

Order Coleoptera, family Scarabaeidae

Subfamily Dynastinae

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INTRODUCTION

The Dynastinae, or rhinoceros beetles, are a subfamily of Scarabaeidae comprising over 1500 species of medium sized to very large, compact beetles, which feed on living and dead plant material, some of them being major pests on palms and tubers. Most species have a distinct sexual dimorphism with males often showing spectacular horns on head and thorax, hence their vernacular name, rhinoceros beetles. Endrődi (1980) listed seven species for Saudi Arabia, with a few more being recorded since then for the Arabian Peninsula. A revision of the Dynastinae of the Arabian Peninsula is in preparation by the senior author. From the United Arab Emirates, we recorded six native and one introduced species of Dynastinae.

MATERIALS AND METHODS

214 specimens from the following collections were studied:

- BMNH – The Natural History Museum, London, UK
- DMNS – Denver Museum of Nature & Science, Denver, Colorado, U.S.A.
- JBCP – Jan Batelka collection, Praha, Czech Republic
- MMUE – Manchester Museum, The University, Manchester, UK
- MGCB – Michael P.T. Gillett collection, Birmingham, UK
- NMPC – National Museum Praha, Czech Republic.

Collecting localities of the material collected by Antonius van Harten were documented in an introductory paper in the first volume of the *Arthropod fauna of the UAE* (van Harten, 2008).

SYSTEMATIC ACCOUNT

Pentodon algerinus (Fuessly, 1778)

Plates 1–3

Specimens examined: Abu Dhabi Emirate: Abu Dhabi, v.1998, leg. P.D. Johnson (2 ex., MMUE). Al-Ain, Hilton Hotel, 24°12'N 55°48'E, 26.viii.1991 (3 ex.), 30.viii.1991 (3 ex.), 1.ix.1991 (4 ex.), leg. M.P.T. Gillett (MGCB). Al-Jimi, al-Ain, 24°14'N 55°46'E, 16.vi.1995, leg. M.P.T. Gillett (1 ex., MGCB). Al-Muwaiji, al-Ain, 24°12'N 55°45'E, 20.x.1995, leg. M.P.T. Gillett (1 ex., MGCB). Ain al-Faydah, 24°05'N 55°43'E, 11.ix.1992, leg. M.P.T. Gillett (1 ex., MGCB). Al-Ajban, 24°36'N 55°01'E, 60 m, 12–19.ix.2006, light trap, leg. A. van Harten (4 ex., BMNH). NARC near Sweihan, 24°24'N 55°26'E, 28.iii–2.iv.2005 (2 ex.), 2–30.iv.2005 (1 ex., Plate 3), light trap, leg. A. van Harten (DMNS). – Literature records: Al-Ain Intercontinental Hotel, 24°12'N 55°48'E, lights, iv.2005 (Gillett, 2005). Jebel Hafit, 24°03'N 55°46'E (Gillett & Howarth, 2004: 142). Marawah Island, ca. 24°17'N 53°17'E (Gillett & Gillett, 2002). Dubai Emirate: Al-Lisaili, 24°56'N 55°29'E, 27.iii.1997, 13.v.1997, leg. M.P.T. Gillett (2 ex., MGCB). Fujairah Emirate: Fujairah, 25°08'N 56°21'E, light trap, 5–24.iii.2005 (2 ex., DMNS), 2–13.v.2005 (11 ex., DMNS; 1 ex., BMNH), 13.v–5.vi.2005 (3 ex., DMNS), 6–13.v.2006 (3 ex., BMNH; 1 ex., NMPC), leg. A. van Harten. Wadi Wurayah farm, 25°24'N 56°17'E, 165 m, 16.vii–12.viii.2009, light trap, leg. A. van Harten, (3 ex., BMNH). Ra's al-Khaimah Emirate: Wadi Bih (dam), 25°48'N 56°04'E, 100 m, 8–22.iii.2007, light trap, leg. A. van Harten (2 ex., BMNH; 1♂, NMPC). Near



Plates 1–3. *Pentodon algerinus* (Fuessly). 1: Dorsal view; 2: Lateral view.

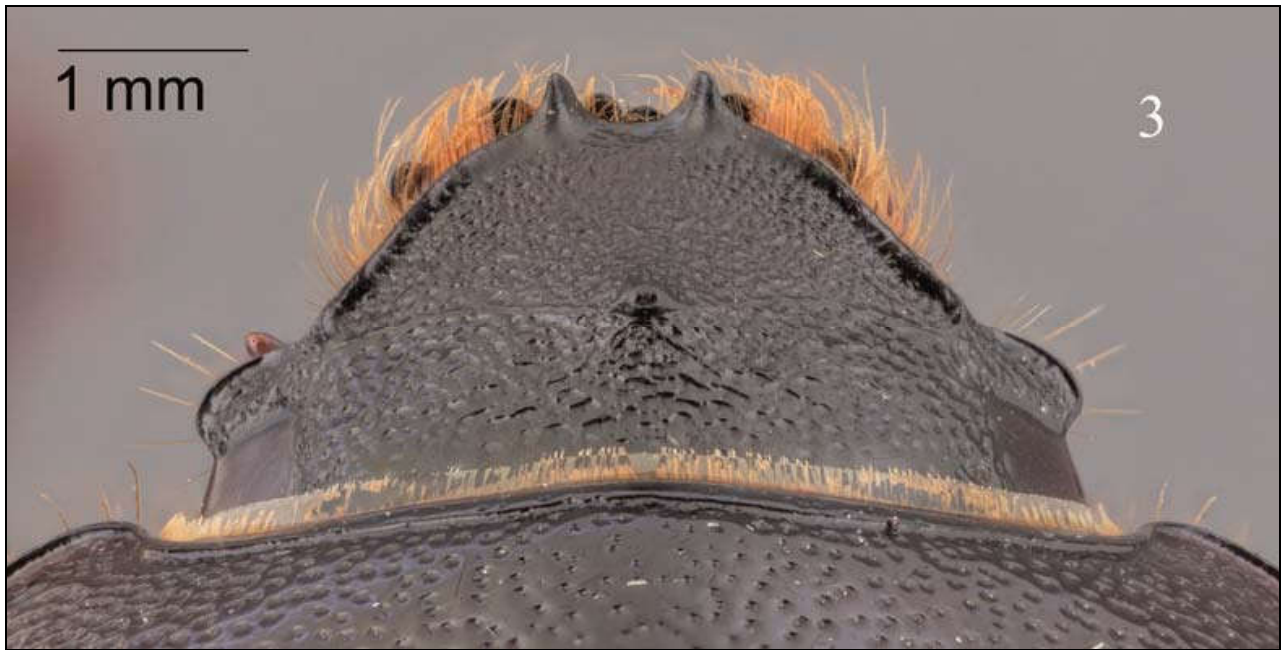


Plate 3. *Pentodon algerinus* (Fuessly), head.

International Airport, Ghaf forest, 27.ix.2007, leg. J. Batelka & H. Pinda (1 ex., JBCP). Khor al-Khwair, 25°58'N 56°03'E, 16.vii–5.viii.2009, at light, leg. A. van Harten (1 ex., BMNH). Sharjah Emirate: Desert Park, 25°17'N 55°42'E, 21–29.iii.2005, light trap (4 ex.), 13–23.iv.2005 (2 ex.), 30.iv–31.v.2005 (2 ex.), 16–31.v.2005 (11 ex., Plates 1–2), leg. A. van Harten (DMNS). Sharjah–Khor Kalba, near tunnel, 24°59'N 56°14'E, 17–24.v.2006, leg. A. van Harten (4 ex., BMNH; 1 ♂, NMPC).

Length: 14–26 mm.

Distribution: *Pentodon algerinus* is distributed from Portugal and North Africa to northwestern China (Krell, 2006). In Arabia, the subspecies *P. a. dispar* Baudi di Selve, 1870, has been recorded, which is claimed to be distributed from eastern Europe to Asia minor and Arabia. However, the status of the subspecies of *P. algerinus* needs to be reassessed since the alleged subspecific morphological differences are minor and fluent whereas the variation of the Arabian specimens of this taxon is considerable.

***Podalgus cuniculus arabicus* (Fairmaire, 1895)**

Plates 4–6

Specimens examined: Abu Dhabi Emirate: Al-Ajban, 24°36'N 55°01'E, 60 m, 12–19.ix.2006, light trap, leg. A. van Harten (1 ex., BMNH; 1 ♂, 4 ex., NMPC). Al-Dhafra, 13.x.1998, leg. J. Lloyd (3 ex., MMUE). Al-Oha, 24°21'N 55°49'E, 27.ii.1992 and 26.xi.1992, leg. M.P.T. Gillett, (1 ex. and 1 ex., both in MGCB). Madinat Zayed, end vii.1995, light trap, leg. BJT (J. Hamer coll.) (1 ex., BMNH). Ruwais, 12.x.1998, leg. J. Lloyd (2 ex., MMUE). NARC, near Sweihan, 24°24'N 55°26'E, 1.ii–14.iii.2005, light trap (1 ex., DMNS; 1 ex., BMNH), 14–28.iii.2005, light trap (2 ex., DMNS), leg. A. van Harten. Sweihan, 16.xi.1986, leg. J.N.B. Brown (J. Hamer coll.) (1 ex., BMNH). – Literature records: Jebel Hafit; Gillett & Howarth (2004: 142); from several localities between 11.xi.1993 and 27.viii.1995 (Tigar, 1998; Tigar & Osborne, 1999: 170). Dubai Emirate: Al-Lisaili, 24°56'N 55°29'E, 27.iii.1997, leg. M.P.T. Gillett (2 ex., MGCB). Sharjah Emirate: SSE of ad-Dhaid, 25°09'N 55°48'E, at light or light trap, 23.iv.2005, leg. A. van Harten & K. Szpila (1 ex., DMNS, Plates 4–6). Desert Park, 25°17'N 55°42'E, light trap, 16–31.v.2005, leg. A. van Harten (1 ex., DMNS). Near Mahafiz, 25°12'N 55°44'E, 110 m, 11.iv–10.v.2006, light trap, leg. A. van Harten (5 ex., BMNH). Near ad-Dhaid, oasis Tawi al-Saman, 25°14'N 55°49'E, 106 m, 20.xi.2006, leg. J. Batelka & H. Pinda (1 ex., JBCP).

Length: 7.5–15 mm.



Plates 4–5. *Podalgus cuniculus arabicus* (Fairmaire), lateral view.

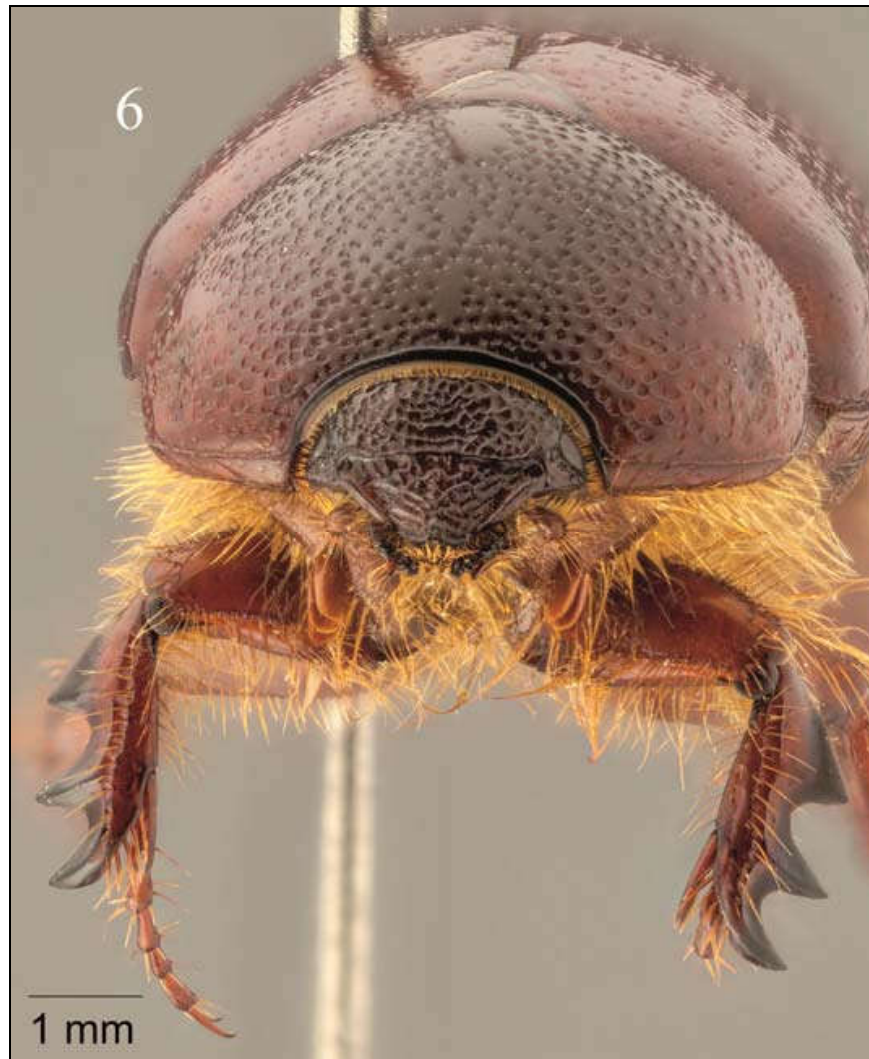


Plate 6. *Podalgus cuniculus arabicus* (Fairmaire), frontal view.

Distribution: *Podalgus cuniculus* Burmeister, 1847, is distributed from Northern and northern West Africa, Asia Minor, to Central Asia (Endrődi, 1985). The subspecies *P. c. arabicus* occurs from Egypt and Israel to Arabia (Krell, 2006).

***Phyllognathus excavatus* (Forster, 1771)**

Plates 7–11

Specimens examined: Abu Dhabi Emirate: Al-Ajban, 24°36'N 55°01'E, 60 m, 12–19.ix.2006, light trap, leg. A. van Harten (2♀, BMNH, 1♀, NMPC). Al-Oha, 24°21'N 55°49'E, 28.xi.1991, leg. M.P.T. Gillett (4♂, 2♀, MGCB; see also Drumont & Saldaitis, 2011). Liwa, Wazeel oasis, 23°01'27.4"N 54°07'56.4"E, 24.xi.2006, leg. J. Batelka & H. Pinda (1♀, JBCP). – Literature records: From several localities between 11.xi.1993 and 27.viii.1995 (Tigar, 1998; Tigar & Osborne, 1999: 170). Dubai Emirate: Al-Lisaili, 24°56'N 55°29'E, 27.iii.1997, leg. M.P.T. Gillett (4♂, 1♀, MGCB, Plates 7–8).

Length: 19–30 mm.

Distribution: Southern Europe from Portugal to Turkey, Northern Africa, Arabia, Asia Minor to Central Asia (Krell, 2006).

***Oryctes agamemnon arabicus* Fairmaire, 1896**

Plates 12–17, 25–26

Specimens examined: Abu Dhabi Emirate: Abu Dhabi, 30.v.1988, leg. J.N.B. Brown (L. Hamer coll.) (2♂, BMNH). Ain al-Faydah, 24°05'N 55°43'E, 27.v.1992 (1♂, 1♀), 11.ix.1992 (1♂, 1♀), 21.ix.1992



Plates 7–8. *Phyllognathus excavatus* (Forster). 7: Male, dorsal view; 8: Male, lateral view.



Plates 9–10. *Phyllognathus excavatus* (Forster). 9: Female, dorsal view; 10: Female, lateral view [females from Oman].



Plate 11. *Phyllognathus excavatus* (Forster), female, head [from Oman].

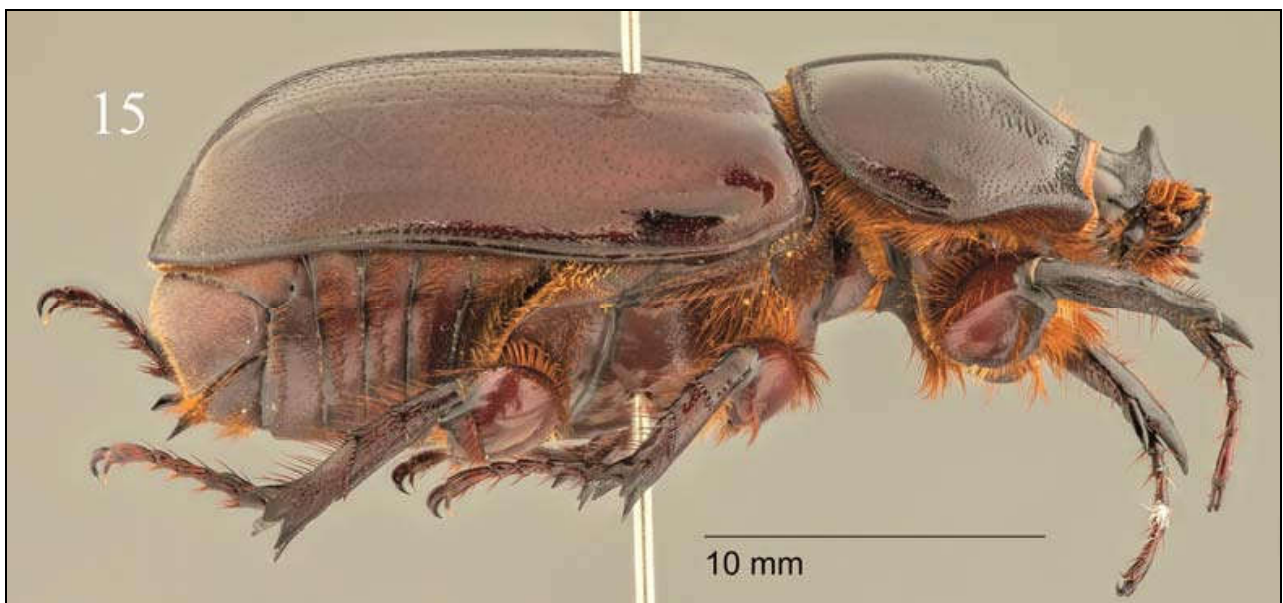
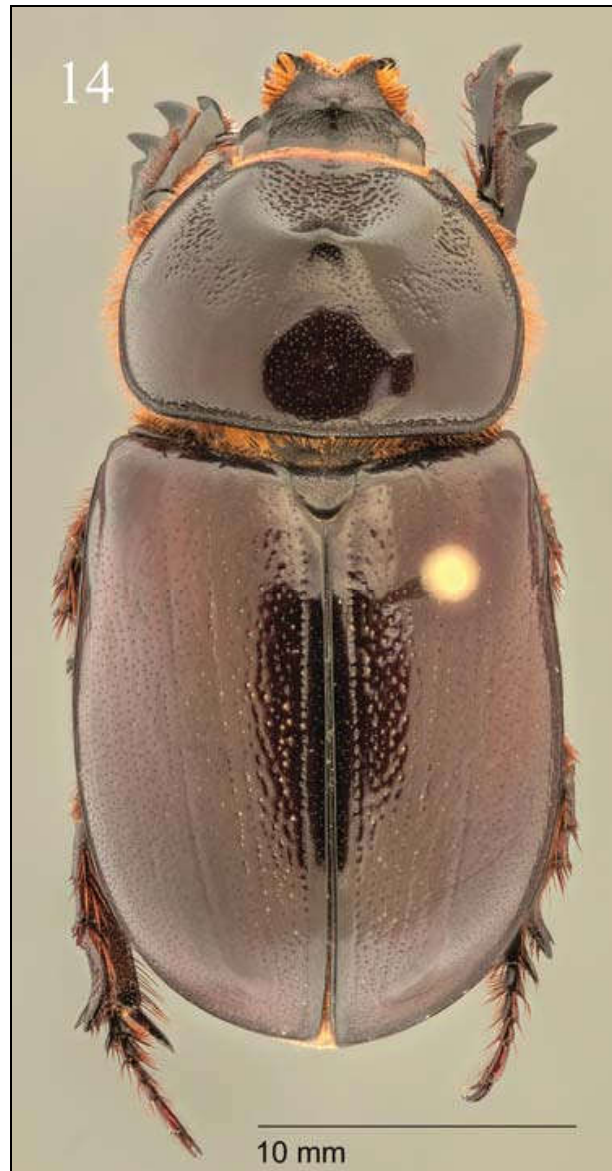
(1♂), leg. M.P.T. Gillett (MGCB). Al-Ain, vi.1998, P.D. Johnson leg. (1 ex., MMUE). Al-Ain, Hilton Hotel, 24°12'N 55°48'E, 30.viii.1991, leg. M.P.T. Gillett (1♀, MGCB). Al-Jimi, al-Ain, 24°14'N 55°46'E, 16.vi.1995, leg. M.P.T. Gillett (1♂, MGCB). Al-Muwaiji, al-Ain, 24°12'N 55°45'E, 28.viii.1992 (1♂), 20.ix.1993 (1♂, 1♀), 11.ix.1996 (1♂), leg. M.P.T. Gillett (MGCB). Al-Oha, 24°21'N 55°49'E, 7.iii.1996, leg. M.P.T. Gillett (1♂, MGCB). NARC, near Sweihan, 24°24'N 55°26'E, 11–21.v.2005, light trap, leg. A. van Harten (1♂, DMNS). – Literature records: Al-Ain Intercontinental Hotel, 24°12'N 55°48'E, lights, iv.2005 (Gillett, 2005). Al-Ain, date palm plantations, 24°11'N, 55°45'E, vi–ix.2007–2010 (Al-Deeb & Enan, 2010; Al-Deeb et al., 2012). Marawah Island, ca. 24°17'N 53°17'E (Gillett & Gillett, 2002). Dubai Emirate: Near Margham, 24°55'N 55°38'E, 25.ix.2007, dead, leg. J. Batelka & H. Pinda (1♂, JBCEP). Fujairah Emirate: Fujairah, 25°08'N 56°21'E, 24.ii.2005, hand-collecting (1♂), 2–13.v.2005 (5♂, 2♀), 13.v–5.vi.2005 (6♂, 9♀), light trap, leg. A. van Harten (DMNS). Wadi Madaq, 25°19'N 56°08'E, 410 m, 11.viii–9.ix.2006, light trap, leg. A. van Harten (1♂, BMNH; 1♂, 1♀, NMPC). Wadi Wurayah farm, 25°24'N 56°17'E, 165 m, 16.vii–12.viii.2009, light trap, leg. A. van Harten (3 ex., BMNH). Ra's al-Khaimah Emirate: Wadi Bih (dam), 25°48'N 56°04'E, 100 m, 8–22.iii.2007, light trap, leg. A. van Harten (1♂, BMNH). Khor al-Khwair, 25°58'N 56°03'E, 16.vii–5.viii.2009, light trap, leg. A. van Harten (5 ex., BMNH). Sharjah Emirate: Desert Park, 25°17'N 55°42'E, 21–29.iii.2005, light trap (7♂, 3♀, DMNS; Plates 12–17, 25–26), 13–23.iv.2005 (1♂, DMNS), 16–31.v.2005 (5♂, 2♀, DMNS; 1♂, 1♀, BMNH), 21.vii–5.viii.2005 (1♂, DMNS), leg. A. van Harten. Length: 24–40 mm.

Distribution: The species is distributed from North Africa and northern East Africa, through Israel and Arabia to Afghanistan, Pakistan and Iran (Endrődi, 1985; Krell, 2006). The Arabian populations form the subspecies *O. a. arabicus*.

Remarks: The species is considered a secondary pest of date palms (El-Shafie, 2014).



Plates 12–13. *Oryctes agamemnon arabicus* Fairmaire. 12: Male, dorsal view; 13: Male, lateral view.



Plates 14–15. *Oryctes agamemnon arabicus* Fairmaire. 14: Female, dorsal view; 15: Female, lateral view.



Plates 16–17. *Oryctes agamemnon arabicus* Fairmaire. 16: Aedeagus, frontal view; 17: Aedeagus, lateral view.

***Oryctes elegans* Prell, 1914**

Plates 18–21, 27

Specimens examined: Fujairah Emirate: Fujairah, 25°08'N 56°21'E, light trap, 5–24.iii.2005 (2 ex., DMNS), 2–13.v.2005 (2 ex. DMNS; 1 ex., BMNH), 13.v–5.vi.2005 (1 ex., DMNS), leg. A. van Harten. Wadi Madaq, 25°19'N 56°08'E, 410 m, 2–30.iii.2006, light trap, leg. A. van Harten (5♂, BMNH; 1♂, 1♀, NMPC); 11.viii–9.ix.2006, light trap, leg. A. van Harten (1♂, BMNH; 1♂, NMPC). Ras al-Khaimah Emirate: Wadi Bih (dam), 25°48'N 56°04'E, 100 m, 8–22.iii.2007, light trap, leg. A. van Harten (6 ex., BMNH). – Literature record: "Specimens of the fruit stalk borer (*Oryctes* [sic!] *elegans* Prell) [...] at the museum of the Digdaga Experiment Station were checked by the expert and their identification was confirmed." (El-Haidari, 1980: 4). Sharjah Emirate: Sharjah–Khor Kalba, near tunnel, 24°59'N 56°14'E, 17–24.v.2006, leg. A. van Harten (4♂, BMNH).

Length: 24–40 mm.

Distribution: Arabia, Iraq, Iran (Krell, 2006).

Remarks: The species is a pest of date palms (El-Shafie, 2014) and can cause considerable damage (eg. Kadous et al., 1982).

***Oryctes rhinoceros* (Linnaeus, 1758)**

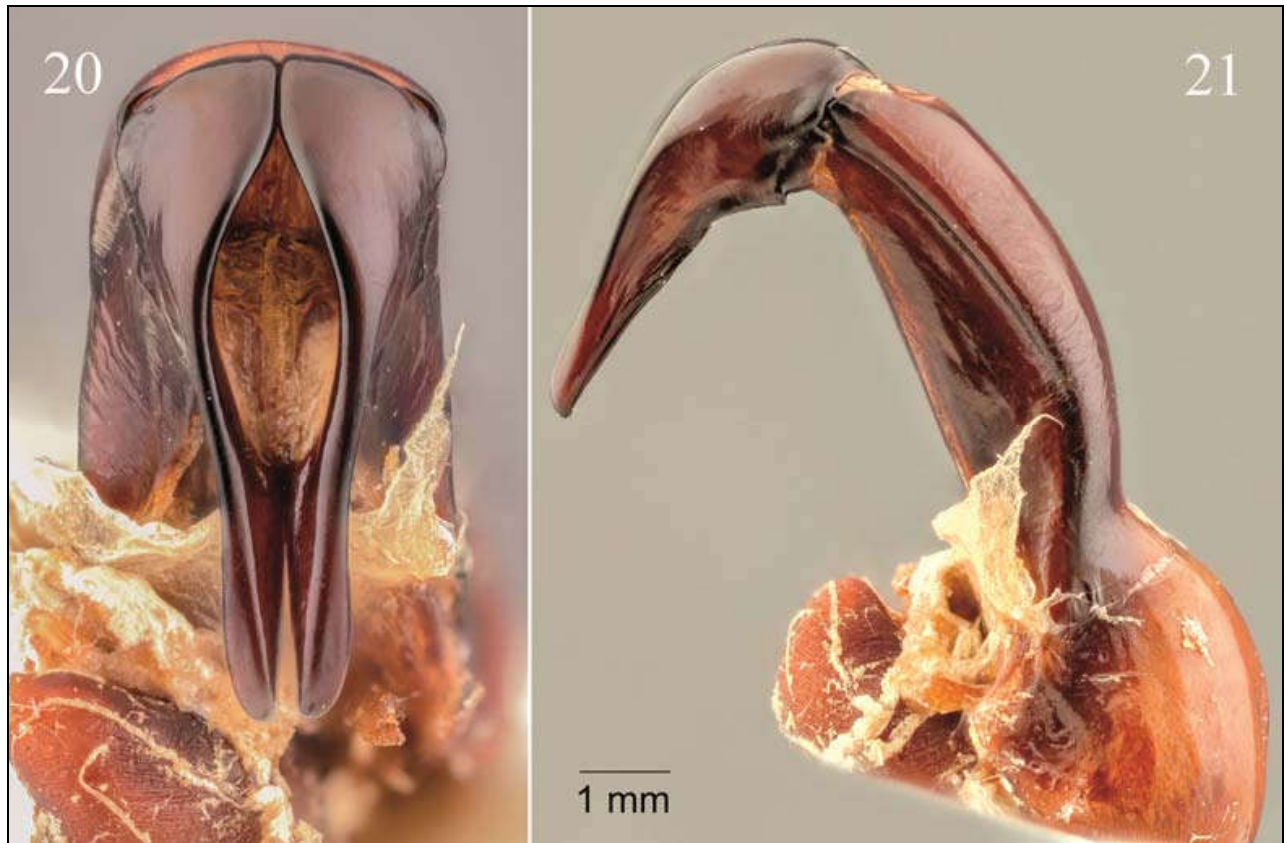
Plates 22–24

Specimen examined: Dubai Emirate: Dubai, near Dhow Wharfs, 13.v.1997 (1♂, MGCB, Plates 22–24).

Length: 30–57 mm.



Plates 18–19. *Oryctes elegans* Prell. 18: Male, dorsal view; 19: Male, lateral view.



Plates 20–21. *Oryctes elegans* Prell. 20: Aedeagus, frontal view; 21: Aedeagus, lateral view.

Distribution: *Oryctes rhinoceros* is a species from the Oriental and south-eastern Palaearctic regions, Papua and Fiji (Endrödi, 1985: 520) and was reported from the UAE as an invasive species by Gassouma (2004) and Gillett & Gillett (2005: 356).

Remarks: In Asia, the species is reported damaging coconut, date, and other palms (El-Shafie, 2014).

Key to the Dynastinae species of the United Arab Emirates

- 1 Outer apical margin of hind tibia with two or three triangular denticles or lobes (Oryctini) (Plates 25–26) 2
- Outer apical margin entire, without lobes or denticles (Pentodontini) (Plate 5) 4
- 2 Outer apical margin of hind tibia with two triangular denticles (Plate 24) *Oryctes rhinoceros*
- Outer apical margin of hind tibia with three triangular denticles (Plate 25) 3
- 3 Fore tibia ventrally with a subapical, downward-pointing denticle (Plate 27, arrow) *Oryctes elegans*
- Fore tibia ventrally without a downward-pointing denticle, but instead with a subapical shallow lobe (Plate 26, arrow) *Oryctes agamemnon arabicus*
- 4 Clypeus triangular, in the middle of the anterior margin with only one median denticle or lobe, if any (Plates 6, 11) 5
- Clypeus in the middle of the anterior margin with two denticles (Plate 3) *Pentodon algerinus*



Plates 22–23. *Oryctes rhinoceros* (Linnaeus). 22: Male, dorsal view; 23: Male, lateral view.

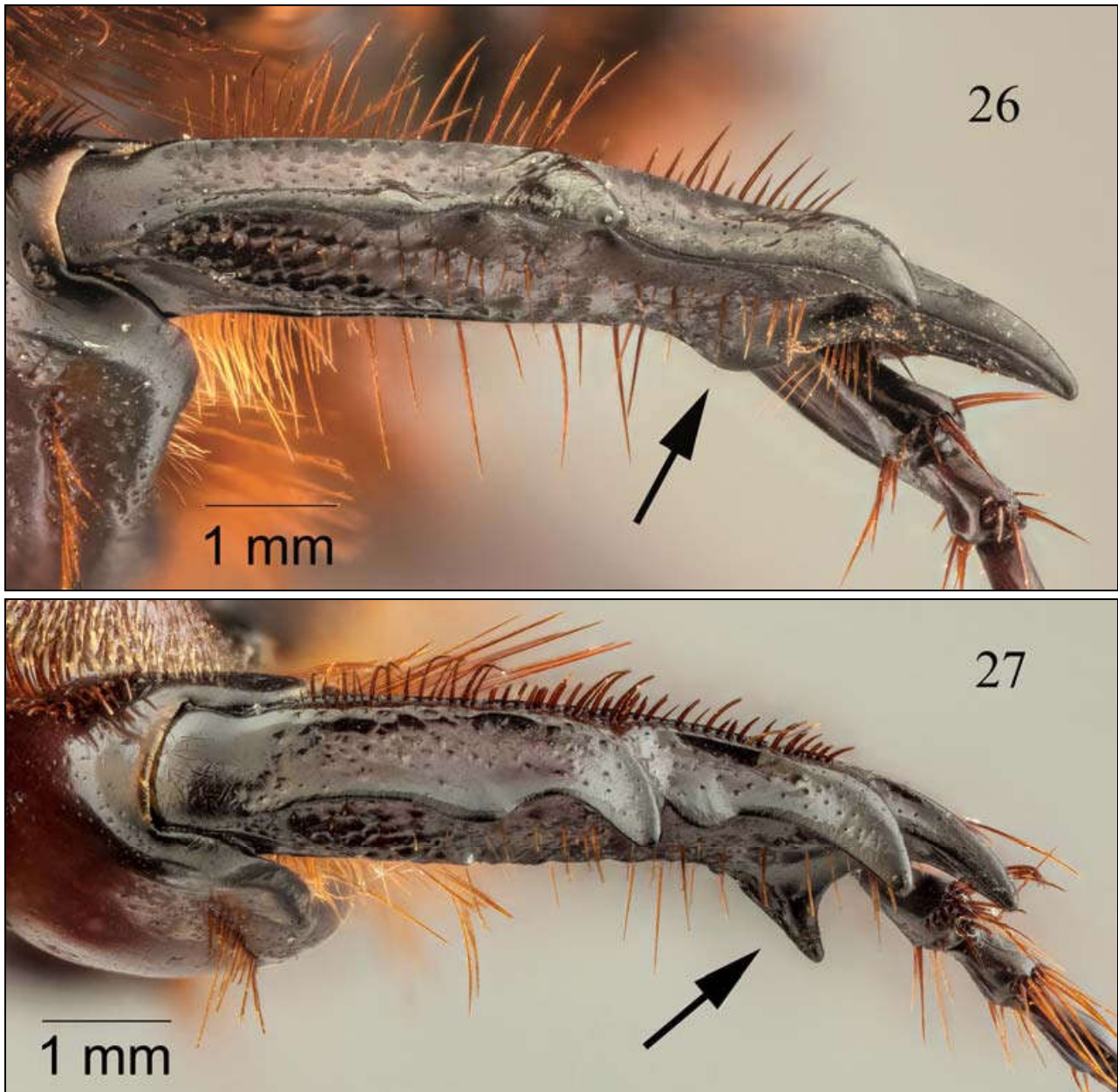


Plates 24–25. 24: *Oryctes rhinoceros* (Linnaeus), apex of hind tibia; 25: *Oryctes agagemnon arabicus* Fairmaire, apex of hind tibia.

- 5 7.5–15 mm body length; outer side of mandibles with lobes *Podalgus cuniculus arabicus*
 - 19–30 mm body length; outer side of mandibles entire, curved, without lobes (Plate 11) ...
 *Phyllognathus excavatus*

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Plates 26–27. 26: *Oryctes agagemnon* Fairmaire, protibia, lateral view; 27: *Oryctes elegans* Prell, protibia, lateral view.

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