



# *Entomofauna*

ZEITSCHRIFT FÜR ENTOMOLOGIE

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Band 36, Heft 40: 529-536

ISSN 0250-4413

Ansfelden, 2. Januar 2015

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## **A study of Coleoptera (Insecta) from the rice fields and surrounding grasslands of northern Iran**

**Hassan GHAHARI, Hamid SAKENIN, Hadi OSTOVAN & Mehrdad TABARI**

### **Abstract**

The fauna of Coleoptera from the rice fields and surrounding grasslands of northern Iran is studied. In total 27 species from 10 families Alleculidae (2), Anthicidae (6), Cantharidae (3), Cleridae (2), Elmidae (3), Glaphyridae (4), Elateridae (3), Helophoridae (2), Silphidae (1), and Spercheidae (1) were collected and identified.

### **Zusammenfassung**

Die Käferfauna von Reisfeldern und umgebendem Grasland des nördlichen Iran wurde in dieser Arbeit untersucht. Insgesamt konnten 27 Arten der 10 Familien Alleculidae (2), Anthicidae (6), Cantharidae (3), Cleridae (2), Elmidae (3), Glaphyridae (4), Elateridae (3), Helophoridae (2), Silphidae (1), and Spercheidae (1) gesammelt und bestimmt werden.

### **Introduction**

Coleoptera is the largest order that contains 40% of all described insect species (more than 350,000 species), and new species are constantly discovered. These insects live throughout the world (except Antarctica), but most of them occur in the tropics (WHITE

1983; LAWRENCE & BRITTON 1994). The oldest fossils of Coleoptera are from the Lower Permian (about 265 million years ago) (PAKALUK & SLIPINSKI 1995). They range in size from minute featherwing beetles (Ptiliidae, 0.3 mm long) to the giant Goliath and Hercules beetles (Scarabaeidae, over than 15 cm long) (ARNETT 1973; BORROR CORRECT FONT et al. 1989). Beetles have variable life styles, the majority are terrestrial herbivores, though many families are predators, some are parasitic, in both terrestrial and aquatic environments. Among the herbivores, there are seed, stem, leaf, root, gall, and plant litter specialists. Some species inhabit ant and termite colonies, others make use of dung or carrion (PONOMARENKO 1969; CROWSON 1981; LUFF 1998; BOUCHARD 2004). Some of the coleopteran families are serious agricultural and forest pests and some of them have effective role in biological control of pests.

The diversity of organisms inhabiting rice fields includes a rich fauna and flora (FERNANDO 1993). Rice fields, together with their contiguous aquatic habitats and dry land comprise a rich mosaic of rapidly changing ecotones, harboring a rich biological diversity, maintained by rapid colonization as well as by rapid reproduction and growth of organisms (FERNANDO 1996; BAMBARADENIYA & AMERASINGHE 2003). The Coleoptera of Iranian rice fields have been studied rather well (e.g. Ghahari & Tabari 2008; SAKENIN et al. 2008; GHAHARI et al. 2009a, b, 2010a, b, 2011; JEDRYCZKOWSKY et al. 2010), but these insects are very diverse and carrying on the faunistic surveys is necessary. In this paper the species diversity of ten families (Alleculidae, Anthicidae, Cantharidae, Cleridae, Elmidae, Glaphyridae, Elateridae, Helophoridae, Silphidae, and Spercheidae) is studied.

## Materials and Methods

The specimens were collected under stones and on the ground by hand and knocked down, by sweeping the vegetation, and by pitfall traps from different rice fields of Golestan, Guilan and Mazandaran provinces (northern Iran, South of Caspian Sea). The information containing the specific name, describer and description date, locality and date of collection, [this is the same as 'locality'] [I do not see any "determinant" in the list below], and number of specimens (in brackets) was given.

## Results

A total of 27 species of Coleoptera from 10 families which were collected from the rice fields and surrounding grasslands of northern Iran are presented below. The list of species is given below alphabetically.

### Family *A l l e c u l i d a e*

#### Genus *H y m e n a l i a* MULSANT 1856

#### *Hymenalia (Hymenalia) reticulata* SEIDLITZ 1896

*M a t e r i a l e x a m i n e d* : Golestan province, Azadshahr, Narges-chal, (2), April 2013.

**Genus *Mycetocharina* SEIDLITZ 1891**

***Mycetocharina (Alleculopsis) rufotestacea* REITTER 1898**

Material examined: Mazandaran province, Amol, Ejbar-kola, (1), July 2012.

**Family Anthicidae**

**Genus *Anthicus* PAYKULL 1798**

***Anthicus crinitus* LA FERTE-SENECTERE 1849**

Material examined: Golestan province, Gonbad, Aghband, (2), April 2013.

***Anthicus urganensis* PIC 1896**

Material examined: Guilan province, Lahijan, Kushal, (1), September 2012.

**Genus *Cyclodinus* MULSANT ET REY 1866**

***Cyclodinus debilis* (LA FERTE-SENECTERE 1849)**

Material examined: Mazandaran province, Babol, Nakh-kola, (1), August 2012.

***Cyclodinus semiopacus* (REITTER 1887)**

Material examined: Golestan province, Gorgan, Nahar-khoran, (2), June 2013.

**Genus *Steropes* BOISDUVAL 1832**

***Steropes caspius* STEVEN 1806**

Material examined: Mazandaran province, Sari, Pasha-kola, (1), October 2012.

**Genus *Leptaleus* LA FERTE-SENECTERE 1849**

***Leptaleus klugi* (LA FERTE-SENECTERE 1849)**

Material examined: Guilan province, Amlash, Shirchak, (3), September 2012.

**Family Cantharidae**

**Genus *Cantharis* LINNAEUS 1758**

***Cantharis forticornis* HEYDEN 1885**

Material examined: Golestan province, Kordkoy, Gorji-mahalleh, (1), summer 2013.

**Genus *Metacantharis* BOURGEOIS 1886**

***Metacantharis raptor* BALLION 1870**

Material examined: Guilan province, Bandar-Anzali, Jefrood, (2), September 2012.

**Genus *Rhagonycha* ESCHSCHOLTZ 1830**

***Rhagonycha fulva* SCOPOLI 1763**

Material examined: Mazandaran province, Neka, Shorab-sar, (2), October 2013.

## Family *Cleridae*

### Genus *Trichodes* HERBST 1792

#### *Trichodes longissimus* ABEILLE DE PERRIN 1881

Material examined: Golestan province, Gonbad, Masan-kub, (3), April 2013.

#### *Trichodes axillaris* FISCHER DE WALDHEIM 1842

Material examined: Mazandaran province, Qaemshahr, Arateh, (2), September 2013.

## Family *Elmidae*

### Genus *Elmis* LATREILLE 1798

#### *Elmis aenea* (P.W.J. MÜLLER 1806)

Material examined: Mazandaran province, Sari, Sharafdar-kola, (2), October 2012.

#### *Elmis maugetii maugetii* LATREILLE 1802

Material examined: Golestan province, Kordkoy, Mofid-abad, (3), summer 2013.

### Genus *Stenelmis* DUFOR 1835

#### *Stenelmis damascena* REITTER 1907

Material examined: Mazandaran province, Amol, Moozi-kety, (1), July 2012.

## Family *Glyphyridae*

### Genus *Eulasia* TRUQUI 1848

#### *Eulasia chrysopyga* (FALDERMANN 1835)

Material examined: Mazandaran province, Amol, Kherman-kola, (4), July 2012.

#### *Eulasia speciosa* (CHAMPENOIS 1900)

Material examined: Guilan province, Lahijan, Lakmeh-sar, (2), September 2012.

### Genus *Pygopleurus* MOTSCHULSKY 1860

#### *Pygopleurus banghaasi* (REITTER 1895)

Material examined: Golestan province, Gorgan, Zangian, (1), June 2013.

#### *Pygopleurus cyanescens* (REITTER 1890)

Material examined: Guilan province, Amlash, Khasil-dasht, (1), September 2012.

## Family *Elateridae*

### Genus *Ampedus* DEJEAN 1833

#### *Ampedus (Ampedus) turanus* (SEMENOV 1891)

Material examined: Mazandaran province, Sari, Arab-kheyli, (1), October 2012.

***Ampedus (Ampedus) sanguineus sanguineus* (LINNAEUS 1758)**

Material examined: Guilan province, Amlash, Babajan-darreh, (3), September 2012.

**Genus *Dalopius* ESCHSCHOLTZ 1829**

***Dalopius marginatus* (LINNAEUS 1758)**

Material examined: Golestan province, Gorgan, Heydar-abad, (2), June 2013.

**Family *Helophoridae***

**Genus *Helophorus* FABRICIUS 1775**

***Helophorus aquaticus* (LINNAEUS 1758)**

Material examined: Guilan province, Lahijan, Bazar-deh, (2), September 2012.

***Helophorus discrepans* REY 1885**

Material examined: Golestan province, Gorgan, Hashem-abad, (1), June 2013.

**Family *Silphidae***

**Genus *Nicrophorus* FABRICIUS 1775**

***Nicrophorus confusus* PORTEVIN 1924**

Material examined: Mazandaran province, Babol, Kapoor-chal, (2), August 2012.

**Family *Spercheidae***

**Genus *Spercheus* KUGELANN 1798**

***Spercheus emarginatus* (SCHALLER 1783)**

Material examined: Guilan province, Lahijan, Chamandan, (2), September 2012.

## Discussion

According to this research and the previous studies (GHAHARI & TABARI 2008; SAKENIN et al. 2008; GHAHARI et al. 2009a, b, 2010a, b, 2011; JEDRYCZKOWSKY et al. 2010), the fauna of Coleoptera in Iranian rice fields and surrounding grasslands is very diverse. However, this fauna may include a large number of novelties, but specialized field investigations are needed to recognize them. This paper focuses mainly on the families which have not been studied in the rice fields of Iran so far. Of the Iranian Coleoptera, after the checklist of MODARRES AWAL (1997), only the family Nitidulidae was catalogued by Lasoñ & Ghahari (2013); so providing the lists of other coleopteran families is necessary in order to keep it updated. Additionally, in spite of several studies on the insect diversity of Iranian rice fields (especially Coleoptera), there is not any comprehensive list of them.

## Acknowledgements

The authors are grateful to W.B. Jedryczkowski and M. Bunalski (Poland), M. Kesdek (Turkey), V. Novak, J. Ruzicka (Czech Republic), D. Telnov (Lithuania), and R. Rolf (Sweden) for their helps during the research, W.J. Pulawski (California Academy of Sciences) for correcting the English style of the manuscript. This project was supported by Islamic Azad University (Shahre Rey Branch).

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Authors' addresses:

Hassan GHAHARI  
Department of Plant Protection, Shahre Rey Branch  
Islamic Azad University  
Tehran, Iran  
E-mail: hghahari@yahoo.com

Hamid SAKENIN  
Department of Plant Protection, Qaemshahr Branch  
Islamic Azad University  
Mazandaran, Iran  
E-mail: hchelave@yahoo.com

Hadi OSTOVAN  
Department of Entomology, Fars Science & Research Branch  
Islamic Azad University  
Marvdasht, Iran  
E-mail: ostovan2001@yahoo.com

Mehrdad TABARI  
Iran Rice Research Institute  
Mazandaran, Iran  
E-mail: ma\_tabari@yahoo.com

### Buchbesprechung

Marent, T. & F. Jantschke: **Affen der Welt, Welt der Affen.** - Frederking & Thaler Verlag, München, 2014. 240 S.

Als der Textautor Fritz Jantschke vom Verlag das Angebot zu diesem Band bekam, fragte er sich "noch ein Buch über Affen"? Diese Meinung kann man durchaus teilen; dass Jantschke trotzdem den Text verfasste, liegt an den grandiosen Aufnahmen des Schweizer Fotografen Thomas Marent. Von den weltweit etwa 480 bekannten Primatenarten werden über 100 Arten in diesem Bildband dargestellt: überaus ansprechende, z.T. schon künstlerisch gestaltete, faszinierende Aufnahmen in freier Natur. Sie verzaubern uns, weil sie unsere nächsten Verwandten zeigen, ebenso temperamentvoll, verspielt, ruhig, nachdenklich, mit Gesichtsausdrücken, die uns Menschen zum Grübeln bringen (weil wir glauben, sie interpretieren zu können?).

Nach einem kurzen Geleitwort des Fernsehmoderators Dirk Steffens, einem Vorwort von Jane Goodall und einer Einleitung von Fritz Jantschke geht es systematisch mit der Vorstellung der Affen los: Halbaffen, Neuwelt-, Altwelt- und Menschenaffen (nicht die modernste Systematik, aber praktikabel). Die Texte informieren über das Wissenswerteste, wie z.B. Sozialverhalten, Nahrungswahl und Bedrohung. Dazwischen eingestreut sind Spezialseiten, die bestimmte Themen zum Inhalt haben, z.B. Wie kamen die Lemuren nach Madagaskar? Warum brüllen Brüllaffen? Aggression und Intelligenz. Ein überragender, fesselnder, informativer und damit höchst empfehlenswerter Bildband; schade nur, dass der Platz für ein Stichwortverzeichnis nicht mehr gereicht hat.

R. Gerstmeier

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Druck, Eigentümer, Herausgeber, Verleger und für den Inhalt verantwortlich:

Maximilian SCHWARZ, Konsulent f. Wissenschaft der Oberösterreichischen Landesregierung, Eibenweg 6, A-4052 Ansfelden, E-Mail: maximilian.schwarz@liwest.at.

Redaktion: Erich DILLER, ZSM, Münchhausenstraße 21, 81247 München; Germany.  
Roland GERSTMEIER, Lehrstuhl f. Tierökologie, H.-C.-v.-Carlowitz-Pl. 2, 85350 Freising  
Fritz GUSENLEITNER, Lungitzerstr. 51, 4222 St. Georgen/Gusen, Austria.  
Wolfgang SPEIDEL, MWM, Tengstraße 33, 80796 München; Germany.  
Thomas WITT, Tengstraße 33, 80796 München; Germany.

Adresse: Entomofauna, Redaktion und Schriftentausch c/o Museum Witt, Tengstr. 33, 80796 München, Germany, E-Mail: thomas@witt-thomas.com; Entomofauna, Redaktion c/o Fritz Gusenleitner, Lungitzerstr. 51, 4222 St. Georgen/Gusen, Austria, E-Mail: f.gusenleitner@landesmuseum.at



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Jahr/Year: 2015

Band/Volume: [0036](#)

Autor(en)/Author(s): Ghahari Hassan, Sakenin Hamid, Ostovan Hadi, Tabari Mehrdad

Artikel/Article: [A study of Coleoptera \(Insecta\) from the rice fields and surrounding grasslands of northern Iran 529-536](#)