

# **GYRINIDAE:**

## **Catalogue of Chinese Gyrinidae**

### **(Coleoptera)**

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#### **Abstract**

A catalogue of Chinese Gyrinidae is compiled, employing data drawn from the literature and new records. 46 species are listed, 19 of which are endemic to China. From the zoogeographical point of view, Oriental species predominate numerically.

**Key words:** Coleoptera, Gyrinidae, China, faunistics, catalogue

#### **Introduction**

A check list of Chinese Gyrinidae was first published by OCHS (1929), followed by WU (1932) and CHEO (1933, 1934), the second of which was also a taxonomic work including keys. Cheo's publications were harshly criticized by OCHS (1936) since this author reintroduced many dubious or erroneous old records, which had been deliberately omitted by WU (1932). In the following years a few more papers, some with descriptions of new species, were published by OCHS (1933c, 1936, 1942a), FALKENSTRÖM (1933), LEECH (1944) and BRINCK (1946), but after that, for about 50 years, no further contributions to the knowledge of Chinese Gyrinidae appeared, with the exception of SATO (1965) who worked on Taiwanese water beetles.

For each species the general distribution and the distribution in China are given. The records for China are divided by provinces or autonomous regions, and when possible old locality names were translated into modern ones. For all these localities the old name mentioned in the literature is given between quotation marks, while the modern equivalent is given between square brackets. Unfortunately, it was not possible to identify some of the old localities, their names are simply given between quotation marks.

Nomenclature follows HOLMEN (1987) for the names of subfamilies and genera. I have kept the traditionally accepted subdivision into subgenera in *Gyrinus* L. (*Gyrinus* s.str. and *Gyrinulus* ZAITZEV) and *Orectochilus* DEJEAN (*Orectochilus* s.str. and *Patrus* AUBÉ), although I think that these arrangements may change following revision.

#### **Material**

The present catalogue is based on data drawn from the literature, excluding all dubious and erroneous records, and on the study of material kept in the following institutions:

- |      |                                                                                                |
|------|------------------------------------------------------------------------------------------------|
| CASS | Chinese Academy of Sciences, Institute of Applied Ecology, Shenyang                            |
| CPM  | Paolo Mazzoldi private collection                                                              |
| NMW  | Naturhistorisches Museum, Wien (incl. the Dudgeon collection and parts of the CWBS collection) |
| NTU  | National Taiwan University, Taipei, Republic of China                                          |

Our knowledge of the Chinese Gyrinidae will certainly increase as soon as the genus *Orectochilus* DEJEAN is revised and the rich material collected during the CWBS and deposited in the NMW can be thoroughly studied.

CWBS loc. 6. **Hong Kong**; New Territories; Tai Mo Shan Country Park, SW Tai Po New Town; Lam Tsuen River, 150 - 500 m a.s.l.; 25.VI.1992; leg. Jäch

CWBS loc. 7. **Hong Kong**; Lantau Island; NW Mui Wo Village; shallow pools and streams between Mui Wo and Ngau Kwu Long, ca. 25 - 100 m a.s.l.; 26.VI.1992; leg. Jäch

CWBS loc. 8. **Hong Kong**; New Territories; Tai Po Kau Forest Nature Reserve near Tai Po New Town; stream, ca. 3 m wide, flowing through secondary forest, ca. 150 - 200 m a.s.l.; 27.VI.1992; leg. Jäch

CWBS loc. 14: **Yünnan Province**; Dali Autonomous Prefecture; Weishan County; Weibao Shan, 60 km S Xiaguan City and 12 km S Weishan City; pool in a small, shaded, unpolluted stream, 2500 - 3000 m a.s.l.; 1. - 17.VII.1993; leg. Ji

CWBS loc. 15: **Yünnan Province**; Dali Autonomous Prefecture; Weishan County; Weibao Shan, 60 km S Xiaguan City and 12 km S Weishan City; small, ca. 1 m deep, man made rain water pool, unshaded, unpolluted, 2500 - 3000 m a.s.l.; 1. - 17.VII.1993; leg. Ji

CWBS loc. 28. **Hunan Province**; Huaihua Prefecture; Huitong County; Guangping Township; near Paotuan Village, ca. 1 km from Academia Sinica Research Station; small river, flowing through rice terraces, partly dammed up, slightly polluted, ca. 1 m wide, ca. 350 m a.s.l.; 2.XI.1993; leg. Schönmann, Schillhammer & Ji

CWBS loc. 29. **Hunan Province**; Huaihua Prefecture; Huitong County; Guangping Township; Moshao Village, ca. 15 km W Guangping Town; south slope below the upper Research Station of Academia Sinica; small stream in a deep ravine, shaded, unpolluted, secondary (broadleaf) vegetation, ca. 450 - 550 m a.s.l.; 3.XI.1993; leg. Schönmann, Schillhammer & Ji

CWBS loc. 30. **Hunan Province**; Huaihua Prefecture; Huitong County; Guangping Township; Moshao Village, ca. 15 km W Guangping Township; ca. 5 km N of upper Research Station of Academia Sinica; small stream, flowing through planted forest (Chinese fir, *Cunninghamia lanceolata*) and rice fields, slightly polluted, ca. 350 m a.s.l.; 4.XI.1993; leg. Schönmann, Schillhammer & Ji

CWBS loc. 38. **Guangxi Autonomous Region**; Liuzhou Prefecture; ca. 10 km NE Liuzhou City; ca. 2 km E Shanmenjiang Forest Station; small stream, ca. 0.3 - 0.5 m wide, with accumulations of decaying plant material, ca. 200 m a.s.l.; 10.XI.1993; leg. Schönmann, Schillhammer & Ji

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## Family Gyrinidae THOMSON, 1860

### Subfamily Gyrininae RÉGIMBART, 1882

#### Genus *Gyrinus* LINNAEUS, 1767

#### Subgenus *Gyrinulus* ZAITZEV, 1908

#### 1. *Gyrinus (Gyrinulus) minutus* FABRICIUS, 1798, Ent. Syst. Suppl.: 65

Synonyms: *Gyrinus Kirbii* MARSHAM 1802, *Gyrinus bicolor* auct. ? nec FABRICIUS 1787

General distribution: most of Europe, north to Britain, Fennoscandia and Russia, south to northern Spain, northern Italy, Sardinia and the Balkans, Siberia, Mongolia, northeastern China, North America (AHLWARTH 1910, FRANCISCOLO 1979, HOLMEN 1987, OCHS 1927b, OMER-COOPER 1934, OYGUR & WOLFE 1991, RÉGIMBART 1883b, 1892)

Distribution in China (BRINCK 1946, CHEO 1934, OCHS 1942b, WU 1932):

Northeastern China: "Manchukuo: Weischache, Sjaolin"; "Manchuria: Djalantun, Greater Kingom Mountain"

Heilongjiang: "Charbin" [= Harbin]

Jilin: "Yablonya"

Liaoning

### Subgenus *Gyrinus* s.str.

#### 2. *Gyrinus* (s.str.) *caspius* MÉNÉTRIÉS, 1832, Cat. Rais. Cauc.: 142

Synonyms: *Gyrinus elongatus* AUBÉ, 1836, ? nec MARSHAM, 1802, *Gyrinus angustatus* AUBÉ, *Gyrinus celox* SCHÖDTE, 1841, *Gyrinus bicolor* auct., ? nec FABRICIUS, 1787, *Gyrinus mergus* auct. nec AHRENS, 1812, *Gyrinus distinctus* auct. nec AUBÉ, 1836

General distribution: Most of Europe, north to Britain and Fennoscandia, southern European Russia, Morocco, Algeria, Turkey, Syria, Iraq, Iran, China (AHLWARTH 1910, HOLMEN 1987, OCHS 1929b, 1930a, 1953b, RÉGIMBART 1883b, ZAITZEV 1928, 1953, ZIMMERMANN 1917a)

Distribution in China (CHEO 1934, OCHS 1930a, WU 1932):

Xinjiang: "Chinese Turkestan, Lower Tarim, Iangi-su Abdal"

#### 3. *Gyrinus* (s.str.) *convexusculus* MACLEAY, 1871, Trans. ent. Soc. N.S.W. 2: 128

Synonyms: *Gyrinus nitidulus* AUBÉ, 1838 (partim), *Gyrinus huttoni* PASCOE, 1877, *Gyrinus simoni* RÉGIMBART, 1883b

General distribution: Japan (Ryu-Kyu Islands only), China, India, Nepal, Sri Lanka, Burma, Vietnam, Malaysia, Indonesia, Australia, New Caledonia, New Zealand (AHLWARTH 1910, OCHS 1929b, 1924b, 1927a, 1928a, 1930a, 1931, 1949, 1953c, RÉGIMBART 1883b, VAZIRANI 1958, 1984)

Distribution in China (CHEO 1934, OCHS 1929b, 1930a, WU 1932):

Tibet: "Tibet" [= Xizang]

Jiangxi: "Kiangsi" [= Jiangxi]

Taiwan: Taipei City, 15.V.1991, leg. C.F. Lee, 3 exs. (NMW, NTU)

#### 4. *Gyrinus* (s.str.) *curtus* MOTSCHULSKY, 1866, Bull. Soc. Nat. Moscow 39: 165

General distribution: Japan, China (AHLWARTH 1910, RÉGIMBART 1883b, SHARP 1884, TAKIZAWA 1931, WU 1932)

Distribution in China (CHEO 1933, 1934, LI 1992, OCHS 1936, WU 1932):

Beijing: "Peiping" [= Beijing]

Liaoning

#### 5. *Gyrinus* (s.str.) *distinctus* AUBÉ, 1836 in Dejean: Icon. Hist. Nat. Col. Eur. 5: 383

Synonyms: *Gyrinus caspius* auct. nec MÉNÉTRIÉS, 1832, *Gyrinus colymbus* auct. nec ERICHSON, 1837, *Gyrinus distinctus* var. *colymbus* SEDLITZ, 1887, *Gyrinus niloticus* WALT., 1838, *Gyrinus aegyptiacus* RÉGIMBART, 1883b

General distribution: Most of Europe, north to Britain and Fennoscandia, Azores, Sudan, Egypt, Turkey, Cyprus, Israel, Lebanon, Syria, Iran, Iraq, Central Asia, Afghanistan, Kashmir, Mongolia, China (HOLMEN 1987, OCHS 1929b, 1930a, 1953b, VAZIRANI 1984, ZAITZEV 1953, ZIMMERMANN 1917a)

Distribution in China (CHEO 1933, 1934, OCHS 1929b, 1936, WU 1932):

Nei Mongol: "Mongolia"

Xinjiang: "Chinese Turkestan" [= Xinjiang]: "Tschakar near Polu [= Pulu]", "Haschi near Chotan [= Hotan]", "Samputa near Chotan [= Hotan]", lower Tairin, "Iangi-su", Abdal, "Shuryk near Uljasutaj"; Boro Horo Shan, Jining, Ining-H-Sien, 44°06'N/81°56'E, 26.-31.VII.1991, leg. Snizek, 13 exs. (CPM)

#### 6. *Gyrinus (s.str.) japonicus* SHARP, 1873, Trans. ent. Soc. London: 55

Synonyms: *Gyrinus japonicus francki* OCHS, 1929

General distribution: Korea, Japan (incl. Ryu-Kyu Islands) (AHLWARTH 1910, OCHS 1924b, RÉGIMBART 1886, SHARP 1873, 1884, WU 1932, ZAITZEV 1953)

Distribution in China (BRINCK 1946, CHEO 1933, 1934, OCHS 1929b, WU 1932):

Northeastern China: "Djalantun, Greater Kingom Mountain"; "Weysshaho"

*Gyrinus japonicus francki* is a female form with smooth elytra.

#### 7. *Gyrinus (s.str.) orientalis* RÉGIMBART, 1883b, Anns Soc. ent. Fr.: 167

Synonyms: *Gyrinus orientalis politus* OCHS, 1929

General distribution: China, Vietnam (AHLWARTH 1910, OCHS 1942b, RÉGIMBART 1883b, and others, see below)

Distribution in China (AHLWARTH 1910, CHEO 1933, 1934, FALKENSTRÖM 1936, LI 1992, OCHS 1929a, 1929b, 1930a, 1936, 1942b, RÉGIMBART 1883b, 1907, ZIMMERMANN 1917a, WU 1932):

Northeastern China:

Jiangsu: "Soochow" [= Suzhou]; "Nanking" [= Nanjing]

Shanghai: Shanghai

Sichuan: "near Kiating, Shin-Kai-Si, Mt. Omei" [= near Leshan, Xin-Kai Si, Emei Shan], 4400 ft.; "Kuanshien" [= Dujiangyan]; "Tatsienlu" [= Kangding Xian], "S. Yüling"

Guizhou: "Kouy-Tcheou" [= Guizhou]

Jiangxi: "Pingshiang" [= Pingxiang]; "Kuling near Kiu Kiang" [= Guling near Jiujiang], near Yellow Dragon Temple

Jiangsu: "Chinkiang" [= Zhenjiang, ca. 65 km NE Nanjing]

Fujian: "Foochow" [= Fuzhou]; "Amoy" [= Xiamen]; "Shaowu"; "Kwangtseh", "Kuatun" [= Guadun]

Yünnan: "Yünnan-fu [= Kunming], San-Non-Kai"

Guangdong: "Northern Kuantung [= Guangdong], Tsa-jiu-san", 1400 m; "E Kwuantung [= Guangdong], Tsin Leong San"

Hong Kong

? Guangxi: "Kuang-Si-Hien", 2100 m

? Hunan: "Hong San" [= ? Hengshan]

Eastern China: "Ho-Chan"

*Gyrinus orientalis politus* is a female form with smooth elytra.

#### 8. *Gyrinus (s.str.) paykulli* OCHS, 1927, Koleopt. Rdsch. 13: 39

Synonyms: *Gyrinus paykulli* a. *ochsi* FRANCK, 1932, *Gyrinus bicolor* auct. nec FABRICIUS, 1787, *Gyrinus celox* auct. nec SCHIÖDTE, 1841

General distribution: most of Europe, north to Britain, Fennoscandia and European Russia, south to northern Spain, northern Italy and Greece, Turkey, Kazakhstan, Siberia, Mongolia and China (CHEO 1933, HOLMEN 1987, OCHS 1927b, 1953b, OMER-COOPER 1934, ZAITZEV 1928, 1953)

Distribution in China (CHEO 1934, OCHS 1933, 1936, WU 1932):

Nei Mongol: "SW Mongolia", "Etsin Gol" [= Ruo Shui, Nei Mongol-Gansu border]

**9. *Gyrinus* (s.str.) *pullatus* ZAITZEV, 1907, Russk. ent. Obozr. 7: 244**

General distribution: Sweden, Finland, European Russia, eastern Siberia, China, Korea (AHLWARTH 1910, HOLMEN 1987, OCHS 1927b, ZAITZEV 1953)

Distribution in China (BRINCK 1946, CHEO 1933, 1934, OCHS 1936, 1942b, WU 1932):

Northeastern China: "Manchuria"; "Imanj-Po"; "Weischache"; "Djalantun, Greater Kingom Mountain"

Jilin: "Yablonya"

Liaoning: "Dairen" [= Dalian]; "Liautung", "Dairen" [= Dalian]

**10. *Gyrinus* (s.str.) *smaragdinus* RÉGIMBART, 1891, Ann.Mus.civ.Stor.nat.G.Doria (2) 10: 547**

General distribution: India (Assam, Andaman islands), Burma, Vietnam, China (AHLWARTH 1910, BRINCK 1984, OCHS 1924b, 1929b, 1930a, 1936, RÉGIMBART 1891, 1892, VAZIRANI 1984, ZIMMERMANN 1917a)

Distribution in China (CHEO 1933, 1934, OCHS 1929b, 1930a, 1940a, PESCHET 1923):

Yunnan: Kambaiti, 6800-7000 ft. (border Burma-China); 100 km W of Kunming, Diaolin Nature Reserve, 22.V.-2.VI.1993, leg. E. Jendek & O. Sausa, 25 exs. (NMW); env. Baoshan, 5.-8.VI.1993, leg. E. Jendek & O. Sausa, 1 ex. (NMW); CWBS: 14 or 15, 1.-17.VII.1993, leg. L. Ji, 24 exs. (NMW, CASS)

**11. *Gyrinus* (s.str.) *szechuanensis* (OCHS, 1929), Proc. U. S. Nat. Mus. 75 (3): 2**

General distribution: endemic to China (CHEO 1934, OCHS 1929a, 1932, 1936, 1942b)

Gansu: eastern "Kansu" [= Gansu], "Hweisi" [= Hui Xian]

Shaanxi: South "Shensi" [= Shaanxi]

Sichuan: "Kuanshien" [= Dujiangyan], 13000 ft; between "Chengtu" [= Chengdu] and "Kuanshien" [= Dujiangyan]; "Tatsienlu" [= Kangding Xian]; "Nitou"

?Border Qinghai-Tibet: "Tangshan" [= Tanggula Shan?]

**12. *Gyrinus* (s.str.) *tsingtaoriensis* CHEO, 1934, Peking nat. Hist. Bull. 8 (3): 212**

General distribution: endemic to China (CHEO 1934)

Distribution in China:

Shandong: "Tsingtao" [= Qingdao]

**Genus *Aulonogyrus* MOTSCHULSKY, 1853****Subgenus *Aulonogyrus* s.str.****13. *Aulonogyrus concinnus* (KLUG, 1834), Symbol. Physic. 4: t. 34**

Synonyms: *Gyrinus striatus* auct. nec FABRICIUS, 1792, *Gyrinus strigipennis* SUFFRIAN, 1842, *Gyrinus abdominalis* auct. nec AUBÉ, 1838

**General distribution:** southern Europe, northwards to France, Belgium, the Netherlands, Germany, Poland, southern part of European Russia, Algeria, ? Egypt, Turkey, Syria, Iraq, Iran, Afghanistan, China, Mongolia (AHLWARTH 1910, BRINCK 1955, HOLMEN 1987, OCHS 1929b, 1942a, 1953b, 1955, RÉGIMBART 1883b, ZAITZEV 1928)

Distribution in China (BRINCK 1955, CHEO 1933, 1934, OCHS 1929b, 1953b, WU 1932):

Xinjiang: "Chinese Turkestan" [= Xinjang]; "Tschakar" near "Polu" [= Pulu]

Qinghai: "Tschardschui", "Kukunor" [= Qinghai Hu]

## Genus *Metagyrinus* BRINCK, 1955

### 14. *Metagyrinus sinensis* (OCHS, 1924), Ent. Blätt. 20: 231

General distribution: endemic to China (CHEO 1934, OCHS 1924b, 1929b, 1936, WU 1932)

Fujian: "Amoy" [= Xiamen]

N Guangdong: "Tsha-jiu-san"

## Subfamily *Enhydryinae* RÉGIMBART, 1882

### Genus *Dineutus* MACLEAY, 1825

#### Subgenus *Spinosodineutes* HATCH, 1925

### 15. *Dineutus (Spinosodineutes) orientalis* (MODEER, 1776), Physiogr. Sällsk. Handl. 1 (3): 160

Synonyms: *Dineutes marginatus* SHARP, 1873, *Dineutes quadrispina* FAIRMAIRE, 1878

General distribution: Vietnam, Laos, China, Korea, Japan (AHLWARTH 1910, MOUCHAMPS 1951, OCHS 1924B, 1929B, 1930A, 1930b, 1937, 1942B, RÉGIMBART 1883a, SATO & MIYATAKE 1964)

Distribution in China (CHEO 1934, BRINCK 1946, MOUCHAMPS 1951, OCHS 1929b, 1930a, 1933, 1936, 1940a, 1942b):

Northeastern China: "Manchuria", "Eastern Three Provinces"

Liaoning: "Dairen" [= Dalian]

Hebei: "Tschili" [= Hebei]; "Hopch" [= Hebei]

Shandong: "Kiautschau" [= Kiao Hsien]; "Tsingtau" [= Qingdao]

Jiangsu: "Soochow" [= Suzhou]; "Chinkiang" [= Zhenjiang, ca. 65 km NE Nanjing]; "Nanking" [= Nanjing]

Shanghai: Shanghai

Sichuan: "Tatsienlu" [= Kangding Xian], "Yüling-Süd" [= Yulingong?]; N.E. "Szechuan" [= Sichuan]; "Suifu" [= Yibin] near "Yashan"; between "Chengtu" [= Chengdu] and "Kuanshien"; "Tschengtufu"; "Ginjun b. Bébé, Tempelberg, 900 m" [= Jinyuen Shan (Red Silk Cloud Summer Resort), NW Beibei, ca. 80 km NW Chongqing]

Hubei: "Hubei, Mts. Wushan" [= W Hubei, Wu Shan, Hubei-Sichuan border]

Zhejiang: "Chekiang" [= Zhejiang]; "Hangchow" [= Hangzhou]

Guizhou: "Kweichow" [= Guizhou]

Fujian: "Futschau" [Fuzhou]; Shaowu; "Kuangtse"; "Kuatun" [= Guadun]

Yunnan: between "Tengyueh" [= Tengchong Xian] and "Talifu" [= Dali Xian]; "Yi-Leang" [= Yi Liang, NE Yunnan, Zhaotong Prefecture, ca. 50 km NE Zhaotong City]; "Sze-Tsong" [= Shi Zhong Xian, Qujing Prefecture, ca. 140 km E Kunming City]; "Kuang-Si-Hien"; "Djo-Ku-La" [= Jizu Shan, Dali Zhou, Binchuan County, ca. 30 km NW Binchuan City]; "Tsche-Ping-Tschu"; valley of river "Soling-Ho"; "Kuyong", 1700 m

Guangxi: "Mts. Toyen-chan"

Guangdong: "Kwangtung" [= Guangdong]

Hong Kong

Taiwan: Taipei; "Takao" [= Kaohsiung] and "Pilan" [= Taitung City, Taitung Hsien], eastern coast

### 16. *Dineutus (Spinosodineutes) unidentatus* AUBÉ, 1838, Spec. Col. 6: 788

General distribution: India, Sri Lanka, Burma, Vietnam, Cambodia, Malaysia, China (AHLWARTH 1910, OCHS 1929b, 1929c, 1929d, 1930a, 1931, 1966, RÉGIMBART 1883a, 1889, VAZIRANI 1958, 1969, 1984)

Distribution in China (CHEO 1934, OCHS 1936):

Hainan

## Subgenus *Cyclous* OCHS, 1926

### 17. *Dineutus (Cyclous) australis* (FABRICIUS, 1775), Syst. Ent.: 235

Synonyms: *Gyrinus rufipes* FABRICIUS, 1801, *Gyrinus dentipennis* MACLEAY, 1825, *Gyrinus limbatus* MACLEAY, 1825, *Gyrinus iridis* HOPE, 1842, *Dineutes janthinus* BLANCHARD, 1853, *Dineutus leucopoda* MONTROUZIER, 1860

General distribution: China, Japan (Ryu-Kyu Islands only), Philippines, Australia, New Caledonia, Vanuatu, Fiji, Indonesia (AHLWARTH 1910, MOUCHAMPS 1951, OCHS 1924a, 1924b, 1929b, 1929c, 1931, 1934, 1937a, 1940b, 1942b, 1949, 1953a, 1953c, RÉGIMBART 1883a, 1907)

Distribution in China (CHEO 1934, MOUCHAMPS 1951, OCHS 1924b, 1929b, 1931, 1936, 1942b, ZIMMERMANN 1917b):

Fujian: "Amoy" [= Xiamen]

Guangxi: Nanning

Guangdong: "Canton" [= Guangzhou ], "Pak-wan-san" [= Bai Yun Shan, ca. 5 km N Guangzhou City]

Hong Kong

Taiwan: Chiahsien, Kaohsiung Hsien; Orchid Island, Taitung Hsien, 19.VIII.1989, leg. M.L. Jeng, 5 exs. (NMW, NTU)

## Subgenus *Dineutus* s.str. (sensu BRINCK 1955)

### 18. *Dineutus (s.str.) mellyi* (RÉGIMBART, 1882), Annls Soc. ent. Fr. (6) 2: 399

Synonyms: *Dineutes fulgidus* RÉGIMBART, 1880 (partim), *Dineutes sauteri* UYTENBOOGAART, 1915)

General distribution: China, Vietnam, Japan (incl. Ryu-Kyu Islands with ssp. *insularis* RÉGIMBART) (AHLWARTH 1910, CHEO 1934, MOUCHAMPS 1951, OCHS 1929b, 1930a, 1936, 1937b, RÉGIMBART 1883a)

Distribution in China (CHEO 1934, FALKENSTRÖM 1936, MOUCHAMPS 1951, OCHS 1929b, 1930a, 1936, 1942b, RÉGIMBART 1907, UYTENBOOGAART 1915, ZIMMERMANN 1917b):

Shandong: "Tsingtau" [= Qingdao]; "Lauschan" [= probably Laoshan, near Qingdao]

Sichuan: "Chungking" [= Chongqing], Emei Xian; Emei Shan VII.1921; W of "Yachow" [= Yaan Shi] 2-8000 ft. 16.-20.VI.1923; "Wassuland" [= Yin Xiu Wan]; "Chungwa"; "Nitou Tatsienlu" [= Kangding Xian]; "Ginjun b. Bébé, Tempelberg, 900 m" [= Jinyuen Shan (Red Silk Cloud Summer Resort), NW Beibei, ca. 80 km NW Chongqing]

Hubei: "Hupei" [= Hubei]

Zhejiang: "Hangchow" [= Hangzhou]

Guizhou: "Nyengathi"

Hunan: Zhangjiajie, 17.VII.1992, 750 m, leg. L. Ji, 4 exs. (NMW, CPM); CWBS loc. 28 (4 exs., NMW); CWBS loc. 29 (19 exs., NMW, CASS); CWBS loc. 30 (2 exs., NMW)

Jiangxi: Southern "Kiangsi" [= Jiangxi], "Tai An Hong"; "Kiu-Kiang" [= Jiujiang]; Jiangxi W, Jinggang Shan, Ciping env., 2.-14.VI.1994, 10 exs. (NMW)

Fujian: "Futschau" [= Fuzhou]; "Shaowu"; "Kuangtseh"; "Kuatun" [= Guadun]; Fujian Prov., Sangang env., 3.-5.VII.1991, 14 exs. (CPM)

Yunnan: NE "Kut-Sin-Fu", 2000 m; SE "Kuang-Si-Hien", m 2100; W "Mit Sao", 1800 m; "Yunnan-fou" [= Kunming], "Yunnan-sen" [= Yunnan Province]; 22.V.-2.VI.1993, 100 km W Kunming, Diaolin Nat. Res., leg. E. Jendek & O. Sausa, 6 exs. (NMW)

Guangxi: CWBS loc. 38 (19 exs., NMW, CASS)

Guangdong: "Tsha-jiu-san", VIII.1910, 1400 m; "Tong-Cung-San" [= Tong Gu Zhang, Meixian Prefecture, ca. 30 km SE Meizhou City], 9.VIII.1912; "Wang-Lum-Kum", IV.-V. 1912; "Yinfa" [= Yinhu, Shaoguan Prefecture, ca. 50 km N Shaoguan City] (under bark of Pride of India Tree); "Fuk-Zan" [= Fugang Xian, Qing Yuan City Region, ca. 80 km NE Guangzhou], 29.VII.1912; East "Kwantung" [= Guangdong], "Tsing Leong San" and "Yim Na San"; "Yü-sa-tam" near "Canton" [= Guangzhou]

Hong Kong

Taiwan: Tainan; "Mizuho" [= Juisuei, Hualien Hsien]; "Iac Candidus" [= Jihyuetan, "Sun Moon Lake"]; Ilan Hsien, Sheumihu, 12.I.1991, leg. M.L. Jeng, 2 exs. (NMW, NTU)

### Genus *Porrorhynchus* CASTELNAU, 1834

#### 19. *Porrorhynchus landaisi landaisi* RÉGIMBART, 1892, Annl. Soc. ent. Fr. 60: 667

General distribution: Vietnam, China (AHLWARTH 1910, OCHS 1930a, RÉGIMBART 1892, 1907)

Distribution in China (AHLWARTH 1910, CHEO 1934, OCHS 1929b, 1930a, RÉGIMBART 1907):

Guizhou: "Pin-Fa" [= Pingba, Anshun Prefecture, ca. 50 km SW Guiyang City]

#### 20. *Porrorhynchus landaisi latilimbus* OCHS, 1926, Ent. Zeitschr. Frankf. 40: 193

General distribution: endemic to China (CHEO 1934, OCHS 1929b, 1930a, 1942b)

Hainan: "Goshi Zau"; "Dwa-Bi"

## Subfamily *Orectochilinae* RÉGIMBART, 1882

### Genus *Orectochilus* DEJEAN, 1833

#### Subgenus *Orectochilus* s.str.

#### 21. *Orectochilus* (s.str.) *formosanus* TAKIZAWA, 1931, Ins. mats. 6: 19

General distribution: endemic to China (SATO 1965, TAKIZAWA 1931)

Taiwan: "Daitonzan" [= Tatung Shan or Datun Shan, N Taipei]; "Rimogan-Magan" [= Fushan, Taipei Hsien]

#### 22. *Orectochilus* (s.str.) *fusiformis* RÉGIMBART, 1892, Annl. Soc. ent. Fr. 60: 706

General distribution: endemic to China (AHLWARTH 1910, CHEO 1933, 1934, OCHS 1929b, 1936, RÉGIMBART 1892, WU 1932)

Shanghai: Shanghai

Zhejiang: "Hangchow" [= Hangzhou]

Fujian: "Fokien" [= Fujian]

Guangdong: "Yinfa" [= Yinhu, Shaoguan Prefecture, ca. 50 km N Shaoguan City]

#### 23. *Orectochilus* (s.str.) *nigroaeneus* RÉGIMBART, 1907, Annl. Soc. ent. Fr. 76: 215

General distribution: endemic to China (AHLWARTH 1910, CHEO 1934, OCHS 1929b, 1936, 1942b, RÉGIMBART 1907, WU 1932)

Fujian: "Foochow" or "Futschau" [= Fuzhou Shi]

Guangdong: "Tsha-jiu-san", 1400 m; "Tong-sung-san"; eastern Guangdong, "Yim Na San"

eastern China: "Ho-Chan"

The occurrence of this species in Jilin and Gansu, reported by WU (1932) and CHEO (1934) is strongly doubted by OCHS (1936), as this is a typical south Chinese species; confusion with other *Orectochilus* s.str. seems likely.

#### 24. *Orectochilus* (s.str.) *obscuriceps* RÉGIMBART, 1907, Annl. Soc. ent. Fr. 76: 215

General distribution: endemic to China (CHEO 1933, 1934, OCHS 1929b, 1936, 1942b, RÉGIMBART 1907, WU 1932)

Shaanxi: "South Shensi" [= S Shaanxi]

Sichuan: "Siao Lu"

The records for northeastern China and Yalu River, Korea, given by OCHS (1929a, 1929b), must be deleted since OCHS (1936) refers these specimens to a form of *O. villosus*.

**25. *Orectochilus* (s.str.) *obtusipennis*** RÉGIMBART, 1892, Annls Soc. ent. Fr. 60: 712

General distribution: endemic to China (CHEO 1933, CHEO 1934, OCHS 1929b, RÉGIMBART 1892, RÉGIMBART 1907, WU 1932)

Shanghai: Shanghai

Zhejiang: "Hangchow" [= Hangzhou]

Eastern China: "Ho-Chan"

**26. *Orectochilus* (s.str.) *punctipennis*** SHARP 1884, Trans. ent. Soc. London: 449

General distribution: Eastern Siberia (Ussuri), Japan, ? China (OCHS 1927b, 1929c, RÉGIMBART 1886, 1887, 1892, SHARP 1884, TAKIZAWA 1931)

Distribution in China (TAKIZAWA 1931):

Taiwan: "Toroen" [= Doulin, Chiai Hsien]

OCHS (1950) questions the records of *O. punctipennis* from Taiwan. The presence of such a northern species in southern China requires further confirmation.

**27. *Orectochilus* (s.str.) *villosus villosus*** (O. MÜLLER, 1776), Zool. Dan. Prodr.: 68

Synonyms: *Orectochilus sibiricus* MOTSCHULSKY, 1860, *Orectochilus modeeri* MARSHAM, 1802, *Orectochilus reitteri* SEIDLITZ, 1887, *Orectochilus seidlitzii* JACOBSON, 1907

General distribution: all Europe including Caucasus, north to Britain and Fennoscandia, Algeria, Egypt, Syria, Iran, Siberia, China (BALFOUR-BROWNE 1946, HOLMEN 1987, OCHS 1953b, OMER-COOPER 1934, RÉGIMBART 1884, 1892, ZAITZEV 1915)

Distribution in China (CHEO 1934, OCHS 1936, WU 1932):

Northeastern China (Liaoning or Jilin): Yalu River

Sichuan: NE "Szechuan" [= Sichuan]

? Fujian

All the records for China probably refer to the subspecies *O. villosus dauricus* MOTSCHULSKY (see below), but the status of the latter taxon is not yet clear and its distribution cannot be delineated with certainty.

**28. *Orectochilus* (s.str.) *villosus dauricus*** MOTSCHULSKY, 1853, Hydr. Russ.: 10

General distribution: East Russia ("Amur Region"), China (CHEO 1934, OCHS 1929c, WU 1932)

Distribution in China (CHEO 1934, OCHS 1933, WU 1932):

Sichuan: NE "Szechuan" [= Sichuan], "Yuen Koll" on river "Kialing-Ho"

**Subgenus *Patrus* AUBÉ, 1838**

**29. *Orectochilus* (*Patrus*) *assequens*** OCHS, 1936, Fests. f. Prof. Dr. E. Strand 1: 607

General distribution: endemic to China (OCHS 1936)

Guangdong: northern "Kwantung" [= Guangdong], "Tsha-jiu-san" 1400 m

**30. *Orectochilus (Patrus) chaldeus* OCHS, 1936, Fests. f. Prof. Dr. E. Strand 1: 605**

General distribution: endemic to China (OCHS 1936)

Guangdong: northern "Kwantung" [= Guangdong], "Tsha-jin-shan"

**31. *Orectochilus (Patrus) chinensis* RÉGIMBART, 1892, Annls Soc. ent. Fr. 60: 699**

General distribution: endemic to China (CHEO 1933, CHEO 1934, OCHS 1929b, RÉGIMBART 1892, RÉGIMBART 1907, WU 1932)

Hubei: "Chang-Yang" near "I-Chang" [= Yichang], 2000 m

According to OCHS (1942b) the locality Siao-lu, Sichuan, quoted by WU (1932) must be cancelled, as the beetles collected there were in fact *O. emmerichi* FALKENSTRÖM.

**32. *Orectochilus (Patrus) distinguendus* OCHS, 1942, Mitt. Münch. ent. Ges. 32 (1): 205**

General distribution: endemic to China (OCHS 1942b)

Fujian: "Fukien" [= Fujian], "Kuatun" [= Guadun], 2300 m

**33. *Orectochilus (Patrus) emmerichi* FALKENSTRÖM, 1936, Lingnan Sci. J. 15 (2): 245**

General distribution: endemic to China (FALKENSTRÖM 1936, OCHS 1942b)

Sichuan: "Szechuan" [= Sichuan], "Siao-lu"; "Szechuan" [= Sichuan], "Nitou Tatsienlu" [= Kangding Xian]

**34. *Orectochilus (Patrus) figuratus* RÉGIMBART, 1892, Annls Soc. ent. Fr. 60: 698**

General distribution: India (Himachal Pradesh, West Bengal, Sikkim), Nepal, China (OCHS 1930a, 1966a, RÉGIMBART 1892a, VAZIRANI 1984)

Distribution in China:

Tibet: Tatopani, border Nepal-Tibet, 1.III.1981, leg. Jäch, 3 exs. (NMW, CPM)

**35. *Orectochilus (Patrus) klapperichi* OCHS, 1942, Mitt. Münch. ent. Ges. 32 (1): 205**

General distribution: endemic to China (OCHS 1942b)

Fujian: "Fukien" [= Fujian], "Kuatun" [= Guadun], 2300 m

**36. *Orectochilus (Patrus) landaisi* RÉGIMBART, 1892, Annls Soc. ent. Fr. 60: 692**

General distribution: Vietnam, Laos, China (CHEO 1934, OCHS 1930a, 1937b, PESCHET 1923, RÉGIMBART 1892, 1907, WU 1932, ZAITZEV 1910)

Distribution in China (CHEO 1932, 1934, OCHS 1929b, 1930a, PESCHET 1923, RÉGIMBART 1907, WU 1932):

Guizhou

**37. *Orectochilus (Patrus) marginipennis parvilibus* OCHS, 1925, Rec. Ind. Mus. 27: 202**

General distribution: endemic to China (CHEO 1934, OCHS 1929b, 1925, 1930a, WU 1932)

Guangdong: "Tsha-jiu-san" 1400 m

This is an endemic Chinese subspecies of *O. marginipennis* AUBÉ, 1838 (= *O. marginipennis* auct.), which inhabits Assam, Burma, Vietnam, Malaysia, Indonesia and southern China (CHEO 1933, 1925, 1927a, 1927b, 1929d, 1930a, 1931, 1937a, 1953a, RÉGIMBART 1884, 1891, 1907, ZIMMERMANN 1917a)

**38. *Orectochilus (Patrus) melli* OCHS, 1925, Rec. Ind. Mus. 27: 197**

General distribution: endemic to China (CHEO 1934, MOUCHAMPS 1951, OCHS 1925, 1929b, 1936, 1942b, WU 1932)

Eújian: "Foochow" [= Fuzhou]; "Amoy" [= Xiamen]; "Kuatun" [= Guadun]

Guangdong: "Tsha-jiu-san", ca. 1400 m; eastern "Kwantung" [= Guangdong], "Tsin Leong San"

Hong\_Kong: CWBS loc. 6 (7 exs., NMW, CPM)

**39. *Orectochilus (Patrus) mimicus* OCHS, 1936, Fest. f. Prof. Dr. E. Strand 1: 608**

General distribution: endemic to China (OCHS 1936)

Guangdong: "Canton province" [= Guangdong], "Lo-fau-san" [= Luofu Shan]

OCHS (1936) discusses the possibility that *O. mimicus* is only a subspecies of *O. chaldeus*.

**40. *Orectochilus (Patrus) minusculus* OCHS, 1936, Fest. f. Prof. Dr. E. Strand 1: 608**

General distribution: endemic to China (OCHS 1936)

Guangdong: "Canton province" [= Guangdong], "Wa-scha-toi"

**41. *Orectochilus (Patrus) productus* RÉGIMBART, 1884, Annls Soc. ent. Fr.: 422**

General distribution: India, Sri Lanka, Burma, Cambodia, Vietnam, Thailand, Malaysia, China, Java, Borneo (CHEO 1933, 1934, OCHS 1927b, 1928b, 1929b, 1929c, 1929d, 1930a, 1936, 1937b, 1940a, OCHS 1942b, 1953a, PESCHET 1923, RÉGIMBART 1884, 1888, 1889, RÉGIMBART 1893, 1903, VAZIRANI 1958, 1969, 1984, ZIMMERMANN 1917a)

Distribution in China (CHEO 1934, OCHS 1929b, 1930a, 1936, OCHS 1940a, 1942b, WU 1932):

Jiangsu: "Chinkiang" [= Zhenjiang, ca. 65 km NE Nanjing]

Hong\_Kong

Hainan

? Guangdong: "Lilong"; "Li-Cong" or "Licong" (? different spelling for Lilong)

**42. *Orectochilus (Patrus) sculpturatus* RÉGIMBART, 1884, Annls Soc. ent. Fr.: 425**

General distribution: endemic to China (CHEO 1933, 1934, OCHS 1929b, RÉGIMBART 1884, 1892, 1907, WU 1932)

Hong\_Kong: CWBS loc. 6 (1 ex., NMW); CWBS loc. 7 (1 ex., NMW); CWBS loc. 8 (1 ex., NMW); Hong Kong, Tai Po Kau, 6.-7.VI.1984 and 14.VII.1983, leg. Dudgeon, 2 exs. (NMW, CPM)

**43. *Orectochilus (Patrus) severini* RÉGIMBART, 1892, Annls Soc. ent. Fr. 60: 700**

General distribution: endemic to China (CHEO 1934, OCHS 1929b, RÉGIMBART 1892, 1907, WU 1932)

Guizhou: "Kweitschu" or "Kweichow" [= Guizhou]

Fujian: "Fokien" or "Fukien" [= Fujian]

Hong\_Kong

? Guangdong: "Li-Cong"

**44. *Orectochilus (Patrus) sublineatus* RÉGIMBART, 1892, Annls Soc. ent. Fr. 60: 695**

General distribution: Laos, India (Assam), China (OCHS 1930a, PESCHET 1923, RÉGIMBART 1892, 1907)

Distribution in China (RÉGIMBART 1892):

Southern China

| Realm              | Types of distribution                                                                             | Species                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | n. | % of tot. |
|--------------------|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----------|
| Palearctic species | Euro-siberian distribution (G. minutus is really Holarctic)                                       | Gyrinus minutus<br>Gyrinus paykulli<br>Gyrinus pullatus<br>Orectochilus villosus<br>(incl. villosus dauricus )                                                                                                                                                                                                                                                                                                                                                                                                 | 4  | 9.3       |
|                    | European or Mediterranean distribution extending to central Asia and western China                | Gyrinus caspius<br>Gyrinus distinctus<br>Aulonogyrus concinnus                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 3  | 7         |
|                    | Eastern Palearctic distribution, including northern China, Japan, Korea                           | Gyrinus curtus<br>Gyrinus japonicus                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 2  | 4.6       |
|                    | Eastern Palaearctic distribution limited to central China                                         | Gyrinus szechuanensis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1  | 2.3       |
| Oriental species   | Distribution including both the Oriental and Australian regions                                   | Gyrinus convexiusculus<br>Dineutus australis                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2  | 4.6       |
|                    | Distribution including the whole Oriental region                                                  | Orectochilus marginepennis<br>(with ssp. parvilimbus)<br>Orectochilus productus                                                                                                                                                                                                                                                                                                                                                                                                                                | 2  | 4.6       |
|                    | Distribution including China, Indochina, India, Ceylon                                            | Dineutus unidentatus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1  | 2.3       |
|                    | Distribution including the Himalayan region (N India, Nepal, Tibet)                               | Orectochilus figuratus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1  | 2.3       |
|                    | Distribution including China, Indochina, Japan, Korea                                             | Dineutus orientalis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1  | 2.3       |
|                    | Distribution including China and Indochina (sometimes extending to Assam and the Andaman Islands) | Gyrinus orientalis<br>Gyrinus smaragdinus<br>Dineutus mellyi<br>Porrorrhynchus landaisi<br>Orectochilus landaisi<br>Orectochilus sublineatus<br>Orectochilus sulcipennis                                                                                                                                                                                                                                                                                                                                       | 7  | 16.3      |
|                    | Distribution limited to China                                                                     | Gyrinus tsingtaoriensis<br>Metagyrimus sinensis<br>Orectochilus formosanus<br>Orectochilus fusiformis<br>Orectochilus nigroaeneus<br>Orectochilus obscuriceps<br>Orectochilus obtusipennis<br>Orectochilus assequens<br>Orectochilus chalceus<br>Orectochilus chinensis<br>Orectochilus distinguendus<br>Orectochilus emmerichi<br>Orectochilus klapperichi<br>Orectochilus melli<br>Orectochilus mimicus<br>Orectochilus minusculus<br>Orectochilus sculpturatus<br>Orectochilus severini<br>Orectochilus wui | 19 | 44.2      |

Table 1: Geographical grouping within Palaearctic and Oriental species.

**45. *Orectochilus (Patrus) sulcipennis* RÉGIMBART, 1892, Annls Soc. ent. Fr. 60: 705**  
General distribution: Vietnam, Burma, China (OCHS 1930a, 1936, RÉGIMBART 1892)  
Distribution in China (OCHS 1936):  
Guangdong: "Yinfa" [= Yinhua, Shaoguan Prefecture, ca. 50 km N Shaoguan City]

**46. *Orectochilus (Patrus) wui* OCHS, 1932, Peking Nat. Hist. Bull. 6 (3): 57**  
General distribution: endemic to China (CHEO 1934, OCHS 1932, 1942b, WU 1932).  
Eüjian: "Foochow" [= Fuzhou]; "Amoy" [= Xiamen]; "Kwangtsch"; "Kuatun" [= Guadun]

Biogeographical considerations

Before attempting an evaluation of the Chinese fauna from a biogeographical viewpoint, I think it is necessary to try to estimate our degree of knowledge of the fauna itself (see table 2).

| Province               | species number | Province | species number |
|------------------------|----------------|----------|----------------|
| NE China (3 provinces) | 5              | Jiangsu  | 3              |
| Nei Mongol             | 2              | Shanghai | 4              |
| Gansu                  | 2              | Sichuan  | 8              |
| Ningxia                | 0              | Hubei    | 3              |
| Xinjiang               | 3              | Zhejiang | 4              |
| Qinghai                | 2              | Guizhou  | 6              |
| Tibet                  | 2              | Hunan    | 1              |
| Hebei                  | 1              | Beijing  | 1              |
| Jiangxi                | 3              | Tianjin  | 0              |
| Fujian                 | 13             | Shandong | 3              |
| Yünnan                 | 4              | Shanxi   | 0              |
| Guangxi                | 3              | Shaanxi  | 2              |
| Guangdong, Hong Kong   | 18             | Henan    | 0              |
| Taiwan                 | 6              | Anhui    | 0              |
| Hainan                 | 3              |          |                |

Table 2: Provinces of China with the number of species which are known from each of them. Records for the three northeastern provinces (Heilongjiang, Jilin and Liaoning) are grouped together under the heading NE China, as in many old works we find usually only the generic indications "Manchuria" or "Northeastern China", making it impossible to divide these records by province.

It can be seen easily from the table that there are still many gaps in our knowledge: 1) we have no records at all for 5 regions of China (Ningxia, Tianjin, Shanxi, Henan, Anhui); 2) while the paucity of species in the northern regions relative to the southern ones probably reflects a genuine diversity gradient, strong differences in the species richness of neighbouring provinces surely must reflect only lack of research, as it is difficult to believe, for instance, that Guangdong has 18 species while adjacent Guangxi has only 3 and Yünnan only 4, or that Fujian has 13 species, while adjacent Jiangxi has only 3; 3) in some cases, even for the provinces for which we have records, often they are few, scattered over large territories. Therefore we must admit that we are still very far from having a detailed knowledge of the distribution of Chinese Gyrinidae, and all considerations on biogeography must be considered tentative and provisional.

Nevertheless it is possible to make a biogeographical evaluation of the fauna as a whole. To that end, I divide the Chinese species into groups according to their distribution; first they can be

divided into 2 main groups; Palaearctic species and Oriental species, which may be further subdivided as shown in Table 1. The assignment of the species to the different groups stems rather directly from consideration of their distribution; only *Gyrinus szechuanensis* needs some comments, as this species appears to be endemic to a region which, for reasons I shall discuss below, I consider to be on the border between the Palaearctic and Oriental regions: I consider this species to be a Palaearctic element in the Chinese fauna, however, since it appears to be closely related to the Palaearctic *G. natator* L., originally being described as a variety of this species. From examination of the table, we may draw the following conclusions: 1) the Oriental species, 33, amounting to 76.7 % of the whole fauna, clearly predominate over the Palaearctic species; 2) a high percentage of the species are endemic to China (19 species, equal to 44.2 % of the total), although we do not have enough records to evaluate whether most of these species have limited ranges, or instead occur over wide areas of the country.

Now it is possible to see whether the Gyrinidae can give a contribution to the solution of an old problem of Chinese biogeography, the placement of the border between the Palaearctic and Oriental regions. This is a controversial subject, as some authors (e.g. LATTIN 1967) considering the distribution of terrestrial animals, put the border at the northern limit of the tropical forest through South China, north of Taiwan but south of Japan, while others (e.g. BANARESCU 1991) considering the freshwater fauna, mainly fish, put it much more to the north, at the watershed between the Amur and Lena rivers.

After studying the water beetles of northeastern China BRINCK (1946) came to the conclusion that this region has strong connections with more northern and western regions in combination with a low proportion of Oriental elements, keeping the distribution of water beetles more in accordance with that of terrestrial animals, but more recently NILSSON & NAKANE (1992), studying the genus *Hydroporus* (Dytiscidae) of Japan and nearby islands maintain that the paucity of species of *Hydroporus* south of the Amur Basin supports Banarescu's view.

An examination of the distribution of gyrinid species in China, on the contrary, seems to reconfirm Brinck's hypothesis, since we observe that: 1) the Oriental species are limited in distribution to southern China, roughly to the south of a line running from Shandong to Sichuan, with the exception of *Dineutus orientalis* which reaches northeastern China; 2) in the northern and western regions of China the Palaearctic elements predominate: northeastern China, Nei Mongol, Gansu, Qinghai and Xinjiang are inhabited only by Palaearctic species (with the above mentioned exception of *D. orientalis*); 3) in some regions of China lying at the border between the two above mentioned areas we find both Oriental and Palaearctic elements; this is the case for instance of Tibet but especially of Sichuan. Unfortunately, the biggest gaps in our knowledge concern provinces in this border region, so further research will be necessary before we can delineate with more precision the border between the Palaearctic and Oriental gyrinid faunas.

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