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PHYSOSPERMOPSIS, A NEW GENUS OF *UMBELLIFERAE* (*APIACEAE*) FOR THAILAND, AND A NEW SPECIES

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Physospermopsis siamensis Esser & M.F.Watson is described as a new species from material collected in northern Thailand. This is the first record of *Physospermopsis* (*Umbelliferae*, *Apiaceae*) from Thailand, and represents a significant southern extension of the geographic range of this largely Sino-Himalayan genus. Comparison is provided with *P. shaniana*, its closest morphological ally, and the key to genera given in the *Flora of Thailand* account for *Umbelliferae* is revised.

Keywords. *Apiaceae*, new species, *Physospermopsis*, Thailand, *Umbelliferae*.

INTRODUCTION

The *Umbelliferae* (*Apiaceae*) was revised for the *Flora of Thailand* by Hedge & Lamond (1992), and *Acronema* has been recorded as an additional genus by Suksathan (2001). During recent joint field work with the Forest Herbarium Bangkok (BKF) in 1998 an umbellifer was collected that turned out to be in a genus, *Physospermopsis* H.Wolff, previously unknown for Thailand. In Thailand this genus is most similar to *Seseli* L. and *Ligusticum* L., but is characterized by emerald-green young fruit and slightly compressed mature fruit with filiform ribs. It is differentiated from Thai members of *Ligusticum* by the lax, open inflorescence and pinnatifid bracteoles. *Physospermopsis* is predominantly a high-altitude Sino-Himalayan genus, and this new collection represents a significant southern extension to the range. Comparison with recent revisions (Liou, 1979; Pimenov & Kljuykov, 2000; Pan & Watson, 2005) has shown that this collection differs from other known taxa, and it is here described as a species new to science.

This new record brings the tally of *Umbelliferae* represented in Thailand to 17 genera and c.23 species. The key to the Thai genera (Hedge & Lamond, 1992, amended by Suksathan, 2001) should be revised again as follows (in the style of the *Flora of Thailand* and assigning *Physospermopsis* the next number which is 17):

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17. Umbels leaf-opposed. Fruits topped with ± conspicuous sepals to 0.5 mm. Plants of wet places ____ **13. Oenanthe**
17. Umbels not leaf-opposed. Fruits without or with very minute sepals. Plants of dry ground
    18. Ultimate leaf segments entire; petiole sheath narrow or absent
        19. Petals white, apex rounded. Fruits strongly compressed, ridges winged ____ **11. Seseli**
        19. Petals red (or white), apex acute or acuminate. Fruits slightly compressed laterally, ridges obscure to obsolete ____ **16. Acronema**
    18. Ultimate leaf segments serrate; petiole sheath broad
        20. Young fruit greenish-brown to brown. Bracts and bracteoles entire ____ **12. Ligusticum**
        20. Young fruit emerald green. Bracts and bracteoles pinnatifid ____ **17. Physospermopsis**

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H.Wolff, Notizbl. Bot. Gart. Berlin-Dahlem 9: 276 (1925); S.L.Liou, Fl. Reipubl. Popul. Sin. 55(1): 96 (1979); Pimenov & Kljuykov, Feddes Repert. 111: 535 (2000).

Glabrous perennial herbs with tuberous woody taproot bearing a collar of fibrous petiolar remains; stem erect, ribbed, branched. *Basal leaves* long-petiolate, sheathing at base; blade pinnatifid-ternatifid, ultimate segments pinnatifid. *Cauline leaves* reduced upwards, petioles often reduced to a sheathing base. *Umbels* compound, terminal and lateral, rays and pedicels elongating in fruit; bracts and bracteoles several, conspicuous, 3-lobed to pinnatifid. *Calyx teeth* obsolete. *Petals* white to purple, obovate with inflexed tips (based on Chinese taxa). *Stylopodium* conic, margin sinuolate; styles about equalling stylopodium, reflexed in fruit. *Fruit* ovoid, slightly laterally compressed, mericarps 5-ribbed, ribs filiform, otherwise smooth; vittae 2–3 in each furrow, 2–4 on commissure. Carpophore 2-parted at apex.

A genus of c.10 species, distributed across the eastern Himalaya (Nepal, Sikkim, Bhutan to N Burma) and SW China, with highest diversity in SW China. Not yet recorded for Laos.

Physospermopsis siamensis Esser & M.F.Watson, **sp. nov. Fig. 1.**
Species haec ab *Physospermopsis shaniana* C.Y.Wu & F.T.Pu differt radiis longioribus, bracteis brevioribus et fructis majoribus. – Type: Thailand, Northern, Uttaradit Province, Phu Soi Dao National Park, 17°44′25″N, 100°59′41″E, 1620 m, 28 x 1998 (fr.), *H.-J. Esser* 98-236 (holo BKF; iso A, AAU, CMU, E, L, M).

Plants 30–50 cm high; taproot tuberous more than 6 cm; stem slightly grooved, reddish-green. *Leaves*: petiole 9–11 cm, sheathing base c.3 × 0.8 cm; blade triangular-ovate in outline, 6–8 × 6–8 cm; primary divisions ternate, rachis c.2 mm wide, hardly winged; secondary divisions ternate-pinnatifid, very similar to the whole leaf;

FIG. 1. *Physospermopsis siamensis* Esser & M.F.Watson. A1, habit (× 3/4); A2, continuation of habit to show flowering stem (× 4/5); B, umbel (× 1/2); C, bract (× 2); D, bracteole (× 3); E, fruit (× 5); F, mericarp (× 10). Drawn by Jane A. Nyberg from *H.-J. Esser* 98-236 (iso E).

ultimate segments with acute apex. *Inflorescences* not seen. *Primary umbels* 8–16 cm across in fruit (secondary lateral umbels smaller); bracts 5–7, 1–1.5 cm, pinnatifid, persistent, up to 1/4 length of rays in fruit; rays 10–20, 7–10 cm in fruit, ascending, lax; bracteoles several, 5–9 mm, pinnatifid or apex 3-lobed, persistent, about equal or slightly shorter than pedicels in fruit; pedicels 4–8 mm; mericarps ovoid-ellipsoid, (3–)4–4.5 × 1.8–2.1 mm, emerald green with purple-black stylopodium when young, becoming darker when mature; commissural seed face slightly convex, pericarp readily separating from seed at maturity.

Distribution. Thailand. Currently known only from the type which was collected very near to the border with Laos, and therefore to be expected in Laos.

Ecology. Montane pine forest (pine–oak savanna), in dense ground cover mainly of grasses, c.1620 m.

Physospermopsis is a taxonomically complex genus with often unclear specific and generic limits (e.g. with *Pleurospermum*, *Tongoloa* and *Trachydium*; see Pan & Watson, 2005). A comprehensive revision of *Physospermopsis* is needed, but this Thai species is sufficiently morphologically and geographically distinct to warrant description as a new species. The closest known species is *Physospermopsis shaniana* C.Y.Wu & F.T.Pu (*nomen novum* for *P. forrestii* (Diels) C.Norman non H.Wolff). *Physospermopsis shaniana* is known from the border areas of NW Yunnan, SW Sichuan, SE Xizang and NE Burma, between 2900 and 4500 m. *Physospermopsis siamensis* is found over 1000 km to the south of this range and at much lower altitude (c.1620 m). Morphological differences between these two species include:

Character	***P. siamensis***	***P. shaniana***
Ray length in fruit	7–10 cm	4–6.5 cm
Bract length in fruit	1–1.5 cm	2.5–3.5 cm
Bract:ray ratio	0.15–0.25	0.4–0.5
Pedicels in fruit	5–9 mm	3–6 mm
Bracteoles	4–8 mm	7–9 mm
Fruit	(3–)4–4.5 × 1.8–2.1 mm	2.5–3.5 × c.2 mm

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