

**A new species of *Spatholirion* (Commelinaceae) from Thailand  
and further notes on *S. ornatum***

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**ABSTRACT.** *Spatholirion calcicola* a new species from northern Thailand is described and illustrated. *Spatholirion decumbens* Fukuoka & N. Kurosaki is shown to be synonymous with *S. ornatum* Ridl. A key to *Spatholirion* in Thailand and adjacent areas is provided.

**A NEW SPECIES OF SPATHOLIRION**

In an earlier paper (Larsen & Larsen, 1994), the distribution and variation of *Spatholirion ornatum* Ridl. in Thailand was discussed. There it was stated that, besides an old collection from Tomoh (= To Mo) in southern Thailand, all the other collections of the species were from the northern part of the country. It was also stated that the collections from northern Thailand, studied in the wild, did not match Ridley's description in every detail, and that it "would be interesting to refind the species in southern Thailand and study the life form under the more humid climatic conditions here".

In 1995 the Thai-Danish Botanical Expedition visited Hala-Bala Wildlife Sanctuary in Narathiwat province. Hala-Bala is situated on the Thai-Malaysian border adjacent to the Belum Nature Reserve in Malaysia. The locality, named Sirindhorn Falls, near Waeng is close to the old mining village of To Mo visited by Ridley and from where he described *S. ornatum*. The surroundings consist of primary evergreen forest with acid soil, dark and rich in humus. In this habitat several populations of *S. ornatum* were found. In BKF there is also a collection "C.S.S. 212" from Waeng. These specimens fully match Ridley's original description (Ridley, 1896): and therefore, what has previously been treated as *S. ornatum* in northern Thailand is a different species. Besides the morphological differences, there is also a striking difference in the ecological requirements of the two taxa. Therefore, the material from northern Thailand is described here as a new species.

***Spatholirion calcicola* K. & S.S. Larsen sp. nov.** A *S. ornato* Ridl. differt caulibus non radicanibus, radicibus crassis tuberiferis, caule ad basin cum innovationibus numerosis, foliis ellipticis utrinque pallide viridibus, axe inflorescentiae floribusque masculinis violaceis; in terra calcarea sylvarum decidualium crescenti. Typus: Thailand, Nan, Larsen *et al.* 46420 (holotypus AAU!; isotypi BKF!, K!, L!, P!). Fig. 1.

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Acaulescent herb with innovation shoots at base; roots thick with spherical or fusiform storage tubers; stems not rooting. *Leaves*: petiole up 25 cm long, 4–5 mm broad, canaliculate at base, pubescent; lamina sparsely pubescent on upper side, particularly along the midvein in the lower part, 9–20 by 7–12 cm, green on both sides, elliptic, attenuate or truncate to cordate at base, apex acute to acuminate. *Inflorescence* on a ca. 5–6 cm long peduncle with one basal bract enclosing the bisexual flowers, remaining inflorescence a panicle of male flowers. *Peduncle* densely woolly. *Bract* spathaceous, when opened subrotund to lanceolate, 15–20 mm broad with pointed apex, margin densely woolly, otherwise sparsely pubescent on the upper surface. *Rachis* of inflorescence pubescent. *Flower* buds with dense yellowish pubescence of patent hairs. *Bisexual* inflorescence cream-coloured with 1–2 flowers, perianth subequal in length, the outer whorl somewhat broader, 7–10 mm long, 2–4 mm broad, stamens with a ca. 5 mm long filament, anther ca. 1 mm long; pistil ca. 1 cm long; male flowers violet, similar to the bisexual ones but smaller in all parts, perianth 3–4 mm long, stamens ca. 4 mm. *Ovary* minute, not developing. *Capsule* puberulous, 3-valved, angulate, 20 by 7–8 mm. *Seeds* brownish, reniform with an orange aril, ca. 5 by 3 mm.

Thailand.— Without locality, *Kerr* 20573 (K); NORTHERN: Chiang Mai [along the road Fang-Chiang Mai, in shade among limestone boulders, alt. 400 m, Aug. 1963, *Larsen* 2762 (AAU)]; Nan [Tham Pa Toob, 10 km N of Nan, rugged limestone hills covered with secondary, mixed deciduous forest and bamboo thicket, alt. 250 m, 13 Sept. 1995, *K. Larsen et al.* 46420 (holotype AAU!; isotypes BKF!, K!, L!, P!); Tham Pa Toob, *K. Larsen et al.* 43586 (AAU, BKF, PSU)]; Lampang [Pang Pua, alt. 420 m, 24 May 1915, *Kerr* 3617 (K); Ngao, Sept. 1931, *Put* 4010 (K); Ngao, Mae Huat, on rocks, alt. 350 m, *Sangkhachand* 92 (BKF); Jae Sawn Nat. Park, at base of limestone cliffs, 500 m alt. 25 Aug. 1995, *Maxwell* 95585 (BKF); Pratu Pha, limestone, 9 July 1965, *Smitinand & Phengklai* 8871 (BKF)].

Distribution.— Endemic to northern Thailand.

Ecology.— Growing in crevices in limestone rocks or in scree; alt. 350–500 m.

Cytology.— All three species have been studied with regard to chromosome number. *Larsen & Larsen* (1994, Fig. 31) gave the chromosome number  $2n=20$  for *S. ornatum*. This number refers to *S. calcicola*. *S. ornatum* has now been counted for the first time, from living material brought back and grown at AAU, and has been found to have the same number. All three species have  $2n=20$ .

Note.— *Larsen et al.* 46420 was chosen as the holotype as the chromosome number was determined from this plant. Its flowers are preserved in alcohol and colour slides are deposited in AAU.

#### FURTHER NOTES ON *S. ORNATUM*

***Spatholirion ornatum*** Ridl., J. Bot. 1896: 329. 1896. Type: Thailand, Narathiwat, Legeh at Tomoh, *Machado* s.n. (lectotype SING!; isolectotype K!, selected here).— *S. decumbens* Fukuoka & N. Kurosaki, Acta Phytotax. Geobot. 48: 147. 1997.

We have studied the type material of *S. ornatum* deposited in K and SING. The sheet at Kew consists of one leaf and a packet containing a few flowers. It seems clear to us that this is a duplicate taken from the better material in SING. Consequently, the sheet in SING has been selected here as the lectotype.

In 1994 a Japanese expedition to Thailand visited the area at Waeng in Narathiwat province and collected material of *Spatholirion*. During our expedition to that area in 1995 we were told by the Head of a local forest station that members of the Japanese expedition were very interested in the plant, which is now grown as an ornamental at the station. Fukuoka & Kurasaki (1997) described their collection as a new species, *S. decumbens*. According to their paper they saw a photo of the type collection in Kew. However, they did not see the better type material in SING, nor the material cited in Larsen & Larsen (1994), and they also misinterpreted the collections from northern Thailand in BKF.

There is no doubt that the locality where *S. ornatum* and *S. decumbens* has recently been collected in Narathiwat province is very close to the type locality; it may even be the same place. There are no significant differences between these new collections and the material of Ridley. There is, however, a clear difference between the southern material and the material from northern Thailand, as Fukuoka & Kurasaki correctly point out. They also give a very good description of the main differences between *S. ornatum* and our new species, but mistook the material from northern Thailand to be *S. ornatum*. *Spatholirion decumbens* thus falls within the circumscription of *Spatholirion ornatum* when the northern material (now assigned to *S. calcicola*) is excluded. Thus it is reduced here to a synonym of *S. ornatum*.

The following key will help to identify *Spatholirion* in Thailand and adjacent regions.

#### KEY TO THE SPECIES OF SPATHOLIRION

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|--|------------------------------|
| 1. Scandent herb, leaves lanceolate to lanceolate-elliptic, long acuminate (China)   | <b><i>S. longifolium</i></b> |
| 1. Erect or decumbent herbs, leaves elliptic or ovate (Southern Thailand, Malaysia)  |                              |
| 2. Inflorescence creamy white, male flowers yellow-white. Leaves ovate with $\pm$ cordate base, upper sides dark green, almost glabrous, undersides purple; petioles densely sericeously hairy with white hairs, stems rooting at the lower nodes, roots thin. On acid soil in evergreen forest (West Malaysia: Kelantan, Thailand: Narathiwat)                                      | <b><i>S. ornatum</i></b>     |
| 2. Inflorescence pale violet, male flowers violet. Leaves elliptic with attenuate or truncate to cordate base, both sides pale green, upper sides patently hairy; petioles less hairy; stems not rooting; roots thick with spherical storage tubers. In crevices of calcareous rocks or at the base of calcareous boulders in deciduous forest (northern and north-eastern Thailand) | <b><i>S. calcicola</i></b>   |

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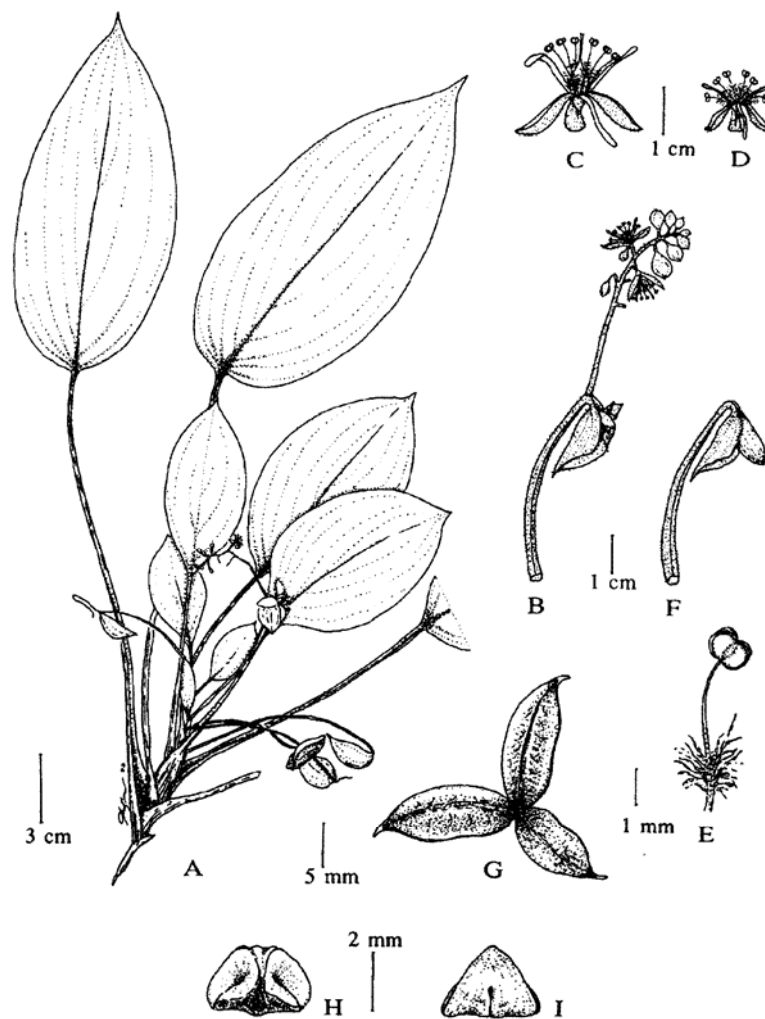


Figure 1. *Spatholirion calcicola*: A. habit; B. inflorescence; C. bixexual flower; D. male flower; E. stamen; F. lower part of infructescence with capsule; G. open capsule; H–I. seed seen in front and back view. All from Larsen *et al.* 46420 (AAU). Drawn by P. Suksathan.