

Some interesting and new records of leaf beetles (Coleoptera: Chrysomelidae) from Pakistan

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We have studied 16 species of Chrysomelidae with distribution notes. Seven species were recorded for the first time in the country. These species encompass four subfamilies: *Alticinae*, *Chrysomelinae*, *Cryptocephalinae*, and *Galerucinae*. The list includes eight species, four subspecies, and three at the genus level: *Entomoscelis adonidis*; *Gastrophysa polygoni polygoni* Linnaeus, 1758; *Clytra* (*Clytraria*) *afghanica* Reineck, 1937; *Clytrasoma conformis*, Lacordaire, 1848; *Clytrasoma palliata* Fabricius, 1801; *Madurasia undulatovittata* (Motschulsky, 1866); *Monolepta sexlineata* Chujo, 1938; *Hermaephaga* (*Orthocrepis*) *ruficollis* (Lucas, 1847); *Nonarthra variabilis* Baly, 1862; *Chrysolina caeruleans bella* Jacoby, 1890; *Clytra atraphaxidis atraphaxidis* (Pallas, 1773); *Miochira signaticollis signaticollis* (Kollar & L. Redtenbacher, 1844); *Theone octocostata cf. woehrli*; *Chrysolina* (*Bittotaenia*) *cf. mellyi* (Stal, 1857); and *Diapromorpha cf. turcica* Fabricius, 1801. Seven species and four subspecies have been recorded for the first time, while three subspecies are closely related. The other three species are interesting with their new distribution.

Key words: Coleoptera, Chrysomelidae, Meloidae, New records, Distribution, Pakistan.

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INTRODUCTION

The study is a continuation of the series by Nadein *et al.* (2012), where 19 species were reported from Pakistan, with eight species recorded as new for the country. In the last decade, no work has been accomplished in Pakistan. Maulick (1926; 1936) worked on Chrysomelidae from the Indian sub-continent, revealing a large number of species with a key to the groups of large genera. Schöeller (2020) studied the

Palearctic Cryptocephalinae from countries of the Middle East to Eastern Europe and Palearctic, including Pakistan, listing 45 new records from these countries, including three species: *Clytra afghanica*; *Miochira montana montana* Jacoby, 1895; and *Tituboea daccordii* Lopatin, 1982, reported from Pakistan as new records. The species in old literature (Hashmi & Tashfeen, 1992; Chaudhry *et al.*, 1966) do not exist in the museums of Pakistan; therefore, the lack of exact distribution needs to be addressed.

The current study encompasses 12 species and subspecies and their distribution. The remaining species and subspecies are marked as cf. for confirmation. A summary of the species with a detailed distribution is presented.

MATERIALS AND METHODS

Some species are housed in the collection of Jan Bezdek (Czech Republik) and the first author collection (ZACP).

RESULTS

Family Chrysomelidae Latreille, 1802
Subfamily Chrysomelinae Latreille, 1802
Tribe Doryphorini Motschulsky, 1860
Subtribe Chrysolinina S.-H. Chen, 1936

***Chrysolina caerulans bella* (Jacoby, 1890)**

Pakistan, Beshgram, Chitral, KPK, 3.vi.2021, leg. Misbahuddin, 1 male.

Note: The species is recorded from Kashmir and Pakistan (Löbl & Smetana, 2010).

***Chrysolina (Bittotaenia) cf. mellyi* (Stal, 1857)**

Pakistan, Malamjabba, Swat, KPK, 4.vii.2017, leg. Zubair.

Note: The species *Chrysolina (Bittotaenia) cf. mellyi* (Stal, 1857) is identified only at the genus level, and the species is close to *mellyi*. The species is recorded from Pakistan (Löbl & Smetana, 2010).

Tribe Chrysomelini Latreille, 1802
Subtribe Gastrophysina Kippenberg

***Gastrophysa polygoni polygoni* Linnaeus, 1758**

Pakistan, Balochistan, Ziarat, 28.vi.2023, leg. Zubair, 1 male.

Note: Two subspecies have been listed in Löbl & Smetana Catalog (2010): *Gastrophysa polygoni elongata* Jolivet, 1951, is listed from Afghanistan and China, whereas *Gastrophysa polygoni polygoni* is listed from Europe, Turkey, and western Siberia. Because of its small size and being in the Palearctic region of Pakistan, the subspecies assigned here is *Gastrophysa polygoni polygoni* Linnaeus, 1758. *Gast. elongata* is listed as a synonym of *polygoni* in the new version of the Pal. Catalogue. (Jan Bezdek, person.comm) new record for Pakistan.

Tribe Entomoscelini Reitter, 191

***Entomoscelis adonidis* Pallas, 1771**

N. Pakistan, Khyber-Pakhtunhwa Province, Bajaur Agency, 20.vii.2023, leg. Dawood, 1 male.

Note: The species listed are from Pakistan (Löbl & Smetana, 2010). Kippenberg and Mikhailov (2020) only had one specimen from Pakistan at disposal.

Subfamily Cryptocephalinae Gyllenhal, 1813

Tribe Clytrini

***Clytra (Clytraria) afghanica* Reineck, 1937**

Pakistan, KPK, Swat, Marghazar, 10.vii.2010, leg. Zubair, 1 male.

Note: Described from Pakistan (Schöeller, 2020).

***Clytra atraphaxidis atraphaxidis* (Pallas, 1773)**

Pakistan, Ziarat, Balochistan, 26.vi.2023, leg. Zubair, 1 male.

Note: The species described is from Southern Europe, Asia Minor, Central Asia (extended Iran, Afghanistan), Mongolia, and Korea (Löbl & Smetana, 2010). New record for Pakistan.

***Clytrasoma conformis* Lacordaire, 1848**

Pakistan, Azad Kashmir, Kotli, 20.vi.2016, leg. Tahir Mahmood.

Note: Medvedev (2005) studied the Oriental Clytrinae with taxonomic reconstruction and resurrected the species. The two species *Clytrasoma conformis* Lacordaire, 1848, and *C. palliata* Fabricius, 1801 are recommended as species and differentiate between them with characteristics.

The species listed are from Himachal Pradesh and Kashmir (Löbl & Smetana, 201A new). New record for Pakistan.

***Clytrasoma palliata* Fabricius, 1801**

Pakistan, Azad Kashmir, Kotli, 20.vi.2016, leg. Tahir Mahmood.

Note: The species described is from Asia; Chinese states (Löbl & Smetana, 201A new). New record for Pakistan.

***Diapromorpha cf. turcica* Fabricius, 1801**

Pakistan, Azad Kashmir, Kotli, 20.vi.2016, leg. Tahir Mahmood.

Note: The species retain as *D. cf. turcica* and not listed in Löbl & Smetana (2010). Jacoby (1908) described this species with its three variables of that third var with spots of thorax resemble of the species.

***Miochira signaticollis signaticollis* (Kollar & L. Redtenbacher, 1844)**

Pakistan, Malamjabba, Swat, KPK, 5.vii.2023, leg. Zubair, 1 male.

Note: The subspecies described from India, Nepal and Afghanistan and not listed in Löbl & Smetana (2010). Jacoby (1908) described three species of *Miochira*, *M. gracilis* Lacord; *M. montana* Jac and *M. indica* Jac from Sikkim, Himalaya and Burma respectively. Schöeller (2020) reported under the name of *Miochira montana*

montana Jacoby, 1895. New record for Pakistan.

Subfamily Galerucinae Latreille, 1802
Tribe Galerucini Latreille, 1802

Theone octocostata cf. (beludschistanica or T.o. woehrli)

Pakistan, Beshgram, Chitral, KPK, 5.vii.2021, leg. Misbahuddin, 1 female.

Note: In Löbl & Smetana Catalogue (2010), seven subspecies listed three subspecies from Pakistan, *T.o. beludschistanica* Mandl, 1970; *T.o. octocostata* Weise, 1912 and *T.o. woehrli* Mandl, 1970. The specimen studied as female and found the following characters (according to Mandl, 1968,1970) which most probably related to *T.o. woehrli*. Michael Geiser identified it with two subspecies possible as *T.o. beludschistanica* or *T.o. woehrli* (Person. commun).

***Theone* species (female):**

Measurement: 10 mm; head, antennae, legs, scutellum black, pronotum, elytra dark brown; head rounded, vertex raised with rounded shiny median part, coarse punctures, a median line depressed, lateral margin of vertex not shiny, black, smooth; antennal tubercles raised, antennal length ahead of elytral shoulders, scape long, slender, 2nd segment small, slender, 3rd segment long but shorter than 4th segment, rest of segment slender; pronotum transverse, broader than long, narrow at middle, disc depressed with coarse, dense punctures, anterior margin scarcely depressed just behind of that, lateral margin irregular rounded; scutellum depressed, broad, lobate shiny, black; elytra connate, without distinct humeral shoulders, lateral margin more emerginate, expanded posteriorly, elytral stria margin distinct, three more stria margin raised with distinct gap, explanate margin broad, intervals with deep, coarse punctures; pygidium transverse, narrow with straight apex.

Female genitalia: Spermatheca with proximal lobe swollen scarce, narrow in the middle then cylindrical distally.

Subtribe Luperina Gistel, 1848

***Madurasia undulatovittata* (Motschulsky, 1895)**

Pakistan, Thar, Mithi, Sindh Province, 7.viii.2013, leg. Zubair 1ex.

Note. Prathapan (2016) listed this species from Africa, Asia, Nepal, Sri Lanka and Yemen. *Madurasia obscurella* Jacoby, 1896 is synonym of *undulatovittata* (Prathapan, 2016). New record for Pakistan.

***Monolepta sexlineata* Chujo, 1938**

Pakistan, Thar, Mithi, Sindh Province, 7.viii.2013, leg. Zubair 1ex.

Note. The species listed from Pakistan (Beenen, 2010; Löbl & Smetana, 2010).

***Hermaeophaga (Orthocrepsis) ruficollis* (Lucas, 1847)**

Pakistan, Thar, Mithi, Sindh Province, 7.viii.2013, leg. Zubair 2ex.

Note. The species listed in the Abdel-Dayem et al., (2020) from Pakistan.

Subfamily Alticinae

***Nonarthra variabilis* Baly, 1862**

Pakistan, Ziarat, Balochistan, 2.vi.2014, leg. Zubair 1 ex; Murree, Punjab, Pakistan, 4.vii.2023, leg. Zubair.

Note: Löbl & Smetana (2010) have not listed this species from Pakistan. New record for Pakistan.

Remarks: The faunal diversity of leaf beetles of Pakistan becoming increase after long silence. The sounds of work needs to determine precisely searching, identification with concise decision because many species

or sub species create problem when one group worked on way to identification while other group make own sense, like *Coptocephala crassipes* with subspecies *vavilovi*, make no sense if the specimen compared with holotype of *C.vavilovi* (by Jan Bezdek) and could not make decision therefore in our country species has big chaos for the confirmed subspecies therefore we eliminated the subspecies from the list (Pers. Comm., Jan Bezdek).

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