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THE DESCRIPTION OF A NEW *BRUCHOPHAGUS* SPECIES (HYMENOPTERA,
CHALCIDOIDEA, EURYTOMIDAE), DEVELOPING IN SEEDS OF
MELILOTUS OFFICINALIS (L.) DESCR. (FABACEAE) IN IRAN

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The new species, *Bruchophagus ayadi* sp.n., is reared from seed pods of *Melilotus officinalis* (L.) Desr. (Fabaceae) in Iran (Lorestan). The new species is close to *B. platypterus* (Walk.), but differs by roundish abdomen and very gibbous, almost globular (in lateral view) mesosoma. These species can be also differentiated by some biological features. The host plant of *B. platypterus* is *Lotus corniculatus* L., whereas the new species is reared from *Melilotus officinalis* (L.) Desr. Holotype of *Bruchophagus ayadi* sp.n. is deposited in the collection of I.I. Schmalhausen Institute of Zoology of National Academy of Sciences of Ukraine (Kyiv).

Key words: *Bruchophagus*, Eurytomidae, chalcid wasps, *Melilotus*, Iran.

Опис нового виду роду *Bruchophagus* (Hymenoptera, Chalcidoidea, Eurytomidae), що виведено з насіння буркуна лікарського *Melilotus officinalis* (L.) Desr. (Fabaceae) в Ірані

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Новий вид – *Bruchophagus ayadi* sp.n. виведено з насіння буркуна лікарського *Melilotus officinalis* (L.) Desr. (Fabaceae) в Ірані (провінція Лорестан). *Bruchophagus ayadi* sp.n. близький до виду *B. platypterus* (Walk.), але відрізняється опуклою, майже круглою (вид збоку) мезосомою. Крім того, ці види розрізняються особливостями біології. Господарем *B. platypterus* є *Lotus corniculatus* L., а нового виду – *Melilotus officinalis* (L.) Desr. Голотип *Bruchophagus ayadi* sp.n. зберігається в колекції Інституту зоології ім. І.І. Шмальгаузена Національної академії наук України (Київ).

Ключові слова: *Bruchophagus*, Eurytomidae, Chalcidoidea, *Melilotus*, Іран.

Описание нового вида рода *Bruchophagus* (Hymenoptera, Chalcidoidea, Eurytomidae), виведеного из семян донника лекарственного *Melilotus officinalis* (L.) Desr. (Fabaceae) в Иране

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Новый вид – *Bruchophagus ayadi* sp.n. выведен из семян донника лекарственного *Melilotus officinalis* (L.) Desr. (Fabaceae) в Иране (провинция Лорестан). Новый вид близок к *B. platypterus* (Walk.), но отличается выпуклой, почти круглой (вид сбоку) мезосомой. Указанные виды также различаются особенностями биологии. Хозяином *B. platypterus* является *Lotus corniculatus* L., а нового вида – *Melilotus officinalis* (L.) Desr. Голотип *Bruchophagus ayadi* sp.n. хранится в коллекции Института зоологии им. И. И. Шмальгаузена Национальной академии наук Украины (Київ).

Ключевые слова: *Bruchophagus*, Eurytomidae, Chalcidoidea, *Melilotus*, Иран.

Introduction. The genus *Bruchophagus* (Hymenoptera, Eurytomidae) comprises 34 species of phytophagous, seed-feeding chalcid wasps in the Palaearctics; 19 species were recorded previously on the territory of Iran (Zerova and Seryogina, 1994; Zerova, 1995; Saghaei et al., 2018; Noyes, 2019). The genus was subdivided on 2 subgenera, *Bruchophagus* s. str. and *Parabruchophagus*, but recently, the status of the subgenus *Parabruchophagus* was raised to the genus level (Zerova, 2011).

In the world fauna the species of genus *Bruchophagus* are associated with legume plants of the family Fabaceae (genera *Astragalus*, *Caragana*, *Cladrastis*, *Coronilla*, *Dorycnium*, *Glycyrrhiza*, *Hedysarum*, *Hippocrepis*, *Lotus*, *Medicago*, *Onobrychis*, *Omonis*, *Oxytropis*, *Robinia*, *Sesbania*, *Sophora*, *Smirnovia*, *Trifolium*, *Trigonella*, *Vicia*, *Zosima*), family Apiaceae (genus *Prangos*) and Polygonaceae (genus *Rumex*), and the species of the genus *Parabruchophagus* are associated with the family Liliaceae (genus *Eremurus*) (Zerova and Seryogina, 1994; Zerova, 2011).

In the material received by Mr. A. Al-Sendi and Dr. S. E. Sadeghi in Iran, we identified a new species of the genus *Bruchophagus* (Hymenoptera, Eurytomidae) (Zerova and Seryogina, 1994; Zerova, 1995). This new species was reared from small seed pods of yellow seed clover *Melilotus officinalis* (L.) Desr. (Fabaceae) collected in south Province of Iran (Lorestan) by F. Pirouzi. It was found that it's the first record of association of seed-feeding chalcid wasp with seeds of *Melilotus officinalis* (L.) Desr.

The new species is very peculiar by a short and almost round mesosoma and metasoma. The length of fore wing is also very unusual, which is as long as the body length. The description of a new species is given below.

Materials and methods

Comparative collection of the genus *Bruchophagus* (Eurytomidae), deposited at the I.I. Schmalhausen Institute of Zoology of National Academy of Sciences of Ukraine (SIZU), was studied. Original microphotographs of *B. ayadi* sp. n. were taken using a Leica Z16 APO stereo-microscope equipped with a Leica DFC 450 camera and processed with LAS V3.8 software. Material (holotype) is deposited in the collection of SIZU (Kyiv, Ukraine).

Results: description of a new species

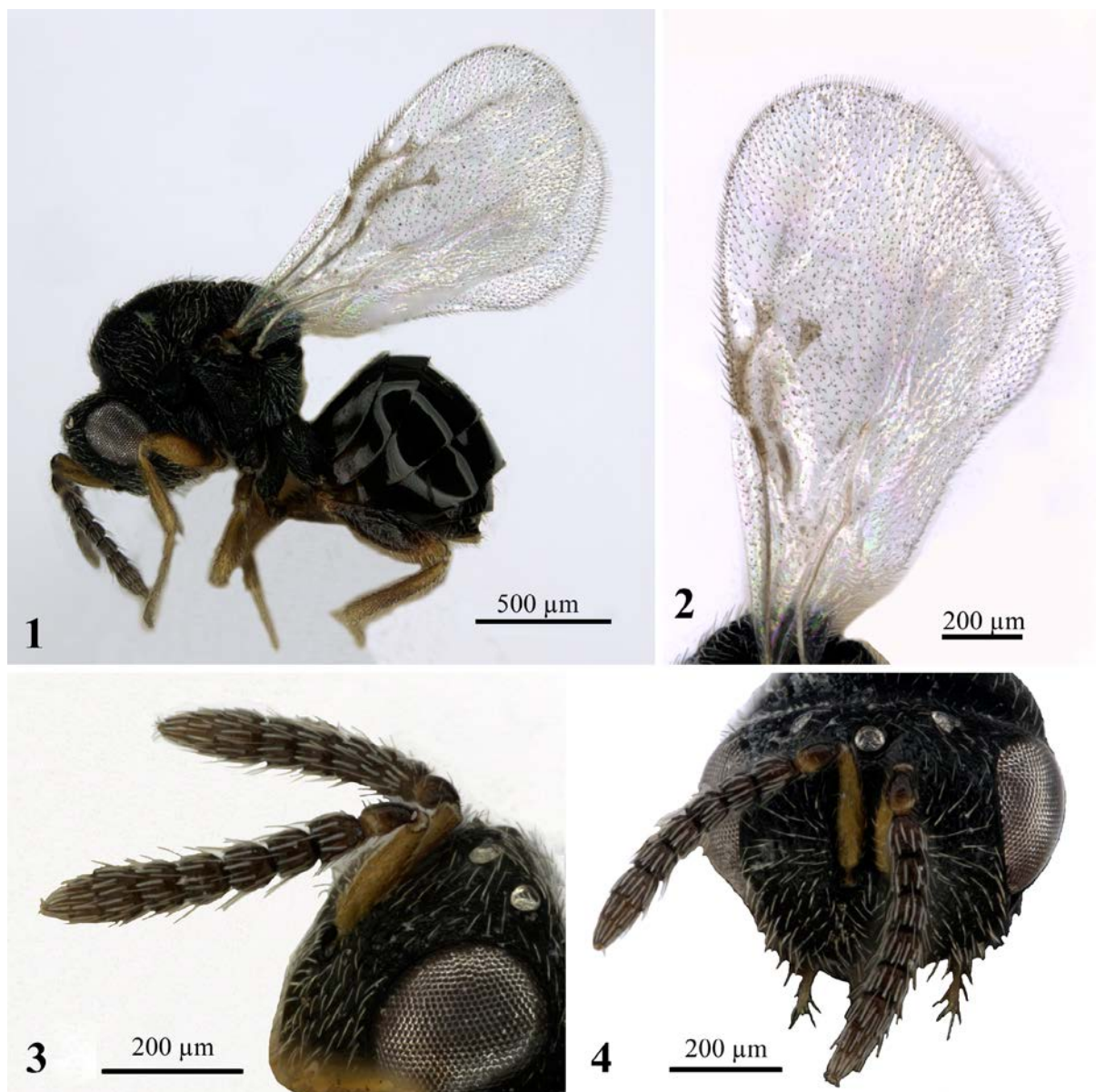
Bruchophagus ayadi Zerova et Fursov, sp. n.

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Material. Female (♀), holotype: Iran, Lorestan, Darizhan region, coll. VII. 2011, reared VII. 2011, ex seed pods *Melilotus officinalis* (coll. F. Pirouzi). Deposited in the collection of I. I. Schmalhausen Institute of Zoology of National Academy of Sciences of Ukraine (Kyiv).

Female (Figs. 1–4). Body length 1.2 mm. Very small species with gibbous, almost globular mesosoma and short metasoma. Body black, all coxa black, middle and hind femora mostly yellow, but darkening in the middle, tibia and tarsi yellow, scape, pedicel and flagellum brownish-yellow, fore wing hyaline, veins dark yellow.

Head in dorsal view stout, wider than its length (8 : 2); in frontal view wider than its height (10 : 7.5); POL longer than OOL (4.0 : 1.5); temple very short, much shorter than length of head (dorsally). Eyes bare, ratio of malar space to length of eye as 35 : 43; clypeus external margin straight; post-genal keel absent. Face and occiput with fine umbilicate puncture and short but thick pubescence; facial depression very shallow. Antenna inserted some lower the middle of face, scape long, almost reaching mid ocellus, longer than its width in ration 35 : 8 (in basal part); annellus strongly transverse, pedicellus some longer than its distal width (10 : 8); 1–3-d flagellar segments elongated, 4–5th flagellar segments some shorter, nearly quadrate; the first segment – the longest (12 : 8). Funicle pubescent, sparse and short; length of hairs equals to 1.3–1.5 length of funicular segments.



Figs. 1-4. Female of *Bruchophagus ayadi*, sp. n.: 1 – lateral view; 2 – head and antennae; 3 – fore wing; 4 – head, frontal view.

Mesosoma bulging, almost globular (in profile), pronotum (dorsally) short, much broader than length (7.0 : 1.5); mesoscutum massive, broader than its length (7.5 : 4.8); scutellum almost round; dorsal surface of mesosoma with distinct but shallow umbilicate sculpture, mesepisternum and mesepimeron with thin sculpture (punctuation). Propodeum at the middle part with very thin punctuations. Hind coxa without distinct sculpture. Fore wing disc very long, almost as long as body length, basal 1/3 of fore wing disc bare, last part with very short brownish pubescence. Veins dark yellow; marginal, postmarginal and radial vein length in ratio 16 : 17 : 13.

Metasoma globular, surface of metasomal tergites shining; epipygium very short, 5th tergite the longest.

Diagnosis. *B. ayadi* sp.n. is differentiated from some other *Bruchophagus* species with short body (*B. roddi* Guss, *B. platypterus* (Walk.), and *B. evolans* Szel.) (Zerova and Seryogina, 1994; Zerova, 1995) by globular mesosoma and metasoma, and very long fore wing disc which is almost as long as body length (in profile). These species are differentiated by some biological features. The

host of *B. platypterus* is *Lotus corniculatus* L., for *B. roddi* Guss. — *Medicago sativa* L., *M. falcata* L., *M. glandulosa* (Mert. et Koch) David., *M. lupulina* L., for *B. evolans* Szél. — *Medicago orbicularis* (L.) Bartalinin (Fabaceae), and for a new species is *Melilotus officinalis* (L.) (Zeroва, 1995; Saghaei et al., 2018; Noyes, 2019).

Etymology. The species is named after Iraqi–Iranian entomologist Ayad Kadhim Rafea Alsendi.

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