

THE GENUS *ERIA* LINDLEY (ORCHIDACEAE) IN THAILAND

by

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The present paper is an attempt to clarify the identity of the *Eria* of Thailand, based on available literature and herbarium material and on investigations in the field. An attempt has been made to work out an identification key to sections and species of the genus, and an enumeration of the species known at present from Thailand is given, with an indication of their occurrence.

In the early part of 1957 I was invited by the Committee for the Thai Danish Botanical Cooperation to spend a period of three months in Copenhagen to work together with the Danish botanists who were later to proceed to Thailand. On my way back the Committee agreed to my stay for a short period at the Royal Botanical Gardens, Kew, where I had the opportunity to check references pertaining to the present paper.

The author wishes to thank the Committee for this opportunity, without which this paper could not have been completed; he also tenders his deep gratitude to the Directors and the staffs of the Botanical Museum of the University of Copenhagen and the Royal Botanical Gardens in Kew for giving him access to the valuable collections and references. Also his sincere thanks are due to Mr. V.S. Summerhayes, Senior Scientific Officer of the Herbarium in Kew, for kind assistance. Finally he wishes to convey his gratitude to H.E. Mr. Gunnar Seidenfaden, the Danish Ambassador to Thailand, editor of the Natural History Bulletin of the Siam Society, who helps much to accelerate the study of orchidology in Thailand, and has supplied the illustrations and seen the paper through publication.

INTRODUCTION

Eria LINDLEY is in Thailand a comparatively small genus of orchids, but its representatives are commonly found all over the country. Owing to the not very attractive flowers it is, however, not very well known by the orchid growers at home and abroad, it has always been considered a "botanical orchid". But some species flower prolificly, and most species are not too difficult to grow in the Bangkok orchid houses, therefore, they should be quite worth while to cultivate.

The genus comprises some 3-400 species spread over the area from Ceylon and India to the islands of the western Pacific, and from China and Japan to Malaysia. So far some 40 species are known to occur in Thailand, but undoubtedly future investigations will show that many more species are present, especially of the Indo-Burmese and Malayan elements.

The history of the genus probably goes back to 1750 when RUMPHIUS (1750)¹) described two plants from Amboina under the genus *Angraecum*, one of these was later interpreted as *Eria moluccana* SCHLTR. & J.S.S.,²) the other species is believed to be an *Eria* of the section *Trichotosia*. The generic name *Eria* goes back to 1825, when LINDLEY (1825) based it on the plant hitherto known as *Dendrobium javanicum* SW., at present it is known as *Eria javanica* (SW.) BL.

The first record of species of this genus from Thailand was made by KRAENZLIN (1900), when treating the *Orchidaceae* in JOHANNES SCHMIDT's "Flora of Koh Chang". F.N. WILLIAMS (1904) lists seven species from Thailand, and SCHLECHTER (1906 a & b) added two more species, based on the collections made by Dr. HOSSEUS. Two more species were later published by SCHLECHTER (1912,1914), found in the living collections of BARON VON FUERSTENBERG at Mintard, and DOWNIE (1925) when publishing the manuscript of the late R.A. ROLFE, recorded another two new species. In the "Flore

1) see list of literature 2) cf MERRILL (1917)

Générale de l'Indo-Chine, GAGNEPAIN (1933) mentions a total of 11 species from Thailand. So far no one has treated the genus *Eria* in Thailand as a whole.

Undoubtedly, the classification of *Eria* is still not satisfactory, and a general revision is much needed; it is, however, beyond the scope of the present paper, limited as it is to the Thai species. The system applied in this paper is a combination of those of KRAENZLIN (1911) and HOLTUM (1957), with some modifications. It cannot be claimed a phylogenetic one, but is hoped to be of some practical use for those who want to know the identity of the Thai plants. Due to pressure of other work, the lack of experience of the author, and the scanty references available in Bangkok, this paper must be considered incomplete and preliminary in many ways, and any criticism will be heartily welcome.-

Like *Dendrobium*, *Eria* shows a great variability in the vegetative characters, creating considerable confusion in the nomenclature which has had to be faced. As an introduction, mention should be made of the author's conception of some species treated in this paper, apart from these remarks, notes may be found in the list of the individual species.

1. *Eria perpusilla* PAR. & RCHB. F. There are many sheets in the Kew Herbarium, collected in Thailand by Dr. A.F.G. KERR, bearing the name *E. perpusilla* PAR. & RCHB. F. in his handwriting, and they all agree well with the type specimen. They all came from a single locality, *viz.* Doi Suthep in the Chiangmai District. The plant in general appearance is more like a *Phreatia* than an *Eria*, having the lateral scape coming up from the base of the pseudobulb, the calyx united at the basal part, forming a short tube and remaining after the anthesis. GRANT (1895, p. 159) treated this species under *Phreatia*, KRAENZLIN (1911, p. 20) following BENTHAM'S conceptions placed this species in the section *Conchidium* LINDL. It is rather difficult to examine the

pollinia in the dry specimens, and a living specimen seems to be required in order to prove its true identity, therefore this epithet is retained for the time being.

2. *Eria exilis* HK.F. is the name given by HOOKER (1890, p. 785) to a plant found in Travancore. The plants found by HOSSEUS at Doi Suthep and described by SCHLECHTER (1906 b, p. 170) under the name *E. microphyton* n. sp. were transferred to *E. exilis* HK. F. by KRAENZLIN (1911, p. 21). I have not seen SCHLECHTER's type specimens or any specimens of *E. exilis* from Thailand. Living specimens believed to be this species have been brought to Bangkok, but as they have not yet flowered, the epithet *E. exilis* HK. F. is retained for the time being.

3. *Eria pubescens* WIGHT and *E. sutepensis* ROLFE. In describing his new species ROLFE (DOWNIE 1925, p. 376) named as its nearest related species *Eria ringens* RCHB.F., a very widespread species, which KRAENZLIN (1911, p. 74) placed in the same group as *E. bractescens* LINDL.; but he seems to overlook *E. pubescens* WIGHT. As I could not see any striking difference between *E. pubescens* WIGHT and *E. sutepensis* ROLFE, for the time being I consider the two species as conspecific, referring the material of both to *E. pubescens* WIGHT.

4. *Eria truncata* LINDL., *E. trilamellata* LINDL., and *E. chrysobracteata* SCHLTR. all belong to the section *Cylindrolobus* BLUME. The diagnostic differences are very slight, such as the pubescent to puberulous flowers, the short slightly clavate to long, subcylindric pseudobulbs. All of them have the same shape of labellum, i.e. truncate in profile with thick median disc. For the time being I consider them identical, and, *E. truncata* LINDL. having the antecedent, have reduced *E. trimellata* LINDL. and *E. chrysobracteata* SCHLTR. to synonyms.

5. *Eria tomentosa* LINDL. and *E. fürstenbergiana* SCHLTR. I have not seen the type specimens of *E. fürstenbergiana* SCHLTR. and doubt if it exists, as the new species was based by

SCHLECHTER (1914, p. 132) on living specimens from the collection of BARON VON FUERSTENBERG, collected and sent to him from Thailand by HOSSEUS. Comparing the descriptions one gets the impression that the two species are identical, and I do not hesitate to reduce SCHLECHTER's epithet to a synonym of *E. tomentosa* LINDL.

6. *Eria albido-tomentosa* (BL.) LINDL. and *E. flava* LINDL. Both KRAENZLIN (1911, p. 50 and 55) and GAGNEPAIN (1933, p. 347) treat these two species separately. Both are said to occur on the Malayan peninsula (although *E. flava* is not mentioned by HOLTUM (1957) from Malaya proper, be it because he does not recognize it as a separate species, or the specimens earlier identified as *E. flava* are not recorded so far south), but it seems to me that the crucial criteria for distinction are very vague, being based on the presence or absence of discs on the lip, which may be misunderstandings due to work with dried material. For the time being I prefer considering *E. flava* LINDL. (including the var. *lanata* (GRIFF.) KRZ.) as a synonym of *E. albido-tomentosa* (BL.) LINDL.

7. *Eria wildiana* ROLFE (DOWNIE 1925, p. 377) was based on a living specimen brought by KERR to the Trinity College Botanical Gardens from Doi Chiangdao; I have not seen the type specimen. ROLFE gave as its closest allied *E. tinctoria* LINDL., a plant I have not been able to trace (also absent from Index Kewensis). KERR has given the name to herbarium specimens with a questionmark, the plant in question looks very much like a small *E. acervata* LINDL. The available material is too scanty to solve the question, so for the time being I leave *E. wildiana* ROLFE in the list as a doubtful species.

8. *Eria stricta* LINDL. and *E. siamensis* SCHLTR. The similarity of these two species is very apparent by their general appearance. The diagnostic differences are very vague, such as the pseudobulbs being cylindric versus slightly club-shaped, the inflorescens being secund versus distichous, (the inflorescence in herbarium specimens may be secund owing to the twisted axis)

and the transversed versus longitudinal disc. I tend to believe that these differences in the descriptions are due either to the condition of the herbarium specimens examined, or they are mere morphological variations within one species. It may seem a pity to reduce the well intended name of *E. siamensis* to a synonym of *E. stricta*, but I feel it unavoidable.

There is a certain difficulty in placing this species in the sectional system. KRAENZLIN (1911, p. 42) placed it in the section *Mycaranthes* BLUME, a section in which he put together many quite different plants. HOLTTUM (1957, p. 364) restricts this section to plants having leafy pseudobulbs and powdery calli on the lip, at the same time creating a section *Cymboglossum*, in which he places *E. longifolia* HK.F. In general outlook, *E. stricta* seems related to *E. longifolia*, and for the sake of convenience I have for the time being placed it in HOLTTUM's new section.

9. *Eria nummularia* KRZ. and *E. semiconnata* KRZ. These two plants were described by KRAENZLIN (1900, p. 8) based on material from SCHMIDT's expedition. For some reason or other they have been omitted from his treatment in DAS PFLANZENREICH (1911). They belong to the genus *Porpax* LINDL., and as to my knowledge they have not been treated in their proper stature yet, new combinations are needed, as follows: *Porpax nummularia* (KRAENZLIN) SMITINAND *comb. nov.*

Basynym: *Eria nummularia* KRAENZLIN, Bot. Tidss. Vol. 25, 1900.

Porpax semiconnata (KRAENZLIN) SMITINAND *comb. nov.*

Basynym: *Eria semiconnata* KRAENZLIN, Bot. Tidsskr. Vol. 25, 1900.

KEY TO SECTIONS OF THAI ERIA

- A. Leaves or at least their sheaths hairy;
 - hairs usually red-brown I. *TRICHOTOSIA*.
- AA. Leaves and sheaths not hairy.
 - B. Pseudobulbs one-jointed; more or less close together.
 - C. Pseudobulbs depressed II. *CONCHIDIUM*.
 - CC. Pseudobulbs ovoid or subglobose; leaves one or two,

- D. Pseudobulbs ovoid, at least 5 cm long; inflorescence axillary; sepals and petals long, narrow III. *GONIORHABDOS*.
- DD. Pseudobulbs subglobose, at most 1 cm long; inflorescence terminal, sepals and petals not long, narrow II. *CONCHIDIUM*¹).
- BB. Pseudobulbs many-jointed, fleshy or not, well spaced or close together on creeping rhizome.
 - E. Pseudobulbs well spaced on creeping rhizome.
 - F. Pseudobulbs fleshy; inflorescence basal, many-flowered IV. *DENDROLIRIUM*.
 - FF. Pseudobulbs not fleshy, inflorescence on upper part of pseudobulbs.
 - G. Pseudobulbs long; inflorescence short-hairy, many-flowered, lip hinged to columnfoot V. *CALLOSTYLIS*.
 - GG. Pseudobulbs very short; inflorescence 1 - 3 flowers, lip not hinged to columnfoot VI. *STRONGYLERIA*.
 - EE. Pseudobulbs more or less close together.
 - H. Pseudobulbs usually long, leafy throughout their leaves, length except at the very base.
 - I. Pseudobulbs erect; inflorescence longer than leaves, many-flowered.
 - J. Inflorescence terminal, lip with powdery calli VII. *MYCARANTHES*.
 - JJ. Inflorescence axillary, lip without such calli X. *AERIDOSTACHYS*.
 - II. Pseudobulbs pendulous; inflorescence shorter than leaves, 1 - 2 flowers IX. *CYLINDROLOBUS*²).

1) viz. *E. muscicola*, p. 23.

2) viz. *E. rigida*, p. 32

- HH. Pseudobulbs relatively short, leaves few or single, near apex of pseudobulbs only, lower parts covered with sheaths.
- K. Inflorescence longer than leaves
- L. Inflorescence terminal, flowers 0,5 cm across, more or less close together, densely whitish hairy.....VIII. *CYMOGLOSSUM*
- LL. Inflorescence lateral, axillary, flowers 1-1,5 cm across, spacing, brown hairs.....XI. *BAMBUSIFOLIA*¹⁾
- KK. Inflorescence shorter than leaves
- M. Flowers in short raceme, 1 - 3 flowers, IX. *CYLINDROLOBUS*.
- MM. Flowers in longer raceme, many-flowered,
- N. Inflorescence usually horizontal, sidelobes of lip at its very base.....XII. *UROSTACHYS*
- NN. Inflorescence more erecto-patent; sidelobes of lip not as above.....XIII. *HYMENARA*

KEY TO THE THAI SPECIES OF ERIA

I. *TRICHOTOSIA*

- A. Stems very short, less than 4 cm long 1. *E. dasyphylla*.
- AA. Stem much longer.
- B. Stems usually more than 100 cm long; inflorescence pendulous, 10 - 40 cm long, flowers well spaced 2. *E. ferox*.
- BB. Stems shorter, inflorescence not pendulous, flowers close.

1) viz. *E. bambusifolia*, p. 34

- C. Lip with long linear nail, suddenly dilatated spathulate, flowers 8-10 mm long.....3. *E. rufinula*.
- CC. Lip with short nail gradually dilatated, cuneate or obovale.
 - D. Flowers sparsely pilose inside, 10 mm long, two elevated lines on the disc.....4. *E. velutina*.
 - DD. Flowers glabrous inside, 13 mm long, three elevated pilose lines on the disc.....5. *E. helleri*¹).

II. *CONCHIDIUM*

- A. Inflorescence basal.....6. *E. perpusilla*.
- AA. Inflorescence terminal.
 - B. Sheats tessellate.....7. *E. muscicola*.
 - BB. Sheats not tessellate.....8. *E. exilis*.

III. *GONIORHABDOS*

- Stems ovoid, fleshy; leaves 1-2; inflorescens solitary raceme, many-flowered; sepals and petals long, narrow.....9. *E. javanica*.

IV. *DENDROLIRIUM*

- A. Bracts at base of pedicels less than 2 cm long.
 - B. Stems conical ovate, rhizome creeping; flowers white-tomentose.....10. *E. albido-tomentosa*.
 - BB. Stems elliptic ovate, rhizome rampant; flowers brown-tomentose.....11. *E. tomentosa*.
- AA. Bracts at base of pedicels 2, 5-8 cm long, bright orange.....12. *E. ornata*²)

1) I have not seen this plant, for which reason the key for species No. 3 to 5 has been worked out on the basis of the descriptions in KRAENZLIN (1911).

2) I have not seen this species.

V. CALLOSTYLIS

- Stem long, swollen in the middle; inflorescence
 short-tomentose, many-flowered, flowers
 open successively one at a time, lip
 hinged to columnfoot.....13. *E. pulchella*.

VI. STRONGYLERIA

- A. Stems very short, cylindric, rhizome
 creeping; leaves terete, flowers 2-3.....14. *E. pannaea*.
 AA. Stems not very short, globose, rhizome
 rampant; leaves oblong, flowers solitary...15. *E. globifera*.

VII. MYCARANTHE

- A. Midlobe of lip forked, bent downwards,
 sidelobes rounded, more or less
 horizontal.....16. *E. paniculata*.
 AA. Midlobe of lip divergent, pointed
 forwards, sidelobes pointed, forming
 a crescent.....17. *E. ridleyi*.

VIII. CYMBOGLOSSUM

- A. Flowers in distinct whorls.....18. *E. longifolia*.
 AA. Flowers distichous.....19. *E. stricta*.

IX. CYLINDROLOBUS

- A. Stems long, pendulous, leafy throughout
 the whole length except at the very base;
 inflorescence in one-flowered raceme.....20. *E. rigida*.
 AA. Stems relatively short, leaves near apex only.
 B. Inflorescence (pseudo) terminal.
 C. One (rarely two) flower.....21. *E. nutans*.
 CC. 4-7 flowers.
 D. 2 leaves; inflorescence usually longer
 than leaves, usually 5-7 flowers,
 sepals 3 cm.....22. *E. coronaria*.

- DD. 3 - 5 leaves, inflorescens usually shorter than leaves, normally four flowers, sepals 1,5 cm.....23. *E. ochracea* ¹).
- BB. Inflorescence lateral.
- E. Stems flattened towards apex; flowers glabrous.....24. *E. biflora*.
- EE. Stems fusiform, clavate or subcylindric, flowers white-tomentose.
- F. Stems fusiform to clavate, lip simple.....25. *E. cristata*.
- FF. Stems subcylindric, lip trilobed.....26. *E. truncata*.

X. *AERIDOSTACHYS*

- Stems erect, leafy throughout; inflorescens axillary, lip unlobed, straight.....27. *E. robusta*.

XII. *UROSTACHYA* ²

- A. Stems about 10 cm long, thickened and flattened towards the apex, leaves narrow, not more than 1 cm wide.....29. *E. carine*.
- AA. Stems more than 10 cm long, thickened evenly throughout the whole length; leaves more than 1 cm wide.
- B. Stems 1 cm in diameter; inflorescences many on both sides of stems.....30. *E. floribunda*.
- BB. Stems 2 - 3 cm in diameter; inflorescences few.....31. *E. saccifera*.

XIII. *HYMENARIA*

- A. Inflorescence much longer than or almost equal to stems.
- B. Inflorescence much longer than stems.

1) I have not seen this species.

2) For XI. *BAMBUSIFOLIA*, See p. 34

- C. Inflorescens glabrous, bracts
yellowish or pinkish; pedicels
2 - 2, 5 mm long.....32. *E. bractescens* & *var.*
- CC. Inflorescence pubescent, bracts
greenish, pedicels shorter.....33. *E. bipunctata*.
- BB. Inflorescence almost equal to stems.
- D. Stems usually compressed.
- E. Inflorescence densely flowered, on mature stems,
flower buds globose.
- F. Inflorescence oblong in profile.....34. *E. spicata*.
- FF. Inflorescence globose in profile.....35. *E. pumila*.
- EE. Inflorescence loosely flowered,
on new shoots; flower-buds
conical.....36. *E. acervata*
- DD. Stems not compressed.
- F. Inflorescence 2 - 3 flowers.....37. *E. wildiana*.
- FF. Inflorescence many-flowered.
- G. Inflorescence brown-pubescent.
- H. Inflorescence upper axillary....38. *E. amica*.
- HH. Inflorescence subbasal...39. *E. acutifolia*.
- GG. Inflorescence whitish-pubescent.....
40. *E. pubescens*.
- AA. Inflorescence much shorter than stems.
- I. Stems 10 cm long,
inflorescence erect.....41. *E. lancifolia*.
- II. Stems 15 cm or more long;
inflorescence horizontal.
- J. Bracts 6 - 7mm long, lip
tri-lobed.....42. *E. xanthocheila*.
- JJ. Bracts to 4 mm long, lip
not trilobed.....43. *E. tenuiflora*.

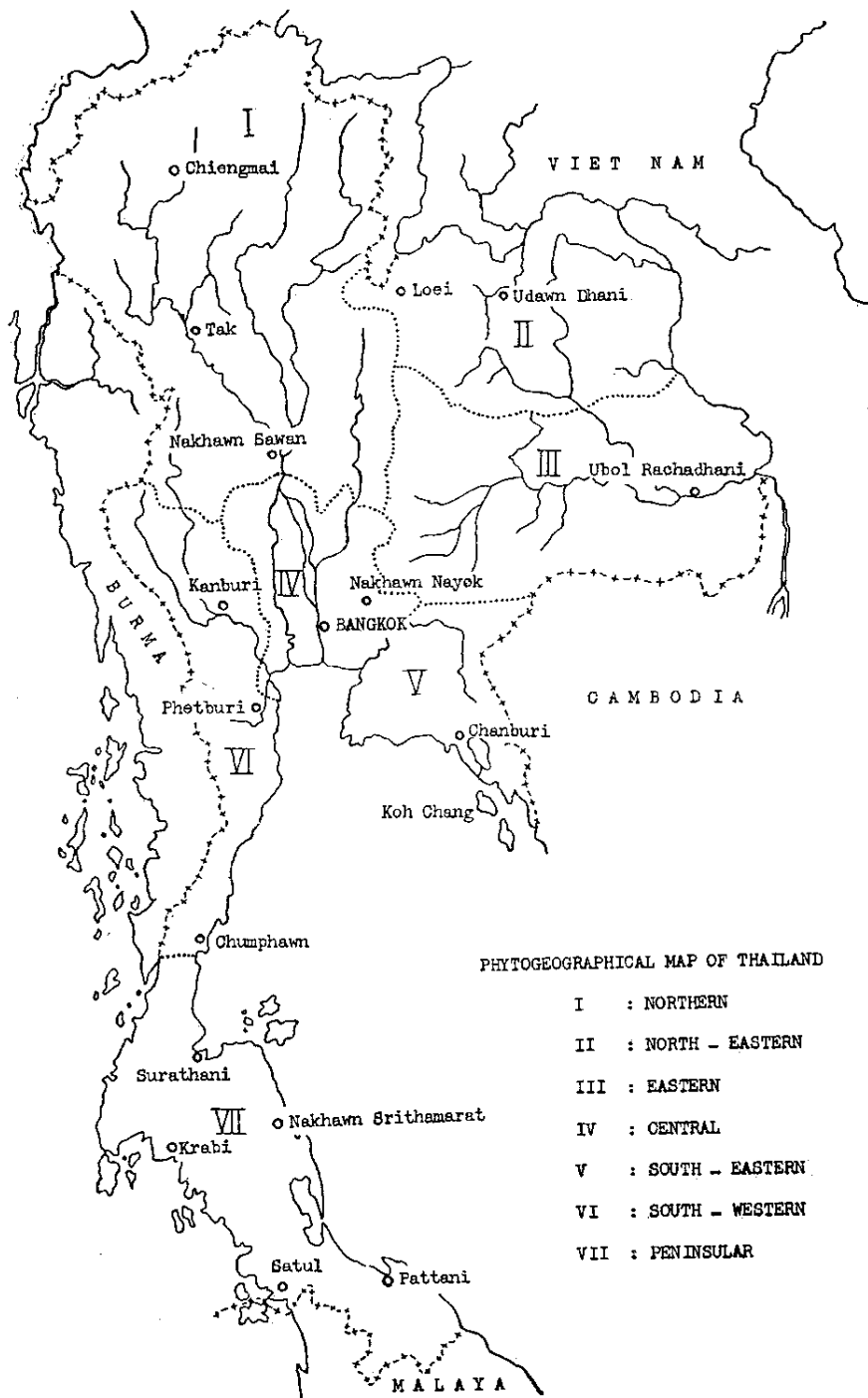
ENUMERATION OF THE SPECIES OF *ERIA* IN THAILAND

Below the Thai species of *Eria* are enumerated in the order indicated in the key above. Following the name of the species, reference is given of the most important works in which the plant has been described or nomenclatural problems discussed, but no attempt has been made of giving a complete series of references. Synonyms have been added only when these have been used by earlier authors for plants from Thailand. Generally, references have been limited to KRAENZLIN's monography (KRAENZLIN 1911), to GAGNEPAIN's treatment in Flore Générale de l'Indo-Chine (GAGNEPAIN 1933), and to HOLT-TUM's work on the Malayan orchids (HOLT-TUM 1957). The information of general distribution outside Thailand is normally based on these works.

Only when it is felt that supplementary information has been obtained through new collections in Thailand, such has been added. For the detailed description of the species, the reader is referred to the papers mentioned above or under each species. If a drawing has been included, it has been made after living material.

The localities in Thailand have been grouped together in seven geographical districts (see fig. 1). The split-up in these districts is not exclusively a matter of convenience; some attempt has been made in the limitation of the districts to give them some plant-geographical and ecological value. A fuller explanation of the limitation of the seven districts will be given in a later paper on the Thai orchids, which it is hoped will be published in this Bulletin during 1959, in the meantime the reader is referred to another paper by the author (SMITINAND 1958).

The transcription of the Thai names of localities into English is quite a controversial problem. In the present work no hard fixed system has been applied, but an effort has been



made to spell the same locality in the same way throughout. This means that earlier authors' names may have been considerably altered. It is the intention in the above mentioned future paper to give an alphabetic list of localities, including the different spelling of earlier authors and collectors.

A list of abbreviations used is given on page 42. Generally in the list of localities after each locality-name is in parenthesis given first the abbreviation for the collector, if known, followed by his specimen-number, if any, secondly the place, where the specimen is now kept, if known, and finally the authority on which the locality is cited, in cases where I have not seen the specimen myself. If found more than once in the same locality, this whole information is repeated within the same parenthesis after a semicolon. To give an example: "Chumpawn (KERR 354 BKK!K!; GT 1735 OG)" indicates, that at Chumpawn the species in question have been found by A.F.G. KERR (his number being 354), his specimens are kept at the Herbarium at Bang Khen (Bangkok), and in Kew, where I have seen it; furthermore it has been found by SEIDENFADEN and myself (our number 1735) and the specimen is kept living in the garden of the Danish Embassy in Bangkok.

I. *TRICHOTOSIA*

1. *Eria dasyphylla* PAR. & RCHB.F. in Trans. Linn.

Soc. XXX, p. 147, 1874. KRAENZLIN (1911, p. 138)

I: Mae Lao, Doi Hua Mot, 1250m (GARRETT 793 BKF! 802, K!; KERR 281 K!), Phu Langka 1340 m (TS 1756 BKF!), Doi Chiengdao (KERR BKK!K!), Doi Suthep (KERR 103,103 A, 256,257 K!; GARRETT 565 K!; GT 1932,1980 OG, CG; DB 2622 OG)

II: Phu Krading 1300 m (GS 938 OG)

VI: Wangkha 200 m (KERR 265 BKK!K!)

VII: Thungwa 50 m (KERR 481 BKK!)

Geogr. Distr.: Himalaya, Burma (ex KRZ. l.c.), Laos (ex KERR 1933, p. 233).

If the identification of the finds in distr. VI and VII is correct, it might be reasonable to assume that the *Eria rotundifolia* RIDL. mentioned by HOLTUM (1957, p. 360) to have been found once on Penang Hill (it is also mentioned by RIDLEY (1911, p. 195) as occurring at Prigi Tujoh, Bureau, in the Malayan Langkawi Islands), is actually identical with *E. dasyphylla*; HOLTUM indicates this possibility by adding, with a question-mark, *E. dasyphylla* as a synonym of *E. rotundifolia*.

2. *Eria ferox* (BL.) BL. in Mus. Bot. Lugd. Bat. II, p. 184, 1851. - KRAENZLIN (1911, p. 151), HOLTUM (1857, p. 359).

VII: Khao Kheo, Pattani, 700m (KERR 532, BKK! K!), Khao Kalakhiri, 900m (KERR 115, 559 BKK! K!).

Geogr. Distr.: Sumatra, Java, Borneo, Malaya (ex H. l.c.), Thailand.

3. *Eria rufinula* RCHB. F. in Hamb. Gartenz. XIX, p. 13, 1863. - KRAENZLIN (1911, p. 143, s.n. *Trichotomia rufinula* (RCHB. F.) KRZ.), GAGNEPAIN (1933, p. 360).

V: Dong Maduea 50 m (TS 1326 BKF), Khao Banthat (PUT 3048 BKK! K!), Dan Kao 3-400m (KERR 185 BKK! K!).

VII: Khao Nawng 400 m (KERR 440 BKK! K!).

Geogr. Distr.: India, Burma, Moluccas (ex G l.c.), Thailand.

4. *Eria velutina* LODD. in Bot. Reg. Misc. 86, 1840. - KRAENZLIN (1911, p. 140), HOLTUM (1957, p. 361), KRAENZLIN (1900, p. 9, s.n. *E. sp. aff. E. velutina*), WILLIAMS (1904, p. 369).

V: Koh Chang (SM ex KRZ. 1900; KERR 17 K!), Khao Sabab (GT 1648-52 OG FD).

VII: Huay Mot (KW SING), Bangbao (GS 320,609 OG), Phang Nga, between Thai Muang and Thung Maphrao (TS 1789 OG), Terutao (CU ex WILLIAMS l.c.), Khao Kheo, Songkla 300 m (KERR 625 BKK! K!), Adang 400 m (KERR K!), Chawng (TS 1814 OG).

Geogr. Distr.: Sumatra. Malaya (ex H, l.c.), Java. Borneo Tenasserim (ex KRZ. l.c.), Thailand.

5. *Eria helleri* HAWKES in Lloydia Vol. 20, No. 2, 1957. KRAENZLIN (1911, p. 140, s.n. *Trichotosia cristata* (RIDL.) KRZ.), HOLTUM (1957, p. 362, s.n. *E. cristata* RIDL.). VII: Terutao CU (ex RIDLEY 1911).

Geogr. Distr.: Malaya (Penang and Langkawi) (ex H, l.c.).

As stated earlier, I have not seen this species.

II. *CONCHIDIUM*

6. *Eria perpusilla* PAR. & ROHB. F. in Trans. Linn. Soc. Vol. 30, p. 148, 1859.—KRAENZLIN (1911, p. 20).

I: Doi Suthep 7-800 m (KERR 79 K!).

Geogr. Distr.: Malay Peninsula and Burma (ex K, l.c.), Thailand.

See the remarks on this species p. 9.

7. *Eria musicola* LINDL. in Journ. Linn. Soc. Bot. III, p. 47, 1859.—KRAENZLIN (1911, p. 20).¹

I: Doi Phakhao, SW.-slope 1550 m (GARRETT 670 K!BKF!), Doi Intanon 1500 m (KERR BKK!K!), Doi Suthep (TS 2618 OG).

V: Khao Kuap (PUT 2996 BKK!K!)

VII: Khao Soidao (KERR 870 K!)

Geogr. Distr.: India, Ceylon, Assam, Burma (ex K, l.c.).

8. *Eria exilis* HK. F. in Fl. Brit. Ind. Vol. V, p. 788, 1890.—KRAENZLIN (1911, p. 21), GAGNEPAIN (1933, p. 362, s.n. *E. microphyton* SCHLTR.)

I: Doi Suthep.: (HOSSEUS ex KRZ. l.c.).

Geogr. Distr.: India, Ceylon (ex K, l.c.), Thailand

See the remarks on this species p. 10.

III. *GONIORHABDOS*

9. *Eria javanica* (SW.) BL. in Rumphia p. 23, 1836.—KRAENZLIN 1911. p. 26), HOLTUM (1957, p. 377).

1) Future investigations may show that it would be more correct to place this species in the *Hymenaria*-Section.

I: Fang (GT 131, 144, 162, 224, 249, [509, 2089 OG], Chiengmai 300 m (KERR 354 K!).

VII: Banag Sta 50 m (KERR 104 K!).

Geogr. Distr.: From Sumatra to the Philippines (ex H, l.c.), Laos (GS in manusc.)

The plants collected in Fang (as also a plant collected by SEIDENFADEN in Col den Din, Laos) seems to be slightly smaller than the Malayan, the following measurements can be given (in, parenthesis is added the figures given by HOLTUM l.c.): pseudobulbs 3-6 cm tall (5-7 cm), leaves 20-30 cm long (50 cm) and 3-4,5 cm wide (6 cm). Inflorescence 30-40 cm (to 60 cm), flowers about 3 cm (4 cm) wide. Upper sepal max. 27 mm (28 mm), usually 24 mm, lip 13-14 mm (15 mm). The drawing in fig. 2 is based on a specimen from Laos. Considering the large gap which at least at present seems to exist between the North Thailand and Peninsular occurrences, the northern plant may well be considered a variety, but further investigations are necessary.

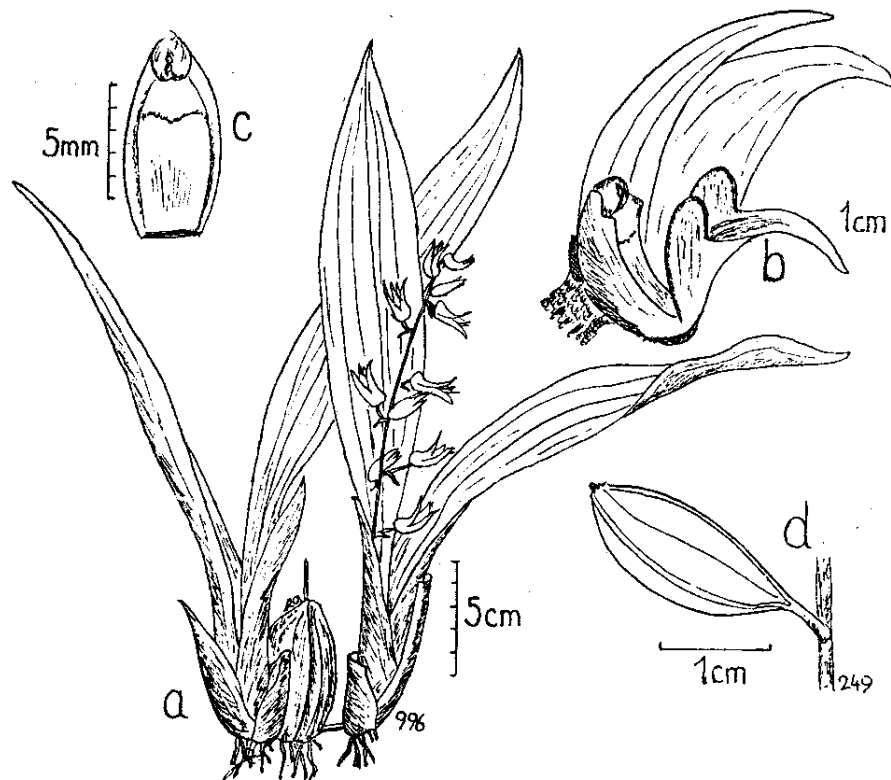


Fig. 2. *Eria javanica* (SW.) Bl. a. whole plant, b. flower, sideview, dorsal and lateral sepals and one petal removed, c. column, frontview, d. fruit. Sidelobes of lip red along edges and a transversal red ridge on anther. Sept. 10, 1957. Col den Din, Laos.

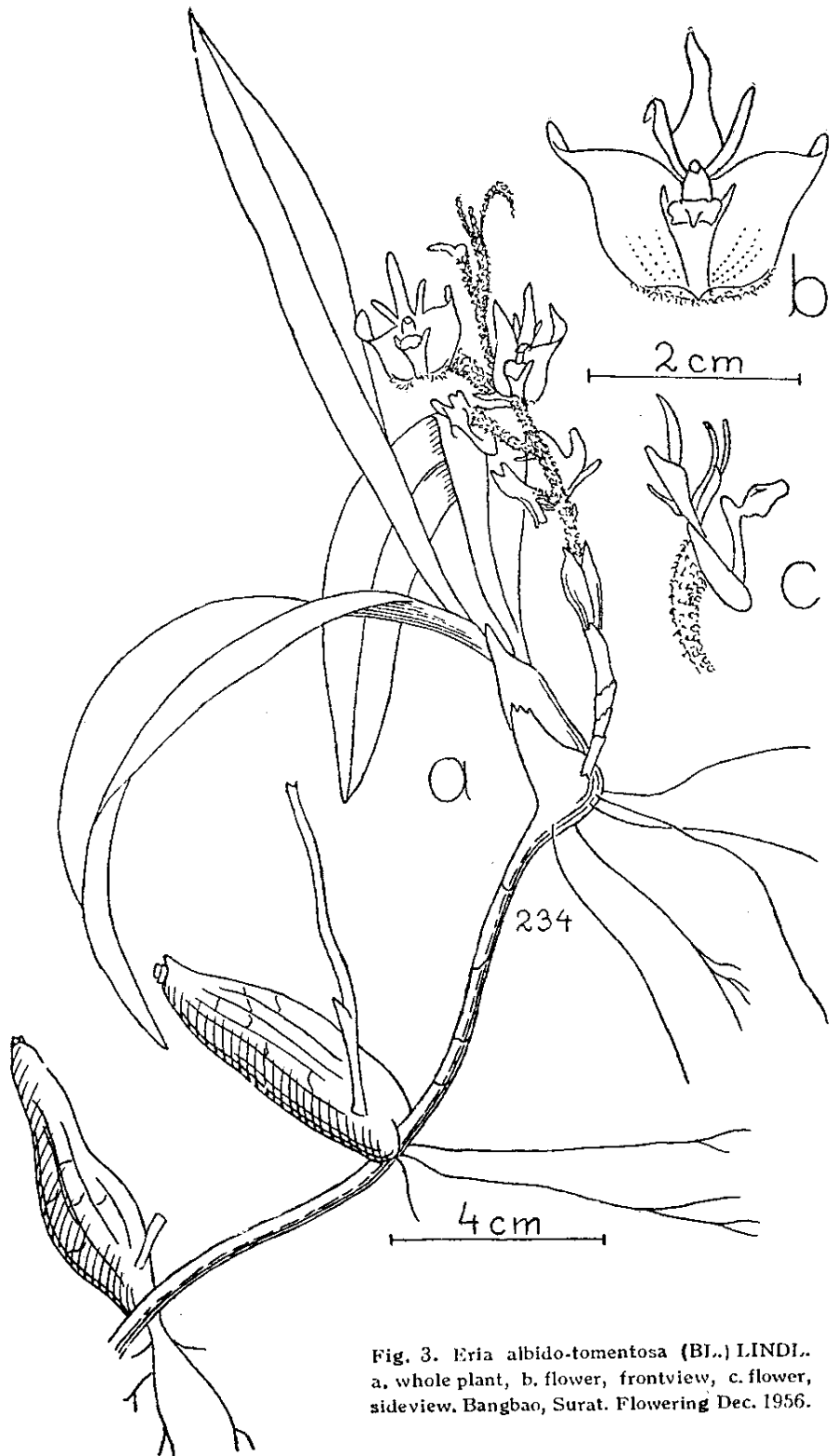


Fig. 3. *Eria albido-tomentosa* (Bl.) Lindl.
a. whole plant, b. flower, frontview, c. flower,
sideview. Bangbao, Surat. Flowering Dec. 1956.

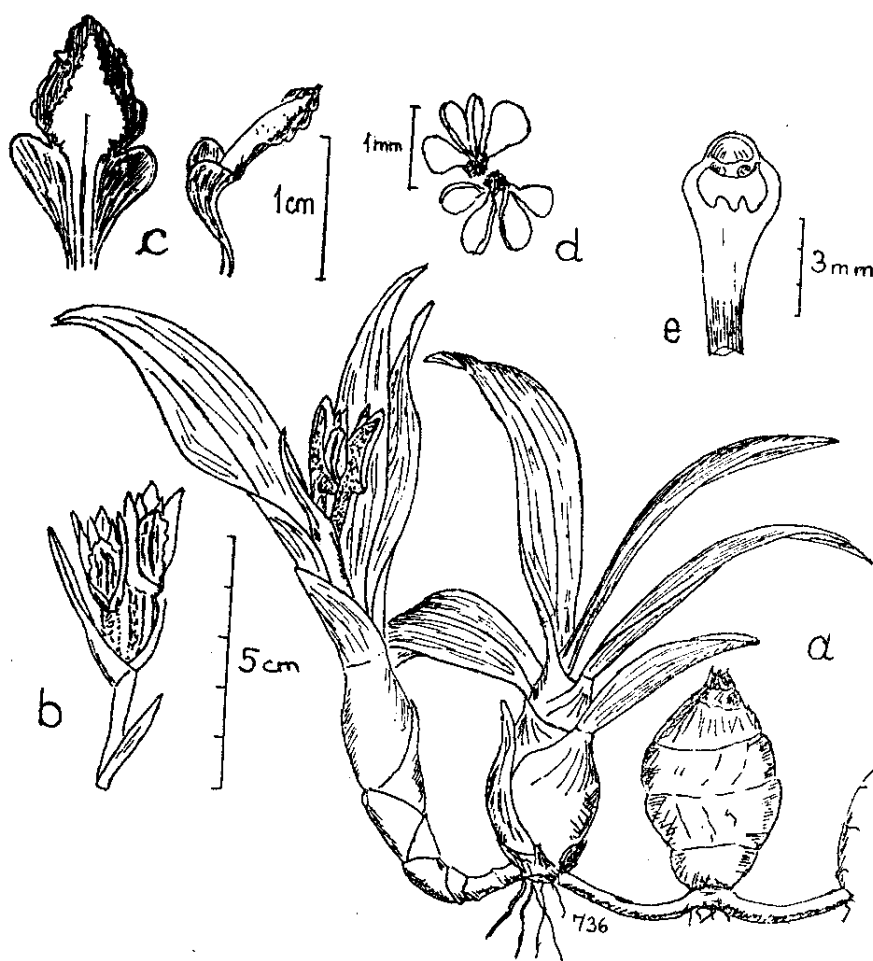


Fig. 4. *Eria albido-tomentosa* (BL.) LINDL. a. whole plant, b. inflorescence, c. lip, front and sideview, d. pollinia, e. column. Phu Krading. Flowering in Bangkok June 1958.

10. *Eria albido-tomentosa* (BL.) LINDL. in Gen. & Sp. Orch., p. 66, 1830.—KRAENZLIN (1911, p. 50), GAGNEPAIN (1933, p. 347), HOLTUM (1957, p. 375). As stated on p. 11, I have included here *Eria flava* LINDL. in Wall. Cat. 1973 e.p. 1828.—KRAENZLIN (1911, p. 55), GAGNEPAIN (1933, p. 360), and *E. flava* var. *lanata* HK. F. in Fl. Brit. Ind. Vol. V, p. 801, 1890.—KRAENZLIN (1900, p. 9, 1911, p. 55).

II: Nawng Khai (KERR 134 BKK! K!), Phu Krading 1200 m (KERR 906 BBK!; DEE 459 BKF!; GS 731, 736, 741, 891 OG).

III: Nawng Ilom (PUT 88 BKF!), Khao Phra Vilarn (GS305, 306 OG).

IV: Nakhawn Nayok (GS 1067, 1103, 1105, 1118, 1138, 1139, 1153, 1166, 1174, 1201 OG).

V: Huay Raeng 5 m (KERR 754 BBK! K!), Khao Saming (PUT 510 BBK! K!), Khao Kuap 600 m (KERR 765 BBK! K!), Phliu (GS 35/2792 OG, dBP; GS 1742, 1756, 1757 OG), Makham (GT 1029, 1360, 1392, 1393, 1394 OG FD), Makham to Soidao (GT 1406, 1407, 1408, 1462, 1474, 1475, 1484, 1485 OG GG), Soidao (GT 1572, 1573 OG FD), Khao Sabab (GT 1620, 1621, 1667 OG FD), Klawng Phrao, Koh Khadat, Koh Saket (SM ex KRZ. l.c.).

VI: Chumphawn (KERR 351 BKK! K!).

VII: Wat Suea Um (GS 35/2208 dVSS K!), Koh Samui (KERR 397 BKK! K!), Nawng Khaw (K!) Khao Rau (ERYL SMITH 532 K!), Kapiat (SNAN 509 BKF!), Khuan Pho 20 m (KERR K!), Adang (KERR 492 BKK! K!), Yanyao (HANIFF 2041 SING), Thung Kha (SING), Takuapa (CU ex Ridley 1911), Langkawi (CU ex WILLIAMS 1904), Between Thai Muang and Thung Maphrao (TS 1807 OG), Thale Sawng Hawng (TS 1810 OG), Bangbao (GS 234 XX).

Geogr. Distr.: Java, Sumatra, Perak northward to Tenasserim and Thailand (ex H,l.c.), Laos, Annam, Cambodia, Cochinchina (ex G, l.c.)

This species seems to be the most common *Eria* in Thailand, but it is remarkable, that it has not yet been recorded from the northern provinces. It is highly variable, and future investigations may show that a split up in well defined varieties is possible. As an example is in fig. 3 shown a specimen from the peninsula, flowering in December (most of our plants flowered in January), and in fig. 4 a plant from the northeast (Phu Krading 1300 m), flowering in May - June. The specimens from Phu Krading differs from the majority of plants from other localities, i.e. in having a much shorter inflorescence appearing on top of a bulbous stem with three developed ordinary leaves. The scape is not hairy.

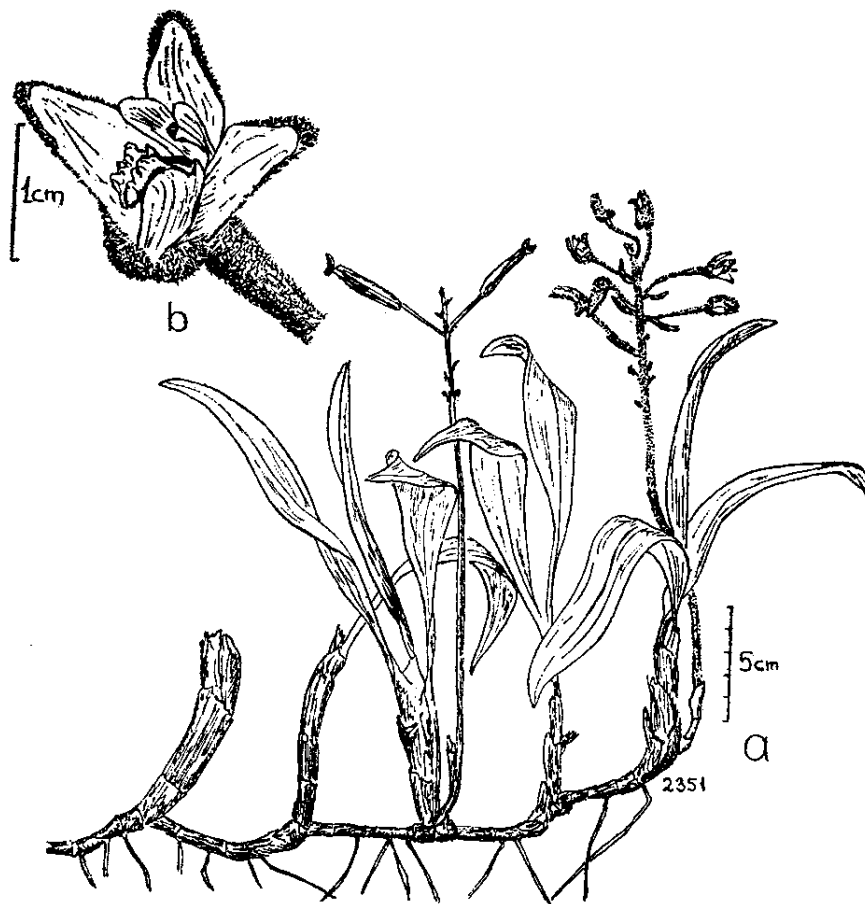


Fig. 5. *Eria tomentosa* (RETZ.) HK.F a- whole plant, b. flower. Doi Inthanond. Flowering May 1958.

11. *Eria tomentosa* (RETZ.) HK. F. in Fl. Brit. Ind. Vol. V, p. 803, 1890. – KRAENZLIN (1911, p. 56.), Gagnepain (1933, p. 347). Included here (cf. p. 10) *Eria fuerstenbergiana* SCHLTR. in Orchis 8, p. 132, 1914.–

I: Fang 750 m (KERR 85 K!), Doi Inthanond (DB 2350, 2351, 2353 OG) Chiangmai (HOSSEUS ex SCHLTR. l.c.).

II. Nawng Khai 200 m (KERR 134 BKK!), Phu Krading K1200 m (ERR 906 BKK!).

VI: Wang Kha 200 m (KERR 280 BKK! K!), (DEN HOED 911 K!).

THE GENUS *ERIA* LINDLEY (ORCHIDACEAE) IN THAILAND 29

VII: Koh Tao (KERR K!), Bang Son (KERR 640 K!).

Fig. 5 is a plant from Doi Inthanond flowering in May.
Geogr. Distr.: Himalaya, Tenasserim, Hainan (ex KRZ. l.c.),
Moluccas, Laos, Annam (ex G. l.c.).

12. *Eria ornata* (BL.) LINDL. in Gen. & Sp. Orch. 66,
1830. — KRAENZLIN (1911, p. 50), HOLTUM (1957, p. 375).

VII: Krabi (CU ex RIDLEY 1911).

Geogr. Distr.: From Sumatra and Malaya to the
Philippines (ex H. l.c.), Thailand.

As stated earlier, I have not seen this plant.

V. CALLOSTYLIS

13. *Eria pulchella* LINDL. in Wall. Cat. 7407, 1828. —
KRAENZLIN (1911, p. 59), GAGNEPAIN (1933, p. 335, *s.n.*
Tylostylis rigida BL.), HOLTUM (1957, p. 372).

I. Nannao 600 m (TS 527 BKF!), Doi Wao (KERR 1, 6 K!)
Chiengdao 1200 m (KERR K!), Pang Tawn (PUT 3888, 3822 K!)
Doi Suthep (KERR K!).

II: Phu Kheo 1000 m (KERR 913 K!), Phu Theng
1000 m (KERR 159 K!), Phu Krading 1200 m (KERR 139 K!; GS
679, 725 OG).

VII: Koh Tao (KERR 642 K!), Thap Phui 100 m (KERR
802 K!), Thung Nui 100 m (KERR 547 K!), Adang 600 m (KERR
496 K!).

Geogr. Distr.: Malaya, Sumatra to Celebes (ex H. l.c.),
Thailand, Tenasserim.

VI. STRONGYLERIA

14. *Eria pannea* LINDL. in Bot. Reg. Misc. 64, 1842. —
KRAENZLIN (1911, p. 48), GAGNEPAIN (1933, p. 343),
HOLTUM (1957, p. 380).

I: Pang Tawn (PUTT 3818 K!), Doi Chiengdao
(PLOENCHIT 1188 BKF!), Doi Suthep (KERR 32, 32A K!; TS
136, BKF!; GT 1966, 1967, 2002 OG FD CG: GT 2207, 2208 OG;

DB 2359, 2360 OG), Doi Inthanond 1000 m (DB 2347 XX), Huay Ton Nun 1230 m (GARRETT 777 BKF!), Wieng Papao 1240 m (GARRETT 761 K!).

II: Phu Krading 1300 m (GS 697 OG), Tham Nam (DIN 35 BKF!), Tham Saw (TS 368 BKF!), Phu Kheo 1000 m (KERR 917 K!).

V: Khao Kuap (PUT 2917 BKK! K!).

Geogr. Distr.: From Eastern Himalaya and Southern China southwards to Malaya and Sumatra (H, l.c.).

15. *Eria globifera* ROLFE in Gard. Chron. II, p. 449, 1905. — KRAENZLIN (1911, p. 58), GAGNEPAIN (1933, p. 346, *s.n.E. langbianensis*, cf. SUMMERHAYES 1949, t. 83).

V: Khao Kuap 800 m (KERR 777 K!).

Geogr. Distr.: Annam (SUMMERHAYES l.c.), Thailand.

16. *Eria panniculata* LINDL. in Wall. Pl. As. Rar. I, 32, t. 36, 1830. — KRAENZLIN (1911, p. 125), GAGNEPAIN (1933, p. 349).

I: Pang Tawn (PUT 3920 BKK! K!).

II: Tham Saw 1300 m (TS 1080, 369 BKF!), Kawk Meei (DIN 103 BKF!); KERR 144 BKK! K!), Huay Namdan 900 m (KERR 446 BKK! K!), Phu Krading 1300 m (GS 688, 714, 717, 721-23 OG).

V: Khao Kuap (KERR 772A BKK! K!).

Geogr. Distr.: Himalaya, Java, Sumatra, Borneo, Sarawak (ex KRZ, l.c.), Annam, Laos, Cambodia (ex G, l.c.) Thailand.

17. *Eria ridleyi* ROLFE in Journ. Linn. Soc. 42, p. 150, 1914. — HOLTUM (1957, p. 366).

V: Khao Kuap (KERR 876, BKK! K!).

VII: Khao Luang 600 m (TS 897 BKF!; 1600 m: KERR 591 BKK! K!), Khao Kalakhiri 900 m (KERR 556 BKK! K!), Khao Kheo 700 m (KERR K!), Gunong Ina 1200 m (KERR 82 K!).

Geogr. Distr.: Malaya (ex H, l.c.) Thailand.

VIII. CYMBOGLOSSUM

18. *Eria longifolia* HK. F. in Fl. Brit. Ind. Vol. V, p. 790, 1890. — KRAENZLIN (1911, p. 114), HOLTUM (1957, p. 381).

VII: Khao Kalakhiri 900 m (KERR 566 K!), Gunong Ina 1200 m (KERR 85 K!).

Geogr. Distr.: Borneo Sumatra, Malaya (ex H, l.c.) Thailand.

19. *Eria stricta* LINDL. in Coll. bot. t. 41B, 1821. — KRAENZLIN (1911, p. 42), GAGNEPAIN (1933, p. 349). Included here (cf. p. 11) *E. siamensis* SCHLTR. in Fed. Rep. II, 1906. — GAGNEPAIN (1933, p. 348).

I: Pang Tawn (PUT 3909 BKK! K!), Doi Inthanond 1900 m (KERR BKK!, GARRETT 630 BKF!), Doi Suthep (KERR 70 (Type of *E. siamensis* SCHLTR.), 70A, BKK! K!; NC 328 OG; GT 1956, 1960, 1961, 2133, 1962, 1999 OG GG CG; DB 2209, 2210 OG; HOSSEUS 426 ex SCHLTR (1906, p. 133); TS 160 BKF!).

II: Phu Krading 900 m (KERR 900 K!).

V: Khao Sabab (KERR K!).

VII: Khao Phawta Luang Khaeo 900-1300 m (KERR 697 BKK! K!), Phanom Bencha (KERR 808 K!), "Westcoast 2300 m" (MURTON ex KRAENZLIN l.c.).

Geogr. Distr.: Himalaya, Burma, Thailand (ex KRZ. l.c.), Annam (ex G, l.c.). See fig. 6

IX. CYLINDROLOBUS

20. *Eria rigida* BL. in Mus. Lugd. Bat. II, p. 183, 1856. — KRAENZLIN (1911, p. 160), HOLTUM (1957, p. 371).

VII: Huay Yawt (KERR K!), Yan Yao 400 m (KERR K!), Khao Khaow (RABIL 343 K!), Thung Wah 50 m (KERR 480 K!), Thung Nui 100 m (KERR 546 K!), Banang Sta 200 m (KERR 37 BKK! K!), Island w. of Putan Panji (HANIFF

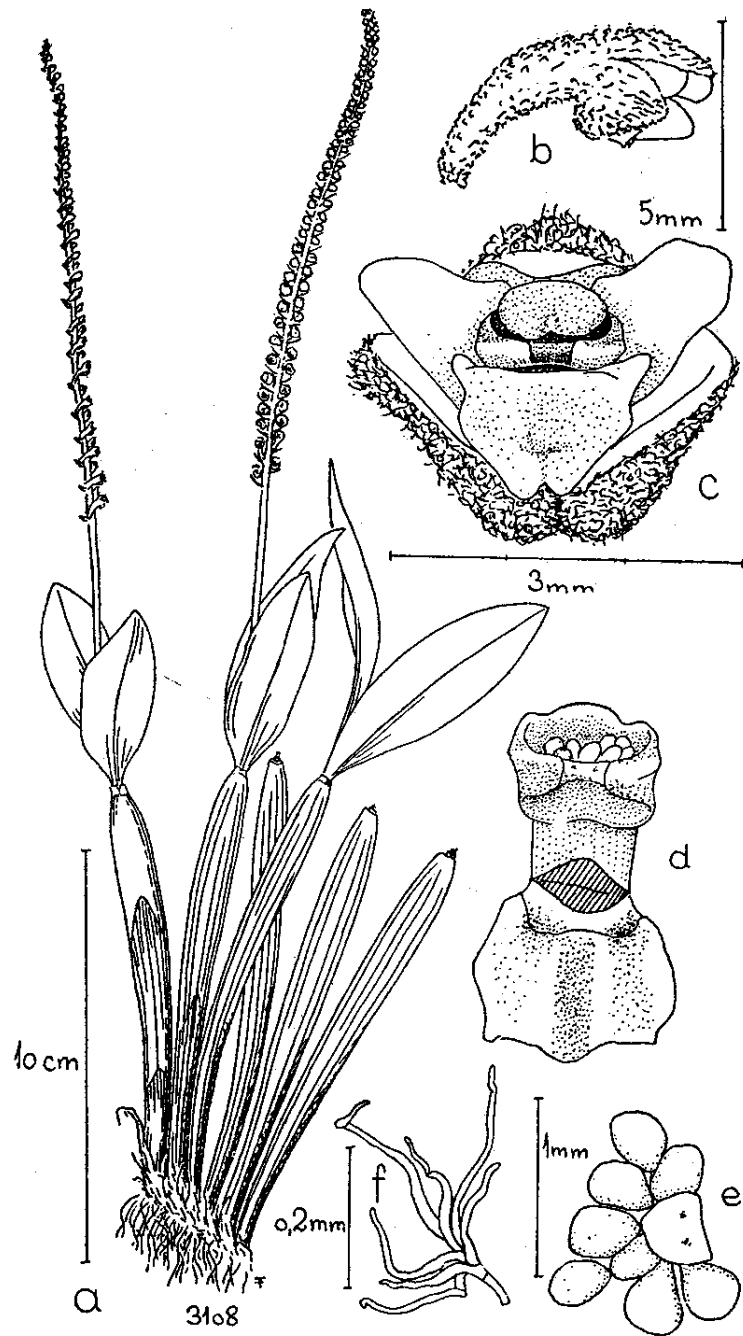


Fig. 6. *Eria stricta* LINDL. a. whole plant, b. flower, sideview, c. flower frontview, d. column, e. pollenia, f. hair on scape.

4078 SING), Langkawi (CU ex RIDLEY 1911, s.n. *E. pendula* RIDL).

Geogr. Distr.: Borneo, Sumatra, Malaya (ex H, l.c.) Thailand.

21. *Eria nutans* LINDL. in Bot. Reg. Misc. 83, 1840. — KRAENZLIN (1911, p. 100), Holttum (1957, p. 368).

VII: Khao Kalakhiri 900m (KERR 566 BKK! K!).

Geogr. Distr.: Borneo, Sumatra, Malaya (ex H, l.c.) Thailand.

22. *Eria coronaria* (LINDL.) ROHB. F. in Walp. Ann. Vol. VI, p. 272, 1861. — KRAENZLIN (1911, p. 53).

I: Doi Suthep 700m (KERR 319 K!).

Geogr. Distr.: Sikkim (ex KRZ. l.c.), Thailand.

23. *Eria ochracea* ROLFE in Kew Bull. 1909. — KRAENZLIN (1911, p. 150). HOLTUM (1957, p. 367).

VII: Batu Bunga (HANIFF ex RIDLEY 1911, p. 195).

Geogr. Distr.: Endemic.

As stated above, I have not seen this species.

24. *Eria biflora* GRIFF. in Notulae III, p. 302, 1851. — KRAENZLIN (1911, p. 98), HOLTUM (1957, p. 372).

I: Loi Pha Khao (KERR (F. D. RYAN) 321 K!).

VII: Khao Soi Dao (KERR K!), Thap Chang 200m (TS 804 BKF!), CHAWNG (TS 1806, 2134 OG)

Geogr. Distr.: From Sikkim southwards to Sumatra and Java (ex H, l.c.)

25. *Eria cristata* ROLFE in Kew Bull. p. 139, 1892. — KRAENZLIN 1911, p. 98).

I: Wieng Papao ((GARRETT 762 K!).

Geogr. Distr.: Burma (ex KRZ. l.c.) Thailand.

26. *Eria truncata* LINDL. in Journ. Linn. Soc. III, p. 58, 1859.— KRAENZLIN (1911, p. 102). Here included (cf. p. 10).

E. chrysobracteata SCHLTR. (1912, p. 7), cf. GAGNEPAIN (1933, p. 352), and *E. trilammellata* ROLFE (1913, p. 141) cf. GAGNEPAIN (1933, p. 365).

I: Pui 1600m (TS 183 BKF!; KERR 166, 166A K1), Doi Nang Kha (PUT 3723 K1), Chiengdao 1200m (DB 1888, 1889, 1890, 1891 OG).

Geogr. Distr.: Tenasserim (ex KRZ. l.c.), Laos (ex KERR 1933, p. 232), Thailand.

ROLFE (1913, p. 141), gives the locality for the type of *E. trilammellata* as Bangkok, collected by Roebelen; it is to be presumed when considering the distribution of the other known localities that his specimens must have been brought to Bangkok from the mountains in the North.

X. AERIDOSTACHYS

27. *Eria robusta* (BL.) LINDL. in Gen. & Sp. Orch. p. 69, 1830. — KRAENZLIN (1911, p. 53), HOLTUM (1957, p. 381).

VII: Gunong Ina 1100m (KERR 84 K1), Khao Kalakhiri 900m (KERR 565 K1).

Geogr. Distr.: Widely distributed in Malaysia (ex H, l.c.), Thailand.

IX. BAMBUSIFOLIA

28. *Eria bambusifolia* LINDL. in Journ. Linn. Soc. III, p. 61, 1859. — HOOK. F., Fl Brit. Ind. V, p. 805, 1877; KING & PANTL., in Ann. Bot. Gard. Cal. VIII, p. 119, t. 163, KRAENZLIN (1911, p. 118).

II: Phu Luang, Loei, ca. 1100m (DEE BUNPHENG 981, BKF!).

Geogr. Distr.: Sikkim, Khasia, Thailand.

This species is not mentioned in LECOMTE's Flore de l'Indo-Chine or in GRANT's Orchids of Burma. The measurements of the Thai specimen are between *E. bambusifolia* LINDL. and *E. crassicaulis* HK.F., the colour is almost identical with

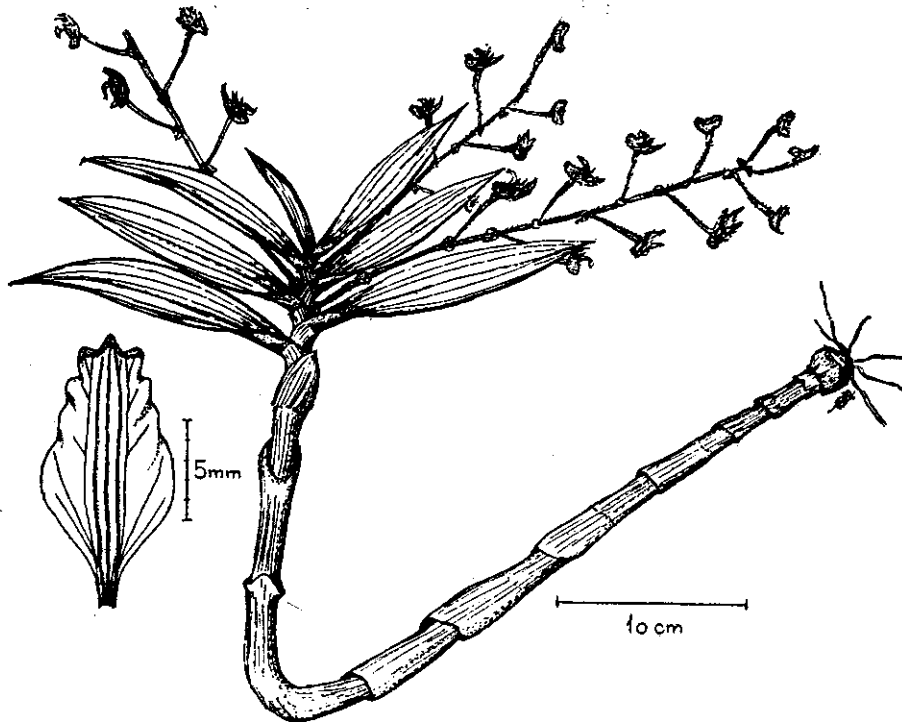


Fig. 7. *Eria bambusifolia* LINDL. whole plant and lip.

the description given by HOOKER (l.c.). After studying the Thai plant one cannot help to believe that the two species are identical. HOOKER describes the lip of *E. crassicaulis* as emarginate, but the profile is almost the same as *E. bambusifolia*.

This is a quite unique *Eria* and very hard to place in any of the sections. KRAENZIN (l.c.) places it in the section *Eriura* LINDL., while HOOKER (l.c.) places it in the section *Bambusifolia*, and I prefer to follow the latter. Its position is between the sections *Cymboglossum* and *Cylindrolobus*. (Fig. 7).

XII. UROSTACHYA

29. *Eria earine* RIDL. in Journ. Fed. Mal. St Mus. Vol. VI, p. 178, 1915. — HOLTUM (1957, p. 383).

VII: Khao Luang (SNAN 241 BKF!), Kampuan (TS 785, 2135 OG).

Geogr. Distr.: Malaya, Sumatra (ex H, l.c.), Thailand.

30. *Eria floribunda* LINDL. in Wall. Cat. n. 7408, 1828. - KRAENZLIN (1911, p. 120), GAGNEPAIN (1933, p. 351), HOLTUM (1957, p. 384).

VII: Khao Kheo 700m (KERR 637 K! 530 BKK! K!), Ban Kra-yae 50m (KERR 411 K!), Khao Luang 1400m (KERR 590 K!), Thap Chang 200m (TS 798, 955 BKF!), Phanom Bencha 1300m (KERR 814, BKK! K!), Kasum (CU SING), Terutao (CU SING).

Geogr. Distr.: Borneo, Sumatra, Malaya (ex H, l.c.), Annam (ex G, l.c.), Tenasserim, (ex HOOKER 1890, p. 792), Thailand.

31. *Eria saccifera* HK. F. in Fl. Brit. Ind. Vol. V, p. 797. - HOLTUM (1957, p. 387).

VII: Khao Luang (PLOENCHIT 420 BKF!).

Geogr. Distr.: Borneo, Sumatra, Malaya (ex H, l.c.), Thailand.

XIII. HYMENARIA

32. *Eria bractescens* LINDL. in Bot. Reg. Misc. 18, 1841. - (KRAENZLIN 1911, p. 88), GAGNEPAIN (1933, p. 354), HOLTUM (1957, p. 388).

I: Fang (GT 2033, 2084, 2092 OG), Mae Hawng Sawn (GT 2432, 2468, 2544, 2545, 2546 OG) Payao (TS 168 OG).

V: Makam (GT 1343-45 OG), Khlung 50m (KERR 197 BKK! K!)

VI: Wangkha 200m (KERR 266 BKK! K!), Sai Yoke (KERR K!).

VII: Thai Muang (TS 1771, 1772 OG), Chawng (TS 1840 OG), Tapli (KLOSS ex RIDL.), Koh Bang Ben (KERR 684 K!), Langkawi (CURTIS ex RIDL.)

Geogr. Distr.: Sumatra and Malaya to the Philippines (ex H, l.c.), Mergui, Andamans, Sikkim (ex KRZ. l.c.), Thailand, Laos, Cambodia (ex G, l.c.).

32a. *Eria bractescens* LINDL. var. *affinis* (GRIFF.)
HK.F. in Fl. Brit. Ind. Vol V, p. 797, 1890.—KRAENZLIN
(1911 p. 88).

I: Doi Suthep 1000-1600m (KERR 164 K!), same, 450m
(KERR K!).

II. Phu Wieng 200m (KERR 951 K!)

III. Khemarat 100m (KERR 151 BKK! K!).

VI. Wangkha 200m (KERR 289 K!). "collected on a
journey from Tavoy to Bangkok (CHANDLER K!)

VII. Takuapa (KERR 727 BKK! K!), Sak, under 50m
(KERR 836 BKK! K!), Kuanpho 20m (KERR 469 BKK! K!)

33. *Eria bipunctata* LINDL. in Bot. Reg. Misc. 83, 1841.—
KRAENZLIN (1911. p. 109)

I: Doi Suthep (KERR 356 (1560m), 279 (1700m) K!)

Geogr. Distr.: KRAENZLIN (l.c.) says Khasya and
Java, as far as I have been able to ascertain, later botanists do
not record it from Java.

34. *Eria spicata* (D. DON) HAND.-MAZZ. in Symb. Sin.
Pt. 7, p. 1352, 1936.—KRAENZLIN (1911, p. 110, s.n. *E. conval-*
larioides LINDL.), GAGNEPAIN (1933, p. 359, s.n. *E. con-*
vallarioides).

I: Doi Pha Khao 1580m (GARRETT 671 BKF! K!), Doi
Suthep (ex HOSSEUS, 1911; KERR 232 K!, GT 1306, 1936, 1984
OG), Fang (TS 2046, 2051 GO), Doi Inthanond (KERR K!), Pha
Ngaem (KERR 496 BKK! K!).

V: Khao Sabab (GS 35/2964 dBP CG).

Geogr. Distr.: Himalaya, India, Sikkim, Tenasserim (ex
KRZ. l.c.), Laos Annam (ex G)

35. *Eria pumila* LINDL. in Wall. Cat. 1972, 1828.—
KRAENZLIN (1911, p. 98)

I: Doi Suthep 800-1700m (KERR 232 K!).

Geogr. Distr. : Moulmein (ex KRZ. l.c.), Thailand.

This species is very close to *E. spicata*.

36. *Eria acervata* LINDL. in Paxt. Fl. Gard. I. p. 170, 1850.—KRAENZLIN (1911, p. 61)

I: Doi Yao 800m (KERR BKK!K!), Huay Pong Dam 500m (KERR K!), Doi Suthep 500-830m (KERR 38 K!; DB 2405 OG), Sok Luek 900m (TS 2707 BKF!), Mae Hawng Sawm (GT 2431 OG), Pangmo (GT 2584 OG), Chiengdao 1100m (TS 1860 OG)

VI: Hin Dat (PUT 93 BKK!K!)

VII: Krawp Kraep 100m (KERR 434 BKK!K!), Pang Nga (CU SING).

The plant in fig. 8 is from Doi Chiengdao 1100m, flowering in May.

37. *Eria Wildiana* ROLFE in DOWNIE: Kew Bull. p. 377. 1925.—GAGNEPAIN (1933, p. 365).

I: Doi Chiengdao 1650-1800m (KERR 331, PUT 345 BKK!)

Geogr. Distr. : Endemic.

See remarks on this species on page 11

38. *Eria amica* RCHB. F. in Xen. Orch. II 162 t. 168 1870.—KRAENZLIN (1911, p. 86), GAGNEPAIN (1933, p. 350. s.n. *E. confusa* HK. F.).

I: Doi Suthep (KERR 171 K!), Phu Huat (KERR 395K!).

II: Phu Krading 1200m (KERR 142 BKK!; K!; GS 674, 703, 743 OG), Tham Saw 1300m (TS 355, 1083 BKF!), Phu Khio 1000m (KERR K!).

V: Makam to Soidao (GT 1523 OG).

Geogr. Distr. : Sikkim (ex KRZ. l.c.), Thailand

39. *Eria acutifolia* LINDL. in Bot. Reg. 42, Misc. 38, 1842, KRAENZLIN (1911, p. 103).

This species is said (in KRZ. l.c.) to have been brought to Europe from Thailand by CHRISTY. HOOKER

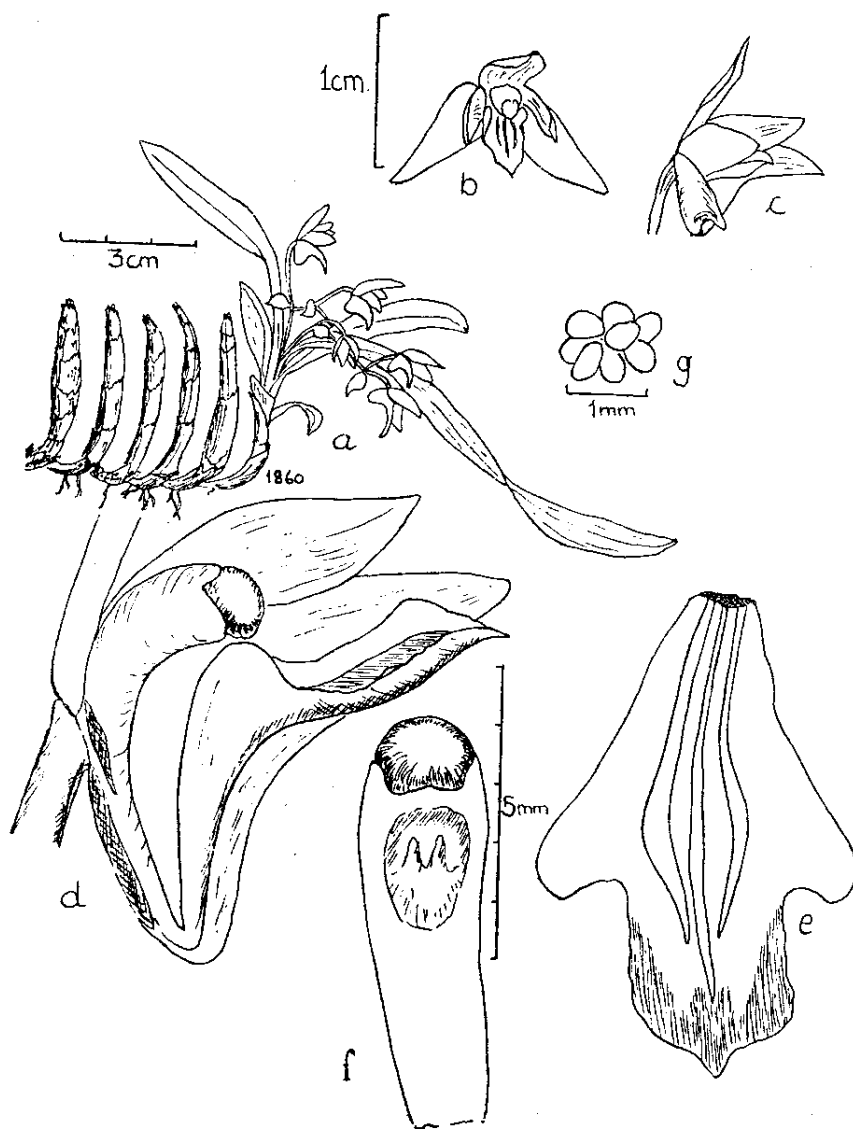


Fig. 8. *Eria acervata* LINDL. a. whole plant, b,c and d. flower, e.lip flattened out, f. column, g. pollinia.

(1890, p. 800) has not seen the plant, he states, that it has been brought to Loddiges Garden from India. In Kew Herbarium there are specimens said to be from India; the specimen from Thailand supplied by the Bang Krabue Nursery, Bangkok, is represented by one raceme only.

40. *Eria pubesens* WIGHT in Ic. Pl. t. 1634, 1856.—KRAENZLIN (1911, p. 64). Here included (cf. p. 10) *E. sutepensis* ROLFE (DOWNIE 1925, p. 376), GAGNEPAIN (1933, p. 353)

I: Doi Suthep (KERR 257 (Type of *E. sutepensis*) K!; GT 1950, 1958, 1968, OG, 1994, 1995, 2003 CG), S. of Denchai (GT 200 OG), Chiengdao 1600m (GT 1907, 1908 OG), Doi Inthanond 1430m (GARRETT 416 K!)

II: Phu Krading (TS 2115 OG)

Geogr. Distr.: Nilgherrie (ex KRZ. l.c.), Thailand.

41. *Eria lancifolia* H.K.F. in Fl. Brit. Ind. Vol. V, p. 804, 1890.—KRAENZLIN (1911, p. 69) HOLTUM (1957, p. 392).

VII: Koh Pha Ngan (PUT 1178 BKK!K!)

Geogr. Distr.: Malaya (ex H, l.c.) Thailand.

42. *Eria xanthocheila* RIDL. in Mat. Fl. M. P. I, p. 102, 1907.—HOLTUM (1957, p. 393).

V: Khao Kuap (KERR 851 BKK!K!), Khao Klua (TS 1023 OG), Cholburi (COLLINS K!)

Geogr. Distr.: Java, Sumatra, Borneo, Malaya(ex H, l.c.), Thailand.

See fig. 9. The measures of the flowers of the specimen sketched (Khao Klua, TS 1023), are slightly smaller than those given by HOLTUM (l.c.), and the sepals and petals are pink-veined. HOLTUM (l.c.) mentions a similar form from Sat River.

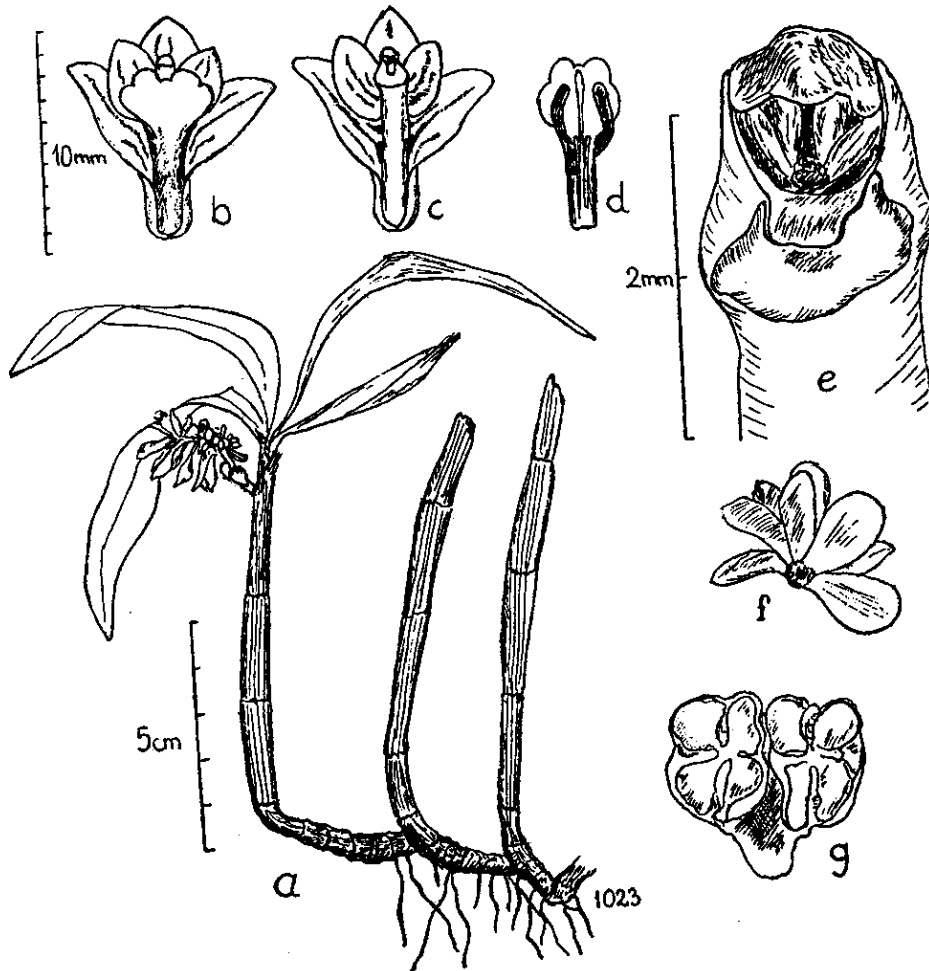


Fig. 9. *Eria xanthocheila* RIDL. a. whole plant, b. flower, c. flower, lip removed, d. lip, e. column, f. pollinia, g. anther cap.

43. *Eria tenuiflora* RIDL. in Journ. Linn. Soc. Vol. 32, p. 291, 1896.—KRAENZLIN (1911, p. 77), HOLTUM (1957, p. 393)

V: Khao Kuap 600m (KERR 770 K!), Phang Nga (CUSING).

Geogr. Distr.: Java, Sumatra, Borneo, Malaya (ex H, l.c.), Thailand.

ABBREVIATIONS

I. Collectors :

CU; Curtis	GS: G. Seidenfaden
DB: Danish Botanists 1958	GT: do. with author
DEE: Forest Dept.-collector	KW: Kingdon Ward
DIN: " " "	NC: Native collectors
PUT: Kerr's Siamese collector	RABIL: do.
SNAN: Forest Dept. collector	TS: author's collections

II: Places, where specimens are at present kept :

<i>Herbarium material</i>	<i>Living material</i>
BKK: Herb. Bang Khen, Bangkok	CG: Botanical Gardens Copenhagen
BKF: Herb. Forest Dept. "	FD: Forest Dept. Bangkok
K: Kew Herbarium	GG: Goteborg Botanical Gardens
SING: Herb. Singapore Bot. Gardens	OG: Danish Embassy, Bangkok

XX: indicates, that plant was kept in Danish Embassy, but has died a!
a! indicates that I have seen the specimen.

III: <i>Other abbreviations:</i>	dBP: indicates plants determined by Dr. Boye-Petersen, Copenhagen
G: GAGNEPAIN 1933	dVSS: indicates plants determined by Dr. Summerhayes, Kew
H: HOLTUM 1957	
KRZ.: KRAENZLIN 1911	

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