



CLASSIFICATION OF THE CELERY FAMILY *APIACEAE* LINDL. 1836 (*UMBELLIFERAE* JUSS. 1789) IN MONGOLIA

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Abstract

The classification position of Celery family *Apiaceae* Lindl. (*Umbelliferae* Juss.) in Mongolia is revised here. 76 species and 39 genus are included in this family. Also distribution data each species of this family in Mongolia are given.

Key: words: Distribution, tribe, subtribe, genus, species, *Apiaceae*

Introduction

The Celery family (*Apiaceae* Lindl.), which is one of the biggest families in the Mongolian Flora (Gubanov, 1996) and in the book included 34 genus and 66 species of this family. Previous study on systematics of the Celery family of Mongolia is part of an involved project for creating a series books "Flora of Mongolia, vol. 10, *Apiaceae-Cornaceae*, 2009". This book is included 35 genus and 71 species in the this family.

Materials and Methods

The Celery family (*Apiaceae* Lindl.) specimens from the Herbarium of the Institute of Botany, MAS (UBA), Herbarium of the National University of Mongolia (UBU), Herbarium of the Institute of Botany, CAS (PE), Herbarium Institute of Botany, RAS (LE) and Herbarium of the Tracy's of Texas University A&M, as well as additional data, were used for the present study. There are over 2800 sheets of specimens in total, which were collected by a number of scientists between 1867-2011. This study was conducted using traditional methods of plants systematics.

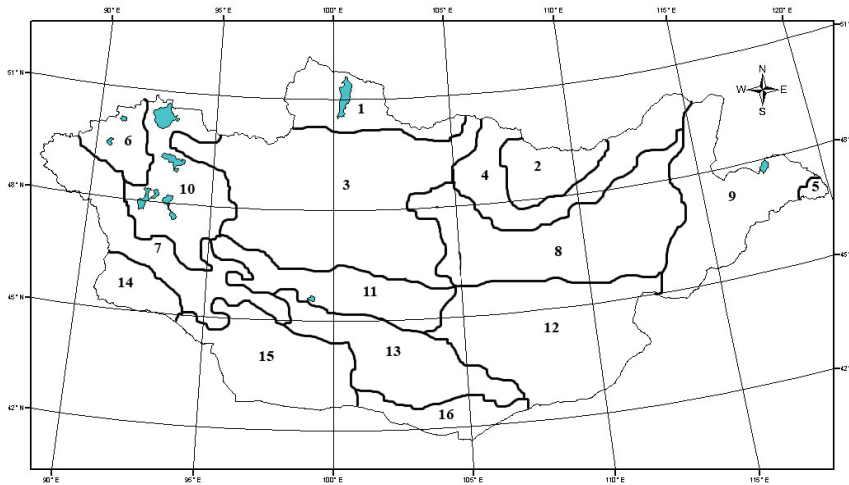
Distribution data of all species of Celery family (*Apiaceae* Lindl.) in phyto-geographical 16 regions of Mongolia by V.I. Grubov (1982) are used here. In the distribution section, after the description of each species, the numbers are given for the respective regions where the species occurs (Figure 1).

Results

Currently according to research result we have officially registered in the recent conspectus by Gubanov (1996), new combination of 2 genera (*Kadenia*, *Kitagawia*) and 3 species and written off 1 species (*Ferula gracilis*) 11 species belonging to 7 genera were added newly to the family and present time is 2 subfamilies, 8 tribes, 11 subtribes, 39 genus and 76 species are included in the Celery family (*Apiaceae* Lindl.) in Mongolian flora (Table 1).

Also distribution data of each species by phytogeographical regions in Mongolia was included in this story (Table 2).

Included in this family are the large genus: *Seseli* (8 ssp.), *Bupleurum* (8 ssp.), *Ferula* (7 ssp.), *Angelica* (6 ssp.), *Peucedanum* (5 ssp.).



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|--------------------|-------------------------------|
| 1. Khubsugul | 9. East Mongolia |
| 2. Khentei | 10. Depression of Great Lakes |
| 3. Khangai | 11. Valley of Lakes |
| 4. Mongol Daurian | 12. East Gobi |
| 5. Great Khingan | 13. Gobi Altai |
| 6. Khobdo | 14. Dzungarian Gobi |
| 7. Mongolian Altai | 15. Transaltai Gobi |
| 8. Middle Khalkha | 16. Alashan Gobi |

Figure 1. Map of the phytogeographical regions of Mongolia (by Grubov, 1982)

Table 1. Classification of Celery family Apiaceae Lindl. of the Mongolian flora

Subfamily	Tribe	Subtribe	Genera / species	
1. <i>Saniculoideae</i> Burnett 1835	1. <i>Saniculeae</i> G.Koch 1824	<i>Saniculinae</i> Cosson & Germann 1845	1/1	
	1. <i>Scandiceae</i> Sprengel 1820	<i>Scandicinae</i> J.E.Tausch 1834	2/2	
	2. <i>Coriandreae</i> G.Koch 1824	<i>Coriandrinae</i> J.E.Tausch 1834	1/1	
	3. <i>Smyrniaceae</i> Sprengel 1820	<i>Smyrniinae</i> Dumortier 1829	4/4	
	4. <i>Ammineae</i> Dumortier 1829	<i>Carinae</i> Drude 1897	8/16	
		<i>Seselinae</i> J.E.Tausch 1834	13/24	
	2. <i>Apioideae</i> B.Seemann 1866	5. <i>Peucedaneae</i> Dumortier 1827	<i>Angelicinae</i> J.E.Tausch 1834	2/8
			<i>Ferulinae</i> Drude 1897	4/15
		6. <i>Laserpitieae</i> E.Cosson & Germann 1845	<i>Tordyliinae</i> Drude 1897	2/3
			<i>Laserpitiinae</i> J.E.Tausch 1834	1/1
7. <i>Dauceae</i> G.Koch 1824	<i>Daucinae</i> Dumortier 1827	1/1		
2 subfamilies	8 tribes	11 subtribes	39/76	

Therefore included list name of the all genus in family Celery *Apiaceae* Lindl. in Mongolian flora. There is: *Aegopodium* Linnaeus 1753 (1 spp.), *Anethum* Linnaeus 1753 (1 spp.), *Angelica* Linnaeus 1753 (6 spp.),

Anthriscus Persoon 1805 (1 spp.), *Apium* Linnaeus 1753 (1 spp.), *Aulacospermum* Ledebour 1833 (1 spp.), *Bunium* Linnaeus 1753 (1 spp.), *Bupleurum* Linnaeus 1753 (8 spp.), *Carum* Linnaeus 1753 (2 spp.), *Cenolophium*



G.Koch 1824 (1 spp.), *Cicuta* Linnaeus 1753 (1 spp.), *Conioselinum* Fischer ex Hoffmann 1814 (2 spp.), *Cnidium* Cusson 1782 (3 spp.), *Coriandrum* Linnaeus 1753 (1 spp.), *Daucus* Linnaeus 1753 (1 spp.), *Eryngium* Linnaeus 1753 (1 spp.), *Ferula* Linnaeus 1753 (7 spp.), *Ferulopsis* Kitagawa 1971 (1 spp.), *Foeniculum* Miller 1754 (1 spp.), *Hansenia* Turczaninow 1844 (1 spp.), *Heracleum* Linnaeus 1753 (2 spp.), *Lithosciadium* Turczaninow 1844 (2 spp.), *Oenanthe* Linnaeus 1753 (2 spp.), *Pachypleurum* Ledebour 1829 (1 spp.), *Paraligusticum* V.N.Tichomirov 1973 (1 spp.), *Pastinaca* Linnaeus 1753 (1 spp.), *Petroselinum* Hill 1756 (1 spp.), *Peucedanum* Linnaeus 1753 (5 spp.), *Phlojodicarpus* Turczaninow Ledebour 1844 (2 spp.), *Pimpinella* Linnaeus 1753 (1 spp.), *Pleurospermum* Hoffmann 1814 (1 spp.), *Prangos* Lindley 1825 (1 spp.), *Sajanella* Sojak 1980 (1 spp.), *Saposhnikovia* Schischkin 1951 (1 spp.), *Schulzia* Sprengel 1813 (1 spp.), *Seseli* Linnaeus 1753 (8 spp.), *Sium* Linnaeus 1753 (1 spp.), *Sphallerocarpus* Besser ex de Candolle 1915 (1 spp.), *Stenocodium* Ledebour 1829 (1 spp.).

Table 2. List of species and distribution data of the family Apiaceae Lindl. in Mongolia

<i>Species latin name</i>	<i>Distribution by phytogeographical regions of Mongolia</i>
1. <i>Eryngium planum</i> Linnaeus, 1753	4
2. <i>Sphallerocarpus gracilis</i> (Besser ex Treviranus) Koso-Poljansky, 1829	1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13
3. <i>Anthriscus sylvestris</i> (Linnaeus) Hoffmann, 1814	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
+ 4. <i>Coriandrum sativum</i> Linnaeus, 1753	3+, 4+
5. <i>Pleurospermum uralense</i> Hoffmann, 1814	1, 2, 3, 4, 5, 6, 8, 9
6. <i>Aulacospermum anomalum</i> Ledebour, 1833	7
7. <i>Prangos ledebourii</i> Herrstadt & Heyn, 1977	7, 14
8. <i>Bunium setaceum</i> (Schrenk ex Fischer & C.A. Meyer) H. Wolff, 1927	6, 7
9. <i>Bupleurum aureum</i> Fisher ex Hoffmann, 1814	7
10. <i>B. multinerve</i> de Candolle, 1828	2, 3, 4, 5, 6, 7+, 9+
11. <i>B. mongolicum</i> V.M. Vinogradova, 1985	7, 13, 14
12. <i>B. sibiricum</i> Vest ex Roemer & Schultes, 1820	2, 3, 4, 5, 8+, 9+
13. <i>B. bicaule</i> Helm, 1809	1-13
+ 14. <i>B. pusillum</i> Krylov, 1903	1+, 2+, 3+, 6+, 7+, 13+
15. <i>B. krylovianum</i> Schischkin ex Krylov, 1935	3+, 7
16. <i>B. scorzonerifolium</i> Willdenow, 1809	1, 2, 3, 4, 5, 8, 9
+ 17. <i>Apium graveolens</i> Linnaeus 1753	1+, 2+, 3+, 4+, 7+
+ 18. <i>Petroselinum crispum</i> (Miller) Nyman ex A.W. Hill, 1925	1+, 3+, 4+
19. <i>Cicuta virosa</i> Linnaeus, 1753	1+, 2-15
20. <i>Carum carvi</i> Linnaeus, 1753	1+, 2, 3, 4, 5, 7-10, 13, 14, 16+
21. <i>C. buriaticum</i> Turczaninow, 1844	1+, 2, 3, 4, 5, 6, 8, 9
22. <i>Pimpinella thellungiana</i> H. Wolff, 1927	4, 5, 9
23. <i>Aegopodium alpestre</i> Ledebour, 1829	1, 2, 3, 4, 5, 13
24. <i>Sium suave</i> Walter, 1788	1, 2, 3, 4, 5, 6, 7, 8, 9+, 10, 14+
25. <i>Sajanella monstrosa</i> (Willdenow) Sojak, 1980	2
26. <i>Seseli glabratum</i> Willdenow ex Sprengel, 1820	7
27. <i>S. eriocarpum</i> (Schrenk) B. Fedtschenko, 1915	7, 13, 14
28. <i>S. abolinii</i> (Korovin) Schischkin, 1950	7, 10, 11+, 13
29. <i>S. buchtormense</i> (Fischer) G. Koch, 1824	7, 14



30. <i>S. condensatum</i> (Linnaeus) Reichenbach f. 1867	1, 2, 3, 6, 7, 8, 10, 14+
31. <i>S. grubovii</i> V.M. Vinogradova & Sanczir, 1985	7, 13, 14, 15
32. <i>S. mucronatum</i> (Schrenk) Pimenov & Sdobnina, 1973	14
33. <i>S. seseloides</i> (Fischer & C.A. Meyer ex Turczaninow) Hiroe, 1958	1+, 2, 3, 4, 5, 6, 7, 9+
34. <i>Oenanthe aquatica</i> (Linnaeus) Poiret, 1798	10
+ 35. <i>Oe. javanica</i> (Blume) de Candolle, 1830	10+
36. <i>Hansenia mongholica</i> Turczaninow, 1844	1, 2
37. <i>Schulzia crinita</i> (Pallas) Sprengel, 1813	1, 2, 3, 6, 7
+ 38. <i>Foeniculum vulgare</i> Miller, 1768	1+, 2+, 3+, 4+, 13+
+ 39. <i>Anethum graveolens</i> Linnaeus, 1753	3+, 4+, 13+
40. <i>Lithosciadium multicaule</i> Turczaninow, 1844	1, 3, 4, 6, 7, 13
41. <i>L. kamelinii</i> (V.M. Vinogradova) Pimenov ex Gubanov, 1996	7
42. <i>Cnidium dauricum</i> (Jacquin) Turczaninow ex Fischer & C.A. Meyer, 1835	2, 3, 4, 5, 6, 7, 8, 9, 10
# 43. <i>C. salinum</i> Turczaninow, 1844	2, 3, 4, 8, 9, 10, 11, 13
44. <i>C. monnieri</i> (Linnaeus) Cusson, 1782	4, 9
45. <i>Stenocoelium athamantoides</i> (Marshall von Bieberstein) Ledebour, 1829	6, 7
46. <i>Paraligusticum discolor</i> (Ledebour) V.N. Tichomirov, 1973	7
Species latin name	Distribution by phytogeographical regions of Mongolia
47. <i>Cenolophium denudatum</i> (Fisher & Hornemann) Tutin, 1967	3, 7, 10, 14
48. <i>Pachypleurum alpinum</i> Ledebour, 1829	1, 2, 3, 6, 7, 14+
49. <i>Conioselinum longifolium</i> Turczaninow, 1844	1, 2+, 4+, 7+, 9, 10
50. <i>C. tataricum</i> Hoffmann, 1816	1, 2, 3, 4
51. <i>Angelica czernaevia</i> (Fischer & C.A. Meyer) Kitagawa, 1936	5, 9
52. <i>A. sylvestris</i> Linnaeus, 1753	6, 7+
53. <i>A. dahurica</i> (Fischer ex Hoffmann) Bentham & J. D. Hooker ex Franchet & Savatier, 1873	2, 3, 4, 5, 9
54. <i>A. decurrens</i> (Ledebour) B. Fedtshenko, 1909	1, 2, 3, 4+, 6, 7, 14
+ 55. <i>A. saxatilis</i> Turczaninow ex Ledebour, 1844	2+
56. <i>A. tenuifolia</i> (Pallas ex Sprengel) Pimenov, 1985	1, 2, 3, 4, 6, 7, 8, 10, 13+
57. <i>Ferula potaninii</i> Korovin ex Pavlov, 1935	14
58. <i>F. bungeana</i> Kitagawa, 1956	5+, 8, 9, 10, 11, 12, 13, 14, 15, 16
59. <i>F. dissecta</i> (Ledebour) Ledebour, 1844	3, 6+, 7, 10+, 14+
60. <i>F. mongolica</i> (V.M. Vinogradova & R. Kamelin) V.M. Vinogradova & R. Kamelin, 1990	3, 7, 10, 14, 15
61. <i>F. feruloides</i> (Steudel) Korovin, 1947	7
+ 62. <i>F. caspica</i> Marshall von Bieberstein, 1808	7+, 14+
63. <i>F. dubjanskyi</i> Korovin ex Pavlov, 1934	7, 14
64. <i>Ferulopsis hystrix</i> (Bunge ex Ledeb.) Pimenov, 1991	2, 3, 4, 6, 7, 8, 9+, 10, 11, 13, 15
65. <i>Phlojodicarpus sibiricus</i> (Stephan ex Sprengel) Koso-Poljansky, 1922	1, 2, 3, 4, 7+, 8, 9, 13+
66. <i>Ph. villosus</i> (Turczaninow ex Fischer & C.A. Meyer) Turczaninow ex Ledebour, 1844	1, 2, 3, 6+



# 67. <i>Peucedanum terebinthaceum</i> (Fischer ex Treviranus) Ledebour, 1844	2, 4, 5, 9
# 68. <i>P. baicalense</i> (Redowsky ex Willdenow) W.D.J. Koch, 1824	1, 2, 3, 4, 5, 6, 7+, 8, 10
69. <i>P. falcaria</i> Turczaninow, 1832	1+, 3, 4+, 6-8, 10, 11, 13-15, 16+
70. <i>P. vaginatum</i> Ledebour, 1829	1, 2, 3, 4, 6, 7, 8+, 11+, 13+
71. <i>P. puberulum</i> (Turczaninow) Schischkin, 1951	2, 3, 6, 8, 13
+ 72. <i>Pastinaca sativa</i> Linnaeus, 1753	1+, 2+, 3+, 4+
73. <i>Heraclium dissectum</i> Ledebour, 1829	1, 2, 3, 4, 5, 6, 7, 9, 10, 11+, 13
74. <i>H. sibiricum</i> Linnaeus, 1753	1+, 2+, 3, 9, 13
75. <i>Saposhnikovia divaricata</i> (Turczaninow) Schischkin, 1951	2, 3, 4, 5, 6, 8+, 9
+ 76. <i>Daucus carota</i> Linnaeus, 1753	1+, 2+, 3+, 4+, 5+, 6+, 7+, 10+, 13+

+ newly added species and new distribution region of since Gubanov's (1996) conspectus
new combination name species and genus of since Gubanov's (1996) conspectus

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Conclusion

Currently registered 2 subfamilies, 8 tribes, 11 subtribes, 39 genus and 76 species are included in the Celery family (*Apiaceae* Lindl.) in Mongolian flora.