

THE GENUS *ONTHOPHAGUS* LATREILLE, 1802 (SENSU LATO) (COLEOPTERA: SCARABAEIDAE) IN PAKISTAN

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ABSTRACT

Eleven species of the genus *Onthophagus* Latreille, 1802 (sensu lato) are listed from Pakistan and a key is provided for their separation. Two new records *Onthophagus paliceps* and *O. quadridentatus* are included with their distributions.

Key words: New records, Distribution, *Onthophagus*, *Digitonthophagus* species.

INTRODUCTION

The composition of the beetle family Scarabaeidae in Pakistan is virtually unknown. Arrow (1917, 1925, 1931) attempted to catalogue and describe the Scarabaeoid beetles of the Indian subcontinent, but this work is now outdated. Since that time, no additional faunistic studies on the genus *Onthophagus* Latreille, 1802 have been undertaken in Pakistan. Sewak (2003) gave systematic data on dung beetles from Arunachal Pradesh, Gujrat and Rajasthan, India. He listed 96 species of *Onthophagus*, of which only seven species, *O. variegatus*, *ramosellus*, *catta* (= *gazella*), *ramosus*, *bonasus*, *falsus* and *semicinctus* are reported in this paper. Kabakov (2008) described seven new species of *Onthophagus* including one new species *O. lahorensis* from Lahore, Pakistan and illustrated the pronotum and male genitalia. The genus *Onthophagus* of the tribe Onthophagini consist of about 2000 species worldwide. The diversity of this genus is high in the Oriental and Afrotropical regions. Even after many years of study, the Oriental *Onthophagus* are still poorly known (Tarasov and Kabakov, 2010). The systematic position of the subgenera of *Onthophagus* is still not completely clear. Various authors have described species under different subgenera of *Onthophagus* (Kabakov & Napolov 1999; Ziani 2003, 2005, 2006; Ziani & Gudenzi 2000, 2001, 2006; Balthasar 1963; Kabakov, 2006; 2008; Rössner *et al*, 2010; Ziani and Gharakhloo 2010; Kabakov, 2008). Balthasar (1959) made a genus *Digitonthophagus* under the type species *Scarabaeus bonasus*, later on he (1963) keyed out the species of *Digitonthophagus* including *D. bonasus* and *D. gazella*. Lole and Smetana (2006) catalogued the Palaearctic Coleoptera including two species of *Digitonthophagus*, *bonasus* and *gazelle* recorded from Pakistan. Hashmi & Tashfeen (1992) carried out only list of nine species of *Onthophagus* from Pakistan, and only two species *O. mopsus* and *O. ramosellus* are in the list.

Present work is the part of Ph.D. research of the first author. Eleven species belonging to the genera *Onthophagus* and *Digitonthophagus* were collected from Pakistan and two new records with their distribution, checklist and key to the species are given.

MATERIALS AND METHODS

The specimens were collected from different areas of Pakistan by hand picking and through light traps. All these specimens are deposited in The Natural History Museum University of Karachi, Karachi, Pakistan (NHMUK).

Specimens were identified or confirmed by the following specialists:

Darren Mann, Hope Entomological Collections, Oxford, United Kingdom.

Adrian Davis, University of Pretoria, Pretoria, South Africa.

Bruce Gill, Canadian Food Inspection Agency, Ottawa, Canada.

Teruo Ochi with reference to Masahiro Kon.

Checklist of *Onthophagus* (s.l.) from Pakistan

Digitonthophagus bonasus (Fabricius 1775), described as *Scarabaeus*.

Digitonthophagus .gazella (Fabricius 1787), described as *Scarabaeus*

Onthophagus falsus Gillet, 1925

Onthophagus hindu Arrow, 1931

Onthophagus mopsus (Fabricius 1792), described as *Scarabaeus*.

Onthophagus paliceps Arrow, 1931 **New record.**

Onthophagus quadridentatus (Fabricius 1798), described as *Copris*. **New record.**

Onthophagus ramosus Arrow, 1931

Onthophagus ramosellus Bates, 1891

Onthophagus semicinctus d'Orbigny, 1897

Onthophagus variegatus (Fabricius 1798), described as *Copris*

Key to the Pakistani species of *Onthophagus sensu lato* recorded in this paper

1. Elytra brown.....2
- Elytra black.....3
2. Head with horn slender, sloped back without tubercle.....*Digitonthophagus gazella*
- Head with horn backwardly directed with a tubercle.....*D. bonasus*
3. Clypeus semicircular.....4
- Clypeus excised in the middle.....8
4. Head with horn not extending beyond the hind margin of pronotum.....5
- Head with horn sometimes extending beyond the hind margin of pronotum.....*Onthophagus mopsus*
5. Head with a teeth.....6
- Head without teeth.....7
6. Horns bears a strong tooth near the middle of the anterior edge; lateral margins of elytra black*O. ramosus*
- Horns bears a small sharp teeth on the outer edge of each; elytra with lateral margins tinged with light brown.....*O. falsus*
7. Pronotum strongly punctured, base rounded.....*O. ramosellus*
- Pronotum finely and not closely punctured, base sinuate.....*O. quadridentatus*
8. Head bears a single horn.....9
- Head bears two horns.....10
9. Vertex with an acute horn, on very small males, horn is replaced by a tubercle; tibiae with spur quadrate.....*O. hindu*
- Vertex with a straight horn, not change in tubercle; tibiae with spur spatulate*O. paliceps*
10. Horns united by a basal lamina; pronotum with front angles acutely produced; intervals slightly convex.....*O. variegatus*
- Horns unconnected; pronotum with front angles little produced and not sharp; intervals flat.....*O. semicinctus*

Species records for Pakistan

Digitonthophagus bonasus (Fabricius) (Fig. 1a)

Material. PAKISTAN: *Sindh Prov.*: 4♂, 1♀ Karachi, Gulzar-e-hijri, 24°57'09" N, 67°07'23" E, 12 VI 2007 (Siddiqui H); 12♂, 3♀, Bhains colony, 24°49'42" N, 67°16'24" E, 26 I 2007 (Siddiqui H); 7♂, 1♀, Malir, 24°55'49" N, 67°11'49" E, 22 VI 2006 (Ahmed Z); 5♂, 4♀, Islam kot, 24°42'02" N, 70°11'06" E, 15 VI 2006 (Ahmed Z); 8♂, 3♀, Mirpur khas, 25°32'11" N, 68°58'49" E, 28 X 2006 (Khatri I); ?♂ ?♀, Chilhar; °°° N, °°° E, 19 VIII 2007 (Ahmed Z); 6♂, 2♀, Thar desert, 24°55'34" N, 69°42'34" E, 25 VI 2009 (Behan A); 9♂, 2♀, Naukot, 24°51'27" N, 69°21'43" E, 12 VIII 2009 (Ahmed Z); 7♂, 4♀ Mithi, 69°44'18" N, 69°47'43" E, 18 VIII 2007 (Khatri I) (Ahmed Z); 5♂, 2♀ Naushero feroze, 26°50'15" N, 68°07'12" E, 3 V 2007 ; (Akhter MA). *Punjab Prov.*: 1♂, Chakwal,

Kalarkahar, 32°44'50" N, 72°55'14" E, 3 IX 2007 (Behan A); 2♂, Kamalia, 30°43'23" N, 72°38'20" E, 5 V 2008 (Ahmed Z). *Khyber Pakhtoon Khwa Prov.*: 3♂ 1♀, Sawat, Kanju, 34°49'46" N, 72°20'30" E, 15 VIII 2009; 5♂, 1♀ Sawabi, 34°08'15" N, 72°28'15" E, 12 VII 2006 (Akhter MA), 4♂, 2♀, Peshawar, 33°56'48" N, 71°31'44" E, 20 X 2007 (Ahmed Z); 7♂, 3♀, Rangpur, 32°47'11" N, 74°11'25" E, 18 V 2009 (Ahmed Z). *Azad Kashmir*: 5♂, 1♀, Muzaffarabad, Pir Chanasi, 34°23'32" N, 73°32'38" E, 5 IX 2007; 2♂, Pulandari, 20 VI 2009; 4♂, 1♀, Chikar, 5 III 2007.

Distribution. Indian subcontinent and South East Asia.

Onthophagus (incertae sedis) falsus Gillet

Material. PAKISTAN: *Sindh Prov.*: 12♂, 4♀, Karachi, Gulzar-e-Hijri, 24°57'18" N, 67°06'57" E, 22 VI 2006 (Siddiqui H); 9♂, 2♀, Malir field, 24°53'47" N, 67°13'01" E, 22 VI 2006 (Ahmed Z); 5♂, 1♀, Thar Desert, 24°43'48" N, 70°05'07" E, 29 VIII 2007 (Ahmed Z).

Distribution. Bengal and Pakistan.

Digitonthophagus gazella (Fabricius) (Fig. 1b) **New record**

Material. PAKISTAN: *Sindh Prov.*: 4♂, 1♀, Karachi, Gulzar-e-hijri, 24°58'21" N, 67°06'13" E, 5 VI 2007 (Akhter MA); 6♂, 2♀, Bhains colony, 24°50'21" N, 67°16'25" E, 26 I 2007 (Siddiqui H); 3♂, 3♀, Malir, 24°55'53" N, 67°13'25" E, 22.vi.2006 (Ahmed Z); 8♂, 2♀, Islam kot, 24°41'58" N, 70°10'43" E, 15 VI 2006 (Ahmed Z); 9♂, 4♀, Mirpur khas, 25°30'51" N, 69°01'12" E, 28 X 2006 (Khatri I); 2♂ 1♀, Chilhar, 19 VIII 2007 (Ahmed Z); 6♂, 2♀, Thar desert, 24°54'32" N, 69°30'50" E, 25 VI 2009 (Behan A); 7♂, 1♀, Naukot, 24°51'26" N, 69°23'59" E, 12 VIII 2009 (Behan A); 8♂, 3♀, Mithi, 24°44'30" N, 69°47'54" E, 18 VIII 2007 (Khatri I); 11♂, 2♀, Nausheroferoz, 26°50'29" N, 68°06'43" E, 3 V 2007 (Ahmed Z). *Punjab Prov.*: 3♂ 1♀, Chakwal, Kalarkahar, 32°43'39" N, 72°53'50" E, 3 IX 2007 (Ahmed Z); 3♂, 1♀, Kamalia, 30°43'42" N, 72°39'29" E, 5 V 2008 (Ahmed Z). *Khyber Pakhtoon Khwa Prov.*: 4♂, 2♀, Sawat, Kanju; 34°49'36" N, 72°20'44" E, 15VIII 2009 (Ahmed Z); 5♂, 2♀, Sawabi, 34°08'07" N, 72°28'20" E, 12 VII 2006 (Ahmed Z); 6♂, 1♀, Peshawar, 33°59'49" N, 71°32'28" E, 20 X 2007 (Ahmed Z); 7♂, 3♀, Rangpur, 32°46'53" N, 74°11'05" E, 18 V 2009 (Ahmed Z). *Azad Kashmir*: 4♂, 1♀ Muzaffarabad, Pirchanasi, 34°23'09" N, 73°33'16" E, 5 IX 2007 (Ahmed Z); 5♂ 1♀, Pulandari, 20 VI 2009 (Siddiqui H & Akhter MA); 3♂, 1♀, Chikar, 5 III 2007 (Ahmed Z);

Distribution. Indian subcontinent, Ceylon, Arabia, tropical Africa and Madagascar.

Onthophagus (Colobonthophagus) hindu Arrow (Fig. 1c)

Material. Males 12: PAKISTAN: 2♂, 1♀, Islamabad, 33°43'37" N, 73°00'28" E, 11 V 2008 (Ahmed Z); 1♂, 1♀, *Azad Kashmir*: Muzaffarabad, 34°21'44" N, 73°28'22" E, 23 VI 2008 (Akhter, A).

Distribution. Indian subcontinent and South Afghanistan.

Onthophagus (incertae sedis) mopsus (Fabricius) (Fig. 1d)

Material. PAKISTAN: *Sindh Prov.*: 11♂ 2♀, Thar Desert, 25°01'43" N, 69°36'14" E, 5 V 2009 (Khatri I). *Punjab Prov.*: 15♂ 4♀, Kalar kahar, 32°43'39" N, 72°54'33" E, 3 IX 2007 (Siddiqui H). *Khyber Pakhtoon Khwa Prov.*: 3♂, 6♀, Koray, 34°56'55" N, 72°22'26" E, 18 VIII 2008 (Siddiqui H).

Distribution. Bengal, Bihar and Pakistan.

Onthophagus (Colobonthophagus) paliceps Arrow (Fig. 1e) **New record**

Material. Male 1: PAKISTAN: *Punjab Prov.*: 16♂ 3♀, Kalar kahar, 32°43'38" N, 72°53'32" E, 3 IX 2007 (Akhter MA).

Distribution. India and Pakistan.

***Onthophagus (incertae sedis) quadridentatus* (Fabricius) (Fig. 1f) New record**

Material. PAKISTAN: Sindh Prov.: 3♂, Tharparkar, 24°41'02" N, 69°46'59" E, 4 VII 2008 (Ahmed Z).

Distribution. India, Bengal and Pakistan.

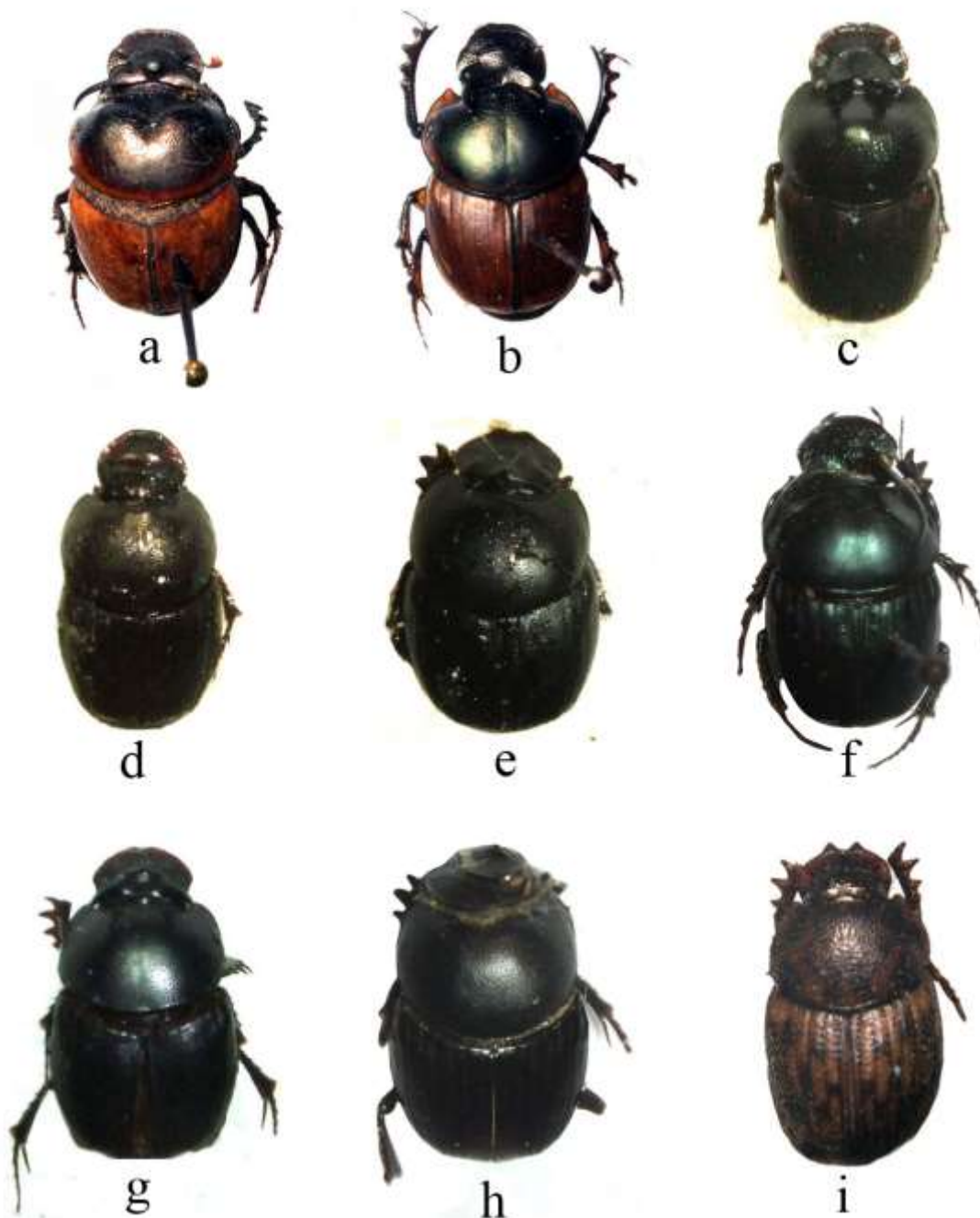


Fig.1. **a**, *Digitonthophagus bonasus* (Fabricius); **b**, *D. gazella* (Fabricius); **c**, *Onthophagus (Colobonthophagus) hindu* Arrow; **d**, *Onthophagus mopsus* (Fabricius); **e**, *Onthophagus (Colobonthophagus) paliceps* Arrow; **f**, *Onthophagus quadridentatus* Fabricius); **g**, *Onthophagus ramosellus* Bates; **h**, *Onthophagus (Colobonthophagus) ramosus* (Wiedemann); **i**, *Onthophagus (Furconthophagus) variegatus* (Fabricius).

***Onthophagus (Colobonthophagus) ramosellus* Bates (Fig. 1g)**

Material. PAKISTAN: *Punjab Prov.*: 7♂, 1♀, Mianwali, 32°31'35" N, 71°33'27" E, 15 V 2008 (Siddiqui H); 5♂, 2♀, Kalar Kahar, 32°43'40" N, 72°52'21" E, 14 IX 2007 (Ahmed Z); 2♂, 1♀, Chakwal, 32°56'06" N, 72°50'45" E, 3 IX 2007 (Ahmed Z). *Balochistan Prov.*: 4♂, 1♀, Dera Ismail Khan, 31°49'32" N, 70°53'57" E, 19 V 2009 (Siddiqui H). *Azad Kashmir*: 6♂, 3♀, Pir Chanasi, 34°23'06" N, 73°33'27" E, 5 IX 2007 (Ahmed Z).

Distribution. Indian subcontinent.

***Onthophagus (Colobonthophagus) ramosus* (Wiedemann) (Fig. 1h) New record**

Material. PAKISTAN: *Khyber Pakhtoon Khwa*: 3♂, 1♀, Sawat, 34°47'27" N, 72°20'49" E, 22 VI 2008. *Azad Kashmir*: 2♂, Bagh, 33°59'37" N, 73°46'39" E, 24 VI 2008 (Siddiqui H), 5♂, Kanju, 34°49'22" N, 72°21'01" E, 23 IX 2009 (Akhter MA); 4♂, 2♀, Pujkot, 2 IX 2008 (Ahmed Z).

Distribution. Indian subcontinent.

***Onthophagus (Eremonthophagus) semicinctus* d'Orbigny**

Distribution. Pakistan., Afghanistan and India.

***Onthophagus (Furconthophagus) variegatus* (Fabricius) (Fig. 1i)**

Material. Males 2: PAKISTAN: *Azad Kashmir*: 3♂, 1♀, Muzaffarabad, 34°21'47" N, 73°27'45" E, 20 VII 2007 (Akhter MA).

Distribution. Africa and South Palaearctic and Pakistan.

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