs/8432F20F-C09B-4FD0-88EE-759E07089EDD>

Figs 1, 2, 9, 10

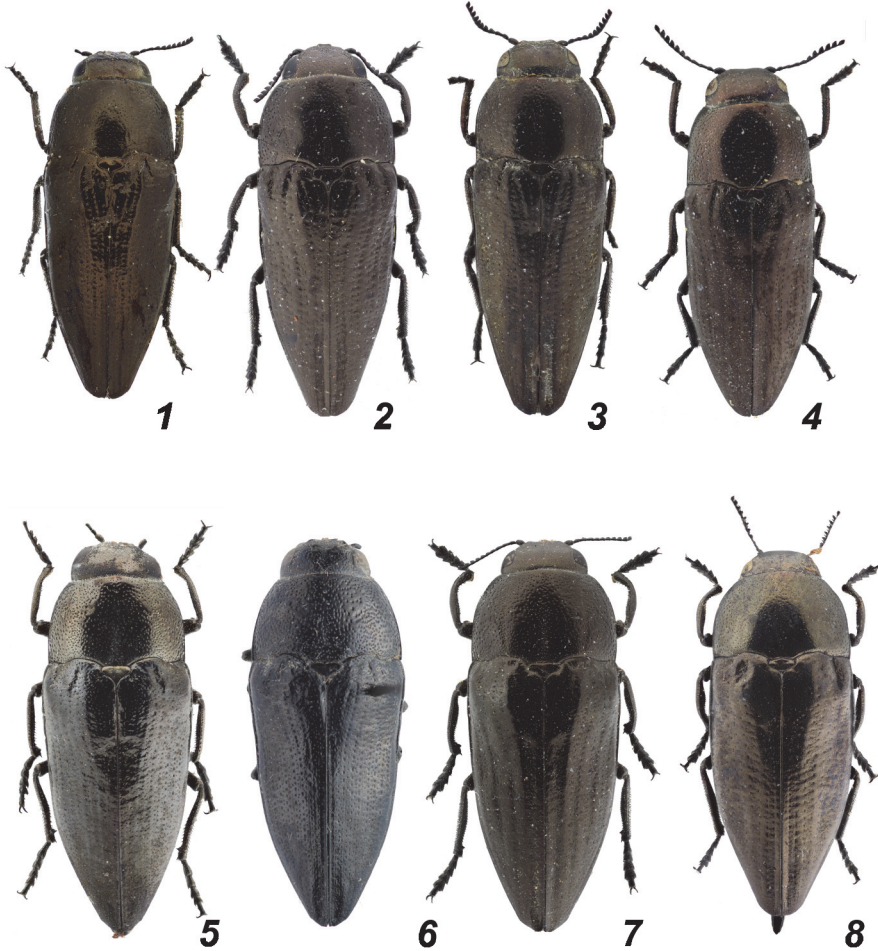
TYPE MATERIAL. Holotype – ♂, **Armenia**: Ararat prov. / env. Surenavan, 39°48'37" / 044°50'09", 1250 m (light) / 15.06.2008, Volkovitsh leg. [p] (ZIN); Paratypes: 1 ♂, **Armenia**: Ararat reg. / P.[aruyr] Sevak, 19.07.[19]98 / Kalashian leg. [p] (MKCY); 1 ♀, **Armenia** [Ararat prov.] env. Vedi / Goravan sands, 23.06. / 1995, Kalashian leg. (MKCY); 1 ♀, **[Iran]**: v. Bodemeyer / Persien / Luristan [p] // *Sphenoptera* / *subtilis* Jak. (h) / coll. Reitter [p] (HNHM); 1 ♀, **Iran**: env. Tebriz / Payam vill., 2000 m / 5.07.[20]01, Sazonov leg. (MKCY); 2 ♀♀, **Iran**: / Vagamine / Karagadj E [?Karaj] (p) / 7.XII.[19]60 (h) / E.S. Brown [leg.] [p] // Press by / Com Inst Ent / B. M. 1967-3 (p) (BMNH); 1 ♂, **Iran**: Kurdistan prov. / Marivan-Garan / 01.06.2010, H. Ghojari leg. (p) // oak forest / window trap (p) (MKCY).

DESCRIPTION. *Body* (Fig. 1) of medium size, length 10.0–12.6 mm (holotype 11.8 mm), width 3.7–4.9 mm (holotype 4.6 mm), moderately robust, 2.55–2.7 times as long as wide, dark bronzy with more or less distinct reddish-cupreous tint, in male anterior portion of frons reddish cupreous. Dorsal surface with sparse very short barely distinct whitish setae, ventral surface completely covered quite longer rather dense distinct setae. Ventral surface with wax cover, medially smoothed, laterally dense, somewhere hiding integument.

*Head* as wide as or barely narrower than anterior margin of pronotum, eyes moderately convex, not protruding beyond head outline. Clypeus narrowly semicircular, moderately transversal, supraantennal keels distinct, far not reaching inner margins of eyes, frons with subparallel sides, moderately convex, with very slight rounded reliefs at the level of half of eyes (in frontal aspect). Surface of frons distinctly and densely micropunctated, anteriorly with several big irregular macropunctures, backwards sculpture smoothed, macropunctures small, pinned, sparse medially, condensed near inner margins of eyes and behind them. Vertex in 2.4–2.6 time as wide as diameter of eyes in both sexes. Antennae 1.65–1.80 times as long as vertical diameter of eye, serrate starting from nearly equilateral fourth antennomere, following antennomeres distinctly transverse.

*Pronotum* 1.65–1.70 times as wide as long, widest near or just before sharp or nearly rectangular posterior angles, nearly regularly arcuately narrowed to anterior angles, anterior

margin distinctly protruded medially, finely sinuate near anterior angles, without edging groove, posterior margin bisinuate with moderately wide medial lobe finely incurved before scutellum. Lateral keels nearly straight, slightly but distinctly incurved just before posterior angles, reaching approximately anterior one sixth of pronotum, completely visible from above. Disc nearly evenly convex, surface distinctly and densely micropunctated, macropunctures medially sparse and small, partly pinned, along lateral margins punctures distinctly rougher and denser, partly stretched longitudinally and fused into irregular short deep longitudinal wrinkles. Convex anterior portion of scutellum transversely oval with shortly protruded posterior margin, with micropunctures similar to those in pronotum.



Figs 1–8. *Sphenoptera (Deudora)* spp., habitus in dorsal view. 1 – *S. (D.) volkovitshi* sp. n., male holotype; 2 – *S. (D.) micans* Jakovlev 1886, Armenia; 3 – *S. (D.) aeneomicans* Kraatz, 1882, Uzbekistan; 4 – *S. (D.) smyrneensis* Gory, 1841, Armenia; 5 – *S. (D.) korotyaevi* sp. n., male holotype; 6 – *S. (D.) korotyaevi* sp. n., female paratype; 7 – *S. (D.) manifesta* Jakovlev 1900, Armenia; 8 – *S. (D.) inculta* Obenberger, 1929, Turkey.

*Elytra* 1.75–1.91 times as long as wide, widest just behind humeri, sides nearly straightly slightly narrowed to approximately posterior two fifth of length of elytra, then more abruptly slightly convexly, then nearly straightly narrowed to apices, each elytron with short sharp sutural tooth and more or less distinct lateral angular fold. Elytra convex, flattened along suture, surface with rows of delicate hyphen-shaped punctures, medially situated on bottom of rather deep rounded punctures, intervals flattened except of moderately convex presutural and third once, surface with irregular few small pinned macropunctures and dense micropunctures anteriorly similar to those of pronotum, smoothed backwards and apically nearly indistinct.

*Prosternal process* slightly longitudinally depressed, laterally bordered with deep grooves, medially with row of big deep punctures. Sternum and base of first visible ventrite finely depressed along middle continuing depression of prosternal process. Hypomera with big irregular punctures, sternum laterally with dense somewhat smaller irregular punctures and oblique wrinkles, medially with big deep rather sparse irregular punctures, first visible ventrite with several deep longitudinal punctures, following ventrites with dense rather rounded punctures barely smoothed backwards and distinct until apex of abdomen. Ventral surface with dense but barely visible micropunctures. Hind margin of metacoxae distinctly bisinuate, with one moderately deep incision near femoral base and another deep incision near lateral angle.

**SEXUAL DIMORPHISM.** In male protibiae completely straight, mesotibiae nearly straight with sinuate inner margin bearing sharp rectangular tooth distally, mesotibiae nearly straight, inner margin slightly sinuate, apically with deep incision proximally separated by long sharp tooth. In female all tibiae nearly straight, with inner margin finely sinuate Anal ventrite in male narrowly cut distally with very fine medial incision, in female rather narrowly rounded distally.

*Aedeagus* as in Fig. 9.

*Ovipositor* as in Fig. 10.

**DIAGNOSIS.** By completely straight protibiae in male to *S. (D.) volkovitshi* sp. n. is similar *S. (D.) smyrneensis* Gory, 1841 (Fig.4), distributed in Levant countries, Turkey, Iran and Southern Transcaucasia (Kalashian, 2016). This species differs by subcylindrical body, by indistinct supraantennal keels, by shiner surface of the head and pronotum with less distinct micropunctuation and distinctly smaller and sparser macropunctuation, and by nearly straight posterior margin of the metacoxae with very shallow incisions near the base of femur and near lateral angles. Habitually *S. (D.) volkovitshi* sp. n. looks similar to *S. (D.) micans* Jakovlev 1886 (Fig. 2) known from Armenia, Turkey and Iran and to *S. (D.) aeneomicans* Kraatz, 1882 (Fig. 3) widely distributed in Southern Palaearctic Region from Syria in the West to North-Western Territory of China in the East (Kalashian, 2016). Both species differ from the new species by the presence of narrow shallow depression along the midline of pronotum with stripe of rather small condensed macropunctures, and with somewhat vague stripes between midline and lateral borders of pronotum situated in shallow depressions or flattened portions of the disk, disk between stripes with sparse rather big macropunctures, laterally macropunctures dense and rough, sometimes rasp-shaped. In addition, both these species are characterized by more than in *S. (D.) volkovitshi* sp. n. uneven elytral disk with convex odd and flattened even intervals. In *S. (D.) micans* hind margin of metacoxae moderately bisinuate, with the incisions distinctly shallower than in *S. (D.) volkovitshi* sp. n. Protibiae in male in *S. (D.) micans* strongly incurved, in *S. (D.) aeneomicans* slightly but distinctly incurved distally.

**DISTRIBUTION.** Armenia: Ararat province; Iran: East Azerbaijan, Kurdistan and Luristan Provinces.

ETYMOLOGY. The new species is dedicated to worldwide known specialist on Buprestidae Dr. Mark Volkovitsh (ZIN) in commemoration of many years of friendship and fruitful cooperation, with my gratitude, respect and best wishes.

***Sphenoptera (Deudora) korotyaevi Kalashian, sp. n.***

<https://zoobank.org/NomenclaturalActs/95AA6266-351B-4590-8B76-3D5F0ECF9712>

Figs 5, 6, 11, 12

TYPE MATERIAL. Holotype – ♂, **S Iran**, Fars / Dast-e Arzan / 29°38' N 51°54' E / 12-5.2005, m.2040 / Leg. D. Gianasso (NMPC); Paratypes: 1 ♀: [**Iran**, Sistan and Baluchestan Province] Beludjistan (h) // Sphenoptera / esfantiarii m. Type (h) / Det. Dr. Obenberger (p) // Popsat! / ad inculta m. / 203 (200) (h) (MKCY); 1 ♀: [**Iran**, Sistan and Baluchestan Province] Beludjistan (h) // Beludjistan: / Saravan, IV.1950, / Salavatian lgt. in coll. / Dept. gen. des Recherches / d'Agriculture, Teheran (h) // popsat! (p, red paper) (NMPC); 1 ♀: **S. Iran**, Hormozgan / 10 km SE di Saadatabad / m. 830, 16.4.2007 / Leg. D. Gianasso (MNCA).

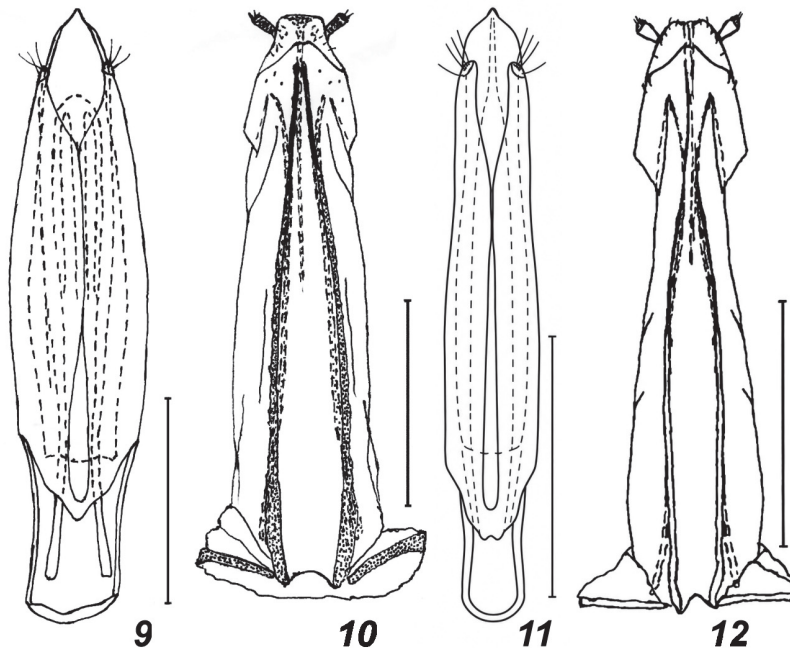
DESCRIPTION. *Body* (Figs 5, 6) large, length 13.9–16.3 mm (holotype 14.2 mm), width 5.4–6.6 mm (holotype 5.5 mm), robust, 2.5–2.6 times as long as wide, dorsally dark bronzy, sometimes with nearly indistinct reddish tint, ventral surface black. Dorsal surface completely glabrous except of few short whitish setae in anterior half of frons, ventral surface with numerous short and thin barely distinct setae. Ventral surface with vax cover, medially smoothed, laterally dense, somewhere hiding integument.

*Head* as wide as or barely narrower than anterior margin of pronotum, eyes moderately convex, not protruding beyond head outline. Clypeus narrowly semicircular, moderately transversal, supraantennal keels distinct, far not reaching inner margins of eyes, frons moderately convex, slightly depressed along middle, with very fine rounded reliefs at the level of upper one third of eyes (in frontal aspect). Surface with moderately big and rough irregular macropunctures, somewhat condensed anteriorly and along inner margins of eyes; micropunctuation sparse, very superficial and nearly indistinct. Vertex in 2.0–2.1 times as wide as diameter of eye. Antennae in female 1.4–1.55 times as long as vertical diameter of eye, serrate starting from slightly longitudinal fourth antennomere, following antennomeres distinctly transverse; in male holotype antennae broken, only four basal antennomeres presented.

*Pronotum* 1.65–1.70 times as wide as long, widest near sharp posterior angles or just before them, nearly regularly arcuately narrowed to anterior angles, anterior margin distinctly protruded medially, finely sinuate near anterior angles, without edging groove, posterior margin bisinuate with moderately wide medial lobe almost straightly cut before scutellum. Lateral keels nearly straight, reaching approximately anterior one sixth of pronotum, almost completely visible from above. Disc convex, surface distinctly and densely micropunctated, macropunctures rough and dense, somewhat bigger than in head, distributed rather evenly. Scutellum pentagonal with rounded lateral angles, with micropunctures similar to those in pronotum.

*Elytra* 1.75–1.90 times as long as wide, widest just behind humeri, sides barely sinuately slightly narrowed or subparallel to approximately posterior two fifth of length, then more abruptly very slightly convexly, distally barely sinuately or nearly straightly narrowed to apices, each elytron with short sharp sutural tooth and more or less distinct lateral tooth or angular fold. Elytra convex, narrowly triangularly flattened along anterior half of suture, surface with rows of hyphen-shaped punctures, medially situated on bottom of rather deep rounded punctures, intervals flattened, surface with irregular moderately dense and rather small macropunctures and dense micropunctures somewhat less distinct than in pronotum.

*Prosternal* process slightly depressed, laterally bordered with row of deep longitudinal punctures partly fused, medially with few rather big and deep punctures. Sternum and base of first visible ventrite moderately depressed along middle. Hypomera with big dense rounded irregular punctures, sternum laterally with dense somewhat smaller irregular punctures and oblique wrinkles, medially with sparser and smaller punctures, first visible ventrite with several longitudinal punctures, structure smoothed backwards and in anal ventrite nearly indistinct. Ventral surface with dense but barely visible micropunctures. Hind margin of metacoxae slightly bisinuate, with shallow incisions near femoral base and near lateral angle.



Figs 9 – 12. *Sphenoptera (Deudora)* spp., aedeagus and ovipositor. 9 – *S. (D.) volkovitshi* sp. n., paratype, Iran; 10 – *S. (D.) volkovitshi* sp. n., paratype, Iran; 11 – *S. (D.) korotyaevi* sp. n., holotype; 12 – *S. (D.) korotyaevi* sp. n., paratype. 9, 11 – aedeagus; 10, 12 – ovipositor. Scale bars = 2 mm.

**SEXUAL DIMORPHISM.** In male protibiae strongly incurved, mesotibiae slightly incurved with approximately rectangular tooth on inner margin apically, metatibiae nearly straight with sinuate inner margin and with sharp tooth somewhat proximally of apex. In female protibiae slightly incurved, mesotibiae and metatibiae nearly straight with sinuate inner margin. Anal ventrite in male narrowly cut distally with fine medial incision, in female rather narrowly rounded distally.

*Aedeagus* as in Fig. 11.

*Ovipositor* as in Fig. 12.

**DIAGNOSIS.** The new species is close to the *Deudora* species characterized by a rather robust body, by lack of the fringing along the anterior margin of the pronotum, and by generally

similar characters of sexual dimorphism. These are *S. (D.) manifesta* Jakovlev 1900 (Fig. 7) distributed in Transcaucasia, Turkey and Iran (Kalashian, 2016) and *S. (D.) inculta* Obenberger, 1929 (Fig. 8) described from Iranian provinces Luristan, Ilam and Isfahan (Obenberger, 1929, 1930); type locality of the species is “Luristan” according to the lectotype label (Kalashian *et al.*, 2005); the species found also in Semnan Province of Iran and in Turkey (see Remarks below). From both species *S. (D.) korotyaevi* **sp. n.** differs by coarser and denser nearly evenly distributed macropunctures on the pronotum, in *S. (D.) inculta* macropunctures on the medial portion of the pronotal disk are sparse and small, rather big and dense laterally, in *S. (D.) manifesta* macropunctuation on the pronotum forms three longitudinal stripes of condensed punctures: one along the middle and pair of stripes approximately equidistant between the midline and the lateral margins. In addition, *S. (D.) manifesta* differs from the new species by uneven elytra with convex odd and flattened even intervals on disk and by the lateral keels of pronotum slightly but distinctly sinuate just before the posterior angles.

DISTRIBUTION. South Iran: Hormozgan, Fars and Sistan and Baluchestan Provinces.

ETYMOLOGY. The new species is named after my good friend, famous specialist on Curculionioidea, Editor in Chief of Entomological Review Dr. Boris Korotyaev (ZIN) with sincere gratitude for continued cooperation and assistance in my work on beetles and in commemoration of the 75th anniversary.

REMARKS. *S. (D.) inculta* previously known from Iran, reported here from Turkey for the first time: ♂, TURKEY, Bitlis vil.[layet] (ca 20 km NE) Tatvan, 38°28' N 42°19' E; 1800 m, 29.IV.-2.VII.2003, Jiří Hájek & Josef Hotový leg. Newly recorded also from Semnan province: IRAN (Semnan [Province]) / Sâh Kûh range NW Abr / 36°43'01"N 55°03'08"E / 19-23.V 2010 1865 m / D. Baiocchi leg.

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#### REFERENCES

- Kalashian, M.Ju. 2016. Tribe Sphenopterini Lacordaire, 1857. P. 470–494. In: Löbl, I. & Löbl, D. (Eds.), *Catalogue of Palaearctic Coleoptera Vol. 3. Scarabaeoidea – Scirtoidea – Dascilloidea – Buprestoidea – Byrroidea. Revised and Updated Edition*. Brill, Leiden, Boston.
- Kalashian, M.Yu. & Karagyan, G.H. 2016. Two new species of *Sphenoptera* Dejean, 1833 (Coleoptera: Buprestidae: Chrysochroinae) from South-West Asia. *Acta Entomologica Musei Nationalis Pragae*, 56(1): 17–22. DOI: 10.5281/zenodo.4503889

- Kalashian, M. & Kubáň, V. 2025. A new species of the genus *Sphenoptera* subgenus *Deudora* (Coleoptera: Buprestidae) from Eastern Mediterranean. *Zoosystematica Rossica*, 34(1): 54–58. DOI: 10.31610/zsr/2025.34.1.54
- Kalashian, M.Yu., Volkovitsh, M.G. & Niehuis, M. 2005. Taxonomic notes on some Palearctic species of *Sphenoptera* from subgenera *Deudora* and *Sphenoptera* s. str. (part) (Coleoptera: Buprestidae). *Zoosystematica Rossica*, 14(1): 87–100.
- Obenberger, J. 1929. Revision der Sphenopteren-Untergattung *Deudora* B. Jakovlev. *Coleopterologisches Centralblatt*, 4(1929-1930): 10–55, 111–130.
- Obenberger, J. 1930. Revision der Sphenopteren-Untergattung *Deudora* B. Jakovlev. *Coleopterologisches Centralblatt*, 4(1929-1930): 233–255.

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