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On the border of Western and Eastern Palaearctic – new records of water beetles (Coleoptera: Gyrinidae, Noteridae, Dytiscidae) from eastern Kazakhstan

Na rozhraní západního a východního Palearktu – nové nálezy vodních brouků (Coleoptera: Gyrinidae, Noteridae, Dytiscidae) z východního Kazachstánu

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Abstract. Two species of Gyrinidae, two species of Noteridae and 35 species of Dytiscidae (Coleoptera) are recorded from the eastern, Asian part of Kazakhstan, namely Almaty Province and East Kazakhstan province. One Noteridae: *Noterus crassicornis* (O. F. Müller, 1776) and eight Dytiscidae: *Bidessus unistriatus* (Goeze, 1777), *Colymbetes dolabratus* (Paykull, 1798), *Herophydrus musicus* (Klug, 1834), *Hydroporus incognitus* Sharp, 1869, *H. lapponum* (Gyllenhal, 1808), *H. melanarius* Sturm, 1835, *H. umbrosus* (Gyllenhal, 1808) and *Rhantus notaticollis* (Aubé, 1837) are recorded from Kazakhstan for the first time, increasing the number of known dytiscid species from Kazakhstan to 93. *Rhantus bistriatus* (Bergsträsser, 1778) is recorded for the first time from the Asian part of Kazakhstan.

INTRODUCTION

Kazakhstan is, with an area of more than 2.7 million square kilometres, the World's largest landlocked country and also the largest successor country of the former Soviet Union. It extends from the Caspian depression in the west to the Tian Shan and the Altai Mountains in the east, from warm steppes in the south to Siberian lowland in the north.

The water beetle fauna of Kazakhstan is very incompletely known. Only six species of Gyrinidae (Mazzoldi 2003), one species of Noteridae (Nilsson 2011) and 85 species of Dytiscidae (Nilsson & Hájek 2014) are mentioned for either the European and/or the Asian part of Kazakhstan in the most recent version of the Palaearctic catalogue. The first records of water beetles from Kazakhstan can be found in old descriptions such as those by Gebler (1829, 1841), Motschulsky (1860a, b), Schaum (1864), Zaitzev (1905, 1906) or Scholz (1916). The most comprehensive information is given in Zaitzev's (1953) Fauna of the USSR and its English translation (Zaitzev 1972); updated information is included in the key to identification of Russian freshwater invertebrates (Kirejtshuk 2001). Most recently, new species of *Hydroporus* Clairville, 1806 were described from Kazakhstan by Shaverdo & Fery (2001) and Fery & Šťastný (2010) respectively, and several new country records were provided by Shaverdo (2002), Fery (2003), Hájek & Fery (2004) and Fery & Petrov (2006a, b).

In summer 2006, a biological expedition of the University of South Bohemia, České Budějovice visited eastern Kazakhstan, predominantly the Altai Mts. One of its members, Petr Koutecký, collected a small number of water beetles comprising one gyrinid, one noterid and 11 dytiscid species. Comparison with the Catalogue of Palearctic Dytiscidae (Nilsson &

Hájek 2014) revealed that about half of the Dytiscidae species in the material had never been formally published from Kazakhstan, which was the impulse to write this contribution. Data from the Czech expedition were afterwards supplemented with other records based on material from several institutional and private collections, and identified by the present authors.

MATERIAL AND METHODS

General distribution of species is simplified according to World Catalogue of Noteridae (Nilsson 2011), Catalogue of Palaearctic Gyrinidae (Mazzoldi 2003), and Dytiscidae (Nilsson & Hájek 2014) respectively.

The material included in this study is deposited in following institutional and private collections:

AKSP	Alexander G. Koval collection, Sankt Petersburg, Russia;
CHF	Hans Fery collection, Berlin, Germany (property of NHMW);
HNHM	Hungarian Natural History Museum, Budapest, Hungary (Ottó Merkl);
JSCO	Jiří Stanovský collection, Ostrava, Czech Republic;
NHMW	Naturhistorisches Museum Wien, Vienna, Austria (Manfred A. Jäch);
NMPC	Národní muzeum, Prague, Czech Republic (Jiří Hájek);
OUMNH	Oxford University Museum of Natural History, Oxford, Great Britain (Darren J. Mann);
SMNS	Museum für Naturkunde, Stuttgart, Germany (Wolfgang Schawaller).

RESULTS

Gyrinidae

Aulonogyrus concinnus (Klug, 1834)

Material studied. KAZAKHSTAN: Almaty Province: 5 km NE Matay, 400 m, 28.vi.2001, 1 ♀, W. Schawaller lgt. (SMNS). East Kazakhstan province: W Tarbagatay Mts., 5 km N Taskesken, 600 m, 26.–27.vi.2001, 1 ♂ 1 ♀, W. Schawaller lgt. (NMPC, SMNS).

Distribution. Predominantly western Palaearctic species.

Gyrinus* (*Gyrinus*) *distinctus Aubé, 1838

Material studied. KAZAKHSTAN: Almaty Province: Charyn canyon W Chundzha [= Shonzhy], 650 m, 29.–31.v.2001, 1 ♀, W. Schawaller lgt.; S Dzhungarskiy Alatau, Tyschkan Valley N Sarybel', 1700–1800 m, 5.–7.vi.2001, 5 ♂♂ 3 ♀♀, W. Schawaller lgt.; 70 km SE Lepsy, 400 m, 11.–13.vi.2001, 1 ♂, W. Schawaller lgt.; 5 km NE Matay, 400 m, 28.vi.2001, 1 ♂, W. Schawaller lgt. (all SMNS); Alatau Mts., 35 km SW Almaty, 43°01.4′N, 76°36.7′E, 1780 m, 17.vii.2006, 1 ♂ 1 ♀, P. Koutecký lgt. (NMPC). East Kazakhstan province: E Tarbagatay Mts., 4 km NE Petrovskoe, 1100 m, 22.vi.2001, 1 ♂ 6 ♀♀, W. Schawaller lgt.; W Tarbagatay Mts., 5 km N Taskesken, 600 m, 26.–27.vi.2001, 1 ♂, W. Schawaller lgt. (all SMNS).

Distribution. Palaearctic species.

Noteridae

Noterus clavicornis (De Geer, 1774)

Material studied. KAZAKHSTAN: Almaty Province: Medeo [= Medeu], 1800 m, 15.viii.1991, 2 ♀♀, P. Waligóra lgt. (JSCO); Altyn Emel NP, Kalkan, ruderal mud/sand flats of north bank of Ili river, 43°50.01′53″N, 78°38.17′14″E, 482 m, 2.v.2012, 2 ♂♂ 5 ♀♀, D. J. Mann & J. Cooter

lgt. (OUMNH). East Kazakhstan province: N of Ust'-Kamenogorsk, "Irtysh" river, wetland, 50°02.9′N, 81°10.5′E, 400 m, 13.vii.2006, 1 ♂ 1 ♀, P. Koutecký lgt. (NMPC).
Distribution. Palaearctic species.

Noterus crassicornis (O. F. Müller, 1776)
Material studied. KAZAKHSTAN: Almaty Province: Altyn Emel NP, Kosbastay oasis, pool margin saline desert, 43°55′24″N, 78°47′41″E, 579 m, 30.iv.2012, 1 ♂ 6 ♀♀, D. J. Mann & J. Cooter lgt. (NMPC, OUMNH).
Distribution. Predominantly western Palaearctic species. **First record from Kazakhstan.**

Dytiscidae

Agabus* (*Acatodes*) *costulatus (Motschulsky, 1859)
Material studied. KAZAKHSTAN: East Kazakhstan province: Altai Mts., Rakhmanovskiye Klyuchi, peat bog, stream, 49°32.1′N, 86°30.3′E, 1780 m, 24.vi.2006, 2 ♂♂ 1 ♀, P. Koutecký lgt. (NMPC).
Distribution. Eastern Palaearctic species.

Agabus* (*Gaurodytes*) *adpressus Aubé, 1837
Material studied. KAZAKHSTAN: East Kazakhstan province: W Altai, Kholzun Mt., source of Khamir river, 50°11′44.9″N, 84°35′6.1″E, 2000–2100 m, 18.–20.vi.2005, 1 ♂ 1 ♀, A. G. Koval lgt. (AKSP).
Distribution. Holarctic species.

Agabus* (*Gaurodytes*) *basalis (Gebler, 1829)
Material studied. KAZAKHSTAN: Almaty Province: Dzhungar Alatau, Tyshkan, 11.vi.1985, 2 ♂♂, Shilenkov lgt.; S Dzhungarskiy Alatau, Tyschkan Valley N Sarybel', 1700–1800 m, 5.–7.vi.2001, 1 ♂, W. Schawaller lgt. (all CHF); N Dzhungarskiy Alatau, 5–10 km E Lepsinsk, 1100 m, 13.–17.vi.2001, 15 spec., W. Schawaller lgt. (CHF, SMNS); Altyn Emel NP, Kosbastay, 43°55′24″N, 78°47′41″E, 579 m, 26.iv.2012, 1 ♀, D. J. Mann & J. Cooter lgt. (OUMNH). East Kazakhstan province: S Tabargatay Mts., 4 km N Alexeevka [ca. 48°25.2′N 85°43.8′E], 1000 m, 24.–27.vi.2001, 1 ♂, W. Schawaller lgt. (CHF).
Distribution. Species occurring in the mountains of central Asia and Mongolia.

Agabus* (*Gaurodytes*) *bipustulatus (Linnaeus, 1767)
Material studied. KAZAKHSTAN: Almaty Province: Medeo [= Medeu], 1800 m, 15.viii.1991, 2 ♂♂, P. Waligóra lgt. (JSCO, NMPC); Altyn Emel NP, Kosbastay, 43°55′24″N, 78°47′41″E, 579 m, 26.iv.2012, 1 ♂, D. J. Mann & J. Cooter lgt. (NMPC, OUMNH); same data, but pools in drying stream, 30.iv.2012, 1 ♀ (OUMNH). East Kazakhstan province: Altai Mts., Archaty, "Bukhtarma" river, oxbow, pools, 49°18.0′N, 86°33.1′E, 1210 m, 3.vii.2006, 1 ♂ 1 ♀, P. Koutecký lgt. (NMPC).
Distribution. Predominantly western Palaearctic species.

Agabus* (*Gaurodytes*) *dichrous Sharp, 1878
Material studied. KAZAKHSTAN: Almaty Province: Medeo [= Medeu], 1800 m, 15.viii.1991, 1 ♀, P. Waligóra lgt. (JSCO). East Kazakhstan province: Altai Mts., Dzham-

bul env., "Bukhtarma" river, pools, 49°14.4′N, 86°17.3′E, 1010 m, 22.vi.2006, 2 ♂♂ 1 ♀, P. Koutecký lgt.; Altai Mts., Archaty, "Bukhtarma" river, oxbow, pools, 49°18.0′N, 86°33.1′E, 1210 m, 3.vii.2006, 2 ♀♀, P. Koutecký lgt. (all NMPC).
Distribution. Species occurring in mountains of central Asia, Mongolia and eastern Siberia.

Agabus* (*Gaurodytes*) *winkleri (Gschwendtner, 1923)
Material studied. KAZAKHSTAN: Almaty Province: Dzhungarskiy Alatau [Mts.], Panfilov, 44°30′N, 79°30′E, 2500 m, 20.–28.vi.1991, 1 ♂, M. Kafka lgt. (NMPC).
Distribution. Species endemic to mountains of central Asia.

Bidessus nasutus Sharp, 1882
Material studied. KAZAKHSTAN: Almaty Province: Masak, 450 m, 21.vi.1996, 1 spec., Fábián & Nádal lgt. (CHF); Altyn Emel NP, Ulken Kalkan, north bank of Ili river, at light, 43°50′48″N, 78°44′57″E, 482 m, 5.v.2012, 1 spec., D. J. Mann & J. Cooter lgt. (OUMNH).
Distribution. Western Palaearctic species.

Bidessus unistriatus Goeze, 1777
Material studied. KAZAKHSTAN: Almaty Province: Masak, 450 m, 21.vi.1996, 6 spec., Fábián & Nádal lgt. (CHF, HNHM).
Distribution. Predominantly western Palaearctic species. **First record from Kazakhstan.**

Colymbetes dolabratus (Paykull, 1798)
Material studied. KAZAKHSTAN: East Kazakhstan province: Altai Mts., 13 km SSE Archaty, mountain lake, 49°11.0′N, 86°38.3′E, 2520 m, 9.vii.2006, 2 ♂♂, P. Koutecký lgt. (NMPC).
Distribution. Holarctic species. **First record from Kazakhstan.**

Colymbetes semenovi (Jakovlev, 1896)
Material studied. KAZAKHSTAN: Almaty Province: Kazakhstan, Almaty Oblast, Masak, 450 m, 21.vi.1996, 1 ♂, Fábián & Nádal lgt.; 70 km SE Lepsy [ca. 45°48′N 78°3′E], 400 m, 11.–13.vi.2011, 1 ♂, W. Schawaller lgt. (all CHF). East Kazakhstan province: Urdzhar Distr., S Taskesken, 9 km SW Kosterek, 300 m, 18.–19.vi.2001, 1 ♂, W. Schawaller lgt.; W Tarbagatay Mts., 5 km N Taskesken, 600 m, 26.vi.2001, 1 ♀, W. Schawaller lgt. (all CHF).
Distribution. A species occurring in subtropical central Asia, from Caucasus to north-western China.

Graptodytes bilineatus (Sturm, 1835)
Material studied. KAZAKHSTAN: Almaty Province: Altyn Emel NP, Kosbastay oasis, pool margin saline desert, 43°55′24″N, 78°47′41″E, 579 m, 30.iv.2012, 1 ♀, D. J. Mann & J. Cooter lgt. (OUMNH).
Distribution. Predominantly western Palaearctic species.

Herophydrus musicus (Klug, 1834)
Material studied. KAZAKHSTAN: Almaty Province: Zailiyskiy Alatau Mts., 15 km S of Issyk [= Esik], Issyk lake, 43°15.2′N, 77°29.1′E, 1710 m, 6.x.2002, 1 spec., B. Benedek & T. Csövári lgt. (HNHM).
Distribution. Predominantly south-western Palaearctic species. **First record from Kazakhstan.**

Hydaticus* (*Prodaticus*) *grammicus (Germar, 1827)
Material studied. KAZAKHSTAN: Almaty Province: Ili river, Bakanas, ca. 44°28.8′N, 76°06′E), 15.v.1999, 1 ♀; 22 km N Masak, 450 m, 43°13′N, 78°27′E, 21.vi.1996, 1 ♂, Fábián & Nádal lgt. (all CHF); W Ili bridge, SW Panfilow (= Yarkand), 400 m, 4.–5.vi.2001, 6 spec., W. Schawaller lgt. (CHF, SMNS).
Distribution. Palaearctic species.

Hydroglyphus geminus (Fabricius, 1792)
Material studied. KAZAKHSTAN: Almaty Province: 20 km N Nurly, Ili river valley, 43°50′N, 78°30′E, 500 m, 1 spec.; 22 km N Masak, 43°13′N, 78°27′E, 450 m, 21.vi.1996, 1 spec., Fábián & Nádal lgt. (CHF); Charyn valley, W Chundza [= Shonzhy], 800 m, 10.–13.vi.1993, 7 spec., W. Schawaller lgt. (CHF, SMNS); W Ili bridge, SW Panfilow (= Yarkand), 400 m, 4.–5.vi.2001, 4 spec., W. Schawaller lgt. (CHF, SMNS); Altyn Emel NP, Kosbastay oasis, pool in stream bed, 43°55′24″N, 78°47′41″E, 579 m, 26.iv.2012, 2 spec., D. J. Mann & J. Cooter lgt. (OUMNH); same data, but pool margin saline desert, 30.iv.2012, 13 spec. (NMPC, OUMNH). East Kazakhstan province: Kokpekty, ca. 48°27′N, 82°13.8′E, 23.vi.1999, 1 spec. (all CHF).
Distribution. Palaearctic species.

Hydroporus angustatus Sturm, 1835
Material studied. KAZAKHSTAN: Almaty Province: 20 km N Nurly, Ili river valley, 43°50′N, 78°30′E, 500 m, 2 spec. (CHF); 10 km N of Masak, 460 m, 24.ix.2002, 1 spec., B. Benedek & T. Csövári lgt. (HNHM).
Distribution. Predominantly western Palaearctic species.

Hydroporus fuscipennis Schaum, 1868
Material studied. KAZAKHSTAN: Almaty Province: Altyn Emel NP, Kosbastay oasis, pool margin saline desert, 43°55′24″N, 78°47′41″E, 579 m, 30.iv.2012, 6 spec., D. J. Mann & J. Cooter lgt. (NMPC, OUMNH).
Distribution. Holarctic species.

Hydroporus incognitus Sharp, 1869
Material studied. KAZAKHSTAN: East Kazakhstan province: Altai Mts., 14 km NNW Yazovka, "Yazovoye" lake, peat-bog, 49°33.6′N, 86°18.4′E, 1660 m, 27.vi.2006, 7 spec., P. Koutecký lgt. (NMPC).
Distribution. Predominantly western Palaearctic species. **First record from Kazakhstan.**

Hydroporus lapponum (Gyllenhal, 1808)
Material studied. KAZAKHSTAN: East Kazakhstan province: Altai Mts., Rakhmanovskiye Klyuchi, peat bog, stream, 49°32.1′N, 86°30.3′E, 1780 m, 24.vi.2006, 1 ♂ 1 ♀, P. Koutecký lgt.; Altai Mts., 13 km SSE Archaty, mountain lake, 49°11.0′N, 86°38.3′E, 2520 m, 9.vii.2006, 9 spec., P. Koutecký lgt. (all NMPC).
Distribution. Holarctic species. **First record from Kazakhstan.**

Hydroporus melanarius Sturm, 1835
Material studied. KAZAKHSTAN: East Kazakhstan province: Altai Mts., 14 km NNW Yazovka, "Yazovoye" lake, peat-bog, 49°33.6′N, 86°18.4′E, 1660 m, 27.vi.2006, 1 ♂, P. Koutecký lgt. (NMPC).
Distribution. Western Palaearctic species. **First record from Kazakhstan.**

Hydroporus nigrita (Fabricius, 1792)
Material studied. KAZAKHSTAN: East Kazakhstan province: Altai Mts., Rakhmanovskiye Klyuchi, peat bog, stream, 49°32.1′N, 86°30.3′E, 1780 m, 24.vi.2006, 2 spec., P. Koutecký lgt.; Altai Mts., Archaty, "Bukhtarma" river, oxbow, pools, 49°18.0′N, 86°33.1′E, 1210 m, 3.vii.2006, 1 ♂, P. Koutecký lgt. (all NMPC).
Distribution. Predominantly western Palaearctic species.

Hydroporus planus (Fabricius, 1781)
Material studied. KAZAKHSTAN: Almaty Province: N Dzhungarskiy Alatau, 5–10 km E Lepsinsk, 1100 m, 13.–17.vi.2001, 7 spec., W. Schawaller lgt. (CHF, SMNS).
Distribution. Western Palaearctic species.

Hydroporus striola (Gyllenhal, 1826)
Material studied. KAZAKHSTAN: East Kazakhstan province: Altai Mts., 14 km NNW Yazovka, "Yazovoye" lake, peat-bog, 49°33.6′N, 86°18.4′E, 1660 m, 27.vi.2006, 1 spec., P. Koutecký lgt.; Altai Mts., Archaty, "Bukhtarma" river, oxbow, pools, 49°18.0′N, 86°33.1′E, 1210 m, 3.vii.2006, 1 ♂, P. Koutecký lgt. (all NMPC).
Distribution. Holarctic species.

Hydroporus umbrosus (Gyllenhal, 1808)
Material studied. KAZAKHSTAN: East Kazakhstan province: Altai Mts., 14 km NNW Yazovka, "Yazovoye" lake, peat-bog, 49°33.6′N, 86°18.4′E, 1660 m, 27.vi.2006, 9 spec., P. Koutecký lgt. (NMPC).
Distribution. Palaearctic species. **First record from Kazakhstan.**

Hygrotus* (*Coelambus*) *enneagrammus (Ahrens, 1833)
Material studied. KAZAKHSTAN: Almaty Province: 20 km N Nurly, Ili river valley, 43°50′N, 78°30′E, 500 m, 4 spec. (CHF). East Kazakhstan province: Aiaguz [= Ayaguz], 600 m, 23.v.1993, 3 spec., Danilevsky lgt. (CHF).
Distribution. Predominantly western Palaearctic species, known from central and eastern Europe and Asia eastwards to Mongolia.

Hygrotus* (*Coelambus*) *flaviventris (Motschulsky, 1860)
Material studied. KAZAKHSTAN: Almaty Province: 20 km N Nurly, Ili river valley, 43°50′N, 78°30′E, 500 m, 1 spec. (CHF). East Kazakhstan province: N Zaysan lake, Karatogai, ca. 49°00′N, 83°00′E, 2 spec.; Aiaguz [= Ayaguz], 600 m, 23.v.1993, 8 spec., Danilevsky lgt. (all CHF).
Distribution. Predominantly western Palaearctic species, known from few countries in central and eastern Europe, Caucasus countries, and Asia eastwards to Mongolia.

Hygrotus* (*Coelambus*) *impressopunctatus (Schaller, 1783)
Material studied. KAZAKHSTAN: Almaty Province: 20 km N Nurly, Ili river valley, , 43°50′N, 78°30′E, 500 m, 1 spec.; Taldy-Kurgan Region, Ili, 43°58′N, 79°39′E, 500 m, 4.vi.1993, 1♂ 1♀, V. Lukhtanov lgt.; 22 km N Masak, 450 m, 43°13′N, 78°27′E, 21.vi.1996, 1 ♀, Fábián & Nádal lgt. (all CHF); W Ili bridge, SW Panfilow (= Yarkand), 400 m, 4.–5.vi.2001,

3 spec, W. Schawaller lgt. (CHF, SMNS). East Kazakhstan province: S Tabargatai Mts., 30 km S Urdzhar, ca. 47°03.0′N, 81°22.2′E, 6 spec. (CHF).
Distribution. Holarctic species.

Hygrotus* (*Coelambus*) *marklini (Gyllenhal, 1813)
Material studied. KAZAKHSTAN: East Kazakhstan province: Kokpekty, ca. 48°27.0′N, 82°13.8′E, 23.vi.1999, 1 ♂ (CHF).
Distribution. Holarctic species.

Hygrotus* (*Coelambus*) *nigrolineatus (Steven, 1808)
Material studied. KAZAKHSTAN: Almaty Province: 20 km N Nurly, Ili river valley, , 43°50′N, 78°30′E, 500 m, 1 spec. (CHF). East Kazakhstan province: N Zaysan lake, Karatogai, ca. 49°00′N, 83°00′E, 1 spec. (CHF).
Distribution. Predominantly western Palaearctic species reaching Mongolia in the east.

Hygrotus* (*Coelambus*) *parallellogrammus (Ahrens, 1812)
Material studied. KAZAKHSTAN: Almaty Province: 20 km N Nurly, Ili river valley, 43°50′N, 78°30′E, 500 m, 1 ♂ 1 ♀; Ili river, Bakanas, ca. 44°29.4′N 76°06′E, 15.v.1999, 1 ♂ (all CHF); 22 km N Masak, 43°13′N, 78°27′E, 450 m, 21.vi.1996, 3 spec., Fábián & Nádal lgt. (CHF, HNHM).
Distribution. Palaearctic species.

Hygrotus* (*Coelambus*) *saginatus (Schaum, 1857)
Material studied. KAZAKHSTAN: Almaty Province: Pristan Dubinskaya, 43°45′N, 80°13′E, 550 m, 15.–18.vi.1993, 1 ♂ 1 ♀, V. & A. Lukhtanov lgt. (CHF).
Distribution. A species occurring in subtropical areas of eastern Europe and western Asia eastwards to Kazakhstan.

Laccophilus poecilus Klug, 1834
Material studied. KAZAKHSTAN: Almaty Province: Altyn Emel NP, Kalkan, north bank of Ili river, wet clay bank, 43°50′48″N, 78°44′57″E, 482 m, 23.iv.2012, 1 spec., D. J. Mann & J. Cooter lgt. (OUMNH); same data, but ruderal mud/sand flats of north bank of Ili river, 43°50.01′53″N, 78°38.17′14″E, 482 m, 2.v.2012, 3 spec. (NMPC, OUMNH). East Kazakhstan province: S Tabargatai Mts., 30 km S Urdzhar, ca. 47°05.0′N, 81°22.2′E, 3 spec. (CHF).
Distribution. Western Palaearctic species.

Nebrioporus airumlus (Kolenati, 1845)
Material studied. KAZAKHSTAN: Almaty Province: Medeo [= Medeu], 1800 m, 15.viii.1991, 2 spec., P. Waligóra lgt. (JSCO); Temurlik [= Temirlik] valley, 1000 m, 24.vi.1993, 2 spec., W. Schawaller lgt. (CHF, SMNS); N Dzhungarskiy Alatau, 5–10 km E Lepsinsk, 1100 m, 13.–17.vi.2001, 7 spec., W. Schawaller lgt. (CHF, SMNS); Altyn Emel NP, Kosbastay oasis, pools in drying stream 43°55′24″N, 78°47′41″E, 579 m, 30.iv.2012, 11 spec., D. J. Mann & J. Cooter lgt. (NMPC, OUMNH).
Distribution. Palaearctic species.

Rhantus* (*Rhantus*) *bistriatus (Bergsträsser, 1778)
Material studied. KAZAKHSTAN: East Kazakhstan province: S Tarbagatai Mts., Urdzhar env., 24.vi.1999, 1 spec.; W Tarbagatay Mts., 5 km N Taskesken, 600 m, 26.vi.2001, 3 spec., W. Schawaller lgt. (all SMNS).
Distribution. Predominantly western Palaearctic species reaching Mongolia in the east. **First record from Asian part of Kazakhstan.**

Rhantus* (*Rhantus*) *notaticollis (Aubé, 1837)
Material studied. KAZAKHSTAN: East Kazakhstan province: Altai Mts., Dzhambul env., "Bukhtarma" river, pools, 49°14.4′N, 86°17.3′E, 1010 m, 22.vi.2006, 1 ♂, P. Koutecký lgt. (NMPC).
Distribution. Palaearctic species. **First record from Kazakhstan.**

Rhantus* (*Rhantus*) *suturalis (Macleay, 1825)
Material studied. KAZAKHSTAN: Almaty Province: Temurlik [= Temirlik] valley, 1000 m, 24.vi.1993, 4 spec., W. Schawaller lgt. (CHF, SMNS).
Distribution. Widely distributed Old World species.

DISCUSSION

The relatively high number of first records of Dytiscidae from Kazakhstan presented here is not a surprise. It is almost certainly due to insufficient collecting efforts of water beetles in the region. Compared with the number of species known from adjacent areas (cf. Nilsson & Hájek 2014) the estimated number of Dytiscidae species occurring in Kazakhstan should be considerably higher.

While the existence of basic zoogeographical realms is now largely accepted, and the Palaearctic region is used in most works dealing with the fauna of Europe and/or temperate Asia, the Western and Eastern Palaearctic are more or less auxiliary categories and the border between them is mostly arbitrary. The most used concept defines the West Palaearctic as Europe, North Africa, extending east to the Ural Mountains, the Caspian Sea and the Arabian Peninsula (see, e.g. Snow & Perrins 1998). The alternative concept extended West Palaearctic east to the Yenisey River in the northern part and Altai and other mountains of Central Asia in the southern part (e.g. Lattin 1967). This second definition seems to better correspond with the distribution of the Dytiscidae. Here we outline some preliminary general pattern of distribution of water beetles occurring in eastern Kazakhstan: Many of the species, including those recorded from Kazakhstan for the first time, are widespread in the Palaearctic (e.g. *Hydroporus umbrosus*, *Rhantus notaticollis*) or even in the Holarctic region (e.g. *Colymbetes dolabratus*, *Hydroporus lapponum*). The largest group of species distributed in eastern Kazakhstan are, however, principally more western Palaearctic species (e.g. *Noterus crassicornis*, *Bidessus unistriatus, Herophydrus musicus, Hydroporus incognitus*, *H. melanarius*) for which the mountains of Central Asia usually represent the barrier and thus an eastern limit of their distribution. With the exception of *Herophydrus musicus*, which is widely distributed in dry subtropical areas of the Palaearctic region, all other mentioned species are also known from the adjacent Russian Siberia in the north. The mountains of eastern Kazakhstan are inhabited by several species endemic to the mountains of Central Asia (e.g.

Agabus basalis, *A. winkleri*), and the place where western and eastern Palaearctic species meet: such eastern Palaearctic species (e.g. *Agabus costulatus*, *A. dichrous*) typically occur in the mountains of Central Asia, northern China, Mongolia, Eastern Siberia and sometimes also in the Russian Far East.

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SOUHRN

Dva druhy čeledi Gyrinidae (vírníkovití), dva druhy čeledi Noteridae a 35 druhů čeledi Dytiscidae (potápníkovití) bylo nalezeno během expedic do východního Kazachstánu, především Altajského pohoří. Jeden druh čeledi Noteridae: *Noterus crassicornis* (O. F. Müller, 1776) a osm druhů čeledi Dytiscidae: *Bidessus unistriatus* (Goeze, 1777), *Colymbetes dolabratus* (Paykull, 1798), *Herophydrus musicus* (Klug, 1834), *Hydroporus incognitus* Sharp, 1869, *H. lapponum* (Gyllenhal, 1808), *H. melanarius* Sturm, 1835, *H. umbrosus* (Gyllenhal, 1808) a *Rhantus notaticollis* (Aubé, 1837) je z území Kazachstánu publikováno poprvé, čímž se počet druhů čeledi Dytiscidae známých z této země zvyšuje na 94. *Rhantus bistriatus* (Bergsträsser, 1778) je poprvé uveden z asijské části Kazachstánu. Nové prvonálezy potápníků z Kazachstánu nejsou překvapením, neboť fauna území je prozkoumána jen velmi nedostatečně.

Většina uvedených druhů (včetně těch, které jsou v této práci publikovány z Kazachstánu poprvé) je v palearktické (např. *Hydroporus umbrosus*, *Rhantus notaticollis*) či dokonce holarktické (např. *Colymbetes dolabratus*, *Hydroporus lapponum*) oblasti široce rozšířena. Největší skupinu druhů na sledovaném území představují typicky západopalearktické druhy (např. *Noterus crassicornis*, *Bidessus unistriatus, Herophydrus musicus, Hydroporus incognitus*, *H. melanarius*), pro které představují pohoří Střední Asie přirozenou bariéru a tím také východní hranici jejich rozšíření; s výjimkou druhu *Herophydrus musicus*, který je rozšířený spíše v sušší subtropické zóně, jsou všechny ostatní zmiňované druhy známé také z přilehlé oblasti ruské Sibiře. Pohoří východního Kazachstánu jsou obývány několika druhy endemickými pro středoasijská pohoří (např. *Agabus basalis*, *A. winkleri*), ale jsou také územím, kde se potkávají druhy západního a východního palearktu: východopalearktické druhy (např. *Agabus costulatus* (Motschulsky, 1859), *A. dichrous* Sharp, 1878) v typickém případě obývají pohoří střední Asie, severní Čínu, Mongolsko, východní Sibiř a někdy též ruský Dálný východ.