

Identification List of Impatiens (Balsaminaceae) in West Sumatra and G. Kerinci Area

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IDENTIFICATION LIST OF *IMPATIENS* (BALSAMINACEAE) IN
WEST SUMATRA AND G. KERINCI AREA

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The genus *Impatiens* is mostly speciated around the continental SE Asia and montane region of Malesian tropics. Many species have reported by Dr. T. Shimizu from Thailand and Malay Peninsula. The taxonomy of the Sumatran *Impatiens* is still much problematical. In our study periods during 1980-1988, we paid special attention to this genus, and collected many herbarium specimens. Also I compared these specimens with those in the Herbarium Bogoriense and the Singapore Botanic Gardens' Herbarium.

This short report treating a rather limited area intends to identify species of the genus *Impatiens* collected by us and restored in Bogor and Singapore. In West Sumatra, I found 16 species, and 9 species of them are new to science. In the Malesian tropics, West Sumatra has the richest flora of the genus. Descriptions of these new species is in preparation.

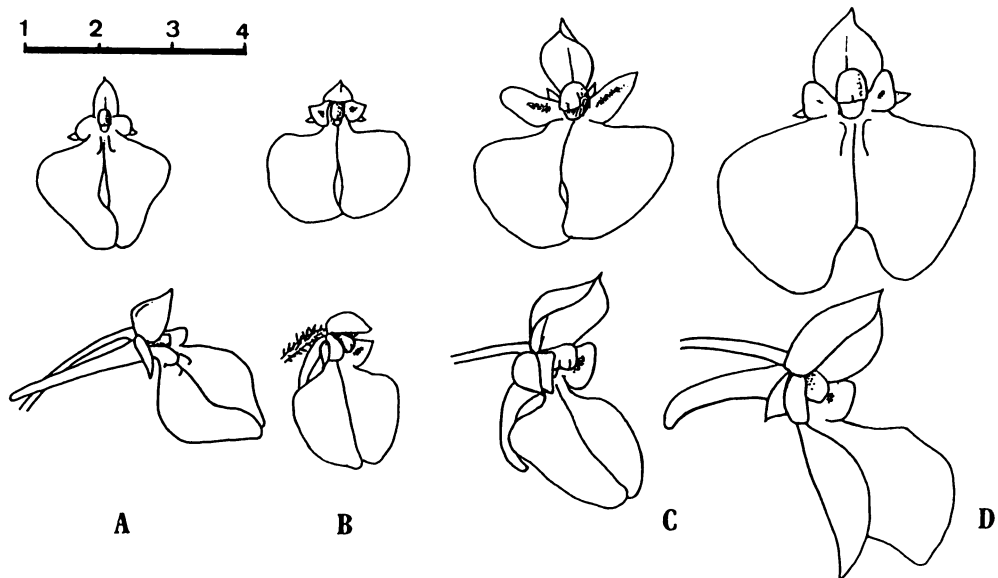


Fig. 1. Flowers of *Impatiens albo-flava* group

Upper: front view of flowers. Lower: side view of flowers. A, *I. albo-flava*. B, *I. gadutensis*. C, *I. pyrrhotricha*. D, *I. talangensis*.

Tentative Key to the Species of *Impatiens* in West Sumatra and Mt. Kerinci

- A. Leaf opposite or verticillate, flower pink or white..... B
- B. Glabrous herb..... *I. platypetala*
- B. Leaf beneath and stem nodes hairy, alpine plant.....
..... *I. platypetala* var. *hedyotidifolia*
- A. Leaf arternate..... C
- C. Flower with large spur, corolla pink or reddish color and sometime
with yellow spots..... D
- D. Glabrous tall herb..... *I. talamauense**
- D. Hairy small herb, stem usually with soft-long hairs.....
..... *I. bunnemeijernii**
- C. Flower yellow or orange yellow sometime with reddish spots or stripes,
spur slender..... E
- E. Stem decumbent, leaf rather thick and narrower with sharply dentate
marginer, typical rheophyte..... *I. diepenhorstii*
- E. Stem erect or decumbent at basal part above ground..... F
- F. Flower with smaller lip, inflorescence raceme with 5-10 flowers.....
..... *I. eubotrya*
- F. Flower with large lip, inflorescence with 1-5 flowers..... G
- G. Stem and leaf with reddish scarios hairs..... *I. gadutensis**
- G. Plant glabrous or with soft hairs..... H
- H. Petal forming suburceolate corolla, flower orange yellow..... I
- I. Outside of petal hairy, spur short and curved,inside of lip with
netted red mark..... *I. junghuhnii*
- I. Petal glabrous, spur short and curved..... J
- J. Inside of lip with large reddish point..... K
- K. Flower small..... *I. microrubra**
- K. Flower larger..... *I. kerinciensis**
- J. Lip without red mark..... *I. teruyae**
- H. Petal open widely and flat, spur usually longer, flower yellow.. L
- L. Leaf narrower with acuminate tip, margins sharply serrate.....
..... *I. delectans*
- L. Leaf small, ovate, margin sharply serrate..... *I. microserrata**
- L. Leaf usually ovate, shortly acuminate..... M
- M. Leaf obovate with many parallel rateral veins..*I. paralleloneura**
- M. Leaf usually ovate, lateral veins not strictly parallel..... N
- N. Petal slightly concave, lateral petal with reddish spot, spur
usually short and slightly curved..... *I. pyrrotricha*
- N. Petal flat opening, spur usually straight..... O
- O. Side sepal small, lanceolate, flower yellow without any spots,
leaf surface hairy..... *I. albo-flava*
- O. Side sepal large, ovate, inside of lateral petal with small
reddish spot..... *I. talangensis**

*: new species collected in West Sumatra.

Cited specimens of the Herbarium Bogoriense (BO), Singapore Botanic Gardens (SING) and Herbarium of Kyoto University (KYO)

Impatiens albo-flava Miq. Sumat. 396 (1862).

WEST SUMATRA: West coast, June 17, 1953, J. v. Borssum, W. 2046 (BO), June 25, 1953, J. v. Borssum, W. 2326 (BO); G. Singalang, Bünnemeijer 2654 (BO); Ulu Gadut, 450 m, Dec. 25, 1980, Hotta 25761 (KYO), 400-600 m, Jan. 24, 1981, Hotta 26118 (KYO), along Sg. Gadut Gadang, 350-450 m, Aug. 2, 1984, Hotta, Okada & Kohyama 276 (KYO, AND), 338 (KYO), 376 (KYO), Bt. Gajabuih, 400-750 m, Dec. 5, 1980, Hotta 25401 (KYO, AND), July 31, 1984, Hotta, Okada & Kohyama 127 (KYO, AND), along Sg. Lantik, 350-400 m, Sept. 5, 1984, Hotta 30012 (KYO, AND), 30018 (KYO), along Sg. Balumuik, 350-450 m, Aug. 3, 1984, Hotta, Okada & Kohyama 435 (KYO); en route from G.Kambot to camp 1, G. Gadut, 1100 m, Jan. 23, 1981, Hotta & Tamin 222 (KYO), 1350 m, Jan. 23, 1981, Hotta & Tamin 200 (KYO), 1300-1600 m, Aug. 17, 1984, Hotta, Tamin, Okada & Kohyama 346 (KYO), 352 (KYO, AND), en route from G. Gadut plot to base camp, 1200 m, Jun. 28, 1983, Hotta, Okada & Ito 856 (KYO); Karang Puteh, 150-300 m, Feb. 16, 1981, Hotta & Okada 249 (KYO), 281 (KYO); Setia Mulia, Bot. Gard. Andalas Univ., 500-600 m, Feb. 4, 1983, Hotta, Okada & Ito 984 (KYO), along Sg. Lubuk Paluku, 550-650 m, Aug. 8, 1984, Hotta & Okada 1043 (KYO); Airsirah above Padang, 950 m, March 5, 1974. E. F. de Vogel 2806 (BO); Airsirah pass, 850-900 m, July 28, 1984, Hotta, Okada & Kohyama 4 (KYO), 9 (KYO, AND, BO), around Airsirah plot, 1000-1100 m, Dec. 2, 1980, Hotta 26190 (KYO), Feb. 3, 1981, Hotta 26419 (KYO), 26417 (KYO), Jan. 18, 1983, Hotta, Okada & Ito 525 (KYO), Aug. 7, 1984, Hotta, Okada & Kohyama 518 (KYO, AND, BO); Padang Highland, 1200 m, Oct. 10, 1939, A. H. Batten-Poll s.n. (SING); near Airsirah, 1000 m, de Vogel & Vermeulen 7464 (BO); Bt. Gombak, 1350 m, Nov. 14, 1918, Bünnemeijer 5693 (BO); G. Talang, Bünnemeijer 5264 (BO); small valley near Bt. Tamaseo, G. Talang, 1200-1300 m, July 28, 1984, Hotta, Okada & Kohyama 187 (KYO, AND, BO), betwween Bantjah and Akargadang, near Danau Diatas, 1500 m, Aug. 25, 1984, Hotta & Okada 1546 (KYO), between Airsirah and Danau Diatas, 1300 m, Aug. 25, 1984, Hotta & Okada 1536 (KYO); G. Talang, 1500 m, Oct. 25, 1918, Bünnemeijer 5121 (BO), 1900 m, Oct. 25, 1918, Bünnemeijer 5120 (BO); G. Kerinci, 2600 m, April 29, 1920, Bünnemeijer 9779 (BO), alt. 950 m, Feb. 16, 1920, Bünnemeijer 8210 (BO), alt. 1500 m, Feb. 16, 1920, Bünnemeijer 8211 (BO), 1600 m, May 1920, Bünnemeijer 104869 (BO), 2000 m, May 12, 1920, Bünnemeijer 10481 (BO), 2150 m, May 1920, Bünnemeijer 10538 (BO), 2300 m, April 7, 1920, Bünnemeijer 9191 (BO, 2 sheets), July 30, 1931, Frey Wyssling 152 (BO); G. Kerimai, 2000 m, May 6, 1920, Bünnemeijer 10214 (BO), 2200 m, May 1, 1920, Bünnemeijer 9866 (BO); Mt. Kurimai, March 4, 1954, Alston 14165 (BO). JAMBI: Sg. Tanduk, Kerinci, March 6, 1954, Alston 14257 (BO); Sg. Kering, March 2, 1954, Alston 14054 (BO); G. Kerinci, 2350 m, July 30, 1979, Ohsawa A-681 (BO); Mt. Kerinci, March 4, 1954, Alston 14165 (BO).

Distr. Central and southern part of West Sumatra and Mt. Kerinci,

rather common in semishaded wet forest floor near stream of lowland and hill area, alt. 400-1400 (-2350).

Impatiens bunnemeijernii M. Hotta, nom. nud. (sp. nov.) --- *I. pyrrotricha* sensu Ridley, Jour. F. M. S. Mus. 8: 23 (1917), non Miq.

WEST SUMATRA: G. Kerinci, 1200 m, Feb. 16, 1920, Bunnemeijer 8221 (BO), 1500 m, May 20, 1920, Bunnemeijer 9008 (BO), 1520 m, May 1920, Bunnemeijer 10512 (BO), 1600 m, March 5, 1920, Bunnemeijer 8464 (BO, 2 sheets), 1700 m, May, 1920, Bunnemeijer 10497 (BO), 1800 m, Feb. 16, 1920, Bunnemeijer 8209 (BO), 1800 m, May 4, 1920, Bunnemeijer 8408 (BO, 2 sheets), 2000 m, April 9, 1920, Bunnemeijer 9287 (BO), 2400 m, April 4, 1920, Bunnemeijer 9204 (BO, 2 sheets, HB114693=holotypus, HB114694=isotypus), 2500 m, April 7, 1920, Bunnemeijer 9194 (BO, 6 sheets). **JAMBI:** Sg. Kerinci, March 2, 1954, Flower rose-pink, A.H.G. Alston 14053 (BO); Kayu Aro, 1300 m, July 26, 1972, leaves darker green above, paler below, flower pinkish, helmeted, J. Dransfield 2671 (BO). **SOUTH SUMATRA:** G. Dempo, Aug. 7, 1916, E. Jacobson 417 (BO).

Distr. Endemic to Mt. Kerinci and southern part of Barisan range, hill and mountain area, alt. (1200) 1500-2400 m.

Impatiens delectans Ridley, Jour. F. M. S. Mus. 8: 24 (1917).

WEST SUMATRA: G. Singalang, Bunnemeijer 2618 (BO, 2 sheets); G. Kerinci, July 30, 1931, F. Wissling 152 (BO). **JAMBI:** Kerinci peak, 7500 ft., April, 1914 Robinson & Kloss s.n. (SING, isotype of *I. delectans* Ridley).

Distr. Mountain area of Mt. Kerinci and Mt. Singalang.

Impatiens diepenhorstii Miq., Sumat. 397 (1862).

WEST SUMATRA: Lae Pondon, E of Sidikalang, Tampanuli, on rock in stream, flower yellow, March 30, 1954, A. H. G. Alston 14996 (BO); between Bantjah and Akargadang, near Danau Diatas, 1500 m, on wet rock beside and in small water fall, flower yellow with long spar, Aug. 25, 1984, Hotta & Okada 1544 (KYO, BO, AND).

Distr. Endemic to West Sumatra, hill area on rocks by rapid stream side. A typical rheophyte.

Impatiens eubotrya Miq., Sumat. 397 (1862).

WEST SUMATRA: G. Melapi, 1850 m, Sept. 14, 1918 (1919 in BO specimen), Bunnemeijer 4571 (BO, SING); west slope of G. Merapi, 1800 m, Feb. 19, 1954, Alston 13681 (BO); G. Talang, 1919, Bunnemeijer 5103 (BO); small valley near Bt. Tamasu, G. Talang, 1200-1300 m, Hotta, Okada & Kohyama 186 (KYO, AND, BO); G. Kerinci, Apr. 7, 1920, Bunnemeijer 9193 (BO), 2000 m, Aug. 2, 1931, F. Wissling 151 (BO). **JAMBI:** G. Labu, Kerinci, March 1, 1954, Alston 13965 (BO).

Distr. Central West Sumatra to Mt. Kerinci, stream side place, alt. 1300-2000 m.

Impatiens gadutensis M. Hotta, nom. nud. (sp. nov.)

WEST SUMATRA: between G. Gadut camp (plot) and summit of G. Gadut, 1600 m, Jan. 22, 1981, Hotta & Tamin 22 (KYO), 1700 m, Jan. 22, 1981, Hotta & Tamin 68 (KYO), 1650-1860 m, Jan. 27, 1983, Hotta, Okada & Ito 692 (KYO), Aug. 15, 1984, Hotta, Tamin, Okada & Kohyama 51 (KYO, AND), Aug. 16, 1984, Hotta, Tamin, Okada & Kohyama 137 (KYO), en route from G. Gadut plot to base camp, 1500 m, Jan. 28, 1983, Hotta, Okada & Ito 846 (KYO, AND, BO).

Distr. Endemic to G. Gadut, mountain oak forest floor and edge of forest, alt. 1500-1700 m.

Impatiens junghuhnii Miq., Ill. Arch. Ind. 99 (1871); Ridley, Jour. F. M. S. Meus. 8: 23 (1917).

WEST SUMATRA: G. Sago, Bünnemeijer 4275 (BO), 1200 m, April 7, 1983, Sarkat & Danimihardja SD2329(BO); G. Merapi, 1919, Bünnemeijer 4494 (BO): Muko Muko, Maninjau, 500 m, Sept. 11, 1984, Hotta & Kohyama 355 (AND, BO); G. Kerinci, 2000 m, Apr. 13, 1920, Bünnemeijer 9587 (BO); Tanang Talu, Bünnemeijer 1113 (BO, 2 sheets), G. Kerinci, 1900 m, April 16, 1920, Bünnemeijer 9495 (BO). JAMBI: Barong Baru, June 4, 1914, Robinson & Kloss s.n. (SING)

Distr. West Sumatra to southern part of Sumatra island.

Impatiens kerinciensis M. Hotta, nom. nud. (sp. nov.)

WEST SUMATRA: Kp. Baru, Kerinci, 1000 m, Feb. 8, 1920, Bünnemeijer 8051 (BO, 2 sheets), 1600 m, March 5, 1920, Bünnemeijer 8462 (BO, 3 sheets).

Note: a new species related *I. gadutensis* but flower larger.

Impatiens microrubra M. Hotta, nom. nud. (sp. nov.)

WEST SUMATRA: Rambutan, 1000 m, June 27, 1918, Bünnemeijer 3409 (BO); G. Merapi, 1200 m, Sept. 26, 1918, Bünnemeijer 4921 (BO); G. Melintang, 1100 m, July 31, 1918, Bünnemeijer 4141(BO, 3 sheets).

Note: a new species, flower orange yellow and large reddish spots with small urceolate corolla.

Impatiens microserrata M. Hotta, nom. nud. (sp. nov.)

WEST SUMATRA: G. Kerinci, 2900 m, May 5, 1920, Bünnemeijer 9998 (BO); 2500-3000m, Aug. 2, 1934, F. Wyssling 153 (BO).

Note: a new species from Mt. Kerinci related to *I. delectans* Ridley but leaf smaller.

Impatiens platypetala Lindl., Bot. Reg. t. 68 (1846). --- *I. sumatrana* Miq., Sumat. 396 (1862).

WEST SUMATRA: Cult. in Tjibodas, Bünnemeijer Sumatra, June 20, 1920 (BO, 2 sheets); Fort de Kock, July 1934, Z. Teruya 2501 (SING); Bt. Puntjak, Bünnemeijer 1282 (BO); Batang Palupuh, north of Bukittinggi, 800-1000 m, Nov. 25, 1980, Hotta 25017 (KYO, AND, BO); Mangani, Bukittinggi,

Bünnemeijer 2992 (BO); G. Malintang, Bünnemeijer 3513 (BO); G. Singalang, Bünnemeijer 2601(BO); G. Talang, 1800 m, Oct. 28, 1918, Bünnemeijer 5259 (BO); Lemba Anai, 400m, Dec. 25, 1983, Mulyati Rakayu & Maskuri 485 & 486(BO); Teluk Kabung, 26 km E of Padang, March 9. 1954, Alston 14354 (BO); Ladang Padi, Padang, 500-800 m, Dec. 22-26, 1982, Dayar Arbain DA-24 (BO); Setia Mulia, Bot. Gard. Andalas Univ., 500-600 m, Feb. 4, 1983, Hotta, Okada & Ito 990 (KYO); Airsirah pass, 850-900 m, July 28, 1984, Hotta, Okada & Kohyama 12 (KYO), around Airsirah plot, 1000-1100 m, Dec. 2, 1980, Hotta 26243 (KYO, AND), Feb. 2, 1983, Hotta, Okada & Ito 930 (KYO, AND); near Airsirah, 1000 m, May 3, 1985, de Vogel & Vermeulen 7364- (BO, 2 sheets), May 5, 1985 de Vogel & Vermeulen 7478 (BO); Laebuk Sikaping, Bünnemeijer 1214 (BO, 2 sheets); Talu, April 4, 1917, Bünnemeijer 36 (BO); G. Kerinci, alt. 1550 m, May 14, 1920, Bünnemeijer 8819 (BO), 1800 m, April 20, 1920, Bünnemeijer 9723 (BO); Sg. Kering, Kerinci, March 2, 1954, Alston 4060 (BO); Kp. Baru, G. Kerinci, 1000 m, Feb. 8, 1920, Bünnemeijer 8047 (BO, 2 sheets); Kumantan, Kerinci, 850 m, Feb. 10, 1920, Bünnemeijer 8114 (BO, 2 sheets).

Distr. Widely distributed from Sumatra, Malaya and Java to Philippines and Celebes (? New Guinea), in open places of hill and mountain area, very variable species.

Var. *hedyotidifolia* (Ridley) M. Hotta, comb. nov.--- *I. hedyotidifolia* Ridley, Jour. F. M. S. Mus. 8: 23 (1917).

WEST SUMATRA: Sg. Kumbang, 4500 ft., April 1914, Robinson & Kloss s.n. (SING, isotype of *I. hedyotidifolia* Ridley); G. Kerinci, 1980 m, May, 1920, Bünnemeijer 10516 (BO), 10549 (BO), 1800 m, April 20, 1920, Bünnemeijer 9723 (BO).

Distr. Endemic to alpine zone of Mt. Kerinci.

Impatiens paralleloneura M. Hotta, nom. nud. (sp. nov.)

WEST SUMATRA: G. Kerinci, 1200-1400 m, May, 1920, Bünnemeijer 10488a- (BO, 3 sheets), 1200 m, May, 1920, Bünnemeijer 10490 (BO, 3 sheets).

Note: a distinct new species with parallel lateral veins of leaf.

Impatiens pyrrhotricha Miq., Sumat. 396 (1862).

NORTH SUMATRA: G. Sarikmarapi, Tapanuli Selatan, 1500 m, March 30, 1983, Sarkat & Danimihardja SD2246 (BO). **WEST SUMATRA:** West coast, June 25, 1953, J. v. Borssum W. 2326 (BO); Laure Kakar, 1640 m, June 17, 1939, A. H. Batten-Pooll s.n. (SING); E of Lubuk Sikaping, June 17, 1953, J. v. Borssum W. 2046(BO); Lurah Berangin Nat. Res., Bondjor, 400-500 m, Sept. 21, 1984, Hotta 30193 (KYO, AND, BO); N. W. Talamau, 400 m, Nov. 1917, Bünnemeijer 410a (BO); G. Merapi, Bünnemeijer 4622 (BO, 2 sheets), Bünnemeijer 4495 (BO), 4865 (BO); G. Singalang, Bünnemeijer 2617 (BO, 3 sheets); G. Malintang, Bünnemeijer 3739 (BO), Bünnemeijer 3920 (BO); G. Sago, Payakumbuh, 1200 m, April 7, 1983, Sarkat Danimihardja 2329 (BO); G. Talang, Bünnemeijer 5120 & 5255 (BO); around Danau Talang, G. Talang,

1600-1750 m, Aug. 23, 1984, Hotta & Okada 1192 (KYO, AND), 1252 (KYO, AND), 1280 (KYO), between Bantjah and Akargadang, near Danau Diatas, 1500 m, Aug. 25, 1984, Hotta & Okada 1546-a (KYO), 1295 (KYO); north slope of G. Talang, Batupingai, 1300-1750 m, Aug. 24, 1984, Hotta & Okada 1494 (KYO, AND); Kerinci, 950 m, Feb. 16, 1920, Bunnemeijer 8260 (BO), 1400 m, March 9, 1920, Bunnemeijer 8655 (BO), 1600 m, March 12, 1920, Bunnemeijer 8733 (BO), 1770 m, Mrch 15, 1920, Bunnemeijer 8828 (BO, 4 sheets), 1440 m, March 20, 1920, Bunnemeijer 9010 (BO), 1700 m, March 23, 1920, Bunnemeijer 9116 (BO), 1600 m, April 4, 1920, Bunnemeijer 8407 (BO), 2200 m, May 6, 1920, Bunnemeijer 10136 (BO). **JAMBI:** Kerinci, March 2, 1954, A. H. G. Alston 14074 (BO). **BENGGUKU:** Mt. Kaba, 1080 m, flower yellow, Aug. 30, 1975, Eddy & Kasik 115 (BO). **SOUTH SUMATRA:** Bt. Sepulang Nat. Res., 800-1050 m, Feb. 1-7, 1983, J. J. Afriastini 649 (BO, 3 sheets), Feb. 2, 1983, J. J. Afriastini s.n.(BO); Bt. Palelawan Nat. Res., 800-1450 m, Feb. 10-14, 1983, J. J. Afriastini 711 (BO, 2 sheets), 736 (BO).

Distr. Hill and lower mountain area of West Sumatra, Jambi and Bengkulu (southern part of Barisan range).

Impatiens talamauense M. Hotta, nom. nud. (sp. nov.)

WEST SUMATRA: W. helling, Talamau, Bunnemeijer 356 (BO).

Distr. Northern Sumatra to central West Sumatra, related to *I. scor-techinii* of Malaya but might be distinct species.

Impatiens talangensis M. Hotta, nom. nud. (sp. nov.)

WEST SUMATRA: G. Merapi, Bunnemeijer 4486 (BO); G. Kerinci, 2000 m, May, 1920, Bunnemeijer 10519, 1800 m, March 23, 1920, Bunnemeijer 9117 (BO, 5 sheets), 2000 m, April 13, 1920, Bunnemeijer 9387 (BO).

Note: a new species related to *I. pyrrhotricha* but flower larger.

Impatiens teruyae M. Hotta, nom. nud. (sp, nov.)

WEST SUMATRA: Agam Brami, Bunnemeijer 3143 (BO); Peconina, Muara Labu, Sept 16, 1929, Teruya 1420 (SING, holotypus), Sept. 1929, Teruya 1422 (SING); Kp. Baru, G. Kerinci, 1000 m, Feb. 8, 1920, Bunnemeijer 8048 & 8049 (BO); G. Kerinci, 1000 m, Feb. 2, 1920, Bunnemeijer 8208 (4 sheets), 2200 m, May 6, 1920, Bunnemeijer 10136 (BO, 2 sheets). **JAMBI:** Sidikalang and Pongkolan, 1200 m, flower orange yellow, March 27, 1954, Alston 14828 (BO).

Note: a new species related to large flower type of *I. pyrrhotricha* but flower orange yellow(?) with urceolate corolla.

