Archihyoscyamus: a new genus of Solanaceae from Western Asia

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ABSTRACT
A new genus of Solanaceae, *Archihyoscyamus* A.M. Lu, from Kurdistan (Western Asia) is described. The morphological characters of the flowers indicate that the genus is primitive in the tribe Hyoscyameae.

MOTS CLÉS
Archihyoscyamus, Solanaceae, W Asie.

RÉSUMÉ
Description d'un nouveau genre de Solanaceae, *Archihyoscyamus* A.M. Lu, du Kurdistan (W Asie). Les caractères morphologiques des fleurs indiquent que ce genre est primitif au sein de la tribu des Hyoscyameae.

It has been a century since the description of *Hyoscyamus leptocalyx* Stapf based on specimens collected by P. SINTENIS (N° *1000*) in 1888 from near Mardin of Kurdistan in Western Asia (STAPF 1896). He noted that the species was "a very distinct species representing an isolated type, characterised by the very short and delicate calyx-tube and the short and rather flat corolla". Previous studies have reviewed the hyoscyameous plants including *Scopolia*, *Anisodus*, *Atropanthe*, *Przewalskia*, *Physochlaina* and *Hyoscyamus* distributed in Eurasian region (LU & ZHANG 1986). In 1995, an opportunity to review the specimens of Solanaceae from Asian countries in the Herbarium Musei Parisiensis (P) revealed that *Hyoscyamus leptocalyx* Stapf differs greatly from the other species of the genus *Hyoscyamus* in characters of habit, flower, and fruiting calyx. It can be clearly distinguished from the other genera of the tribe Hyoscyameae by the following characters: numerous, patent stems; small, solitary flowers on elongate pedicels in the leaf axils; subrotate, actinomorphic corollas; spreading, subrotate fruiting calyx with reflexed lobes and without strong marginal veins, incompletely enveloping the fruit. The morphological characters of the flower and fruiting calyx indicate that the new genus is primitive in the tribe Hyoscyameae.

ARCHIHYOSCYAMUS A.M. Lu, **gen. nov.**

Herba perennis. Radix crassa, pluricaules edens. Caules flaccidi ascendentes, patentes, pubescentes. Folia solitaria, petiolis elongatis, laminis membranaceis deltoideo-subreniformibus margine pauci-dentatis ciliolatis. Flores solitarii axillares actinomorphi longipedicellati. Calyx cupularis ad medium incisus, lobis 5, aequalibus ovatis apice obtuso-orbiculatis, expansis, post anthesin paulo increscentibus subrotatis. Corolla subrotata actinomorpha, tubo valde brevi cylindrico, limbo 5-lobato, lobis horizontaliter patentibus semirotundis obtusis. Stamina 5, erecta, exserta, infra medium tubi corollae inserta, filamentis filiformibus glabris; antherae basifixae, ovatae, quam filamentum multo breviores, loculis subparallelis rima longitudinali dehiscentibus, connectivo inconspicuo. Discus vix nullus. Ovarium ovoideum biloculare; stylus filiformis staminibus longior, stigmate capitato; ovula numerosa. Fructus subglobosus supra medium circumscissus, operculo deciduo, calyce membranaceo imperfecte inclusus. Semina numerosa reniformia lateraliter compressa tenuiter rugoso-foveolata; embryo valde incurvus, cotyledonibus semiteretibus.

Genus novum Hyoscyamo L. *affine, sed plantis pluricaulibus; petiolis elongatis; floribus solitariis actinomorphis subrotatis longipedicelatis; calycibus fructificantibus patentibus subrotatis fructus imperfecte involventibus; lobis ovatis obtusis margine non nervatis.*

Species 1 Asiae Occidentalis incola.

TYPUS NOMINIS GENERIS.—*Archihyoscyamus leptocalyx* (Stapf) A.M. Lu.

Herbs perennial. Root stout. Stems numerous, flaccid, ascending, patent, pubescent. Leaves solitary, with elongating petioles; leaf blade membranous, deltoid-subreniform, the margin coarsely dentate, ciliolate. Flowers solitary, axillary, actinomorphic, with elongating pedicels. Calyx cupular, 5-lobate, the lobes equal, ovate, the apex obtuse-rounted, spreading. Corolla subrotate, actinomorphic; tube very short, cylindric; lobes 5, broad-ovate, spreading, apex rounded. Stamens 5, erect, inserted at base of corolla tube, slightly exserted; filaments filiform, glabrescent; anthers basifixed, ovate, the locules subparallel, dehiscing longitudinally, the connective inconspicuous. Disc indistinct. Ovary ovoid 2-locular; ovules numerous; style filiform elongating; stigma capitate. Fruiting calyx spreading, subrotate, incompletely enveloping the fruit; lobes reflexed, without strong marginal veins. Capsules subglobose, dehiscing by an operculum slightly distal to middle. Seeds numerous, reniform, slightly compressed, rugose-foveolate; embryo ringlike, cotyledon semiterete.

The new genus differs from the genus *Hyoscyamus* in having numerous stems; leaves on elongate petioles; solitary, actinomorphic, subrotate flowers on elongate pedicels; and a spreading, subrotate fruiting calyx, the lobes of which incompletely envelope the fruit, are reflexed and lack strong marginal veins. This combination of character states can also clearly distinguish the new genus from the other genera of the tribe Hyoscyameae. Such as *Anisodus*, *Scopolia*, *Atropanthe*, *Przewalskia*, *Physochlaina*.

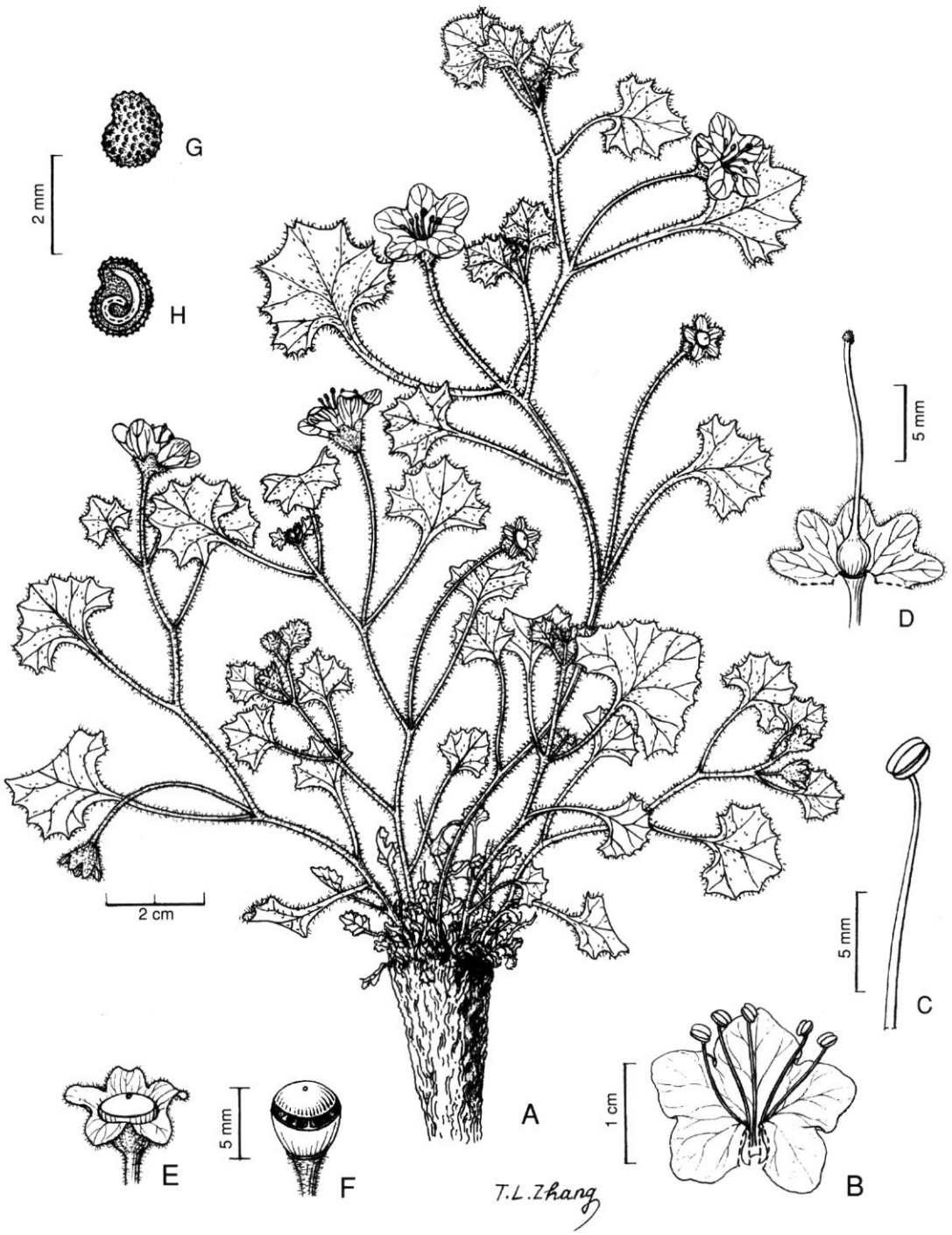

Fig. 1.—***Archihyoscyamus leptocalyx*** (Stapf) A.M. Lu: **A**, plant showing upper root and stems with flowers and fruits; **B**, expanded corolla); **C**, stamen; **D**, expanded calyx and pistil; **E**, fruiting calyx and fruit; **F**, fruit showing circumscissile dehiscence; **G**, seed; **H**, seed cut longitudinally showing curved embryo.

Archihyoscyamus leptocalyx (Stapf) A.M. Lu, **comb. nov.**

Hyoscyamus leptocalyx Stapf in Hook., Icon. Plant. 25: tab. 2446 (1896); Bornmuller, Beih. Bot. Centralbl. 28: 474 (1911).

Radix cylindrica 2-3 cm diametro. Caules ascendentes patentes pubescentes, 10-15 cm alti, 1-2 mm diametro. Folia solitaria, petiolis pubescentibus 1.5-3.5 cm longis; lamina membranacea deltoideo-subreniformia, 1-2 cm longa, 1.5-2.7 cm lata, 7-9-dentata margine ciliolata, dentibus deltoideis. Flores solitarii axillares, pedicellis ad 2.8 cm longis, pubescentibus. Calyx 5 mm diametro, lobis aequalibus, ovato-orbiculatis, obtusis, ciliolatis, 2 mm longis, 2 mm latis. Corolla subrotata, actinomorpha, 1.5-1.8 cm diametro, tubo circiter 2 mm longo, limbo 6 mm lato, lobis horizontaliter patentibus, semirotundis, 4 mm longis, 8 mm latis. Stamina 5 exserta, filamentis glabris, 10 mm longis; anthera 1.2-2 mm longa. Ovarium ovoideum, stylo staminibus paulo longiore circiter 12 mm longo, stigmate capitato. Calyx fructificans subrotatus, 8-10 mm diametro, lobis demum reflexis, 4 mm longis, 4 mm latis. Pedicelus elongatus ad 6.5-12 cm longus, pubescens. Capsula subglobosa supra medium circumscissa, operculo 3.5 mm diametro. Semina rugoso-foveolata, 1.8 mm longa, 1.1 mm lata.

TYPUS.—*Sintenis 1000*, Kurdistan, 1988 (holo-, P).

PARATYPUS.—*d'Alleizette s.n.*, Kurdistan, 16 May 1909 (P).

Root cylindric, 2-3 cm in diam. Stems ascending, patent, pubescent, 10-15 cm tall, 1-2 mm in diam. Leaves solitary; petiole pubescent, 1.5-3.5 cm long; leaf blade membranous, deltoid-subreniform, 1-2 cm long, 1.5-2.7 wide, 7-9-dentate, ciliolate, the teeth deltoid. Flowers solitary, axillary; pedicel to 2.8 cm long, pubescent. Calyx 5 mm in diam.; lobes equal, ovate, apex obtuse-rounded, margin ciliolate, 2 mm long, 2 mm wide. Corolla subrotate, actinomorphic, 1.5-1.8 cm in diam.; tube ca. 2 mm long, limb ca. 6 mm wide; lobes horizontally patent, semirotund, 4 mm long, 8 mm wide. Stamens 5, slightly exserted; filament glabrescent, 10 mm long; anther 1.2-2 mm long. Ovary ovoid, style longer than stamens, 12 mm long; stigma capitate. Fruiting calyx subrotate, 8-10 mm in diam., the lobes reflexed, 4 mm long, 4 mm wide. Pedicels elongating, to 6.5-12 cm long, pubescent. Capsule subglobose, 4.5 mm in diam., operculum 3.5 mm wide. Seeds rugose-foveolate, 1.8 mm long, 1.1 mm wide.—Fig. 1.

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