

greenish brown petioles, and inflorescence bracts, rachis, and rachillae with stellate brown hairs. *L. paludosa* inhabits coastal swamp forest from Indo-China through the Malay Peninsula (including peninsular Thailand) to Sumatra and Borneo, while *L. aurantiaca* occurs in peat swamp forest farther inland from the sea at low elevations on the east coast of southern peninsular Thailand. It is remarkable that a species with such dramatic and ornamental coloring went unnoticed for so long.

***Licuala filiformis* Hodel sp. nov.** Fig. 5.

Subgeneris *Eulicualae* Drude, sectioni *Wurmbiae* Furtado. *L. triphyllae* Griff. affinis sed inflorescentiis rachillis filiformibus valde fractiflexis; floribus late ovatis differt. Typus: Thailand, S of Narathiwat, 100 m elev., *D.R. Hodel, P. & R. Vatcharakorn 1621* (Holotypus BK).

Solitary, dwarf, gregarious, acaulescent understory palmlet to 80 cm overall height but usually much shorter. Stem short, bulbous, subterranean, 3-5 cm diam. Leaves 5-10, palmately divided, spreading, arising from ground; petiole 15-45(-75) cm long, lateral margins in basal 2/3 of petiole armed with thorns to 8 mm long, these forward-curving, irregularly spaced; blade 25-30 cm wide, semi-orbicular, divided to base into 3-7 segments, middle one largest, to 30 x 12 cm and held on its own 4 cm long subpetiole, 11-17-nerved, apex only slightly rounded, truncately praemorse, shallowly toothed, other segments decreasing in size toward petiole, these 14-28 x 1.75-5 cm, widest at apex, 2-6-nerved, obliquely praemorse, more prominently toothed. Inflorescences shorter than leaves, arising from ground, to 25 cm long, spreading; peduncle to 20 cm long; bracts 2, these with deciduous rusty brown felt-like indument; 2-4 partial inflorescences spaced 2-6 cm apart in apical portion of inflorescence, each partial inflorescence with its own subtending bract, these tubular, apically subinflated, with glaucous indument, each partial inflorescence bearing 1-3 rachillae, these 2-6 cm long, digitately arranged, slender, filiform strongly zigzag, densely covered with reddish brown scurfy indument. Flowers remote, at the

"elbows" of the zigzag rachillae, 3-8 mm apart, distichously arranged, solitary, sessile or on a small pedicel but not stalked, subtended by triangular bracteole to 1 mm long, flowers 2.5 x 1.5 mm, broadly ovate; calyx 1.5 mm high, deeply lobed apically, truncate basally, sepals connate in basal 2/3, acute apically, green but with same indument as rachillae; corolla 2-2.5 x 1.25-1.5 mm, white, deeply lobed, petals connate in basal 2/3, acuminate apically, densely covered with white hairs; staminal ring just exceeding corolla throat, stamens 6, incurved toward pistil, filaments 0.3 mm long, slender, anthers 0.3 mm long, oval; pistil 1.75 x 1-1.25 mm, spindle-shaped, base and truncately sculptured top densely covered with white hairs, style 0.75 mm long, slender, equalling stamens. Fruits 8 x 6 mm, ovoid-globose, reddish, bearing a beak at proximal end, fruiting perianth 3 x 2.75 mm, calyx 2 mm high, deeply lobed, lobes spreading, acute, with felt-like indument, corolla 3 mm high, deeply lobed, lobes spreading against base of fruit, acuminate; seed 6 x 4 mm

The specific epithet means thread-like and is used here in reference to the rachillae of *Licuala filiformis*. The thread-like, strongly zig-zag rachillae are a diagnostic character for this species, and one which distinguishes it from the similar *L. triphylla*. *L. filiformis* occurs in disturbed forest on flat sandy soils in southern peninsular Thailand. It should be considered endangered since its habitat is under cultivation in proximity to extensive human activity.

***Licuala poonsakii* Hodel sp. nov.** Figs. 6 & 7.

Subgeneris *Eulicualae* Drude, sectioni *Wurmbiae* Furtado. *L. acutifidae* Becc. affinis sed habitu grandioribus; foliis segmentis grandioribus nervis numerioribus; inflorescentiis longioribus rachillis numerioribus; floribus longis-ovatis, petalis longioribus, ovario truncato stylo longissimo differt. Typus: Thailand, Rayong, 600 m elev., *D.R. Hodel, P. & R. Vatcharakorn 1570* (Holotypus BK).

Solitary or clustered and/or gregarious understory palm to 6 m tall, if forming clumps then usually of 1 tall plant and several small ones at base. Stem 3-5 cm diam. without sheaths and

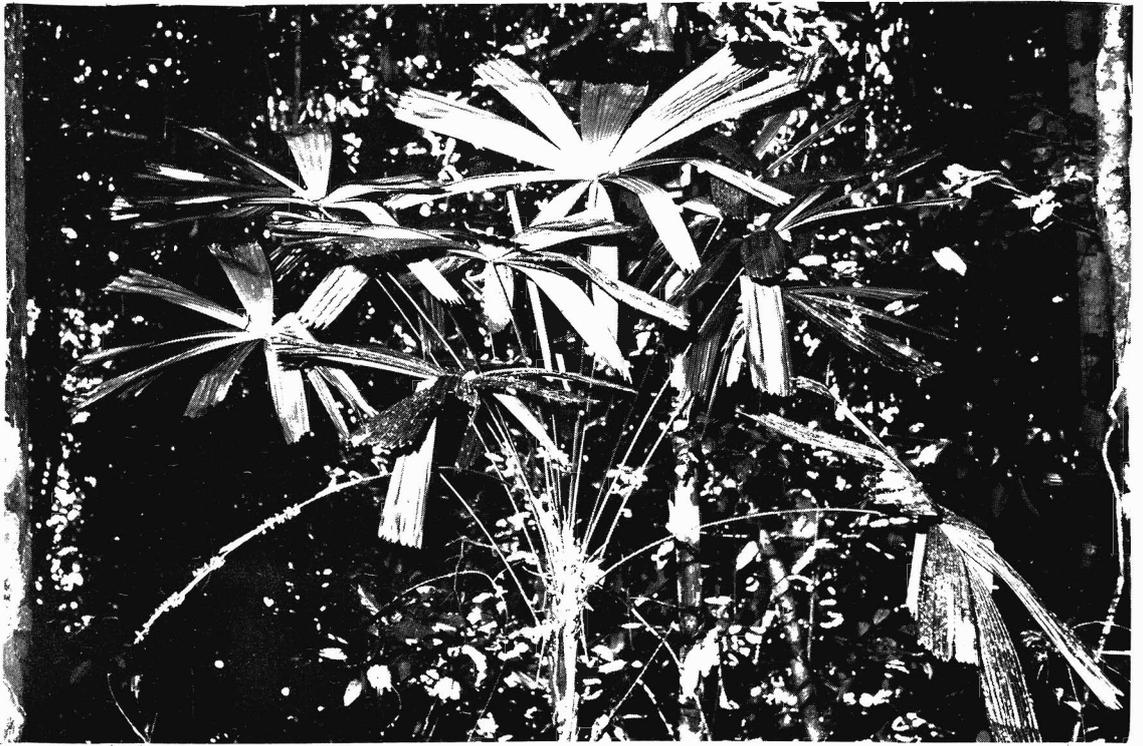


Fig. 6 Licuala poosakii, habit, Hodel et al. 1970 (holotype).

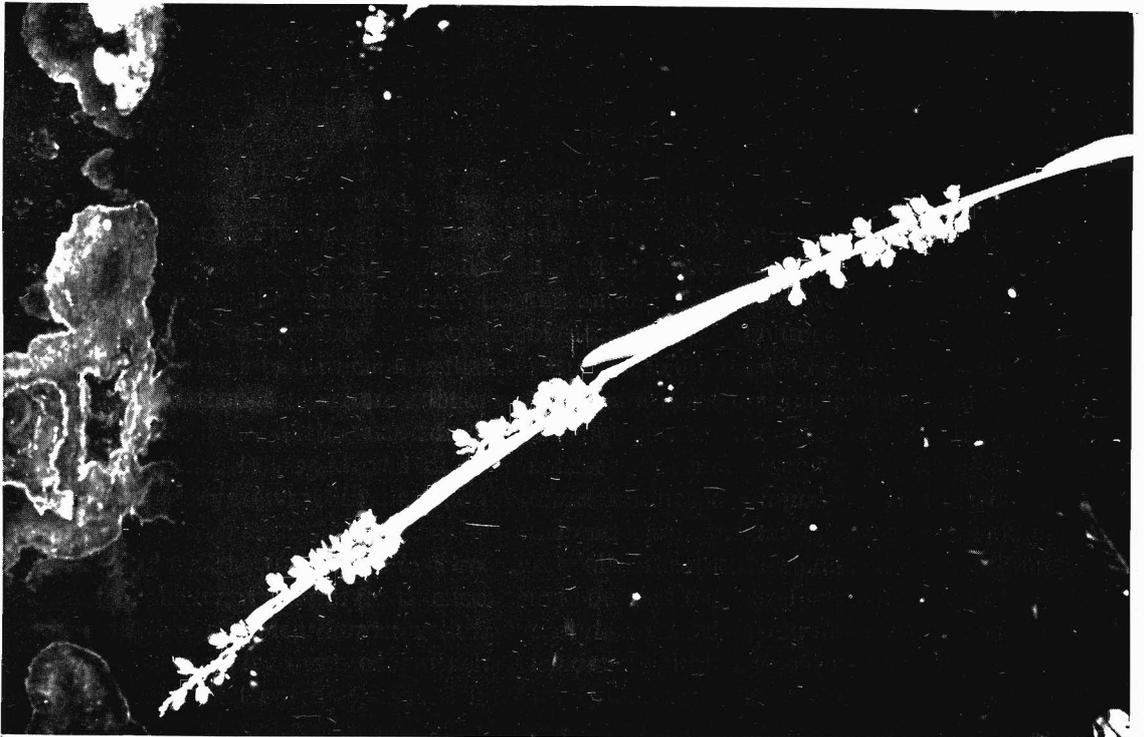


Fig. 7 Licuala poosakii, inflorescence in young fruit, Hodel et al. 1970 (holotype).

obscurely ringed, 5-8 cm diam. with sheaths. Leaves 15-20, palmately divided, spreading; petiole 1 m long, armed only in basal 25 cm with stubby thorns, these backward-curved, 3 mm long, set ca. 8 mm apart on lateral margins; blade 70-90 cm wide, orbicular, divided to base into 10 segments, middle or lateral ones largest, to 46 x 8 cm wide, truncately praemorse, 9-nerved, distinctly toothed, lobes 6 mm high, other segments decreasing slightly in size toward petiole, these 30-40 x 3-5 cm, truncately praemorse, 3-5-nerved. Inflorescences interfoliar, equalling or slightly exceeding leaves, to 1.5 m long, spreading, peduncle to 50 cm long; inflorescence bearing 7 partial inflorescences in apical 2/3, each a simple unbranched rachilla and each subtended by its own bract, these tubular and closely sheathing in basal half, conspicuously inflated in apical half, lower partial inflorescences ca. 20 cm apart, decreasing to 5 cm apart at apex of inflorescence, lowest rachilla to 15 cm long, uppermost to 5 cm long, each rachilla only narrowly diverging from inflorescence rachis, bracts, rachis, and rachillae densely covered with deciduous brownish felt-like indument, that of rachillae especially thick and with tightly appressed white hairs. Flowers seen just past anthesis, 10 x 4 mm, bullet-shaped; calyx 4 x 3 mm, shallowly lobed, lobes rounded; corolla ca. 2 1/2 times as high as calyx, petals 8 x 2.75 mm, long-ovate, acute, boat-shaped; staminal ring 2-3 mm high, ca. 2 times height of ovary, stamens 6, filaments short, ca. half the height of petals, anthers 1.75 mm long; pistil 2.5 x 2.5 mm, globular, glabrous, truncate apically, style 3-4 mm long, slender, nearly equalling petals. Fruits seen immature, 8 x 6 mm, +/- oblong, green, sessile or on a short pedicel, just exceeding perianth, said by local people to be 10-13 x 7-8 mm long, oblong, and red when mature; fruiting perianth 1 cm long, 8 mm wide at tip, calyx 4-5 mm high, sepals connate in basal 1/2-2/3, lobes acute apically but often splitting and tattering into numerous narrow truncate segments, petals 1 cm long, long-ovate, acute, spreading around base of fruit, perianth with similar indument as rachillae only thicker on calyx than on corolla.

The epithet honors Poonsak Vatcharakorn, co-collector of the type, and plant and seed collector for Kampon Tansacha. Poonsak probably knows

the forests of Thailand as well or better than anyone; his extensive knowledge of the palms and their habitats has proven invaluable in preparing the book on Thai palms and cycads. *Licuala poonsakii* is closest to *L. acutifida* but the latter differs in its smaller habit, leaf blades with smaller segments and fewer nerves, shorter inflorescence with fewer rachillae, ovoid flowers with shorter petals and an apically truncated ovary with a very long style reaching nearly to the tips of the petals. *L. poonsakii* occurs in moist hill forest in southeastern Thailand.

***Licuala tansachana* Hodel sp. nov. Fig. 8.**

Subgeneris *Eulicualae* Drude, sectioni *Wurmbiae* Furtado. *L. triphyllae* Griff. affinis sed foliis segmento medio apice rotundato conspicue, petiolis spinis paucis vel nullis; inflorescentiis rachillis tribus simplicibus differt. *L. pusillae* Becc. affinis sed foliis segmentiis paucioribus, segmento medio grandiore conspicue differt. *L. ruthiae* L. G. Saw affinis sed foliis segmento medio grandiore conspicue apice rotundato conspicue, petiolis spinis paucis vel nullis, inflorescentiis rhachidibus pilis brunneolis non stellaribus argenteis differt. *L. kamarudini* L. G. Saw affinis sed foliis segmento medio grandiore conspicue apice rotundato conspicue, petiolis spinis paucis vel nullis, inflorescentiis rhachidibus bracteis pilis brunneolis non argenteis hirtis, fructibus non tuberculatis differt. Typus: Thailand, SW of Narathiwat, 800 m elev., D.R. Hodel, P. & R. Vatcharakorn 1601 (Holotypus BK).

Solitary, dwarf, acaulescent understory palmlet to 1 m overall height but usually shorter. Stem short, bulbous, mostly subterranean. Leaves 8-12, palmately divided, spreading; petiole to 90 cm long, scarcely armed and then only in basal 10 cm with reflexed thorns, these 2 mm long, set ca. 1 cm apart on lateral margins; blade 30-40 cm wide, semi-orbicular, divided to base into 3-4 segments, middle one conspicuously the largest, to 32 x 12 cm, sharply rounded apically, praemorse, shallowly toothed, 19-nerved, narrowing to 1 cm wide at base, other segments 15-20 x 1.5-5 cm, obliquely praemorse, 2-5-nerved, more conspicuously toothed. Inflorescences interfoliar, shorter than leaves, to