

The westernmost record of *Neptosternus circumductus*, and a review of Dytiscidae (Coleoptera) of Baluchistan (Iran, Pakistan)

Jiří HÁJEK

Department of Entomology, National Museum, Kunratice 1, CZ-148 00 Praha 4, Czech Republic;
e-mail: jiri_hajek@nm.cz

Abstract. *Neptosternus circumductus* Régimbart, 1899 has been found in south-eastern Iran, which represents the westernmost record of the Oriental members of the genus *Neptosternus* Sharp, 1882. The lectotype of *N. circumductus* is designated, and its male genitalia as well as the variability of the elytral pattern are illustrated, based on additional material from the Sistan va Baluchestan province of Iran. In addition, a list of species and new distributional data are published for the predaceous diving beetles (Dytiscidae) of the Baluchistan region (Sistan va Baluchestan province in Iran and Baluchistan province in Pakistan). The following first national records are given: *Hyphoporus aper* Sharp, 1882 from Iran and Pakistan; *Nebrioporus indicus* (Sharp, 1882), *Neptosternus circumductus*, and *Peschetiulus quadricostatus* (Aubé, 1838) from Iran; *Laccophilus maindroni persicus* Brancucci, 1983 from Pakistan. The occurrence of *Laccophilus inefficiens* (Walker, 1859) in Iran is confirmed. Altogether 23 species of the family Dytiscidae are now known from Baluchistan.

Keywords. Dytiscidae, *Neptosternus*, first records, zoogeography, India, Iran, Pakistan, Oriental region, Palaearctic region

Introduction

The term Baluchistan (or Baluchestan) originates from the name of the influential 'Baluch' tribe inhabiting an upland area currently divided among three countries (Iran, Afghanistan and Pakistan). In terms of water beetles, this territory remains one of the least investigated areas in the Palaearctic region. There is no comprehensive work dealing with the Dytiscidae of Baluchistan. McCULLERS (1976) mentioned only two species from Iranian Baluchistan. One additional endemic species from the genus *Deronectes* Sharp, 1882, was recently described from Iranian Baluchistan by FERY & HOSSEINIE (1998). From Pakistan, several data on

the Dytiscidae are included in GUÉORGUIEV (1967) and VAZIRANI (1969a, 1970), and BISTRÖM & NILSSON (2003) mentioned one species of *Pescheti* Guignot, 1942. So far, no species of the Dytiscidae was recorded from Afghan Baluchistan (HÁJEK & FERY 2004).

All but a few specimens mentioned in this paper were collected by Czech entomologists. Three entomological expeditions to Iran by the Department of Entomology of the National Museum in Prague took place in 1970, 1973 and 1977 (HOBERLANDT 1974, 1981, 1983). The latter two expeditions also visited Baluchistan. Water beetles from these expeditions were partly identified by the late V. B. Guéorguiev but the results were never published. Additional specimens from Iranian Baluchistan were collected by Marek Kafka (Praha) in 1997, and I collected a number of species during the Czech Biological Expedition to the Islamic Republic of Iran in April 2000. Specimens from Pakistan were collected by three other Czech entomologists, Stanislav Bečvář (České Budějovice) in 1993, and Lukáš Čížek (Brno) and David Hauck (Brno) in 1995.

The aim of this paper is to summarise all known data on the Dytiscidae from the Baluchistan region. In particular, *Neptosternus circumductus* Régimbart, 1899, described and known so far only from India (VAZIRANI 1969a, HOLMEN & VAZIRANI 1990, HENDRICH & BALKE 1999), is reported from Iran for the first time. This is also the westernmost record of the genus *Neptosternus* Sharp, 1882 in the wider Oriental region. The genus is not known from the Arabian Peninsula but one species occurs in North Africa (*N. rotroui* (Pic, 1924) from Algeria) and several other species occur in the Afrotropical region (OMER-COOPER 1970). I thus depict important diagnostic characters of *N. circumductus*, and I also briefly summarise the zoogeographical relevance of the new findings.

Material and methods

The geographical limits of Baluchistan considered in this work are given by the political boundaries of the Sistan va Baluchestan province in Iran and the Baluchistan province in Pakistan. The Afghan part of Baluchistan is not included since no Dytiscidae have been recorded from that area (HÁJEK & FERY 2004).

Species are arranged alphabetically and the nomenclature follows NILSSON (2003). Exact label data are cited for all studied specimens. My remarks are included in square brackets. Localities of the Czechoslovak-Iranian entomological expeditions ('Loc. No. xx, Exp. Nat. Mus. Praha') were fully described by HOBERLANDT (1981, 1983).

All specimens mentioned in this study are deposited in the following institutional and private collections:

- HFCEB Hans Fery collection, Berlin, Germany (property of NMW);
- JSCL Jaroslav Šťastný collection, Liberec, Czech Republic;
- LHCB Lars Hendrich collection, Berlin, Germany (property of NMW);
- MKCN Marek Kafka collection, Neratovice, Czech Republic;
- MNHN Museum National d'Histoire Naturelle, Paris, France (Helene Perrin);
- NHMB Naturhistorisches Museum Basel, Switzerland (Michel Brancucci);
- NMPC Národní muzeum, Praha, Czech Republic (Jiří Hájek);
- NMW Naturhistorisches Museum Wien, Austria (Manfred A. Jäch).

Taxonomy

The genus *Neptosternus* Sharp, 1882, includes 93 species distributed mainly in the tropical areas of Africa and Asia (HENDRICH & BALKE 2001, 2003; NILSSON 2001). Only six species occur in the Palaearctic region (HENDRICH & BALKE 2000b; NILSSON 2003, 2005).

The African *Neptosternus* were revised by GUIGNOT (1959) and OMER-COOPER (1970); those from the Indian subcontinent were monographed by VAZIRANI (1969a) and HOLMEN & VAZIRANI (1990). Later on, HENDRICH & BALKE (1999, 2000b) added four new species from Southern India. *Neptosternus* from South-East Asia were revised by HENDRICH & BALKE (1997), and the results subsequently updated by BALKE et al. (1997), BALKE & HENDRICH (1998, 2001) and HENDRICH & BALKE (2000a, 2001, 2003).

Neptosternus circumductus Régimbart, 1899

(Figs. 1, 3)

Neptosternus circumductus: RÉGIMBART (1899): 83 (original description; Genji, South Arkot [Tamil Nadu, India]); VAZIRANI (1953): 424 (description of variability; Madras [Tamil Nadu], Madhya Pradesh); VAZIRANI (1963): 16 (Bihar); (1969a): 251 (Maharashtra, Orissa, Uttar Pradesh); HOLMEN & VAZIRANI (1990): 20 (India); HENDRICH & BALKE (1999): 60 (India); HENDRICH & BALKE (2000): 1286 (Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu, Uttar Pradesh).

Type locality. 'l'Inde anglaise. Genji (South Arkot)' [Province Tamil Nadu, southern India].

Type material. LECTOTYPE: ♂, by present designation (MNHN), labelled: 'INDE ANGLAIS, Maindron 1881 / MUSEUM PARIS, COLL. MAURICE REGIMBART, 1908 [printed] / TYPE [red label, printed] / *Neptosternus circumductus* Rég. n. sp. typ. [hw], Régimbart det. 1896 [printed] / LECTOTYPUS ♂, NEPTOSTERNUS circumductus Régimbart, 1899, Jiří Hájek des. 2002 [red label, printed]'. 2 paralectotypes (MNHN), labelled: 'MUSEUM PARIS, INDE ANGLAISE, ARKOT NORD, GENJI, M. MAINDRON 1881 / Genji (South Arkot), Inde anglaise, Janvier 1881 / circumductus Rég., Inde (typ. museum) [hw]' and the respective paralectotype labels. I herein designate the lectotype to fix the identity of this species, as available taxonomic works do not allow unambiguous identification of specimens.

Additional material examined. **INDIA:** 1♂ 1♀, 'S-India, Tamil Nadu, Nilgiri Hills, 15 km SE Kotagiri, Kunchappanai, 900 m, 76°56'E 11°22'E, 17-28.11.1993, leg. Boukal & Kejval' (NMW); 4 ex, 'C India, MP [Madhya Pradesh], Panna National Park, VIII.1988, C. Werner leg.' (LHCB, NHMB, NMPC); **IRAN:** 84 exs., 'IRAN, 11.-12.IV.2000, Sistan va Baluchestan Prov., Pir Sohrab env., 100 m, (25°44'N, 60°50'E)', 'Iran 2000 Czech Biological Expedition, J. Hájek & M. Mikát leg.' (LHBC, NMPC).

Redescription. Large, elongate species; body arched in lateral view. Head and pronotum testaceous, elytra brown with variable yellowish pattern (Fig. 1). Ventral parts and appendages testaceous.

Measurements. Total length of beetle 3.6-3.9 mm (lectotype 3.7 mm); length without head 3.3-3.5 mm (lectotype 3.3 mm); maximum width of beetle 1.9-2.1 mm (lectotype 2.0 mm).

Head. Coloration testaceous. Reticulation composed of slightly impressed polygonal meshes, but medially densely punctate. Mouthparts testaceous.

Pronotum. Coloration testaceous, with thin brown stripe along posterior margin, darker anteriorly along the row of large punctures, and in some specimens also with median brown spot along anterior margin. Reticulation similar to that on head but more impressed. Surface densely punctate; basomedially, along anterior margin and laterally with some larger punctures.

Elytra. Blackish brown, with uninterrupted lateral yellow margin and two variable, sometimes confluent yellowish spots on disc of each elytron; lateral margin dilated apically towards suture in form of a triangle (Fig. 1). Microreticulation consisting of slightly transverse polygonal meshes. Large punctures sparse on disc. Three rows of serial punctures perceptible (cf. HENDRICH & BALKE 1997): discal and first lateral row distinct, second lateral row perceptible only in second third of elytral length, sutural row not present.

Ventral side. Venter testaceous and microreticulated. Abdominal sternites with several large setigerous punctures.

Legs. Completely testaceous. Male tarsomeres of fore and middle legs not dilated. Claws simple and equal.

Male genitalia. Shape of median lobe as in Fig. 3.

Female. Similar to male. Last abdominal sternite narrowed apically.

Affinities. According to the elongate shape of body and elytral coloration, *N. circumductus* stands relatively solitary within the Indian and Oriental species of the genus. Habitually, it is more similar to the African species arranged by OMER-COOPER (1970) in species group I (*N. ornatus*-species group). At present, this group contains 14 species occurring in southern and central Africa and Madagascar.

Habitat. The Iranian specimens of *N. circumductus* were collected in a small pool of an almost dry river bed (around 5 metres in diameter and 1 meter in depth). The bottom consisted of sand and few larger stones (Figs. 5-6). All specimens were collected with a dip net at night.

Distribution. India and Iran (Sistan va Baluchestan province). Presence in Pakistan is likely.

List of recorded species

AGABINAE

Agabus (Gaurodytes) dichrous Sharp, 1878

Published records. ZAITZEV (1953: 261): 'Baluchistan', no additional data provided. Data repeated in NILSSON (2005: 5).

Ilybiosoma kermanensis (J. Balfour-Browne, 1939)

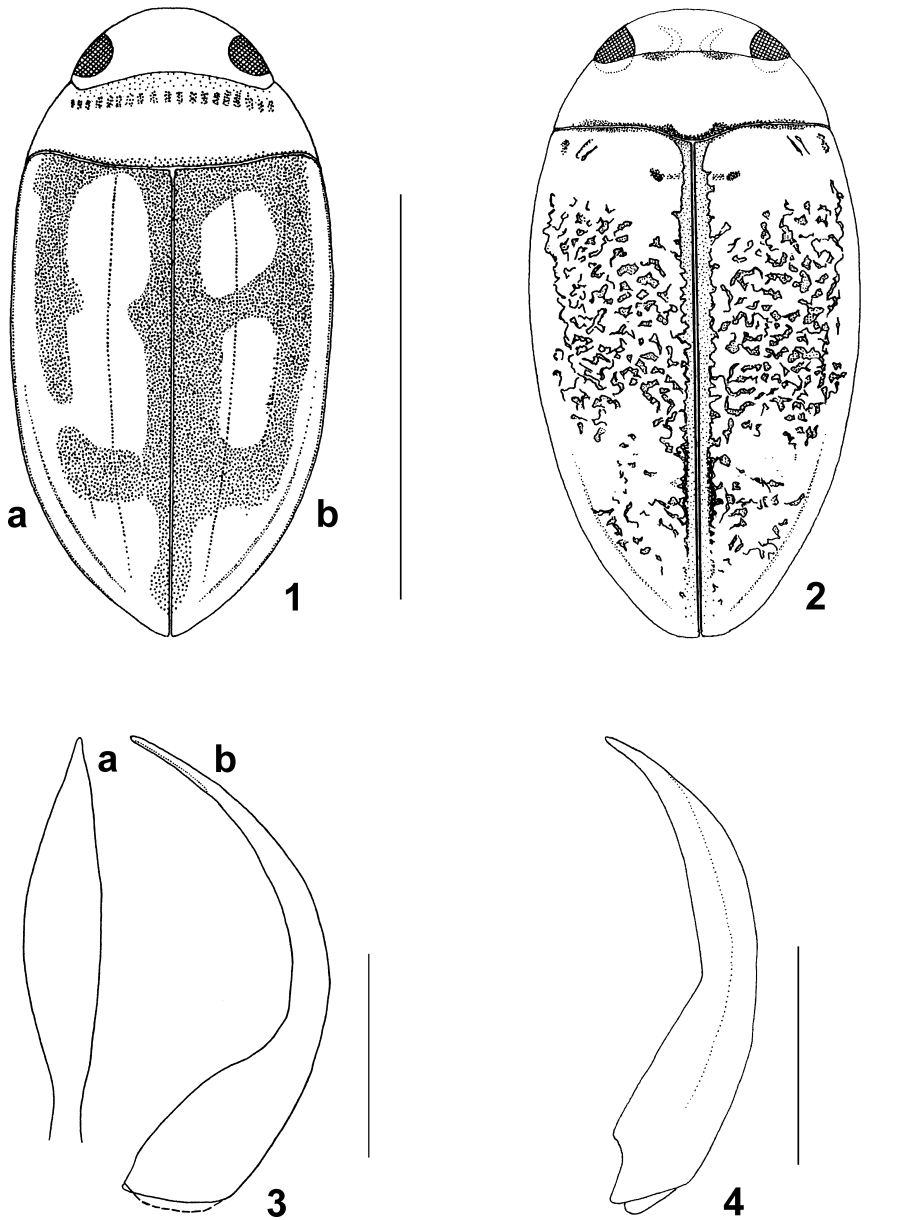
Material studied. IRAN: 10 spec., 'E Iran, 2100 m, Taftan, Tamandan, 17-18.4.1973', 'Loc. No. 167, Exp. Nat. Mus. Praha' (NMPC).

Notes. Endemic to Iran. So far known only from several localities in the Kerman province (BRANCUCCI & HENDRICH 2006). The present finding in Baluchistan suggests its wider occurrence in the highlands of south-eastern Iran.

COLYMBETINAE

Rhantus (Rhantus) suturalis (MacLeay, 1825)

Material studied. IRAN: 1 ♀, 'E Iran, Kuh-e Khvajeh, 3-5.6.1977', 'Loc. No. 357, Exp. Nat. Mus. Praha' (NMPC).



Figs. 1-4. 1, 3: *Neptosternus circumductus* Régimbart, 1899. 1 – habitus (a – aberrant specimen from Baluchistan; b – lectotype from India); 3 – median lobe of aedeagus (a – apex of median lobe in ventral view; b – median lobe in lateral view). 2, 4: *Laccophilus inefficiens* (Walker, 1859). 2 – habitus; 4 – median lobe of aedeagus in lateral view. Scale bars: 2 mm (Figs 1-2); 0.25 mm (Fig. 3); 0.5 mm (Fig. 4).



Figs. 5-6. Locality 'Pir Sohrab', 100 m a.s.l., 12.iv.2000, Sistan va Baluchestan Province, Iran. Photo author.

DYTISCINAE

Cybister (Cybister) tripunctatus lateralis (Fabricius, 1798)

Published records. VAZIRANI (1969a: 291) (as *C. tripunctatus asiaticus*): 'W Pakistan: Kurmuk, Baluchistan-Afghanistan frontier, 22.xi.1819', 'Saindek, 17.xi.1819', and 'Mand, Baluchistan (W.P. Blanford)'.

Material studied. IRAN: 1 ♂, 'SE Iran, Bahu-Kalat, 3-4.4.1973', 'Loc. No. 147, Exp. Nat. Mus. Praha'; 1 ♂ 1 ♀, 'SE Iran, Bazman, 13.4.73', 'Loc. No. 161, Exp. Nat. Mus. Praha'; 5 ♂♂ 3 ♀♀, 'E Iran, Kuh-e Khvajeh, 3-5.6.1977', 'Loc. No. 357, Exp. Nat. Mus. Praha' (all NMPC); 1 ♂, 'Iran, Baluchestan, Bampur, 6.-16.6.1997, M. Kafka lgt.' (MKCN); 1 ♀, 'Iran, 8.-9.IV.2000, Sistan va Baluchestan prov., Gegan env., 640 m, (28°23'N, 59°26'E)', 'Iran 2000 Czech Biological Expedition, J. Hájek & M. Mikát leg.'; 2 ♂♂ 3 ♀♀, 'Iran, 11.-12.IV.2000, Sistan va Baluchestan Prov., Pir Sohrab env., 100 m, (25°44'N, 60°50'E)', 'Iran 2000 Czech Biological Expedition, J. Hájek & M. Mikát leg.'; 2 ♂♂, 'Iran, 12.-13.IV.2000, 12 m, Sistan va Baluchestan prov., Tis env., Oman Sea shore, (25°21'N, 60°36'E)', 'Iran 2000 Czech Biological Expedition, J. Hájek & M. Mikát leg.' (all NMPC).

Eretes griseus (Fabricius, 1781)

Material studied. IRAN: 1 ♀, 'Iran, 11.-12.IV.2000, Sistan va Baluchestan prov., Pir Sohrab env., 100 m, (25°44'N, 60°50'E)', 'Iran 2000 Czech Biological Expedition, J. Hájek & M. Mikát leg.' (NMPC). **PAKISTAN:** 1 ♀, 'Pakistan, 4.-7.4.1993, S Balochistan, Awaran (distr. Khuzdar), lgt. S. Bečvár' (NMPC).

Eretes sticticus (Linné, 1767)

Published records. GUÉORGUIEV (1967: 474): 'Pakistan: 150 km SW von Quetta, 900 m, 13.5.1965', and 'Pakistan: 80 km NW von Quetta, 2100 m, 15.V.1965'. VAZIRANI (1969a: 255): 'W. Pakistan: Baluchistan', no additional data provided.

Material studied. IRAN: 1 ♂, 'Iran, Baluchestan, Bampur, 6.-16.6.1997, M. Kafka lgt.' (NMPC).

Notes. MILLER (2002) removed *E. griseus* from the synonymy of *E. sticticus*. Therefore, the old literature records should be regarded as doubtful, and revision of all material is desirable.

[?Hydaticus (Guignotites) fabricii (MacLeay, 1825)]

Published records. GUIGNOT (1954: 201): 'Le Bélouchistan', no additional data provided.

Notes. Two species, *H. fabricii* and *H. ponticus* Sharp, 1882, should occur in the Iranian part of Baluchistan according to GUIGNOT (1954). However, WEWALKA (1979) replaced *H. fabricii* in Afghanistan and Pakistan by *H. ricinus* Wewalka, 1979, and all specimens from Iran, which I have studied belong to *H. ponticus*. Thus, *H. fabricii* should not be considered as a member of the dytiscid fauna of Baluchistan, and its occurrence there is improbable.

Hydaticus (Guignotites) histrio Clark, 1864

Published records. GUÉORGUIEV (1967: 474): 'Pakistan: 20 km S von Quetta, 1900 m, 14.V.1965 (Kasy & Vartian)'. VAZIRANI (1969a: 258): 'Baluchistan: Muski Dist. (E. Vredenburg)'.

Material studied. IRAN: 1 ♂, 'SE Iran, Rask, vall r. Sarbáz, 3-4.4.1973', 'Loc. No. 146, Exp. Nat. Mus. Praha'; 3 ♀♀, 'SE Iran, Bahu-Kalat, 3-4.4.1973', 'Loc. No. 147, Exp. Nat. Mus. Praha'; 1 ♀, 'SE Iran, 25 km W Ghasreghand, 9-10.4.1973', 'Loc. No. 153, Exp. Nat. Mus. Praha'; 1 ♂, 'SE Iran, 9 km S Espakeh, 10.4.1973', 'Loc. No. 155, Exp. Nat. Mus. Praha'; 1 ♂, 'Iran, 9.IV.2000, Sistan va Baluchestan Prov., Isa Abad env., (26°54'N, 60°10'E), 600 m', 'Iran 2000 Czech Biological Expedition, J. Hájek & M. Mikát leg.'; 1 ♂ 2 ♀♀, 'Iran, 10.-11.IV.2000, Sistan va Baluchestan prov., 25 km S Kahiri, 1050 m, (26°44'N, 61°04'E)', 'Iran 2000 Czech Biological Expedition, J. Hájek & M. Mikát leg.' (all NMPC).

***Hydaticus (Guignotites) ponticus* Sharp, 1882**

Material studied. IRAN: 2 ♂♂ 3 ♀♀, 'E Iran, Kuh-e Khvajeh, 3-5.6.1977', 'Loc. No. 357, Exp. Nat. Mus. Praha' (NMPC).

***Prodaticus pictus* Sharp, 1882**

Material studied. IRAN: 1 ♂, 'Iran, Baluchestan, Bampur, 6.-16.6.1997, M. Kafka lgt.' (NMPC).

***Sandracottus dejeani* (Aubé, 1838)**

Material studied. IRAN: 1 ♀, 'Iran, Baluchestan, Bampur, 6.-16.6.1997, M. Kafka lgt.'; 1 ♀, 'Iran, 11.-12.IV.2000, Sistan va Baluchestan Prov., Pir Sohrab env., 100 m, (25°44'N, 60°50'E)' (all NMPC).

HYDROPORINAE

***Deronectes hendrichi* Fery & Hosseinie, 1998**

Published records. FERY & HOSSEINIE (1998: 253): '26.3.1998, Iran, Sistan & Baluchestan, 103 km S Iransahr, 700 m, river' (type locality), and '26.3.1998, Iran Sistan-o-Baluchestan province, 82 km S Iransahr, 960 m, stagnant water'.

***Herophydrus musicus* (Klug, 1834)**

Published records. GUÉORGUIEV (1967: 473): 'Pakistan: 80 km NW von Quetta, 2100 m, 15.V.1965 (Kasy & Vartian)'. VAZIRANI (1970: 1112): 'W Pakistan: Quetta, Hanna, 10.xi.1918 (B.S.)'.

Material studied. IRAN: 1 spec., 'E Iran, 2100 m, Taftan, Tamandan, 17-18.4.1973', 'Loc. No. 167, Exp. Nat. Mus. Praha'; 5 spec., 'E Iran, Kuh-e Khvajeh, 3-5.6.1977', 'Loc. No. 357, Exp. Nat. Mus. Praha'; 12 spec., 'Iran, 9.-10.IV.2000, Sistan va Baluchestan prov., 2 km S Espakeh, (26°48'N, 60°10'E), 690 m', 'Iran 2000 Czech Biological Expedition, J. Hájek & M. Mikát leg.'; 4 spec., 'Iran, 11.-12.IV.2000, Sistan va Baluchestan prov., Pir Sohrab env., 100 m, (25°44'N, 60°50'E)', 'Iran 2000 Czech Biological Expedition, J. Hájek & M. Mikát leg.' (all NMPC). **PAKISTAN:** 1 spec., 'Pakistan: Baluchistan, 105 km SE Quetta, Sibi, 16.2.1995, leg. Hauck et Čížek' (HFCB).

***Hydroglyphus angularis* (Klug, 1834)**

Published records. GUÉORGUIEV (1967: 473) (as *Guignotus angularis*): 'Pakistan: 80 km NW von Quetta, 2100 m, 15.V.1965 (Kasy & Vartian)'.

Material studied. IRAN: 1 spec., 'Iran, 1.4.1954, Belutschistan, Iranshar, 800 m, Richter & Schäufole' (HFCB); 6 spec., 'SE Iran, Rask, vall r. Sarbáz, 3-4.4.1973', 'Loc. No. 146, Exp. Nat. Mus. Praha'; 87 spec., 'SE Iran, Bahu-Kalat, 3-4.4.1973', 'Loc. No. 147, Exp. Nat. Mus. Praha'; 1 spec., 'SE Iran, 13 km SSE Niksahr (riv.), 8-9.4.1973', 'Loc. No. 152, Exp. Nat. Mus. Praha'; 4 spec., 'SE Iran, 9 km S Espakeh, 10.4.1973', 'Loc. No. 155, Exp. Nat. Mus. Praha'; 3 spec., 'S.E. Iran, 11-12.4.73, Chasemabad, 10 km E Bampur (vall.)', 'Loc. No. 157, Exp. Nat. Mus. Praha'; 1 spec., 'E Iran, 37 km SW Zahedan, 22-23.4.1973', 'Loc. No. 173, Exp. Nat. Mus. Praha' (all NMPC); 4 spec., 'Iran, Baluchestan, Bampur, 6.-16.6.1997, M. Kafka lgt. (MKCN)'; 2 spec., 'Iran, 9.-10.IV.2000, Sistan va Baluchestan prov., 2 km S Espakeh, (26°48'N, 60°10'E), 690 m', 'Iran 2000 Czech Biological Expedition, J. Hájek & M. Mikát leg.'; 2 spec., 'Iran, 10.-11.IV.2000, Sistan va Baluchestan prov., 25 km S Kahiri, 1050 m, (26°44'N, 61°04'E)', 'Iran 2000 Czech Biological Expedition, J. Hájek & M. Mikát leg.'; 5 spec., 'Iran, 11.-12.IV.2000, Sistan va Baluchestan prov., Pir Sohrab env., 100 m, (25°44'N, 60°50'E)', 'Iran 2000 Czech Biological Expedition, J. Hájek & M. Mikát leg.' (all NMPC). **PAKISTAN:** 2 ♂♂, 'Pakistan, 4.-7.4.1993, S Balochistan, Awaran (distr. Khuzdar), lgt. S. Bečvář' (NMPC); 17 spec., 'Pakistan, 8.-19.4.1993, W Balochistan, Turbat, lgt. S. Bečvář' (LHCB); 1 spec., 'Pakistan, 13.4.1993, W Balochistan, 90 km W Turbat, lgt. S. Bečvář' (HFCB).

Hydroglyphus flammulatus (Sharp, 1882)

Material studied. IRAN: 3 spec., 'SE Iran, 13 km SSE Niksahr (riv.), 8-9.4.1973', 'Loc. No. 152, Exp. Nat. Mus. Praha'; 9 spec., 'Iran, 9-10.IV.2000, Sistan va Baluchestan prov., 2 km S Espakeh, (26°48'N, 60°10'E), 690 m', 'Iran 2000 Czech Biological Expedition, J. Hájek & M. Mikát leg.' (all NMPC).

Hydroglyphus geminus (Fabricius, 1792)

Material studied. IRAN: 46 spec., 'S.E. Iran, 11-12.4.73, Chasemabad, 10 km E Bampur (vall.)', 'Loc. No. 157, Exp. Nat. Mus. Praha'; 5 spec., 'Iran, 9-10.IV.2000, Sistan va Baluchestan prov., 2 km S Espakeh, (26°48'N, 60°10'E), 690 m', 'Iran 2000 Czech Biological Expedition, J. Hájek & M. Mikát leg.' (all NMPC).

Hydroglyphus signatellus (Klug, 1834)

Published records. VAZIRANI (1969a: 319) (as *Guignotus signatellus*): 'Baluchistan, 13.xi.1918 (N.A. and S.K.)', 'Hanna, Quetta, 10.xi.1918', and 'Baluchistan, stn. 35, 29.xii.1918 (B.S.)'. McCULLERS (1976: 16): 'Baluchestan', no additional data provided.

Material studied. IRAN: 157 spec., 'SE Iran, Bahu-Kalat, 3-4.4.1973', 'Loc. No. 147, Exp. Nat. Mus. Praha'; 168 spec., 'SE Iran, 13 km SSE Niksahr (riv.), 8-9.4.1973', 'Loc. No. 152, Exp. Nat. Mus. Praha'; 9 spec., 'S.E. Iran, 11-12.4.73, Chasemabad, 10 km E Bampur (vall.)', 'Loc. No. 157, Exp. Nat. Mus. Praha'; 354 spec., 'E Iran, Kuh-e Khvajeh, 3-5.6.1977', 'Loc. No. 357, Exp. Nat. Mus. Praha' (all NMPC); 2 spec., 1♂, 'Iran, Baluchestan, Bampur, 17.-27.8.1996, M. Kafka lgt. (MKCN)'; 1 spec., 'Iran, 8-9.IV.2000, Sistan va Baluchestan prov., Gegan env., 640 m, (28°23'N, 59°26'E)', 'Iran 2000 Czech Biological Expedition, J. Hájek & M. Mikát leg.'; 3 spec., 'Iran, 9-10.IV.2000, Sistan va Baluchestan prov., 2 km S Espakeh, (26°48'N, 60°10'E), 690 m', 'Iran 2000 Czech Biological Expedition, J. Hájek & M. Mikát leg.'; 12 spec., 'Iran, 11.-12.IV.2000, Sistan va Baluchestan prov., Pir Sohrab env., 100 m, (25°44'N, 60°50'E)', 'Iran 2000 Czech Biological Expedition, J. Hájek & M. Mikát leg.' (all NMPC). **PAKISTAN:** 1 spec., 'Pakistan: Baluchistan, 105 km SE Quetta, Sibi, 16.2.1995, leg. Hauck et Čížek' (HFCB).

Hydrovatus acuminatus Motschulsky, 1859

Material studied. IRAN: 1♀, 'SE Iran, Rask, vall r. Sarbáz, 3-4.4.1973', 'Loc. No. 146, Exp. Nat. Mus. Praha'; 1♂ 1♀, 'SE Iran, 13 km SSE Niksahr (riv.), 8-9.4.1973', 'Loc. No. 152, Exp. Nat. Mus. Praha'; 8 spec., 'Iran, 9-10.IV.2000, Sistan va Baluchestan prov., 2 km S Espakeh, (26°48'N, 60°10'E), 690 m', 'Iran 2000 Czech Biological Expedition, J. Hájek & M. Mikát leg.' (all NMPC).

Hygrotus (Coelambus) confluens (Fabricius, 1787)

Material studied. IRAN: 1 spec., 'SE Iran, Bazman, 13.4.73', 'Loc. No. 161, Exp. Nat. Mus. Praha' (NMPC).

Hygrotus (Coelambus) enneagrammus (Ahrens, 1833)

Published records. VAZIRANI (1970: 110) (as *Coelambus enneagrammus*): 'W Pakistan: Baluchistan', no additional data provided.

Hyphoporus aper Sharp, 1882

Material studied. IRAN: 3♀♀, 'SE Iran, Sekand, 27 km ENE Sarbáz, 31.3.-1.4.1973', 'Loc. No. 144, Exp. Nat. Mus. Praha'; 1♀, 'SE Iran, 1.-2.4.1973, env. Sarbaz, valley of river Sarbaz', 'Loc. No. 145, Exp. Nat. Mus. Praha'; 1♀, 'SE Iran, Rask, vall r. Sarbáz, 3-4.4.1973', 'Loc. No. 146, Exp. Nat. Mus. Praha'; 1♀, 'SE Iran, Bahu-Kalat, 3-4.4.1973', 'Loc. No. 147, Exp. Nat. Mus. Praha'; 3♂♂ 1♀, 'SE Iran, 13 km SSE Niksahr (riv.), 8-9.4.1973', 'Loc. No. 152, Exp. Nat. Mus. Praha'; 1♂, 'SE Iran, 25 km W Ghasre-ghand, 9-10.4.1973', 'Loc. No. 1153, Exp. Nat. Mus. Praha'; 1♂, 'SE Iran, 11-12.4.73, Ghasemabad, 10 km Bampur (vall.)', 'Loc. No. 157, Exp. Nat. Mus. Praha';

21 spec., 'SE Iran, Bazman, 13.4.73', 'Loc. No. 161, Exp. Nat. Mus. Praha'; 1♂, 'Iran, 10.-11.IV.2000, Sistan va Baluchestan prov., 25 km S Kahiri, 1050 m, (26°44'N, 61°04'E)', 'Iran 2000 Czech Biological Expedition, J. Hájek & M. Mikát leg.'; 39 spec., 'Iran, 11.-12.IV.2000, Sistan va Baluchestan prov., Pir Sohrab env., 100 m, (25°44'N, 60°50'E)', 'Iran 2000 Czech Biological Expedition, J. Hájek & M. Mikát leg.' (all NMPC). **PAKISTAN:** 1♀, 'Pakistan, 4.-7.4.1993, S Balochistan, Awaran (distr. Khuzdar), lgt. S. Bečvář' (NMPC); 6 spec., 'Pakistan, 8.-19.4.1993, W Balochistan, Turbat, lgt. S. Bečvář' (LHCB, NMPC).

Notes. The species was described originally from 'N India', and subsequently recorded from most parts of northern India (Bihar, Madhya Pradesh, Punjab, Uttar Pradesh, West Bengal) by VAZIRANI (1969b). **First record from Iran and Pakistan.**

The species could in fact be distributed more widely than the data from literature indicate as two related species, *H. nilghiricus* Régimbart, 1903, and *H. pacistanus* Guignot, 1959, may actually be junior synonyms. The entire genus is in an urgent need of a complete revision.

Nebrioporus (Nebrioporus) indicus (Sharp, 1882)

Material studied. IRAN: 1 spec., 'SE Iran, 40 km SW Zabolí, 31.3.1973', 'Loc. No. 143, Exp. Nat. Mus. Praha'; 1 spec., 'SE Iran, Sekand, 27 km ENE Sarbáz, 31.3.-1.4.1973', 'Loc. No. 144, Exp. Nat. Mus. Praha'; 3 spec., 'E Iran, 2100 m, Taftan, Tamandan, 17-18.4.1973', 'Loc. No. 167, Exp. Nat. Mus. Praha'; 1♂, 'Iran, 9.-10.IV.2000, Sistan va Baluchestan prov., 2 km S Espakeh, (26°48'N, 60°10'E), 690 m', 'Iran 2000 Czech Biological Expedition, J. Hájek & M. Mikát leg.' (all NMPC). **PAKISTAN:** 1♀, 'Pakistan, 4.-7.4.1993, S Balochistan, Awaran (distr. Khuzdar), lgt. S. Bečvář' (NMPC).

Notes. The species has been known from northern Pakistan (Baltistan), northern India (Kashmir, Himachal Pradesh, Uttar Pradesh) and Nepal (TOLEDO 1998); HÁJEK & FERY (2004) published records of *N. indicus* also from Afghanistan. **First record from Iran.**

Nebrioporus (Nebrioporus) mascatensis (Régimbart, 1897)

Published records. McCULLERS (1976: 16) (as *Potamonectes mascalorsis* [sic!]): 'Baluchestan', no additional data provided.

Material studied. IRAN: 1 spec., 'Iran, 16.7.1954, Belutschistan, Pass N Karwanda, 1335 m, Richter & Schäufole' (HFCEB); 1 spec., 'SE Iran, 40 km SW Zabolí, 31.3.1973', 'Loc. No. 143, Exp. Nat. Mus. Praha'; 1♀, 'Iran, 11.-12.IV.2000, Sistan va Baluchestan prov., Pir Sohrab env., 100 m, (25°44'N, 60°50'E)', 'Iran 2000 Czech Biological Expedition, J. Hájek & M. Mikát leg.' (all NMPC).

Peschetiulus quadricostatus (Aubé, 1838)

Published records. BISTRÖM & NILSSON (2003: 141): 'Pakistan: Baluchistan 105 km SE Quatta Sibi 16.II. 1995', and 'W Balochistan Turbat 8.-19.IV. 1993'.

Material studied. IRAN: 1♀, 'Iran, 11.-12.IV.2000, Sistan va Baluchestan prov., Pir Sohrab env., 100 m, (25°44'N, 60°50'E)', 'Iran 2000 Czech Biological Expedition, J. Hájek & M. Mikát leg.' (NMPC).

Notes. Species occurring in major parts of India, Nepal and Pakistan (BISTRÖM & NILSSON 2003). **First record from Iran.**

LACCOPHILINAE

Laccophilus indicus Gschwendtner, 1935

Material studied. PAKISTAN: 10 spec., 'Pakistan: Baluchistan, 105 km SE Quetta, Sibi, 16.2.1995, leg. Hauck et Čížek' (NMPC, NMW).

Laccophilus inefficiens (Walker, 1859)

(Figs. 2, 4)

Material studied. IRAN: 9 spec., 'Iran, 9.-10.IV.2000, Sistan va Baluchestan prov., 2 km S Espakeh, (26°48'N, 60°10'E), 690 m', 'Iran 2000 Czech Biological Expedition, J. Hájek & M. Mikát leg.'; 12 spec., 'Iran, 9.IV.2000, Sistan va Baluchestan Prov., Isa Abad env., (26°54'N, 60°10'E), 600 m', 'Iran 2000 Czech Biological Expedition, J. Hájek & M. Mikát leg.' (all NMPC). **PAKISTAN:** 5 spec., 'Pakistan: Baluchistan, 105 km SE Quetta, Sibi, 16.2.1995, leg. Hauck et Čížek' (NMPC, NMW); 1 spec., 'Pakistan: Baluchistan, 90 km SSE Quetta, Kundlani, 20.-23.2.1995, leg. Hauck et Čížek' (NMPC).

Notes. This predominately Oriental species was described from Sri Lanka and recorded from major parts of India and Nepal (BRANCUCCI 1983). VAZIRANI (1969a) listed Burma and Pakistan, and WEWALKA (1975) published records from Iran. However, NILSSON (2003, 2005) did not record this species from Iran. The specimens from desert habitats in Baluchistan have pale testaceous elytra with reduced brownish coloration (Fig. 2). However, other morphological characters as well as the shape of median lobe (Fig. 4) agree well with typical specimens from Sri Lanka and southern India.

Laccophilus maindroni persicus Brancucci, 1983

Material studied. PAKISTAN: 47 spec., 'Pakistan, 8.-19.4.1993, W Balochistan, Turbat, lgt. S. Bečvář' (JSCL, LHCB, NMPC, NMW); 104 exs, 'Pakistan: Baluchistan, 90 km SSE Quetta, Kundlani, 20.-23.2.1995, leg. Hauck et Čížek' (NMW).

Notes. The nominotypical subspecies of *Laccophilus maindroni* Régimbart, 1897, is endemic to Oman. BRANCUCCI (1983) described a new subspecies from the Hormozgan province in southern Iran. The present findings in Pakistan make its occurrence in the entire Baluchistan area very likely. **First record from Pakistan.**

Laccophilus minutus (Linné, 1758)

Published records. VAZIRANI (1969a: 238): 'W. Pakistan: Quetta, 10.xi.1918', and 'Pishin, 19.xii.1918'.

Laccophilus sharpi Régimbart, 1889

Material studied. IRAN: 2 spec., 'Iran, 11.-12.IV.2000, Sistan va Baluchestan prov., Pir Sohrab env., 100 m, (25°44'N, 60°50'E)', 'Iran 2000 Czech Biological Expedition, J. Hájek & M. Mikát leg.'. **PAKISTAN:** 1♂ 1♀, 'Pakistan, 21.-25.4.1993, SE Balochistan, Bela, lgt. S. Bečvář' (all NMPC).

Neptosternus circumductus Régimbart, 1899

Material studied. IRAN: See records given in taxonomic part.

Notes. Species described from the Tamil Nadu province in southern India. It was recorded subsequently from a major part of the Indian subcontinent by VAZIRANI (1953, 1963, 1969a) and HENDRICH & BALKE (2000). **First record from Iran.**

Discussion

In the last 35 years, Czech entomologists found 19 species of the family Dytiscidae in Baluchistan. Four additional species were recorded by other authors in literature. Altogether 23 species of the Dytiscidae are now known from Baluchistan.

Water beetles of Baluchistan correspond to a typical transient zoogeographical area. Most of the recorded species are widely distributed in the Palaearctic or Oriental region or in both. Only a few species have their distribution more restricted to the Arabian Peninsula and the Middle East (e.g. *Nebrioporus mascatensis*, *Prodaticus pictus*). No truly endemic species is known from Baluchistan. The following three taxa from upland running waters are, however, endemic to south-eastern Iran and western Pakistan: *Deronectes hendrichi*, *Ilybiosoma kermanensis* and *Laccophilus maindroni persicus*. These distributional data can be explained by the following two hypotheses:

1. Relatively high number of chiefly Oriental species in Baluchistan (e.g. *H. flammulatus*, *L. inefficiens*, *L. sharpi*, *N. circumductus*, *P. quadricostatus*, *S. dejeanii*) indicates a continuous distribution of fauna typical of the Oriental region through southern Pakistan to Iranian Baluchistan. Animals other than the Dytiscidae have a similar distribution and thus support this hypothesis. A remarkable example is the occurrence of the Indian crocodile (*Crocodylus palustris* Lesson, 1831) at the Iranian locality 'Pir Sohrab' (personal observation).
2. *Neptosternus* and *Peschetius* occur in the Afrotropical as well as in the Oriental region, with *Neptosternus* dominating in Asia (71 species in Asia, 22 species in Africa; BALKE & HENDRICH 2003, OMER-COOPER 1970), and *Peschetius* in Africa (seven species in Africa, two species in Asia; BISTRÖM & NILSSON 2003). The occurrence of *N. circumductus* and *P. quadricostatus* in Baluchistan supports a hypothesis of a former continuous distribution of some taxa in the 'Old World tropics' from sub-Saharan Africa through the Arabian Peninsula, Southern Iran and Pakistan to India and South-East Asia (see also BALKE 1995).

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