

## 蒙古柴胡属 *Bupleurum* L.( 伞形科 )植物的分类和分布

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**摘 要** 根据作者近年来在蒙古的野外采集 , 以及在俄罗斯圣彼得堡科码洛夫植物研究所标本馆 LE 和北京中国科学院植物研究所标本馆 PE 等的研究 , 确认蒙古产 7 种柴胡属( *Bupleurum* L. )植物。作出了它们的检索表。按照蒙古植物区系区划 , 分析和描述了这 7 种植物的分布。

**关键词** 柴胡属 ; 蒙古 ; 分类 ; 分布

## Classification and Distribution of *Bupleurum* L.( Umbelliferae Juss. )in Mongolia

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**Abstract** There are seven species of the genus *Bupleurum* L. in Mongolia , which is recognized from mainly basing on the field collection of Mongolia and specimens of LE and PE. A diagnostic key of the seven species is yielded. And the distributions of the taxa concerned are provided in the light of the phytogeographical division of Mongolia. This paper presents a comprehensive taxonomical treatment of *Bupleurum* L. to the Mongolian flora.

**Key words** *Bupleurum* L. ; Mongolia ; classification ; distribution

*Bupleurum* L. belongs to family Celery Umbelliferae Juss. ( Apiaceae Lindley ). There are about 180 species of it in the world , occur widespread in the North Temperate region.

Based on the former studies<sup>[1~9]</sup> and our recent studies<sup>[10~15]</sup> , our collections from the Mongolian fields ( over 266 specimens of 6 species of *Bupleurum* L. , and deposited in the Herbarium UBA , Ulan-Bator , Institute of Botany , Mongolian Academy of Sciences ) , and our observation mainly from PE , Beijing , China , and LE , St. Petersburg , Russia , etc. , seven species of the genus *Bupleurum* L. are recognized in Mongolia.

According to the phytogeographical division of

Mongolia , thirteen regions were treated as distribution areas to *Bupleurum* L. , the distributions of the taxa are shown into these thirteen regions. The distributions show that *Bupleurum bicaule* across thirteen regions , has the widest distribution. While *Bupleurum aureum* has a narrow distribution only in one region , Mongolian Altai. Additionally , one sub-endemic , two rare species are recorded in Mongolia.

*Bupleurum* L. -Herbs perennial , rarely annual , glabrous. Rootstocks usually short and woody. Stem alternate or dichotomously branched , green or glaucous , base with or without fibrous remnant sheaths. Leaves entire , petioles sheathing ; blade membranous , herbaceous or cori-aceous , usually with parallel

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venation, base usually tapering into petiole. Cauline leaves often sessile, clasping, auriculate or perfoliate. Inflorescence loose, umbels compound, terminal and lateral; bracts several, conspicuous, often similar to uppermost leaves; rays few to many; bracteoles several, conspicuous. Calyx teeth obsolete. Petals yellow, greenish-yellow, tinged purple or purple, oblong to orbicular, apex narrowly inflexed. Stylopodi-

um conic, low-conic or discoid; styles short, often reflexed. Fruit oblong to ovoid-oblong or ellipsoid, slightly laterally compressed, mericarps subpentagonal (rarely rounded) in cross section; ribs 5, filiform, prominent or obscure; vittae 1-3 (6) in each furrow, 2-6 (8) on commissure, sometimes obscure. Seed face plane. Carpophore 2-cleft to base.

**Key of *Bupleurum* Linnaeus, Sp. Pl. 1:236. 1753**

1. Leaves linear, linear-lanceolate, in lower part narrow. Bracteoles small, 1-4 mm long, lanceolate and green, shorter than umbellules. .... 2.  
+ Leaves lanceolate, amplexicaul and in lower part widened. Bracteoles large, 5-15(35) mm long, 10(15) mm wide, ovate or broadly-lanceolate and yellow, yellowish-green, longer than umbellules. .... 4.
2. Stems 3-25(35) cm tall. Leaves scabrous, narrow-lanceolate 1-1.5(3) mm wide, 3-5 nerved. vittae 3 in each furrow. Radical leaves long and narrow than cauline leaf ..... 7. **B. bicaule Helm.**  
+ Stems 30-80 cm tall. Leaves lanceolate-linear or lanceolate, 3-7(9) nerved, 2-15 mm wide. vittae 1 or 3-4 in each furrow. .... 3.
3. Bracts 1-3. Rays 6-15. Fruits oval-ovate, vittae 3-4 in each furrow. Radical leaves shorter and wider than cauline leaf. .... 6. **B. scorzonifolium Willd.**  
+ Bracts 4-6(8). Rays 10-15(25). Fruits oval, vittae 1 or 2-3 in each furrow ..... 5. **B. krylovianum Schischkin**
4. Rays 2-3(4). Stem(5) 10-20 cm tall. Leaves narrow-ovate or broadly-lanceolate. Bracts and bracteoles green and lanceolate ..... 3. **B. mongolicum V. Vinogr.**  
+ Rays 5-15(20). Stem 25-100 cm tall. Leaves numerous, broadly-ovate and lanceolate or at bases leafy. Bracts and bracteoles 5-15(35) mm long, 10(15) mm wide, ovate or broadly-lanceolate, and yellow or yellowish-green. .... 5.
5. Umbel diameter 5-10(20) cm, rays 5-10, equal in length. Bracts 3-5, ovate and light yellow or pinkish, 10-35 mm long, 10-15 mm wide. Petals light yellow. Vittae 2-3 in each furrow ..... 1. **B. aureum Fischer ex Hoffm.**  
+ Umbel diameter 1.5-6(8) cm, rays 5-15. Bracts 2-7, ovate or oval and yellowish or yellowish-green, 5-30 mm long. Petals yellow. Vittae number in each furrow ..... 6.
6. Leaves small, 1-6 cm long, (5) 7-12 nerved, in lower part lively and amplexicaul. Umbel diameter 3-6(8) cm, 20-30(50) flowered. Bracts and bracteoles oval. Bracts 2-4(7). Vittae solitary in each furrow ..... 2. **B. multinerve DC.**  
+ Leaves large, 7-15 cm long, (5) 5-7 nerved, lanceolate-linear. Umbel diameter 1.5-3(5) cm, 10-20 flowered. Bracts and bracteoles lanceolate. Bracts 2-7. Vittae 3-5(6) in each furrow ..... 4. **B. sibiricum Vest.**

**1. B. aureum Fischer ex Hoffm.** in Gen. Umbell. 1 (1814) 115; Fl. USSR, 16 (1950) 295; Fl. Sin. 55, 1 (1979) 223; Vinogradova, in New syst. vasc. plant. 28 (1991) 125; Vinogradova, Plant of Central Asia, 10 (1994) 30; Gubanov, Conspectus of flora of Outer Mongolia (1996) 78. **B. lonfifolium L. subsp. aureum (Fischer ex Hoffm.) Soo** in Acta Bot. Acad. Sci. Hung. 12 (1966) 116; Flora Siberia, 10 (1996) 143.

**Distribution:** Mongolian Altai (Dayan-nuur).

Rare plant.

Kazakhstan, Kyrgyzstan, Russia (Altai), China (Xinjiang).

**Typus:** Moscow (MW)

**2. B. multinerve DC.** in Mem. Soc. Phys. Geneve, 4 (1828) 500; Fl. USSR, 16 (1950) 297; Grubov, Conspectus flora of Mongolia (1955) 210; Grubov, Key to vascular plants of Mongolia (1982) 189; Vinogradova, Plant of Central Asia, 10 (1994) 35; Fl. Siberia 10 (1996) 144; Gubanov, Conspectus of flora of Outer Mongolia (1996) 79.

**Distribution:** Khentei, Khangai, Mongol Dauri-

an , Great Khingan , Khobdo , Mongolian Altai , East Mongolia , Depression of Great Lakes , Valley of Lakes. Russia ( Transbaikal , Southern Siberia ).

**Typus** : Genev ( G )

**3. *B. mongolicum* V. Vinogr.** in New syst. vasc. plant. 22 ( 1985 ) 194 ; Vinogradova , New syst. vasc. plant. 28 ( 1992 ) 127 ; Vinogradova , Plant of Central Asia , 10 ( 1994 ) 34 ; Gubanov , Conspectus of flora of Outer Mongolia ( 1996 ) 79. ***B. densiflorum* auct. non Rupr.** in Mem. Acad. Pe-

tersb. Ser. 7 , XIV , 4 ( 1869 ) 47 ; Grubov , Key to vascular plants of Mongolia ( 1982 ) 190.

**Distribution** : Mongolian Altai , Gobi Altai , Dzungarian Gobi. Subendemic. China ( Xinjiang , Inner Mongolia ).

**Typus** : Mongolia , Dzhungaria , jigum Baitag - Bogdo , declive genusle boreale , 2650 m s. m. , step-pa. 08. VIII. 1977 , E. Volkova , E. Raczkovskaja , St. Petersburg ( LE )

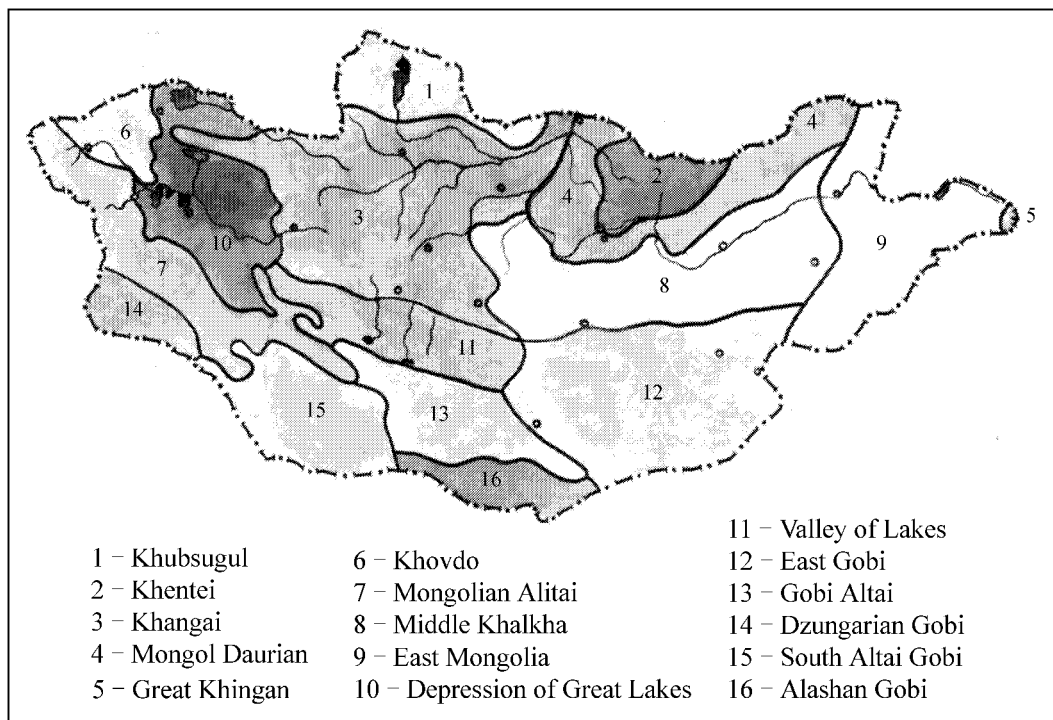


Fig. 1 Phyto geographical region of Mongolia

**4. *B. sibiricum* Vest.** in Schult. Syst. Veg. 6 ( 1820 ) 368 ; Fl. USSR , 16 ( 1950 ) 308 ; Grubov , Conspectus flora of Mongolia ( 1955 ) 211 ; Fl. Intramong. 4 ( 1979 ) 159 ; Fl. Sin. 55 , 1 ( 1979 ) 227 ; Grubov , Key to vascular plants of Mongolia ( 1982 ) 189 ; Vinogradova , Plant of Central Asia , 10 ( 1994 ) 36 ; Fl. Siberia 10 ( 1996 ) 146 ; Gubanov , Conspectus of flora of Outer Mongolia ( 1996 ) 79. ***B. multinerve* var. *angustus* DC.** Prodr. 4 ( 1830 ) 130 ; in Hiroe , Umbell. Asia ( 1958 ) 88.

**Distribution** : Khentei , Khangai , Mongol Daurian , Great Khingan , Middle Khalkha , East Mongolia.

Russia ( Southeastern Siberia ) , China ( Inner Mongolia ).

**Typus** : Berlin ( B ).

**5. *B. krylovianum* Schischkin** Fl. Western Siberia , 8 ( 1935 ) 2010 ; Fl. USSR , 16 ( 1950 ) 324 ; Fl. Sin. 55 , 1 ( 1979 ) 259 ; Vinogradova , Plant of Central Asia , 10 ( 1994 ) 33 ; Fl. Siberia 10 ( 1996 ) 142 ; Gubanov , Conspectus of flora of Outer Mongolia ( 1996 ) 79. ***B. falcatum* L. var. *oblongifolium* Trautv.** in Bull. Soc. Nat. Moscow , 39 ( 1866 ) 319.

**Distribution** : Mongolian Altai ( Dayan - nuur ). Rare plant.

Kazakstan , Kyrgyzstan , Russia ( Altai ) , China ( Xinjiang ).

**Typus** : Kazakhstan , Tarbagatai. St. Petersburg ( LE )

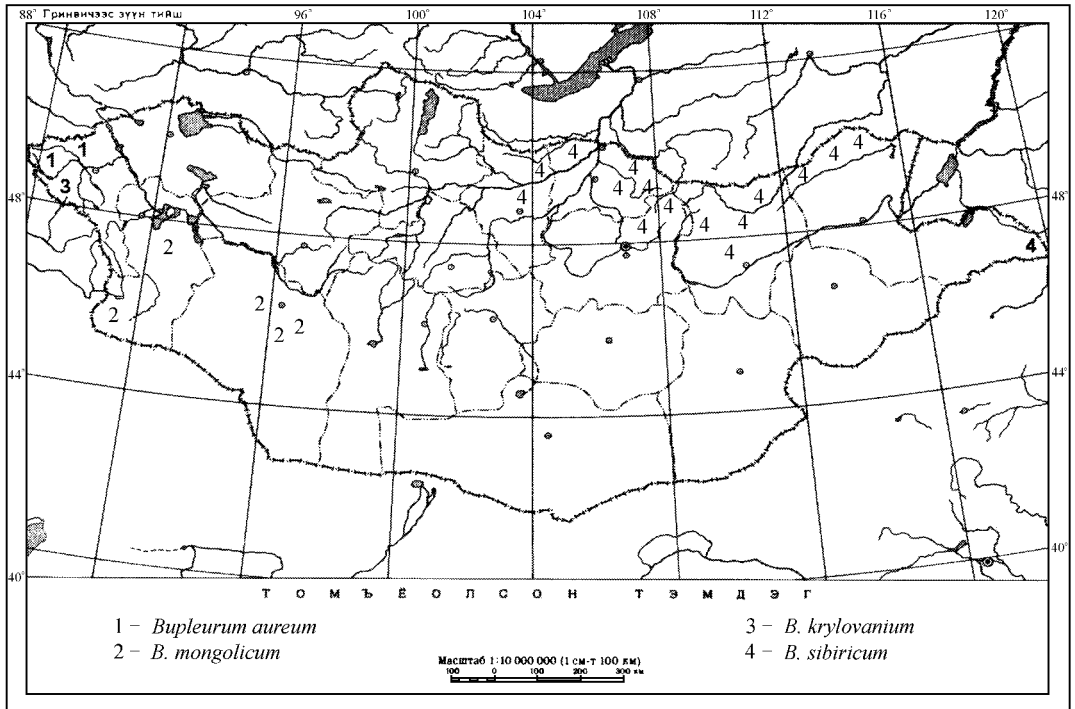


Fig. 2 Distributions of some species of the genus *Bupleurum* L. in Mongolia

**6. *B. scorzonerifolium* Willd.** Enum. Hort. Berol. ( 1809 ) 300 ; Fl. USSR , 16 ( 1950 ) 320 ; Grubov , Conspectus flora of Mongolia ( 1955 ) 210 ; Vinogradova , Plant of Central Asia , 10 ( 1994 ) 30 ; Fl. Siberia 10 ( 1996 ) 142 ; Gubanov , Conspectus of flora of Outer Mongolia ( 1996 ) 79.

**Distribution :** Khubsugul , Khentei , Khangai , Mongol Daurian , Great Khingan , Middle Khalkha , East Mongolia.

Russia , Korea , Japan , North China.

**Typus :** Typus of the Botanical Garden of Berlin. Berlin ( B )

**7. *B. bicaule* Helm.** in Mem. Soc. Nat. Mosc. 2 ( 1809 ) 108 ; Fl. USSR , 16 ( 1950 ) 322 ; Grubov , Conspectus flora of Mongolia ( 1955 ) 210 ; Fl. Intramong. 4 ( 1979 ) 156 ; Fl. Sin. 55 , 1 ( 1979 ) 253 ; Grubov , Key to vascular plants of Mongolia ( 1982 ) 189 ; Vinogradova , Plant of Central Asia , 10 ( 1994 ) 30 ; Fl. Siberia 10 ( 1996 ) 142 ; Gubanov , Conspectus of flora of Outer Mongolia ( 1996 ) 79. ***B. bicaule* Helm. var. *pusillum* ( Krylov ) Gubanov** in Fl. Eastern Khangai ( 1983 ) 143 ; Fl. Khangai ( 1989 ) 135. ***B. pusillum* Krylov** in Acta Horti Petropol. 21 ( 1908 ) 18 ; Grubov , Conspectus

flora of Mongolia ( 1955 ) 210 ; Fl. Intramong. 4 ( 1979 ) 137 ; Grubov , Key to vascular plants of Mongolia ( 1982 ) 189.

**Distribution :** Khubsugul , Khentei , Khangai , Mongol Daurian , Great Khingan , Khobdo , Mongolian Altai , Middle Khalkha , East Mongolia , Depression of Great Lakes , Valley of Lakes , East Gobi , Gobi Altai.

Afghanistan , Russia , Korea , Japan , China.

**Typus :** St. Petersburg ( LE )

#### Herbaria

B—Botanisches Museum Berlin-Dahlem

G—Conservatoire et Jardin botaniques , Geneve

LE—Herbarium of the Komarov Botanical Institute , the Academy of Sciences of Russia , St. Petersburg

MW—Herbarium of the Moscow State University , Moscow

PE—Herbarium of Institute of Botany , the Chinese Academy of Sciences , Beijing

UBA—Herbarium of Institute of Botany , the Mongolian Academy of Sciences , Ulan Bator

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