BOTANICAL MUSEUM LEAFLETS
HARVARD UNIVERSITY

CAMBRIDGE, MASSACHUSETTS, JULY 30, 1938 VOL. 6, NO. 5

REVIEW OF THE GENUS THRIXSPERMUM IN THE PHILIPPINE ISLANDS

BY
LOUIS O. WILLIAMS

THRIXSPERMUM is one of the most difficult genera of the Philippine Sarcanthinae to study and to determine as the flowers are membranaceous, are rarely produced in abundance and tend to become agglutinated upon drying and pressing.

In the large collection of orchids made in the Philippines by A. Loher and received by the Ames Herbarium from the Philippine Bureau of Science for study and determination, were many specimens belonging to the genus *Thrixspermum*. In order to determine them and other accumulated specimens of the genus, a revision of the Philippine species became necessary.

The specimens now at hand, while not a complete representation of the probable Philippine species, is adequate for a study of the species recognized at present. A study of the genus through the medium of living plants may necessitate a change in the conception of some of the species as represented in this revision.

The only paper of importance concerning the Philippine species of *Thrixspermum* is that of Ames (Orch. 5 (1915) 201-210) in which most of the previously known Philippine species are described.

It is the plan of this paper to give a key to the recognized Philippine species of *Thrixspermum*, their bibliography, distribution and descriptions of the new species.

KEY TO THE SPECIES AND VARIETY

A. Inflorescence spirally arranged (Subg. Dendrocolla)

a. Pubescence of the lip confined to a dense mass on either side of the apex; disc shallowly concave

b. Lip transversely rhomboid

1. *comans*

b. Lip broadly subpandurate

1a. var. *bicristatum*

a. Pubescence of the lip, when present, not confined to dense masses, scattered or the lip glabrous; disc usually deeply concave or saccate

c. Leaf-bearing stems 3 cm. or less long; plants appearing acaulescent, the leaves approximate

d. Middle or terminal lobe of the lip pubescent

e. Lip 5-lobed, the lateral lobes spreading

4. *quinquelobum*

e. Lip 3-lobed, the lateral lobes strongly falcate

6. *sp.*

NOTE: The material is inadequate for description

d. Middle or terminal lobe of the lip glabrous, but sometimes the calli are not glabrous

f. Lip entire, i.e. no distinct sinuses between the terminal and lateral lobes

g. Lateral calli near the margin of the lip

9. *Vanoverberghii*

g. Lateral calli near the orifice of the sac of the lip

8. *integrum*

f. Lip 3-lobed (or apparently 4-lobed) with a distinct sinus between the terminal and lateral lobes

h. Lateral lobes of the lip about four times larger than the mid-lobe

3. *Elmeri*

h. Lateral lobes subequal to or smaller than the mid-lobe

i. Lateral and terminal lobes of the lip subequal in size; mid-lobe not retuse

j. Median callus subcordate; lip cruciform; lateral calli near the margin of the lip

5. *fantasticum*

j. Median callus not subcordate, small and

inconspicuous; lateral calli on the orifice of the sac of the lip

2. *Robinsonii*

i. Lateral lobes of the lip smaller than the terminal lobe; mid-lobe retuse

7. *eximium*

c. Leaf-bearing stems 5 cm. long or usually much longer

k. Bracts of the inflorescence subulate

l. Peduncle much exceeding the leaves in length, at least twice as long

10. *agusanense*

l. Peduncle subequal to the leaves in length or usually much shorter

m. Mid-lobe of the lip subequal to or longer than the lateral lobes; sheathed stems not conspicuously flattened; sepals not auriculate

n. Central longitudinal callus pubescent for its entire length; mid-lobe of the lip subequal in length to the lateral lobes

12. *Hystrix*

n. Central callus not longitudinal, short, glabrous; mid-lobe of the lip longer than the lateral lobes

11. *Amesianum*

m. Mid-lobe of the lip considerably shorter than the lateral lobes; sheathed stem conspicuously flattened; sepals auriculate

15. *Weberi*

k. Bracts of the inflorescence not subulate

o. Lip distinctly 3-lobed; callus one

p. Mid-lobe of the lip flat, broadly lanceolate; median callus not emarginate

13. *Wenzelii*

p. Mid-lobe of the lip canaliculate, oblong; median callus strongly emarginate

14. *angustatum*

o. Lip indistinctly 3-lobed; calli two

16. *subulatum*

A. Inflorescence distichous (Subg. Orsidice)

a. Leaves amplexicaul; sepals and petals oval or ovate

17. *amplexicaule*

a. Leaves not amplexicaul; sepals and petals broadly lanceolate *or usually* linear

b. Leaves linear to linear-lanceolate, not more than 1 cm. broad

18. *linearifolium*

b. Leaves not linear to linear-lanceolate or if so much broader than 1 cm.

c. Upper margins of the bracts free from the rachis

d. Inflorescence half as long as the leaves or less; sepals broadly lanceolate

19. *ligulatum*

d. Inflorescence exceeding the leaves in length; sepals linear

22. *acuminatissimum*

c. Upper margins of the bracts adnate to the middle of the rachis

d. Lateral sepals oblique at the base; a rare species

20. *rostratum*

d. Lateral sepals not oblique at the base; a common species

21. *elongatum*

1. **Thrixspermum comans** *J. J. Smith* in Bull. Dépt. Agric. Ind. Néerl. 13 (1907) 61; in Fedde Repert. 5 (1908) 300; in Bull. Jard. Bot. Buitenz. 6 (1924) t. 13, fig. II.

This species had been described (in manuscript) as a variety of *T. bicristatum* Ames. Our specimens agree with those from Java cultivated and determined as *T. comans* by J.J.Smith, as well as with his published figures.

Samar, Mindanao; also Java.

1a. **Thrixspermum comans** *J. J. Smith* var. **bicristatum** *(Ames) L.O.Williams comb. nov.*

Thrixspermum bicristatum Ames Orch. 5 (1915) 202.

The Mindanao specimen reported as *T. bicristatum* by Ames in Merrill Enum. Philipp. Flow. Pl. 1 (1925) 405 is *T. comans*.

Luzon, Leyte.

2. **Thrixspermum Robinsonii** *Ames* Orch. 5 (1915) 207.

Apparently widely distributed but not common in the Philippines. The two specimens which I have seen from Negros are sterile, but probably belong to this species. The specimens from Mindanao differ from the type in having a more prominent and more pubescent median callus. By typographical error, the mid-lobe of the lip is characterized as pubescent in the original description.

Luzon, Leyte, Negros, Mindanao.

3. **Thrixspermum Elmeri** *L. O. Williams sp. nov.*

Planta parva, foliosa. Folia disticha, oblongo-lanceolata. Pedunculus gracilis, folium multo excedens. Bracteae inflorescentiae leviter subulatae, acutae, imbricatae. Sepalum dorsale elliptico-ovatum, obtusum. Petala sepalis similia. Labellum leviter saccatum, trilobatum; lobi laterales semiorbiculares; lobus medius semiorbicularis, parvus.

A small epiphytic herb. Stems about 1.5–2 cm. long, slightly complanate, leafy. Leaves distichous, crowded, coriaceous, rugose when dry, oblong-lanceolate, about 3 cm. long and 5–6 mm. broad; persistent leaf-sheaths covering the stem. Peduncles glabrous, slender, suberect or erect, much longer than the leaves, with one or more sterile bracts subtending the inflorescence. Inflorescence densely flowered, about 1 cm. long. Bracts of the inflorescence somewhat subulate, acute, imbricated, narrowly triangular, about 1.5–2 mm. long. Dorsal sepal elliptic-ovate, obtuse, 3- to 5-nerved, about 4 mm. long and 2

mm. broad. Lateral sepals semiovate, oblique, acute, 5-nerved, about 4–5 mm. long and 3 mm. broad. Petals similar to the lateral sepals but smaller, about 3.5 mm. long and 2 mm. broad. Lip 3-lobed, slightly saccate, about 2 mm. long; lateral lobes semiorbicular, about 2 mm. broad; mid-lobe semiorbicular, small; lip with a callus in each sinus and one in the sac. Column characteristic of the genus.

Among the Philippine species of the genus, *Thrixspermum Elmeri* is most closely allied to *T. Robinsonii* Ames. It may be distinguished from *T. Robinsonii* by having much smaller flowers, by a lip which has the mid-lobe very small in comparison with the lateral lobes, by the sac being much larger in comparison to the size of the flower, and by the pubescent median callus being very small and inconspicuous.

The type specimen of *T. Elmeri* consists of one plant, of a single flower which is now in the glycerine collection of the Ames Herbarium and of the analytical drawings which I have made.

NEGROS: Dumaguete (Cuernos Mountains), Province of Negros Oriental, April 1908, *Elmer 9848* (TYPE in Herb. Ames No. 43878).

4. **Thrixspermum quinquelobum** *Ames* Orch. 5 (1915) 206.

A most distinctive and rare species which is to be distinguished from the other Philippine species of Thrixspermum by means of the 5-lobed lip.

Luzon.

5. **Thrixspermum fantasticum** *L. O. Williams sp. nov.*

Herba epiphytica, parva. Radices fibratae, elongatae. Caules leviter complanati, foliosi. Vaginae foliorum persistentes, caulem obtegentes. Folia oblongo-oblanceola-

ta, obtusa, disticha, valde conferta. Bracteae triangulares, obtusae, imbricatae. Sepalum dorsale elliptico-oblongum, obtusum, trinervium. Sepala lateralia late obovata, obtusa, quinquenervia. Petala ovata, leviter acuta, trinervia. Labellum cruciforme; lobi laterales oblongi, crenati; lobus medius semiquadratus, crenatus; discus callo saccato, semicordato, pubescenti, apice furcato ornatus; sinu utrinque callus lanceolatus divergens stat. Columna generis.

A small epiphytic herb. Roots fibrous, elongated. Stems slightly complanate, foliose, about 2 cm. long. Leaf-sheaths persistent, covering the stems. Leaves distichous, oblong-oblanceolate, obtuse, somewhat crowded, coriaceous, rugose when dry, about 2–4 cm. long and 5–6 mm. broad. Peduncle glabrous, slender, with one or two sterile bracts. Inflorescence densely flowered, 4–12 mm. long. Bracts of the inflorescence triangular, obtuse, imbricated, about 1 mm. long. Dorsal sepal elliptic-oblong, obtuse, 3-nerved, about 3.5 mm. long and 2.5 mm. broad. Lateral sepals broadly ovate, obtuse, 5-nerved, about 4 mm. long and 3 mm. broad. Petals ovate, somewhat acute, 3-nerved, about 3 mm. long and 2.5 mm. broad. Lip cruciform, about 3.5 mm. long and 6 mm. broad; lateral lobes of the lip oblong, crenulate, about 2.5 mm. long; mid-lobe of the lip subquadrate, crenulate, about 1 mm. long; in the sac is a semicordate, saccate, pubescent, furcate callus; in each sinus is a divergent lanceolate callus. Column characteristic of the genus.

Thrixspermum fantasticum is allied to that group of species which contains *T. Robinsonii* Ames and *T. quinquelobum* Ames, but is not closely allied to either of these species or to any of the other Philippine species. The cruciform lip, the very large saccate furcate median callus with glandular tips, the lanceolate calli in the sinuses, and the very broad perianth segments make this species an

outstanding one. *Thrixspermum fantasticum*, in habit, is not easily distinguished from *T. comans* J. J. Sm. and the other species preceding *T. fantasticum* in this paper.

LEYTE: epiphyte in forest, Jaro, Buenavista, at 500 meters altitude, July 14, 1914, *Wenzel 496* (TYPE in Herb. Ames No. 43896).

6. **Thrixspermum** *sp.*

The specimen cited below seems to represent an undescribed species, but the material is not adequate for description. There is but a single flower available and that is withered. The lateral lobes of the lip which are strongly falcate are longer than the pilose-pubescent midlobe, and there seems to be only a single transverse callus on the lip.

The relationship of the plant would appear to be with *T. fantasticum* L. Wms., but the single transverse median callus suggests a possible alliance with *T. agusanense* Ames.

MINDANAO: epiphytic in forest, Placer, Province of Surigao, at 150 meters altitude, May 31, 1927, *Wenzel 10054.*

7. **Thrixspermum eximium** *L. O. Williams sp. nov.*

Herba parva, epiphytica. Radices fibratae, elongatae. Caules breves, foliosi. Vaginae foliorum persistentes, caulem obtegentes. Folia oblongo-lanceolata, obtusa, leviter retusa, disticha, aliquid conferta et coriacea. Bracteae inflorescentiae perbreves, obtusae, imbricatae. Sepalum dorsale ovatum, obtusum. Sepala lateralia subrotunda, obtusa, quinquenervia. Petala oblongo-ovata, obtusa, quinquenervia. Labellum trilobatum, tricallosum.

A small epiphytic herb. Roots fibrous, elongated. Stem short, leafy, 2–3 cm. long, covered with persistent leaf-sheaths. Leaves oblong-lanceolate, distichous, obtuse or slightly retuse, crowded, rugose (at least when dry),

coriaceous, 3–7 cm. long and 0.8–2 cm. broad. Peduncle slender, glabrous, with one or two sterile bracts. Inflorescence densely flowered, 0.8–2 cm. long. Bracts of the inflorescence imbricated, obtuse, very short, about 0.5 mm. long. Dorsal sepal ovate, obtuse, about 6 mm. long and 3 mm. broad. Lateral sepals subrotund, obtuse, 5-nerved, 6–7 mm. long and 6 mm. broad. Petals oblong-ovate, about 6 mm. long and 4 mm. broad, obtuse, 5-nerved. Lip 3-lobed or apparently 4-lobed because of the retuse mid-lobe, with three prominent calli; the median callus extends nearly the length of the lip, with the apical portion free; two arcuate lateral calli are free for nearly their full length; the sac at the base of the lip is directed backward (not downward). Column characteristic of the genus.

Thrixspermum eximium is allied to *T. Vanoverberghii* Ames from which it may be distinguished by the short obtuse instead of subulate, bracts; by the broader sepals and petals; by the lip being saccate at the base instead of toward the apex; and by the lip having a longitudinal callus and two lateral calli instead of two lateral calli and a median comose appendage. The lobing of the lip in the two species also differs.

Luzon: Bontoc Subprovince, January 1911, *Vanoverbergh 1091* (Type in Herb. Ames No. 13654); on branches of trees, Mt. Caua, Bontoc Subprovince, at 4900 feet altitude, March 3, 1920, *Ramos & Edaño 37979* (Cotype in Herb. Bur. Sci., Manila); epiphyte in forest, Jaro, Masaganap, at 600 meters altitude, March 9, 1914, *Wenzel 309* (Herb. Ames No. 43985).

8. **Thrixspermum integrum** *L. O. Williams sp. nov.*

Herba parva, epiphytica. Caules breves, foliorum vaginis obtecti. Folia oblongo-lanceolata, obtusa vel acuta, disticha, valde conferta. Inflorescentia densiflora.

Sepalum dorsale elliptico-ovatum, acutum. Sepala lateralia late ovato-lanceolata. Petala ovato-lanceolata vel ovata, acuta. Labellum integrum, late subcordatum, tricallosum.

An epiphytic herb with fibrous roots. Stem short, about 2 cm. long, covered with persistent leaf-sheaths. Leaves distichous, crowded, coriaceous, rugose when dry, oblong-lanceolate, obtuse or acute, 2.5–9 cm. long, 0.5–1.7 cm. broad. Peduncle exceeding or subequaling the leaves, slender, usually with a sterile bract near the middle. Inflorescence densely flowered, 7–25 mm. long. Bracts of the inflorescence lanceolate, acerose, imbricated, about 3 mm. long. Dorsal sepal elliptic-ovate, acute, 5-nerved, about 7 mm. long and 3.5 mm. broad. Lateral sepals broadly ovate-lanceolate, 5-nerved, about 8 mm. long and 4 mm. broad. Petals ovate-lanceolate to ovate, 5–6 mm. long and 1.2–1.5 mm. broad, acute, 3-to 5-nerved. Lip entire, broadly subcordate, obtuse, rather strongly saccate, about 6 mm. long and nearly as broad, with three calli; the lateral pair of calli small, mammillate, on the margin of the sac; the median callus somewhat larger, glandular-pubescent, situated in the sac. Column characteristic of the genus.

Thrixspermum integrum may be distinguished from its allies, *T. eximium* L. Wms. and *T. Vanoverberghii* Ames, by means of the entire lip and other details of the perianth. The bracts of the inflorescence are much longer than those of either of its allies.

Luzon: on trees, Bauco, Bontoc Subprovince, at 1450 meters altitude, September-October 1912, *Vanoverbergh 1531* (Type in Herb. Ames No. 15112); on trees, Bontoc Subprovince, at 1400 meters altitude, July 30, 1910, *Vanoverbergh 632*.

Leyte: on trees of medium height, Dagami, Panda, at 60 meters altitude, October 24, 1912, *Wenzel 53*.

9. **Thrixspermum Vanoverberghii** *Ames* in Philipp. Journ. Sci. 8 (1913) Bot. 438.

Thrixspermum Vanoverberghii, according to my conception of it, rests on the type specimen, *Vanoverbergh 1792*. The collections (*Vanoverbergh 632*, *1091* and *1531*) cited by Ames in Merrill Enum. Philipp. Flow. Pl. 1 (1925) 406 as referable to *T. Vanoverberghii* belong in reality to *T. eximium* L. Wms. and *T. integrum* L. Wms. which were undescribed at the time when Ames published his conclusions.

Luzon.

10. **Thrixspermum agusanense** *Ames* Orch. 5 (1915) 201.

An easily distinguished species.

Leyte, Mindanao.

11. **Thrixspermum Amesianum** *L. O. Williams sp. nov.*

Herba epiphytica. Folia oblongo-elliptica, obtusa, in sicco valde rugosa, disticha, valde conferta. Inflorescentia densiflora, spicata. Sepalum dorsale ellipticum, obtusum, trinervium. Sepala lateralia oblongo-lanceolata, paulo obliqua. Petala anguste oblonga, obtusa. Labellum trilobatum; lobi laterales leviter arcuati; lobus medius triangularis, pubescens. Columna generis.

An epiphytic herb with numerous fibrous roots. Stem 5 cm. or more long (mostly 10–20 cm. long), terete, covered with persistent leaf-sheaths. Leaves distichous, mostly less than 1 cm. apart, oblong-elliptic, obtuse (sometimes obliquely obtuse), more or less rugose when dry, 3–6 cm. long, 0.5–1.5 cm. broad. Peduncle subequal to the leaves in length. Inflorescence spicate, densely flowered, about 0.5–4 cm. long. Bracts of the inflorescence subulate, mostly 3–5 mm. long. Dorsal sepal

elliptic, obtuse, 3-nerved, about 4.5 mm. long and 2 mm. broad. Lateral sepals oblong-lanceolate, acute, slightly oblique, dorsally somewhat carinate along the mid-rib, about 5 mm. long and 2.5 mm. broad. Petals narrowly oblong, obtuse, about 5 mm. long and 1.5 mm. broad. Lip 3-lobed, about 5 mm. long and 6 mm. broad, strongly saccate at the base; lateral lobes oblong, arcuate; mid-lobe triangular, obtuse, exceeding the lateral lobes in length; lip with a short retuse callus near the mouth of the sac; mid-lobe and margins of the lateral and mid-lobe subglandular-pubescent. Column characteristic of the genus.

Thrixspermum Amesianum is a segregate from *T. Wenzelii* as Ames delimited that species. The easiest and surest method of distinguishing *T. Amesianum* from *T. Wenzelii* (even when there are no flowers) is by means of the subulate-aristate bracts of the inflorescence as contrasted with the shorter non-aristate bracts of *T. Wenzelii.*

When better and more complete material is at hand, it is not improbable that *T. Amesianum* may prove to be an aggregate species.

LEYTE: epiphyte in forest, Jaro, at 300 meters altitude, November 25, 1914, *Wenzel 746* (TYPE in Herb. Ames No. 43830).

MINDANAO: cultivated in the Bureau of Science orchid house, Manila, said to be from Surigao, *Quisumbing 84513.*

The following collections, which for one reason or another cannot be determined with certainty, seem to belong to this species.

LUZON: on floating trees in the river, San Mateo River, Province of Tayabas, at 30 meters altitude, May 9, 1917, *Ramos & Edaño 28539.*

LEYTE: tops of trees, Dagami, Panda, at 60 meters altitude, October 10, 1912, *Wenzel 41* and same data June 9, 1913, *Wenzel 156*; epiphyte in forest, Jaro, Conpagal, at 800 meters altitude, November 24, 1914, *Wenzel 714.*

MINDANAO: Placer, Surigao, July 8, 1916, *Wenzel 1010*[1] and *1011*[1].

12. **Thrixspermum Hystrix** *(Bl.) Reichenbach filius* in Trans. Linn. Soc. 30 (1874) 136, 145—J.J. Smith in Fl. Buitenz. 6 (Orch. Java) (1905) 577 and in Figuren-Atlas pt. 5 (1912) fig. CDXXXIII.

Dendrocolla Hystrix Blume Bijdr. (1825) 291.

It is with some misgiving that the present specimen is referred to *T. Hystrix*. The petals and sepals of the single flower present have been broken, but the lip is in good condition. The lip corresponds very well with the figure given by Smith and until more complete material is available it seems best to refer the specimen here, even though dubiously. I have seen no herbarium material referable to *T. Hystrix*.

Attention should be called to the similarity of *T. adenotrichum* Schltr. to the present specimen.

LUZON: without definite locality, 1909, *Lyon 128*.

13. **Thrixspermum Wenzelii** *Ames* Orch. 5 (1915) 209.

This species is cited by Ames (Orch. 5 (1915) 209) as occurring in Leyte, Palawan and Luzon and again it is attributed to Luzon, Leyte, Palawan, Mindanao and Basilan by Ames in Merrill Enum. Philipp. Flow. Pl. 1 (1925) 406. The distributions given above are, I believe, based on an aggregate.

The specimens from Luzon and Leyte belong here in part, some of them belonging to *T. Amesianum* L. Wms. The specimen from Palawan is possibly undescribed and may belong to Schlechter's proposed section Katocolla. The specimen from Basilan belongs to the following species, *T. angustatum* L. Wms.

Luzon, Leyte.

[1]These two collections seem to differ somewhat from the others.

14. **Thrixspermum angustatum** *L. O. Williams sp. nov.*

Herba epiphytica. Caules plusminusve 5 cm. longi, vaginis foliorum obtecti. Folia lineari-oblonga, obtusa, coriacea, disticha. Inflorescentia densiflora. Sepalum dorsale angustissime rhombicum. Sepala lateralia elliptico-lanceolata. Petala oblanceolata, obtusa. Labellum trilobatum. Columna generis.

An epiphytic herb with numerous fibrous roots. Stems mostly more than 5 cm. long, covered with persistent leaf-sheaths. Leaves distichous, linear-oblong, obtuse, mostly about 7 mm. apart, rather thin for the genus, about 4–7 cm. long and 0.5–1 cm. broad. Peduncles much exceeding the leaves (mostly about twice as long), usually with a single sterile bract much below the inflorescence. Inflorescence densely flowered, 0.5–3 cm. long. Bracts of the inflorescence about 2 mm. long, apparently rather fleshy when fresh, neither subulate nor aristate. Dorsal sepal very narrowly rhombic, obtuse, 3-nerved, about 8 mm. long and 2.5 mm. broad. Lateral sepals elliptic-lanceolate, acute, 3-nerved, about 6 mm. long and 2.5 mm. broad. Petals oblanceolate, obtuse, 3-nerved, about 6 mm. long and up to 1.5 mm. broad. Lip 3-lobed, with a single emarginate callus (free only at the apex) at the orifice of the spur; lateral lobes slightly arcuate, obtuse, subglandular-pubescent on the margin; mid-lobe oblong, obtuse, canaliculate, about 3 mm. long, covered throughout with a fine pubescence, much exceeding the lateral lobes; spur directed slightly forward, about 4.5 mm. long from the junction with the sepals to the tip. Column characteristic of the genus.

Thrixspermum angustatum has been confused with *T. Wenzelii* Ames to which it is doubtless most closely allied. From *T. Wenzelii* it may be distinguished by the peduncles being more than twice as long as the leaves,

whereas in *T. Wenzelii* the peduncles are subequal to the leaves in length. In *T. angustatum* the leaves are comparatively much narrower than those of *T. Wenzelii.* Florally the present species may be distinguished from *T. Wenzelii* by the much narrower sepals and petals, by the narrow mid-lobe of the lip and by the more pronounced sac (or spur).

BASILAN: September 1912, *Reillo 16352* (TYPE in Herb. Ames No. 13358).

15. **Thrixspermum Weberi** *Ames* Orch. 7 (1922) 134.

Thrixspermum Weberi, which is known from but one locality in the Philippines, is one of the most easily distinguished species of the subgenus Dendrocolla in the Philippines by reason of its comparatively very large, strongly flattened stems and its distinctive facies.

Mindanao.

16. **Thrixspermum subulatum** *(Bl.) Reichenbach filius* Xen. Orch. 2 (1867) 122—J. J. Smith in Fl. Buitenz. 6 (Orch. Java) (1905) 578 and in Figuren-Atlas pt. 5 (1912) fig. CDXXXIV.

Dendrocolla subulata Blume Bijdr. (1825) 291.

Aerides subulatum Lindley Gen. & Sp. Orch. Pl. (1833) 241.

Sarcochilus subulatus Reichenbach filius in Walp. Ann. 6 (1863) 500.

Schlechter proposed the section Katocolla (Orchis 5 (1911) 54) for this and other species. I am unable to pass upon the validity of the section.

Ames in Merrill Enum. Philipp. Flow. Pl. 1 (1925) 406 included *T. falcilobum* Schltr. as a synonym, following J. J. Smith. I have not verified this reduction.

The specimens on which this Philippine record is

based are by no means perfect and the identifications may be in error.

Luzon; also in Java, Sumatra, Amboina, and Tenimber.

17. **Thrixspermum amplexicaule** *(Bl.) Reichenbach filius* Xen. Orch. 2 (1867) 121—J.J.Smith in Fl. Buitenz. 6 (Orch. Java) (1905) 573, and in Figuren-Atlas pt. 5 (1912) fig. CDXXX.

Dendrocolla amplexicaulis Blume Bijdr. (1825) 288.

Aerides amplexicaule Lindley Gen. & Sp. Orch. Pl. (1833) 239.

Orsidice amplexicaulis Reichenbach filius in Bonplandia 2 (1854) 93.

Sarcochilus amplexicaulis Reichenbach filius in Walp. Ann. 6 (1863) 499.

Thrixspermum amplexicaule is easily distinguished from all other members of the genus by the amplexicaul leaves.

An additional synonym, but one which is based on extra-Philippine material and which has never been used for Philippine plants, is *T. lilacinum* (Griff.) Reichb.f. It has been figured in Griffith Icon. Pl. Asiat. 3 (1851) t. 320, fig. D, and by J. D. Hooker in Bot. Mag. 127 (1901) t. 7754.

Luzon, Mindanao; also in Malay Peninsula, Sumatra, Amboina, Celebes and Banda Islands.

18. **Thrixspermum linearifolium** *Ames* Orch. 5 (1915) 205.

A rare species which is easily distinguished from other Philippine species of the genus.

I have seen a specimen which possibly represents an allied, but undescribed, species. This specimen bears the following data:

MINDANAO: on trees in damp forest, Mt. Camates, Subprovince of Bukidnon, at 4000 feet altitude, July 9, 1920, *Ramos & Edaño 38587.*

Mindanao.

19. **Thrixspermum ligulatum** *L. O. Williams sp. nov.*

Herba epiphytica. Caules 1–6 dm. longi, foliorum vaginis obtecti. Folia oblongo-ligulata, obtusa, retusa, valde coriacea, disticha. Inflorescentia valde elongata, pauciflora. Sepalum dorsale lanceolatum, acutum. Sepala lateralia late lanceolata, acuta. Petala anguste lineari-oblanceolata. Labellum trilobatum. Columna generis.

An epiphytic herb with few roots. Stem 1–6 dm. long, covered with persistent leaf-sheaths, terete. Leaves distichous, oblong-ligulate, obtuse, usually retuse and somewhat unequal at the apex, 15–21 cm. long, 2.5–4.5 cm. broad, with the surface usually remaining vernicose in dried specimens. Peduncles much shorter than the leaves, (usually about one half as long). Inflorescence distichous, apparently few-flowered, having usually fewer than twelve floral bracts. Bracts of the inflorescence about 1 cm. long, obtuse, with the upper margins completely encircling the rachis, probably somewhat fleshy when fresh. Dorsal sepal lanceolate, acute, about 30 mm. long and 8 mm. broad. Lateral sepals broadly lanceolate, acute, about 30 mm. long and 13 mm. broad, with the widest part near the base. Petals linear-lanceolate, acute, about 25 mm. long and 6 mm. broad. Lip 3-lobed, about 20 mm. long; lateral lobes oblong, about 5 mm. long; mid-lobe lanceolate, about 12 mm. long, acute, apparently thickened; sac rather shallow, with a small bifid callus in the orifice. Column characteristic of the genus.

Thrixspermum ligulatum is apparently most closely allied to *T. elongatum* Ames and to *T. rostratum* Ames,

but differs from these species in many respects. The petals and sepals of *T. ligulatum* are very broad in comparison to those of the allied species; the lanceolate, but not long-caudate, lip is another point of difference; the inflorescence generally has far fewer bracts of which the upper margins encircle the rachis, whereas they are adnate near the middle of the rachis in the allied species; vegetatively the plant is larger than any which I know in the genus.

LUZON: Montalban, Province of Rizal, May 1915, *Loher s. n.* (TYPE in Herb. Ames No. 50009) and *Loher 13320* (COTYPE in Herb. Ames No. 43957); [Mt.?] Paete, Province of Laguna, June 1915, *McGregor 22819* (Philipp. Nat. Herb., Manila); on trees, Province of Laguna, June 20, 1912, *Reillo 27*.

The following sterile specimens, which are in the Philippine National Herbarium, seem to belong to this species.

LUZON: on tree, Papat, Province of Laguna, February 24, 1918, *Ramos 20448*; San Fernando, Province of Unión, January 1922, *Lete 666*.

20. **Thrixspermum rostratum** *Ames* Orch. 5 (1915) 208.

Apparently a rare plant which is dubiously distinct from *T. elongatum* Ames.

Panay, Samar.

21. **Thrixspermum elongatum** *Ames* Orch. 5 (1915) 203.

A most difficult species to study because of the ephemeral nature of the flowers. The mid-lobe of the lip is somewhat fleshy, terete, and often becomes deformed in drying.

It is quite possible that the material referred here represents more than one species. Certainly the material

is variable, with great difference in the size and shape of the leaf, and in the size of the flowers.

Luzon, Polillo, Mindoro, Samar, Leyte, Palawan, Balabac, Bohol, Mindanao, Basilan.

22. **Thrixspermum acuminatissimum** *(Bl.) Reichenbach filius* Xen. Orch. 2 (1867) 121—J.J.Smith in Fl. Buitenz. 6 (Orch. Java) (1905) 569 and in Figuren-Atlas pt. 5 (1912) fig. CDXXVII.

Dendrocolla acuminatissima Blume Bijdr. (1825) 201.

Aerides acuminatissimum Lindley Gen. & Sp. Orch. Pl. (1833) 240.

Sarcochilus acuminatissimus Reichenbach filius in Walp. Ann. 6 (1863) 498.

Luzon, Leyte; also in Malay Peninsula, Java.