

## *Corydalis namdoensis* B.U. Oh et J.G. Kim: A new species of *Corydalis* sect. *Corydalis* (Fumariaceae) from Korea

Byoung-Un Oh<sup>1\*</sup>, Chang-Gee Jang<sup>2</sup> and Chang-Young Yoon<sup>3</sup>

<sup>1</sup>School of Life Science and <sup>2</sup>Biotechnology Research Institute, Chungbuk National University, Cheongju, Chungbuk 361-763; <sup>3</sup>Department of Life Science, Seonam University, Namwon, Jeonbuk 590-711, Korea

A new species of *Corydalis* sect. *Corydalis* (Fumariaceae), *C. namdoensis* B.U. Oh et J.G. Kim, is described from the central and southern part of Korea. The new species is distinct from its close relative *C. albipetala* in having very variable leaf shapes, broadly flattened fusiform fruits, seed arrangement nearly in two rows in capsule, V-shaped inner petal apex and limited distribution area.

Keywords: Fumariaceae, *Corydalis* sect. *Corydalis*, new species, *Corydalis namdoensis*

The genus *Corydalis* DC. (Fumariaceae) includes annual, biennial or perennial herbs, and numbers about 300 species. Within the genus *Cordaylis*, as many as 25 sections have been recognized, and the perennial species having a solid tuber with roots at base are placed in sect. *Corydalis* (Lidén, 1986, 1993). Over 40 species of this section are widely distributed in temperate regions of Eurasia, especially in northeastern Asia.

Korean taxa of the genus *Corydalis* were recently revised (Oh, 1986, 1999), and 19 species representing four sections and four subsections were recognized. These studies did not include *C. bungeana* Turcz., *C. buschii* Nakai, and *C. gigantea* Trautv. et Meyer because they are distributed in North Korea only. Among these 19 species, seven of them are endemic to Korea; *C. albipetala* B. U. Oh, *C. filistipes* Nakai, *C. hirtipes* B. U. Oh et

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\*Corresponding author: Phone; +82-43-261-2296, Fax; +82-43-271-5787,  
e-mail: obutaxon@cbucc.chungbuk.ac.kr

(Received Aug. 29, 2004; Accepted Sept. 9, 2004)

J. G. Kim, *C. grandicalyx* B. U. Oh et Y. S. Kim, *C. hallaisanensis* Lévillé, *C. humilis* B.U. Oh et Y.S. Kim, and *C. maculata* B. U. Oh et Y. S. Kim.

In the present work, a plant of *Corydalis* sect. *Corydalis* collected from Mt. Seonamsan, Kunwi-gun, Province Kyongsangbuk-do, Korea in 2002 is described as a new species, *C. namdoensis* B. U. Oh et J. G. Kim. This new species is clearly distinguished from other species of sect. *Corydalis* by its whitish petals, very variable leaf shapes and broadly flattened fusiform capsules.

***Corydalis namdoensis* B. U. Oh et J. G. Kim, sp. nov. (Figs. 1, 2)**

**Holotype:** KOREA. Province Kyongsangbuk-do, Kunwi-gun, Mt. Seonamsan, 36° 10' 38" N, 128° 47' 1" E, 13 Apr. 2002, B. U. Oh 2002001 (CBU).

**Isotypes:** B. U. Oh 2002002 to 2002015 (CBU)

**Paratypes:** ANH03010001 to 03010007, ANH03010101 to 03010109, ANH03020001 to ANH03020008, ANH03020042, ANH03020043, ANH03020121 to ANH03020130, ANH03020325 to ANH03020330 (ANH)

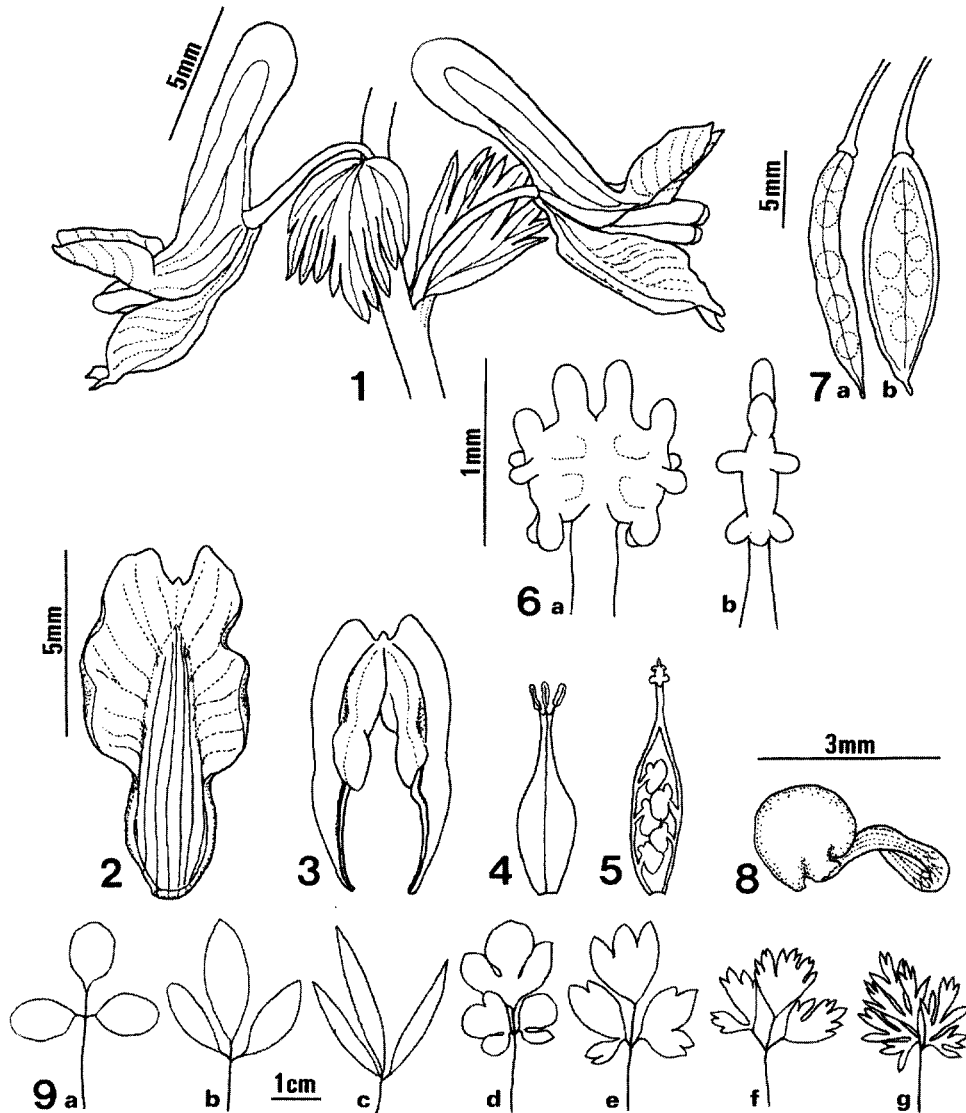
Perennis, crescens et florens ab mense Aprili usque ad mensem Maium, glabra. Rhizoma 1-6 cm longa, tubere sphaerico, 1-2 cm diam., colore facie interiori alba. Cataphyllum squamiforme singulum, 0.5-1.7 cm longum. Caules 1-5, e basi cataphylli exeuntes, 12-20 cm longi, 1-2 mm diam., teretes. Folia caulina 2, petiolata; petiolis 2-4 cm longis; laminis 3-6 cm longis, 3-9 cm latis, ternatis usque biternatis; foliola variabilissima, integra vel lobata vel apice divisa. Inflorescentia terminalis, racema, floribus 2-15; bracteae ellipticae, 0.6-1 cm longae, 2-5 mm latae, apice integro vel fisso; pedicellus floralis 0.5-1.9 cm, fructifer 1.2-2.3 cm longus. Flores albi, interdum caeruleo-albi, 1.2-1.6 cm longi; calcari 6-8 mm longo; petalo interiore apice V-forme. Fructus est capsula, late plano-fusiformis, 1.0-1.2 cm longa, 5-6 mm lata. Semina plana, sphaerica, nitida, 1.8-2.0 mm longa. 1.8-2.0 mm lata, fere 2 seriata.

Perennial herb, growing from April to May, glabrous. Rhizome 1-6 cm long, with tuber; tuber spherical, 1-2 cm in diam., inside color of tuber white. Squamiform leaf 1, 0.5-1.7 cm long. Stems 1-5, originated from base of squamiform leaf, 12-20 cm long, 1-2 mm in diam., circular in cross section. Cauline leaves 2, petiolate; petioles, 2-4 cm long; blade 3-6 cm long, 3-9 cm wide, ternat to biternate; leaflets very variable, entire or lobate or parted at apex. Inflorescences terminal, racemes, 2-15 flowered, flowering from April to

**Table 1.** Comparison of major characters between *C. namdoensis* and *C. albipetala*

| Character    |                                 | <i>C. namdoensis</i>   | <i>C. albipetala</i>       |
|--------------|---------------------------------|--|----------------------------|
|              | Simple unicellular hairs        | absent   | absent                     |
| Leaf         | blade shape                     | ternate to biternate   | ternate to biternate       |
|              | leaflet shape                   | very variable such as rotundiloba, pectinata, fumariaefolia, lineariloba types | elliptical or linear types |
|              | leaflet apex                    | entire or lobate or parted   | entire                     |
| Bract        | shape                           | elliptical   | elliptical or ovate        |
|              | apex                            | entire or cleft  | entire or dentate          |
| Flower       | colour                          | white or whitish blue  | white                      |
|              | length                          | 1.2-1.6 cm   | 1.2-1.8 cm                 |
|              | inner petal apex                | V-shaped   | retuse                     |
|              | front edge of lower outer petal | broad, but rather undulate   | broad                      |
| Pedicel      | length                          | 0.5-1.9 cm, 2.3 cm when fruiting   | 0.5-1.4 cm                 |
| Capsule      | shape                           | broadly flattened fusiform   | linear                     |
|              | length                          | 1.0-1.2 cm   | 1.0-1.2 cm                 |
|              | width                           | 5-6 mm   | 2-3 mm                     |
| Seed         | arrangement                     | in two rows  | in one row                 |
|              | width                           | 1.8-2.0 mm   | 1.8-2.0 mm                 |
| Distribution |                                 | Mt. Seonamsan, Ilwolsan, Ulryonsan, Mandeoksan                                 | Mt. Odaesan                |

May; bracts elliptical, 0.6-1 cm long, 2-5 mm wide, entire or cleft at apex; pedicels 0.5-1.9 cm long when flowering, 1.2-2.3 cm when fruiting. Flowers white, sometimes bluish white, 1.2-1.6 cm long; spur 6-8 mm long; inner petal v-shaped at apex. Fruits capsule, broad, flat fusiform, 1.0-1.2 cm long, 5-6 mm wide. Seeds flat, spherical, glossy, 1.8-2.0 mm long, 1.8-2.0 mm wide, arranged in nearly two rows in capsule.



**Fig. 1.** *Corydalis namdoensis* B.U. Oh et J.G. Kim. 1. Flowers and bracts, 2. Lower part of outer petal, 3. Inner petals with v-shaped apex, 4. membraneous stamen, 5. Ovary with two-rowed ovule, 6. Stigma with 12 papillae (a: front view b: lateral view), 7. Fusiform capsule and seed arrangement (a: lateral view b: front view), 8. Carunculate seed, 9. Various shapes of leaflets; rotundiloba (a) to fumariaefolia (g) types. Scale bar: 1 - 5 = 5 mm, 6 = 1 mm, 7 = 5 mm, 8 = 3 mm, 9 = 1 cm.

**Fig. 2.** Holotype of *Corydalis namdoensis* B.U. Oh et J.G. Kim, *B.U. Oh 2002001* (CBU), Korean name: **Nam-do-hyon-ho-saek** (남도현호색).

The current distribution of *C. namdoensis* is rather limited, and it has been found in the southward of central part and southern part of Korea such as Mt. Ilwolsan, Ulryonsan and Mandeoksan as well as Seonamsan, the type locality. This species is allopatric with *C. albipetala* which is endemic to Korea, but the latter species is more widely distributed. The new species seems to be related to *C. albipetala*, but is distinct from the latter in

having very variable leaf shapes such as rotundiloba, pectinata, fumariaefolia, lineariloba types of leaflets, broadly flattened fusiform capsules, seed arrangement in two rows in a capsule, V-shaped inner petal apex and rather limited distributional area (Table 1, Figs. 1, 2).

### Acknowledgement

This work was supported by Chungbuk National University Grant in 2004.

### Literature cited

- Lidén M. 1986. Synopsis of Fumarioideae (Papaveraceae) with a monograph of the tribe Fumarieae. *Opera. Bot.* 88: 1-133.
- \_\_\_\_\_. 1993. Fumariaceae, *In* K Kubitzki, JR Rohwer, V Bittrich, eds, *The Families and Genera of Vascular Plants*, vol. 2. Springer, Berlin.
- Oh B.U. 1986. A taxonomic study of genus *Corydalis* in Korea. Ph. D. thesis. Korea University, Seoul (in Korean).
- \_\_\_\_\_. 1999. A taxonomic review of Korean *Corydalis* (Fumariaceae). *Korean J. Pl. Taxon.* 29: 201-230 (in Korean).

## 남도현호색: 한국에서 발견된 현호색속 현호색절의 1신종

오 병 운<sup>1\*</sup> · 장 창 기<sup>2</sup> · 윤 창 영<sup>3</sup>

(<sup>1</sup>충북대학교 생명과학부, <sup>2</sup>충북대학교 바이오연구소, <sup>3</sup>서남대학교 생명과학과)

현호색과 현호색속 현호색절의 1신종인 남도현호색이 한국의 중부 및 남부 지방에서 발견되어 기재되었다. 신종은 매우 다양한 엽형과 넓고 편평한 방추형 열매를 가짐으로써, 또한 삭과 내에 종자가 거의 2열로 배열하고, 내화판의 정단이 V자 모양으로 함몰하며, 다소 제한된 분포역을 가짐으로써, 이와 유사한 흰현호색과 뚜렷이 구별되었다.

주요어: 현호색과, 현호색속, 현호색절, 신종, 남도현호색

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\*교신저자: 전화 (043) 265-7646, 전송: (043) 271-5787, 전자우편: obutaxon@chungbuk.ac.kr