

| | | | |
|---------------------|------|-----------|------------|
| Linzer biol. Beitr. | 43/2 | 1579-1586 | 19.12.2011 |
|---------------------|------|-----------|------------|

A contribution to the knowledge of Tachyporiane group of rove beetles (Coleoptera: Staphylinoidea: Staphylinidae) from Iran

N. SAMIN, H. ZHOU, H. SAKENIN, S. IMANI & J. RASTEGAR

Abstract: One of the four staphylinid groups (Coleoptera: Staphylinidae), Tachyporiane group is studied in this paper. In a total of 24 species from 14 genera (including *Phloeocharis* MANNERHEIM, *Bryophacis* REITTER, *Ischnosoma* STEPHENS, *Lordithon* THOMSON, *Mycetoporus* MANNERHEIM, *Sepedophilus* GISTEL, *Tachinus* GRAVENHORST, *Tachyporus* GRAVENHORST, *Aleochara* GRAVENHORST, *Atheta* THOMSON, *Myrmecopora* SAULCY, *Leptusa* KRAATZ, *Euryalea* MULSANT & REY, *Oxyptoda* MANNERHEIM) and 3 subfamilies (including, Phloeocharinae, Tachyporinae, Aleocharinae) are listed in this paper.

Key words: Coleoptera, Staphylinidae, Tachyporiane Group, Fauna, Iran.

Introduction

Staphylinidae (Coleoptera) is one of the largest families of beetles, with over 46,000 species known worldwide (NEWTON et al. 2001). Rove beetles are known from every type of habitat that beetles occur in, and their diets include just about everything except the living tissues of higher plants. Most rove beetles are predators of insects and other kinds of invertebrates, living in forest leaf litter and similar kinds of decaying plant matter. They are also commonly found under stones, and around freshwater margins. Several types are known to live on ocean shores that are submerged at high tide, several species have adapted to live as inquilines in ant and termite colonies, and some live in mutualistic relationships with mammals whereby they eat fleas and other parasites, benefiting the host. A few species, notably those of the genus *Aleochara*, are parasitoids of other insects, particularly of certain fly pupae. Some staphylinids have been shown to feed occasionally on slugs and snails, although apparently they are not specialized to do so as are Cychrini (Coleoptera: Carabidae), nor have slugs and snails been shown to be an important part of the diet as in some Silphinae (Coleoptera: Silphidae). However, a strange, almost commensal relationship with snails has evolved in some Asian Aleocharinae such as *Zyras sagax* CAMERON, in which the adult beetles enter the mantle cavity of *Ryssota* (Pulmonata: Helicarionidae) and perhaps feed on mucus or feces of the snail (NEWTON 1990; BEUTEL & LESCHEN 2005).

Family Staphylinidae is divided into four taxonomic groups including, Omaliine, Tachyporine, Oxyteline and Staphylinine. Tachyporine group included 6 subfamilies, Aleocharinae, Habrocerinae, Olisthaerinae, Phloeocharinae, Tachyporinae and Trichophyinae

(LAWRENCE & NEWTON 1982; NAOMI 1985; HANSEN 1997). The "staphylinid group" comprises several families, most of which are now considered to have been derived from within Staphylinidae (BALLARD et al. 1998; HANSEN 1997; LAWRENCE & NEWTON 1982; NEWTON & THAYER 1995). However, their exact placements remain highly controversial. Lawrence and Newton (1982) proposed four major lineages within the "staphylinid group", (omaliine group, tachyporine group, oxyteline group, and staphylinine group) most of which encompass one or more staphylinid subfamilies in addition to previously recognized families. These groups have been variously assumed (tachyporine group: ASHE & NEWTON 1993), supported (omaliine group: THAYER 1985, 1987), or refuted (omaliine group: BEUTEL & MOLENDEN 1997). The most comprehensive phylogenetic study on staphyliniforms to date (HANSEN 1997) resolved none as monophyletic. Of particular interest was the wide separation of the families Scydmaenidae, Scaphidiidae, and Silphidae from their placements suggested by LAWRENCE & NEWTON's (1982) informal classification. One additional examination of relationships at this level, based on combined molecular and morphological evidence (BALLARD et al. 1998), provided limited additional resolution (CATERINO et al. 2005).

In this paper we study the Iranian specimens of Tachyporine group which was poorly studied so far. Also, the fauna of Iranian Staphylinidae is very diverse but was not studied well so far (SAKENIN et al. 2008a, b, c; Ghahari et al. 2009a, b; Samin et al. 2011a, b).

Materials and Methods

The specimens were collected by sweeping net, pitfall traps, light traps and aspirator from different regions of Iran. Although almost the materials were collected by some Iranian researchers, but many insect collections of different branches of Islamic Azad University were checked too. The information concerning specific name, describer, locality and date of collection, place/plant on which the species were collected and number of species (in brackets) was given. Classification and nomenclature suggested by NEWTON & THAYER (1992), KLIMASZEWSKI (2000), HERMAN (2001) and LÖBL & SMETANA (2004) have been followed in this study. The recorded insect genera have been listed in phylogenetic order in each subfamily and species sorted as alphabetical.

Results

In a total of 24 species from 14 genera and 3 subfamilies of Tachyporine group were collected from different regions of Iran. The list of species is given below.

Subfamily *Phloeocharinae* ERICHSON 1839

Genus *Phloeocharis* MANNERHEIM 1830

Phloeocharis longipennis FAUVEL 1875

Material examined: Golestan province, Gonbad (2), September 2006.

Subfamily Tachyporinae MACLEAY 1825

Tribe Mycetoporini THOMSON 1859

Genus *Bryophacis* REITTER 1909

***Bryophacis rugipennis* (PANDELLÉ 1869)**

Material examined: Mazandaran province, Sari (1), June 2007.

Genus *Ischnosoma* STEPHENS 1829

***Ischnosoma myops* (EPELSHEIM 1880)**

Material examined: Ardabil province, Moghan (1), September 2005.

Genus *Lordithon* THOMSON 1859

***Lordithon thoracicus* (FABRICIUS 1777)**

Material examined: Golestan province, Gorgan (3), October 2006.

Comment: *Cyrtopogon kushka* LEHR 1998 (Diptera: Asilidae) was collected as the predator of *L. thoracicus* from Gorgan.

***Lordithon trinotatus* (ERICHSON 1839)**

Material examined: Guilan province, Rasht (2), September 2007.

Genus *Mycetoporus* MANNERHEIM 1830

***Mycetoporus forticornis* FAUVEL 1875**

Material examined: Semnan province, Garmsar (1), May 2006.

***Mycetoporus punctus* (GRAVENHORST 1806)**

Material examined: Mazandaran province, Savadkooh (1), September 2005.

Tribe Tachyporini MACLEAY 1825

Genus *Sepedophilus* GISTEL 1856

***Sepedophilus littoreus* (LINNAEUS 1758)**

Material examined: Golestan province, Gorgan (2), September 2005.

Comment: *Machimus cyanopus* (LOEW 1849) (Diptera: Asilidae) was collected as the predator of *S. littoreus* from Gorgan.

***Sepedophilus testaceus* (FABRICIUS 1793)**

M a t e r i a l e x a m i n e d : Mazandaran province, Qaemshahr (2), July 2007.

Genus *Tachinus* GRAVENHORST 1802

***Tachinus fimetarius* GRAVENHORST 1802**

M a t e r i a l e x a m i n e d : Tehran province, Shahreyar (1), April 2008.

***Tachinus subterraneus* (LINNAEUS 1758)**

M a t e r i a l e x a m i n e d : Guilan province, Rasht (1), August 2004.

Genus *Tachyporus* GRAVENHORST 1802

***Tachyporus nitidulus* (FABRICIUS 1781)**

M a t e r i a l e x a m i n e d : Khorasan province, Kashmar (2), June 2003.

Subfamily *Aleocharinae* FLEMING 1821

Tribe *Aleocharini* FLEMING 1821

Genus *Aleochara* GRAVENHORST 1802

***Aleochara bipustulata* (LINNAEUS 1761)**

M a t e r i a l e x a m i n e d : Mazandaran province, Behshahr (1), July 2000.

C o m m e n t : *Saropogon melanophrus* BIGOT 1878 (Diptera: Asilidae) was collected as the predator of *A. bipustulata* from Behshahr.

***Aleochara curtula* (GOEZE 1777)**

M a t e r i a l e x a m i n e d : Mazandaran province, Ghaemshahr (1), October 2005.

***Aleochara lata* GRAVENHORST 1802**

M a t e r i a l e x a m i n e d : Mazandaran province, Savadkooh (3), September 2006.

***Aleochara subtumida* (HOCHHUTH 1849)**

M a t e r i a l e x a m i n e d : Mazandaran province, Joibar (1), July 2005.

Tribe *Athetini* CASEY 1910

Genus *Atheta* THOMSON 1858

***Atheta exigua* (ERICHSON 1837)**

M a t e r i a l e x a m i n e d : Mazandaran province, Joibar (2), June 2006.

***Atheta testaceipes* (HEER 1839)**

M a t e r i a l e x a m i n e d : Golestan province, Gorgan (2), September 2003.

Tribe F a l a g r i i n i M U L S A N T & R E Y 1873

Genus *Myrmecopora* SAULCY 1865

***Myrmecopora fugax* (ERICHSON 1839)**

M a t e r i a l e x a m i n e d : Ardabil province, Meshkinshahr (2), August 2005.

Tribe H o m a l o t i n i H E E R 1839

Genus *Leptusa* KRAATZ 1856

***Leptusa pulchella* MANNERHEIM 1830**

M a t e r i a l e x a m i n e d : Isfahan province, Shahreza (2), August 2008.

C o m m e n t : Two ground beetle species including, *Harpalus (Pseudoophonus) griseus* (PANZER) and *Laemostenus (Sphodroides) cordicollis* (CHAUDOIR) (Coleoptera: Carabidae) were collected as the predator of *L. pulchella* from Isfahan.

***Leptusa venusta* (HOCHHUTH 1849)**

M a t e r i a l e x a m i n e d : Zanjan province, Zanjan (1), July 2007.

Tribe O x y p o d i n i T H O M S O N 1859

Genus *Euryalea* M U L S A N T & R E Y 1875

***Euryalea jordanica* (COIFFAIT 1981)**

M a t e r i a l e x a m i n e d : Guilan province, Lahijan (1), August 2004.

Genus *Oxypoda* MANNERHEIM 1830

***Oxypoda flavicornis* KRAATZ 1856**

M a t e r i a l e x a m i n e d : Mazandaran province, Amol (1), April 2007.

***Oxypoda vittata* MÄRKEL 1842**

M a t e r i a l e x a m i n e d : Golestan province, Gorgan (1), September 2006.

Discussion

The result of this research indicates that there is a diverse fauna of Tachyporiane group in different regions of Iran. However, with attention to the various geographical climates

in Iran, it is expected that several other staphylinids related to Tachyporine group will be discovered as new country records through the exact samplings.

Acknowledgments

The authors are grateful to Dr. D. Makhan of the Netherlands, Dr. P. Vicentini of Italy, Dr. A. Newton and Dr. S. Ashe of USA, and Dr. V. Assing of Germany for their helps in this project especially sending the necessary data. The research was supported by Islamic Azad University (Tehran Science and Research Branch) and Chinese Academy of Sciences.

Zusammenfassung

Die Fauna der iranischen Tachyporine, eine der vier Staphyliniden-Gruppen (Coleoptera: Staphylinidae), wird in vorliegender Arbeit behandelt. Aus 24 Arten, 14 Gattungen (*Phloeocharis* MANNERHEIM, *Bryophacis* REITTER, *Ischnosoma* STEPHENS, *Lordithon* THOMSON, *Mycetoporus* MANNERHEIM, *Sepedophilus* GISTEL, *Tachinus* GRAVENHORST, *Tachyporus* GRAVENHORST, *Aleochara* GRAVENHORST, *Atheta* THOMSON, *Myrmecopora* SAULCY, *Leptusa* KRAATZ, *Euryalea* MULSANT & REY, *Oxypoda* MANNERHEIM) sowie 3 Unterfamilien (Phloeocharinae, Tachyporinae, Aleocharinae) setzt sich das untersuchte Material zusammen.

References

- ASHE J.S. & A.F.J. NEWTON (1993): Larvae of Trichophya and phylogeny of the tachyporine group of subfamilies with a review, new species and characterization of the Trichophyinae. — *Systematic Entomology* **18**: 267-286.
- BALLARD J.W.O., THAYER M.K., NEWTON A.F. & E.R. GRISMER (1998): Data sets, partitions, and characters: philosophies and procedures for analyzing multiple data sets. — *Systematic Biology* **47**: 367-396.
- BEUTEL R.G. & R. MOLENDI (1997): Comparative morphology of selected larvae of Staphylinidae with phylogenetic implications. — *Zoologischer Anzeiger* **236**: 37-67.
- BEUTEL R.G. & R.A.B. LESCHEN (2005): Phylogenetic analysis of Staphyliniformia (Coleoptera) based on characters of larvae and adults. — *Systematic Entomology* **30** (4): 510-548.
- CATERINO M.S., HUNTB T. & A.P. VOGLER (2005): On the constitution and phylogeny of Staphyliniformia (Insecta: Coleoptera). — *Molecular Phylogenetics and Evolution* **34**: 655-672.
- GHAHARI H., ANLAS S., SAKENIN H., OSTOVAN H. & M. HAVASKARY (2009a): Biodiversity of rove beetles (Coleoptera: Staphylinidae: Staphylininae) from the Arasbaran biosphere reserve and vicinity, northwestern Iran. — *Linzer biologische Beiträge* **41** (2): 1949-1958.
- GHAHARI H., ANLAS S., SAKENIN H., OSTOVAN H. & M. TABARI (2009b): A contribution to the rove beetles (Coleoptera: Staphylinidae: Staphylininae) of Iranian rice fields and surrounding grasslands. — *Linzer biologische Beiträge* **41** (2): 1959-1968.
- HANSEN M. (1997): Phylogeny and classification of the staphyliniform beetle families (Coleoptera). — *Biologiske Skrifter* **48**: 1-339.

- HERMAN L.H. (2001): Catalog of the Staphylinidae (Insecta: Coleoptera). 1758 to the end of the second millennium. Parts I-VII. — *Bulletin of the American Museum of Natural History* **265**: 1-4218.
- LAWRENCE J. & A.F. NEWTON (1982): Evolution and classification of beetles. — *Annual Review of Ecology and Systematics* **13**: 261-290.
- LÖBL I. & A. SMETANA (2004): Catalogue of Palaearctic Coleoptera. II. Hydrophiloidea-Histeroidea-Staphylinoidea. — Apollo books, Stenstrup, 924 pp.
- NAOMI S.-I. (1985): The phylogeny and higher classification of the Staphylinidae and higher groups (Coleoptera: Staphylinoidea). — *Esakia* **23**: 1-27.
- NEWTON A.F. (1990): Insecta: Coleoptera Staphylinidae adults and larvae, pp. 1138-1174. — In: DINDAL D.L. (ed.), *Soil Biology Guide*. New York: J. Wiley and Sons.
- NEWTON A.F. & M.K. THAYER (1992): Current classification and family-group names in Staphyliniformia (Coleoptera). — *Fieldiana (Zoology)*, New Series **67**: 1-92.
- NEWTON A.F. & M.K. THAYER (1995): Protopselaphinae new subfamily for Protopselaphus new genus from Malaysia, with a phylogenetic analysis and review of the Omaliine Group of Staphylinidae including Pselaphidae. — In: PAKALUK J. & S.A. SLIPINSKI (eds), *Biology, Phylogeny, and Classification of the Coleoptera: Papers Celebrating the 80th Birthday of Roy A. Crowson*. Muzeum i Instytut Zoologii PAN, Warsaw, pp. 219-320.
- NEWTON A.F., THAYER M.K., ASHE J.S. & D.S. CHANDLER (2001): Staphylinidae. pp. 272-418. — In: ARNETT R.H. Jr. & M.C. THOMAS (eds), *American beetles. Volume 1. Archostemata, Myxophaga, Adephaga, Polyphaga: Staphyliniformia*. CRC Press LLC, Boca Raton, FL. xvi + 443 pp.
- SAKENIN H., GHAHARI H., TABARI M., MONEM R., HAVASKARY M. & A. RASHIDI (2008a): A Preliminary Survey on the Fauna of Ants (Hymenoptera: Formicidae, Mutillidae) and Rove Beetles (Coleoptera: Staphylinidae) in Iranian Rice Fields and Surrounding Grasslands. — *Proceedings of National Conference of Agronomical Rice Breeding, Young Research Club Islamic Azad University of Ghaemshahr*, 26-27 November, p. 80. (Full paper in CD Rom, 10 pp) (In Persian with English Summary).
- SAKENIN H., IMANI S., SHIRDEL F., SAMIN N. & M. HAVASKARY (2008b): Identification of Pentatomidae (Heteroptera) and their host plants in central and eastern Mazandaran province and introducing of many dominant natural enemies. — *Plant & Ecosystem* **15**: 37-51. (in Persian, English abstract).
- SAKENIN H., ESLAMI B., SAMIN N., IMANI S., SHIRDEL F. & M. HAVASKARY (2008c): A contribution to the most important trees and shrubs as the hosts of wood boring beetles in different regions of Iran and identification of many natural enemies. — *Plant & Ecosystem* **16**: 27-46. (in Persian, English abstract).
- SAMIN H., ZHOU H. & S. EZZATPANAH (2011a): A study of Omaliine rove beetles (Coleoptera: Staphylinidae) from Iranian rice and cotton fields and surrounding grasslands. — *Calodema* **129**: 1-6.
- SAMIN H., ZHOU H. & S. EZZATPANAH (2011b): A contribution to the Staphylinine group of rove beetles (Coleoptera: Staphylinoidea: Staphylinidae) from Iran. — *Calodema* **140**: 1-9.
- THAYER M.K. (1985): The larva of *Brathinus nitidus* LeConte and the systematic position of the genus. — *The Coleopterists Bulletin* **39**: 174-184.
- THAYER M.K. (1987): Biology and phylogenetic relationships of *Neophonus bruchi*, an anomalous south Andean staphylinid. — *Systematic Entomology* **12**: 389-404.

Author's addresses:

Najmeh SAMIN
Young Researchers Club, Science and Research Branch
Islamic Azad University, Tehran, Iran
E-mail: n_samin63@yahoo.com

Hongzhang ZHOU
Institute of Zoology, Chinese Academy of Sciences
Datun Rd., Chaoyang, Beijing 100101, China
E-mail: zhouhz@ioz.ac.cn

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

Sohrab IMANI
Department of Entomology
Science and Research Branch, Islamic Azad University
Tehran, Iran
E-mail: imanisohrab@yahoo.com

Jinoos RASTEGAR
Department of Entomology
Garmsar Branch, Islamic Azad University
Semnan, Iran
E-mail: jinoosrastegar@yahoo.com

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Linzer biologische Beiträge](#)

Jahr/Year: 2011

Band/Volume: [0043_2](#)

Autor(en)/Author(s): Samin Najmeh, Zhou Hong-Zhang, Sakenin Hamid, Imani Sohrab, Rastegar Jinoos

Artikel/Article: [A contribution to the knowledge of Tachyporiane group of rove beetles \(Coleoptera: Staphylinoidea: Staphylinidae\) from Iran 1579-1586](#)