Umbelliferae of Taiwan [1]

With 16 plates

By

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INTRODUCTION

The present paper is a revision of the genera and species of the UMBELLIFERAE of Taiwan. The naturalized and cultivated species are not included. A taxonomic study was followed by a cytological survey of chromosome numbers. For chromosome counts, fresh young buds were fixed in Farmer's solution, aceto-carmine smear technique was then employed to make temporary slides for chromosome determination. Drawings were made under the microscope with the aid of a camera lucida at the magnification of 1280 ×.

This paper includes 15 genera, 32 species and 1 variety of Umbelliferae of Taiwan. Four new species, one new variety and several new synonyms are listed herein. All specimens cited in this paper have been deposited in the Herbarium of the Department of Botany, National Taiwan University (TAI), Taiwan Forest Research Institute (TAIF), and the Herbarium of the Institute of Botany, Academia Sinica (AS). Voucher specimens for chromosome counts are all in the TAI and AS.

Key to the genera

1. Low creeping herbs; leaves simple; flowers in small axillary simple subcapitate umbels····· ····· 2
1. Slender to stout, erect or ascending herbs; leaves simple or ternate or pinnately compound; flowers pedicellate in compound umbels (rarely simple or sessile)····· 3
2. Leaves with a pair of free stipules at base of petiole; fruits without secondary ribs; involucre wanting or inconspicuous ·····*Hydrocotyle*

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herbs. Leaves pinnate or pinnately decompound; ultimate segments serrate to pinnatifid or the leaves sometimes entire and linear; petioles sheathing. Umbels compound, peduncles terminal or lateral; involucre wanting or of a few or numerous narrow bracts; rays numerous, spreading; involucels of numerous narrow bracts, shorter than the flowers. Flowers white; calyx-teeth small, lanceolate, apex acute, persistent; petals obovate with a narrow inflexed apex; styles erect, elongate, stylopodium conic. Fruits glabrous, oblong or globose, nearly terete, very slightly compressed laterally, ribs low and obtuse. Vittae usually solitary in the intervals, 2 on the commissure. Carpophore wanting. Seeds subterete, the face plane.

About 30 species in the northern hemisphere and south Africa and Australia. Type species, *Oenanthe fistulosa* LINN. Two species in Taiwan.

About 9 out of 30 species of this genus are known for their chromosome numbers (Darlington and Wylie, 1956; Bell and Constance, 1957, 1960). Our counts, n=10 for *O. javanica* are in agreement with that reported by Bell and Constance (1960). The new species *O. pterocaulon* described in this paper has diploid chromosome number of 44 (Plate XVI, fig. 15-16).

The basic chromosome numbers of this genus are 10 and 11.

1. Stem with 5-6 sharp-ridged angles; peduncle 7-18 cm. long; chromosome number 2n=44 ..... *O. pterocaulon*
1. Stem obtuse-angled, peduncle 3-10 cm. long; chromosome number 2n=20..... *O. javanica*

1. **Oenanthe pterocaulon** LIU, CHAO et CHUANG sp. nov. (Plate VIII, fig. 20).

Herbae perennes glabrae; caule acute 5-6-jugate-angulate, basi repente adscendente fistuloso striato; foliis inferioribus bipinnatisectis, segmentis ultimitis oblongo-lanceolatis vel rhombeo-oblongis, basi cuneatis, apice acutis, 3-6 cm. longis, 1-2 cm. latis, margine serratis; umbellis 11-21-radiatis, oppositifoliis; involucris 2-3-phyllis lanceolato-linearibus deciduis; pedunculis 7-18 cm. longis; involucellis circ. 8-foliolis lanceolato-linearibus 2-4 mm. longis; umbellulis multifloris; calycis lobis prominulis, persistentibus, petalis albis obovatis apice acuminatis cum lacinulis inflexis; staminibus petalis plus minusve longioribus, antheris albis, stylis 2 filiformibus elongatis apice reflexis basi conico-rostrabis; fructibus oblongis 2.5-3 mm. longis, jugis crassissimis, carpophoris individis; valleculae 1-vittatae; commissura 2-vittata.

Perennial, glabrous, decumbent, ascending herbs, 30-50 cm. tall. Stem with 5-6 sharp-ridged angles. Leaves oblong to ovate, bipinnate, leaflets oblong-lanceolate or rhombic-oblong, base cuneate, apex acute, 3-6 cm. long, 1-2 cm. broad, margin serrate; petiole 4-10 cm. long, sheathing at base. Umbels compound; involucre wanting or 2-3 linear-lanceolate bracts; rays 11-21, 7-18 cm. long; involucels about 8, narrow bractlets, nearly as long as the flowers. Flowers white, petals obovate with narrower inflexed apex; calyx-teeth ovate-lanceolate, a persistent conspicuous

corona on the fruit, styles erect, elongate, stylopodium conic. Carpophore wanting. Fruit glabrous, oblong, 2.5-3 mm. long, terete, ribs corky thick, rather high. Vittae 1 in the interval, 2 on the commissure. Seed subterete, face plane.

This new species is similar to *Oenanthe javanica* in external morphology. However, the former is stout and has 5-6 sharp-ridged angles on the stem. The chromosome number of our new species is 2n=44, while *Oenanthe javanica* is 2n=20.

Type locality—Tapinlin (大坪林), Taipei Hsien, M. T. Kao, June 26, 1960 K3579 type! (TAI).

Distribution—Endemic to Taiwan.

Specimens examined—Taipei Hsien: M. T. Kao K3579 type! and 2 isotype! July 5, 1957 (TAI).

2. **Oenanthe javanica** (BLUME) DC., Prodr. 4:138. 1830. (Plate IX, fig. 21; Plate XIII, fig. 9).

Sium javanicum BLUME, Bijdr. Fl. Ned. Ind. 15: 881. 1826.

Falcaria javanica (BLUME) DC., Prodr. 4:110. 1830.

Casylome javanicum (BLUME) MIQUEL, Fl. Ind. Mat. 1(1): 741. 1856.

Oenanthe stolonifera var. *javanica* (BLUME) O. KTZE., Rev. Gen. 1: 269. 1891.

Sium laciniatum BLUME, Bijdr. Fl. Ned. Ind. 15: 881. 1826.

Falcaria laciniata (BLUME) DC., Prodr. 4: 110. 1830.

Oenanthe laciniata (BLUME) ZOLL., Syst. Verz. 2: 139. 1854.

Dasyloma laciniata (BLUME) MIQUEI, Fl. Ind. Bat. 1 (1): 741. 1856.

Oenanthe stolonifera var. *laciniata* (BLUME) KANITZ, Anth. Jap. 27. 1878.

Oenanthe stolonifera DC., Prodr. 4: 138. I830.

Dasyloma subpinnatum MIQUEL, Ann. Mus. Lugd.-Bat. 3: 59. 1867.

Oenanthe subpinnatum (MIQ.) DRUCE, in Engl. u. Prantl. Nat. Pflanzenfam. 3 (8): 204. 1897.

Dasyloma japonicum MIQ., Ann. Mus. Lugd.-Bat. 3: 59. 1867.

Oenanthe stolonifera var. *japonica* (MIQ.) MAXIM, Fr. et Sav. Enum. Pl. Jap. 1: 185. 1875.

Oenanthe bengalensis (DC.) BENTH. et HOOK. f. in Gen. Pl. 1: 906. 1862.

Oenanthe linearis WALL., Cat. n. 586. 1828-1849.

Oenanthe bengalensis BENTH. et HOOK. f. in Gen. Pl. 1: 906. 1862.

Oenanthe Kudoi SUZUKI et YAMAMOTO, in Trans. Nat Hist. Soc. Formos. 12: 408. 1932. Syn. nov.

Perennial, glabrous, decumbent, ascending herbs, 10-80 cm. tall. Leaves oblong to ovate, pinnate to tripinnate; ultimate segments ovate, narrow ovate or linear, 0.5-5 cm. long, 0.3-1.5 cm. broad, margin serrate or entire; petiole 2-10 cm. long, sheathing. Umbels compound; involucre lacking, or of a few linear bracts: rays 5-15, 0.5-3 cm. long; involucels several, linear. Flowers white, style long, persistent. Fruit glabrous, oblong, about 2.5 mm. long, 1.5-2 mm. broad, commissure broad;

Plate VIII.

Fig. 20.

Oenanthe pterocaulon Liu, Chao et Chuang sp. nov.

A. Habit. B. Flower. C. Vertical section of flower. D. Petal. E. Fruit.
F. Fruit transection ×20. G. Stem transection ×10. H. Petiole transection.