TAIWANIA

Vol. I, pp. 19-68, May 1948.

ON THE MENISPERMACEOUS PLANTS OF CHINA

Yoshimatsu YAMAMOTO

With one map

I. INTRODUCTION

The object of the present paper is to enumerate the known species of the Menispermaceae of China as complete as possible and to draw a reasonable conclusion regarding the phytogeography of that country based on the distribution of the Menispermaceous plants.

Up to the present we have but very few publications really treating the family Menispermaceae of China except some minor reports contributed from time to time listing the procurment of specimens or informing of localities from where these plants could be acquired.

In 1886, Forbes and Hemsley, in their research entitled "Index Flora Sinensis, I" (in Journ. Linn. Soc. 23: 28-30), recorded 10 species belonging to 7 genera, viz., 1 species of *Limacia*, 3 of *Cocculus*, 1 of *Pericampylus*, 1 of *Menispermum*, 1 of *Cyclea*, 2 of *Stephania*, and 1 species of *Fibraurea*. Diels in 1901, in his work "Flora von Central-China" (in Engler, Botanische Jahrbucher 29: 244-245) described 5 genera and 6 species. In 1910, he published a monograph of Menispermaceae in Engler, Pflanzenreich, IV-94, from which the present writer was greatly inspired by the wealth of new ideas. The present wirter had consulted it in many cases for the identification of new material coming to his hand and identified from it some 30 species which are considered to be indigenous to China. Since these pioneer works research works on the Menispermaceae of China have been greatly intensified and some 20 additional species have been discovered. Most of the contributuons regarding the Menispermaceous flora of China are made, besides Diels, by Merrill and the present writer himself.

In the present stage of knowledge on the Menispermaceae of China, based mainly on the works of the above mentioned authors, the present writer has gathered some 52 species belonging to 19 genera which are considered really indigenous to China.

For the arrangement of the genera in the present paper, the writer follows the system already established by prior workers Diels and Merrill, but the species are arranged chronologically in compliance with their dates of proposal according to their respective genera.

In discussing the phytogeographical observation on all the genera and species of the Chinese Menispermaceous plants the writer ventures to propose tentatively three subregions for China proper according to their floristic features as well as an ecological consideration of the plants. These subregions are namely the Northern, Southern, and Extra-Southern.

(A) Northern subregion. -This subregion includes the western provinces and those provinces which are separated by the Yangtze River in the south. They are Hopei, Honan, Shantung, Shansi, Shensi, Kansu, and the respective northern parts of Kiangsu, Anhwei, Hupeh, and Szechuan, as well as all the wetsern provinces including Ningshai, Sinkiang, and Tibet.

(B) Southern subregion. -This subregion includes the central provinces embracing the area between the two rivers, the Yangtye in the north and the Si-Kiang in the south. This subregion includes the provinces Chekiang, Hunan, Kweichow, and Fukien, the southern parts of Kiangsu, Anhwei, Hupeh, and Szechuan, and the northern parts of both Kwangtung and Kwangsi.

(C) Extra-Southern subtegion.—This subregion includes those southern provinces separated by the Si-Kiang in the north and embraces the province Yunnan, the island Hainan, and the southern parts of both Kwangtung and Kwangsi.

Other regions outside China proper are for the time being excluded from the above mentioned regional classification. In eastern Asia, outside of the area mentioned, the wirter has divided the following phytogeographic areas basing on the ecological point of view and the percentage of various elements present in each:

(a) The islands of Formosa and Ryu-kyu.

(b) Southern Asiatic continent, including India, Burma, Siam, Indo-China, and the Malay Peninsula.

(c) Malay Archipelago, including Sumatra, Java, Borneo, Celebes, Small Sunda islands, Moluccas, and the Philippines.

(d) Northern Asiatic temperate region, including Mongolia, Manchuria, Siberia, Korea, and Japan proper.

DISTRIBUTION OF THE MENISPERMACEOUS PLANTS

There are 52 species belonging to 19 genera of Menispermaceous plants indigenous to the wirter's three floristic subregions of China as mentioned above. These are enumerated in this work and the following table shows the generic distribution of the species:

I.	Pycnarrhena	2 species	
II.	Albertisia	1 „	
III.	Arcangelisia	1 „	
IV.	Tinomiscium	1 „	
V.	Fibraurea	1 „	
VI.	Aspidocarya	1 „	
VII.	Tinospora	4 „	
VIII.	Parabaena	1 „	
IX.	Hypserpa	3 „	
X.	Pericampylus	2 „	
XI.	Diploclisia	3 „	
XII.	Cocculus	4 „	
XIII.	Pachygone	2 „	
XIV.	Sinomenium	1 „	
XV.	Menispermum	1 „	
XVI.	Stephania	14 „	and 1 var.
XVII.	Paracyclea	2 „	and 1 var.
XVIII.	Cissampelos	1 „	
XIX.	Cyclea	7 „	
Total 19 genera		52 species and 3 varieties	

DISTRIBUTION OF THE GENERA. There is no endemic genus in the whole area concerned. Of all the genera, only 5, or ca. 26.3 per cent of the total number are represented in the Northern Subregion; they are, *Cocculus*, *Sinomenium*, *Menispermum*, *Stephania*, and *Paracyclea*; 11 genera, viz, *Tinospora*, *Hypserpa*, *Pericampylus*, *Diploclisia*, *Pachygone*, *Cyclea*, together with the above mentioned five genera, or ca. 59.9 per cent occur in the Southern Subregion; 18 genera, or about 94.7 per cent

of the total pertain to the Extra-Southern Subregion. They are *Pycnarrhena*, *Albertisia*, *Archangelisia*, *Tinomiscium*, *Fibraurea*, *Aspidocarya*, *Paracyclea*, and *Cissampelos* together with the 10 genera of the Southern type except the genus *Menispermum*. Thus almost all of the genera excepting only one are concentrated in the Extra-Southern subregion, and many of them are endemic as indicated by the frequent occurrence of the species. From these evidences, the writer considers this subregion as the center of distribution of the Menispermaceous plants in China. Relative percentage of the genera pertaining to each of the respective subregions is shown as follows: The Southern subregion has about 60 per cent of all number of the Extra-Southern types; the Northern subregion has all number of the Southern types, thus about 45 per cent, and of about 28 per cent of the Extra-Southern types. From these phytogeographical distributions, it can be deduced and will be recognized that the percentage of the genera represented in each of these subregions varies from one region to the other, that is from the south to the north, and it decreases rapidly in its proportion, the relative percentage being about 4–2–1.

We can next observe the mutal relationships between the plants of these three subregions. There are only four genera, viz., *Cocculus*, *Sinomenium*, *Stephania*, and *Paracyclea*, or ca. 21 per cent of the total number, represented throughout the three subregions. There are, however, 10 genera, viz., *Tinospora*, *Hypserpa*, *Pericampylus*, *Diploclisia*, *Cocculus*, *Pachygone*, *Sinomenium*, *Stephania*, *Peracyclea*, and *Cyclea*, or 52.7 per cent of the total 19 genera represented throughout the Extra-Southern and the Southern subregions. On the other hand, there are only five genera, viz., *Cocculus*, *Sinomenium*, *Stephania*, *Cissampelos*, and *Paracyclea*, represented in both the Southern and the Northern subregions, or 45.5 per cent of the 11 genera of these two regions, and there are only four, viz., *Cocculus*, *Sinomenium*, *Stephania*, and *Paracyclea*, represented in both these two northern and the Extra-Southern subregions, or 21.1 per cent of the 19 genera found in these three subregions.

From the obove observations it will be noted that the generic affinities among the plants between these three subregions gradually weaken in their relationship from the south toward the north, somewhat in a decendent nature.

DISTRIBUTION OF THE SPECIES. Throughout China, there are some 52 species, 20, or ca. 38.4 per cent of which are endemic. The following species are the more common types:

1. Pycnarrhena macrocarpa
2. Albertisia laurifolia
3. Tinospora sagittata
4. Hypserpa nitida
5. Diploclisia affinis
6. D. chinensis
7. Pachygone sinica
8. P. valida
9. Stephania herbacea
10. S. sinica
11. S. gracilifiora
12. Stephania Dielsiana
13. S. dolichopoda
14. Paracyclea densifiora
15. P. sutchuenensis
16. Cyclea hypoglauca
17. C. racemesa
18. C. polypetala
19. C. hainanensis
20. C. Migoana

Among these species, 5 (3, 5, 6, 12, and 20) are endemic to the Southern subregion, 8 (1, 2, 8, 11, 13, 14, 18, and 19) are found in the Extra-Southern subregion, and the others flourish in both the Southern and Extra-Southern areas. In the Northern subregion, so far as the writer is aware, there is no endemic species.

Considering the distribution of the indigenous species in each of the three subregions, we find that the Northern subregion comprises *Cocculus trilobus* and 5 other species, or ca. 11.5 per cent of the total number; the Southern subregion comprises *Tinospora sagittata* and 30 other species, or ca. 59.6 per cent; the Extra-Southern subregion comprises *Pycnarrhena fasciculata* and 40 other species, or ca. 78.8 per cent. Thus it will be seen from the above observations that the highest percentages in both genera and species can be found in the Extra-Southern subregion, and they decrease rather abruptly toward the north.

There are only four species, of 8 per cent of the total 52 species, that are common throughout all three subregions. These species are *Cocculus trilobus*, *Sinomenium acutum* var. *cinerium*, *Stephania sinica*, and *Pachygone sutchuenensis*.

In the mode of ditribution of the species and genera in the three subregions of China, the writer concludes that there are striking variations in the floristic constituents. These three subregions, so far as the Menispermaceous plants are concerned, are more or less sharply defined. These three phytogeographical subregions, separated by the two rivers, the Yangtze and the Si-Kiang, are marked by the regional distribution of the Menispermaceous plants in China.

FLORISTIC RELATIONSHIPS

Floristic relationships between China proper and neighbouring regions are worthwhile to be discussed. First let us consider the genera. Of all the genera occurring in China proper, the highest percentage, 78.9 per cent, or 15 genera of the total number, can be found also in both the Indo-Malay-Continental and the Malay Archipelago regions. The number of genera present in other regions, according to their respective abundance, is as follows: 5 genera or 26.3 per cent in Formosa and Ryu-kyu, 4 genera or 21.1 per cent in the Northern Asiatic temperate region including Mongolia, Manchuria, Korea, and Japan proper, and 10 genera or 52.6 per cent in the other areas including New Guinea and the tropical Australian region. With these salient facts the writer tries to proceed in observing any relationship between these Chinese subregions and neighbouring areas. The four genera, with the only exception of the genus *Paracylea* of the Northern subregion, are the same as those found in the Northern Asiatic temperate region. Their alliance is therefore very close. The 18 genera present in the Extra-Southern subregion, with the exception of *Albertisia*, *Sinomenium*, and *Paracyclea*, are the same as those of the Indo-Malay-Continental region. Thus the relationship between these two areas is closer than with the Southern subregion.

With regard to the species, 26 species or 50 per cent of the species occurring throughout China proper range from the Indo-Malay-Continental region to the Extra-Southern subregion, 12 species or 23.1 per cent also pertain to the Malay Archipelago, 8 species or 15.4 per cent extend to Formosa and the Ryu-kiu islands, and 5 species or 9.8 per cent are also present in the Northern Asiatic temperate region.

TENTATIVE CONCLUSIONS

1. In formulating an idea about the phytogeography of the Menispermaceous plants in China, besides the above mentioned observation and facts, there are several factors that must be considered. These conclusions are made after the writer considers some generalizations with regard to physiographic, climatic, and edaphic factors in the general distribution of plants, and organizational and developmental characteristics and mode of variation of the species concerned.

2. There is no endemic genus of the family Menispermaceae in China, but there are 20 species, or 38.5 per cent of the total number, endemic to China. These endemics are entirely confined to the Extra-Southern and the Southern subregions.

3. Almost all the genera and species are represented in both the Extra-Southern and the Southern subregions, while there are only five genera and six species represented in the Northern subregion. The latter has rather closer affinity with the Northern Asiatic temperate region than with the former two subregions. These facts show that the Northern subregion, separated from the other two subregions by the Yangtze River, ought to be included in the Northern Asiatic temeprate region.

4. On the other hand, there are some differences between the Southern and the Extra-Southern subregions. For instance, there are 11 genera and 31 species in the Southern subregion, whereas there are as many as 18 genera and 41 species in the Extra-Southern subregion. Moreover, the elements of this latter subregion have closer allied types with those of the Indo-Malay-Continetal region than those of the Southern subregion. Thus, phytogeographically, this subregion may be included in the Indo-Malay-Continental region as previously proposed by the writer. (See An Enumeration of the Menispermaceous Plants of the Island of Hainan, in Materials for a Flora of the South-Eastern Asia, V., 1942, p. 80).

The writer wishes to express his sincere thanks to Dr. H. Migo, formerly member of the Shanghai Science Institute, who kindly offered his valuable collection of Menispermaceous plants of China for the present study.

II. ENUMERATION OF THE CHINESE MENISPERMACEAE[1, 2]

MENISPERMACEAE

I. *Pycnarrhena* MIERS, ampl. (1851)

(1) **Pycnarrhena fasciculata** (Miers) Diels, Menispermac. (1910) 50, fig. 17; Merrill & Chun, Addition to our Knowledge of the Hainan Flora, II. in Sunyatsenia II (1935) 222; Tanaka & Odashima, Census of Hainan Plants (1938) 366; Yamamoto, Enum. Menisperm. Hainan (1942) 70.

Antitaxis fasciculata Miers in Ann. Nat. Hist. 2-ser. VII (1851) 44, in Contrib. Bot. III (1871) 356, t. 142; Hooker f. Fl. Brit. Ind. I (1872) 106.

Telotia nodiflora Pierre in Bull. Soc. Linn. Paris (1888) 754, et in Fl. Forest. Cochinch. fasc. 24 (1898) t. 376.

---

1. *Abbreviations for the principal references.*

DIELS, Fl. Central-China (1901)—DIELS, Flora von Central-China in ENGLER, Botanische Jahrbücher für Systematik, Pflanzen-geschichte und Pflanzengeographie, XXIX Bd. (1901); DIELS, Menispermaceae (1910)—DIELS, Menispermaceae in Engler, Pflanzenreich, 46 Heft. (IV-94) (1910); FORB. et HEMSL. Index F. Sin. XXIII (1886), CXVI (1805)—FORBES et HEMSLEY, Index Flora Sinensis in Journal of Linnean Socity, XXIII (1885), in l. c. XXVI (1905); TANAKA & ODASHIMA, Census of Hainan Plants (1938)—l. c. (1940)—TANAKA & ODASHIMA, Census of Hainan Plants in Journal of Society of Tropical Agriculture (Dec. 1938), l. c. Supplement (1940); YAMAMOTO, Phytogeogr. View of Menisperma. (1938)—Phytogeographic View of Menipermaceae & A List of Eastern Asiatic Species of Menispermaceae, in Transactions of Natural History Society of Taiwan, XVIII, 180-181 (Oct. 1938); YAMAMOTO, Menispermac. Japans, (1944)—YAMAMOTO, Menispermaceae Japans, in Transactions of Natural History Society of Taiwan, XXXIV, 244 (Jan. 1944); YAMAMOTO, Enum. Menispermac. Pl. in Great-Sunda Islands, I (Aug. 1944); II (Sept. 1944); III (Oct. 194)—YAMAMOTO, Enumeration of the Menispermaceous Plants in the Great-Sunda Islands, I, in Journal of Society ot Tropical Agriculture XVI (Aug. 1944), II in l.c. XVI (Sept. 1944), III in l. c. XVI (Oct. 1944); YAMAMOTO, Enumeration of Menispermac. Pl. Hainan (Apr. 1942)—YAMAMOTO, Enumeration of the Menispermaceous Plants of the Island of Hainan, in Taihoku-Teikoku-Daigaku Dai-ikkai Kainanto Gakuzitututyosa Hokoku (Apr. 1942).

2. *The origin of the specimens cited is indicated as follows:*

In Herb. SBT—in Herbarium of Laboratory of Systematic Botany, Taiwan University, Taipeh, Taiwan; in Herb. BIT—in Herbarium of Botanical Insitute, Tokyo Imperial University, Tokyo; in Herb. Inst. Sc, Shangh.—in Herbarium of Natural Science Institute, Shanghai, China; in Herb. Tanakai—in Herbarium of T. TANAKA, Laboratory of Horticulture, Taiwan University, Taiwan; in Herb. Bogor. —in Herbarium of Botanic Gardens, Buitenzorg, Java; in Herb. Kew.—in Herbarium of Botanic Gardens, Kew, England.

Antitaxis nodiflora Gagnepain in Bull. Soc. Bot. France LV (1908) 35, et in Fl. Gén. Indochiné (1908) 145, fig. 15 (28-32).

NOM. VULG. Siinoha-tuzrahuzi (Jap.).
HABIT. Hainan: Ngai (ipse! 9 Sept. 1940, SBT); Poting (*F. C. How!* Jul. 1935, *-ramus fl. femineis*, Aug. 1933, *-ramus fl. masculinis*; Ngai Yuen (*F. C. How!* Jul. 1933, no. 71051, e *Merr.* et *Chun*).

DISTRIB. Extra-southern China: Hainan. Indochina: Cambodja. Malay Peninsula: Malacca (*type*), Muong-pran, Perak, Siam.

(2) **Pycnarrhena macrocarpa** Diels, Menispermac. (1910) 52; Yamamote, Phytogeogr. View Menisperm. (Oct. 1938) 309, 322.

Frutex alte scandens. Foliorum petiolus ca. 4 cm longus; lamina coriacea in utraque facie glaberrima, oblonge-elliptica, basi rotundata apice acuminata, ca. 15 cm longa, 6.5 cm lata, nervi primarii laterales utrinque ca. 5 arcuato-adscendentes subtus prominentes, secundarii prominuli. -(Flores ♂ et ♀ adhuc ignoti.)—Drupae peramplae 3-4 cm diamet. stipite 5 mm longo praeditae; exocarpium rubrum, mesocarpium pulposum, endocarpium subfabiforme linea dorsali subelevata praeditum ceterum sublaeve, ad insertionem seminis foraminibus duobus perforatum; condylus subnullus. Semen endocarpio conforme 2-2.5 cm longum, 1.4 cm latum. (*e descriptione prima*)

NOM. VULG. Ooba-siinoha-tuzurahuzi (Jap. nov.)
HABIT. Yunnan: Szemao, ad circ. 1200 m alt. (*Henry!* no. 12810, *typus-ramus fructifer*, e *Diels*)

DISTRIB. Extra-southern China: Yunnan; (endemic in China).

II. *Albertisia* BECCARI (1877)

(3) **Albertisia laurifolia** Yamamoto, Enum. Menispermac. Hainan, (1942) 70, fig. 2.

Frutex in arbores adscendens. Rami adulti cortice cinerascente tecti, leviter striati glabrique; ramuli novelli ferrugineo-pubescentes vel fusco-tomentosi, voluviles, plus minusve graciles. Petiolus foliorum cinereo-pilosus, vel daemum subglaber, basi et apice tumidus, striatus, circ. 1.5 cm longus; lamina subcoriacea vel coriacea, supra lucida et glabra, subtus opaca pilosa vel subglabra, elliptica vel elliptico-oblonga, apice mucronato-acuta, basi obtuso-acuta vel obtusa, 7-8 cm longa, circ. 3 cm lata; nervis

primariis 3-subpalmatis cum lateralibus secundariis a costa utrinque 3-4 supra tenuiter subtus distincte prominentibus. Flores masculini axillares, pedunculati; pedunculo 0.7-1.0 cm longo superne cum 2-3 pedicellis 5-7 mm longis subumbellate-ramoso usque ferrugineo-tomentoso; bracteis lanceolatis 1.5 mm longis circ. 0.5 mm latis extus tomentosis; bracteolis 2-3 minoribus ad pedicellos obsolete notatis tomentosis 1-2 mm longis 0.5-1.0 mm latis; sepala exteriora 5-6, ad apicem pedicellorum imbricata, bracteoliformia inaequaliaque, ovata vel rotundata vel deltoidea, 1-2 mm longa et 0.5-1.0 mm lata, omnia extus ferrugineo-tomentosa; sepala interiora 3 coalita in pseudocorollam ellipsoideam apice breviter trilobam 4-5 mm longam et circ. 3 mm latam extus ferrugineo-tomentosam; petala 2-3, abortiva, inaequalia, extus pilosa, lanceolata vel rhomboidea, 0.4-0.5 mm longa, 0.2-0.5 mm lata; stamina in columnam elongatam cum antheris quasi spadicem pyramidalem formantia, 3 mm longa et 2 mm in diametro, in seriebus 6 longitudinalibus inserta; antheris subsessilibus circ. 27 quadrangularibus 0.5 mm longis 0.8 mm latis bilocularibus transversaliter dehiscentibus. Flores feminei adhuc ignoti. Fructus pedicellatus; pedicello e ramo defoliato solitario piloso demum tumido circ. 1.5 cm longo apice valde tumido et 4-6-drupas gignente. Drupae ellipsoideae, 2.2-2.4 cm longae, 1.7-2.0 cm latae, vix compressae, rectae; exocarpium carnosum et facie adpresse ferrugineo-tomentosum; endocarpium oblongum lignoso-crustaceum, facie rugosum, intus laevius. (*e descrptione prima*)

NOM. VULG. Kusunoha-tuzurahuzi (Jap.)

HABIT. Hainan: Poting. ad circ. 230m alt. (*F. C. How!* Apr. 1935, no. 71852, typus-*ramus fl. masculinis*, Sept. 1935, no. 73721, -*ramus fructifer*, in Herb. SBT).

DISTRIB. Extra-southern: Hainan. (Endemic).

III. *Arcangelisia* BECCARI (1877)

(4) **Arcangelisia Loureiri** (Pierre) Diels, Menispermac. (1910) 104; Merrill, Enum. Hainan Pl. in Lingn. Sc. Journ. V-1, 2 (Nov. 1927) 76; Tanaka & Odashima, Census of Hainan Plants (Dec. 1938) 366; Yamamoto, Enum. Menisperm. Pl. Hainan (1942) 72.

Anamirta Loureiri Pierre in Fl. Forest. Cochinch. (1885) pl. 110; King, in Journ. Asiat. Soc. Bengal, LVIII (1889) 379.

Mirtana Loureiri Pierre in Bull. Soc. Bot. France LII (1905) 490; Gagnepain in Fl. Gén. Indochiné I (1908) 136.

NOM. VULG. Biadan-tuzurahuzi (Jap). Nyauzen (Lei). Huang-man 黃蔓 (Chinese). Viay-dang (Cochinchina).
HABIT. Hainan: Tan-hsien, Fanta, (*McClure!* no. 9159, e *Merrill*.

DISTRIB. Extra-southern China: Hainan. Cochinchina (*typus*). Malay Peninsula: Perak & Malacca.

A decoction of the barks of roots and stem is called Kusanlung 古山龍, and it is used as a febrifuge for malaria in the island of Hainan. The plant contains alkaloids, Berberin and Palmatin. (See Tsukamoto & Takahashi, in Taiwan Yakagakukai-Zasshi, no. 55. Dec. 1944, 16-20).

IV. *Tinomiscium* MIERS (1851)

(5) **Tinomiscium tonkinense** Gagnepain in Bull. Soc. Bot. France, LV (1908) 43, et in Fl. Gén. Indochiné I (1908) 129, fig. 14, 2-10; Diels, Menispermac. (1910) 118; Yamamoto, Phytogeogr. View of Menispermac, (Oct. 1938) 322.

NOM. VULG. Tonkin-hosizaki-tuzurahuzi (Jap. nov.)
HABIT. Yunnan: Szemao (*A. Henry!* no. 12068, *-ramus fl. masculinis*).

DISTRIB. Extra-southern China: Yunnan. Indochina (*typus*).

V. *Fibraurea* LOUREIRE (1790)

(6) **Fibraurea tinctoria** Loureiro, Fl. Cochinch. ed. Willd. II (1793) 769, non Hook. f. et Thoms. et aliorum; Miers in Contrib. III (1871) 41; Forbes et Hemsley, Index Fl. Sinensis I in Journ. Linn. Soc. XXIII (1886) 30; Diels, Menispermac. (1910) 122; Merrill, Comment. Lour. Fl. Cochinch. (1935) 258; Yamamoto, Phytogeogr. View of Menispermac. (1938) 322, et in Journ. Soc. Trop. Agr. XIII-1 (1941) 40.

Menispermum tinctorium Spreng. Syst. II (1825) 156.

Fibraurea rescia Pierre, Fl. Forest. Cochinch. (1885) t. 111; Gagnepain in Fl. Gén. Indochiné I (1908) 134.

Cocculus Fibraurea DC. Syst. (1818) 525, et Prodr. I (1824) 99.

NOM. VULG. Kizomeno-tuzuryhuzi (Jap.) Tien-Sien-Tan (China).
HABIT. Kwangsi: Nanning (*R. C. Ching!* Oct. 1926, no. 8285, *-ramus fructifer*, in Herb. Inst. Sc. Shangh.).

DISTRIB. Extra-south.—China: Kwangsi. Indochina (*typus*).

VI. *Aspidocarya* HOOKER f. et THOMSON (1855)

(7) **Aspidocarya uvifera** Hooker f. et Thoms. Fl. Indica (1855) 180; Miers in Contrib. Bot. III (1871) 58, pl. 99; Hook. f. Fl. Brit. Ind. I (1872) 95; Diels, Menispermac. (1910) 127; Yamamoto, Phytogeogr. View of Menispermac. (1938) 322.

NOM. VULG. Hanemi-tuzurahuzi (Jap. nov.)
HABIT. Yunnan: Szemao mont. orientalis, ad circ. 1500 m alt., (*A. Henry!* no. 11867A, *-ramus fl. masculinis*, e *Diels*).

DISTRIB. Extra-southern China: Yunnan. India: Sikkim, Darjeeling (*typus*), Rumno. Assam (Burma).

VII. *Tinospora* MIERS (1851)

(8) **Tinospora crispa** (Linn.) Miers in Hook. f. et Thoms. Fl. Indica I (1855) 183; Hooker f. Fl. Brit. Ind. I (1872) 96; Diels, Menispermac. (2910) 142; Yamamoto, Phytogeogr. View of Menispermac. (1938) 313; Merrill in Journ. Arnold Arboretum XX-2 (1930) 226; Yamamoto in Trans. Nat. Hist. Soc. Formosa, XXIV (Jun. 1944) 196.

Menispermum crispum Linn. Sp. Pl. ed. 2 (1763) 1468.

Menispermum tuberculatum Lam. Dict. IV (1797) 96.

Meniseermum verrucosum Fleming in Asiat. Research. XI (1810) 172; Roxb. Fl. India, ed. 2, III (1882) 808.

Cocculus crispus De Candolle, System. I (1818) 521.

Tinospora Rumphii Boerlage, Catal. Hort. Bogor. (1901) 116; Diels, Menispermac. (1920) 135; Merrill, Interpret. Rumph. Herb. Amboin. (1917) 220, et Sp. Pl. Blancoanae (1918) 145; Handel-Mazzetii in Symbolae Sinicae VII (Aug. 1931) 260, (? = *Tinospera gibbericaulis* Hand.-Mazz.)

Tinospora Thorelii Gagnepain in Bull. Soc. Bot. France LV (1998) 46, et in Fl. Gén. Indochiné I (1908) 130.

Tinospora crispa Diels, Menispermac. (1910) 142, pro parte.

Funis felleus Rump. Herb. Amboin. V (1747) 82, t. XLIV. f. 1.

NOM. VULG. Andawari-tuzurahuzi, samehada-tuzurahuzi (Jap.). Badi-penawari-benar (Borneo). Andawari (Sunda). Titta-kinda (Ceylon).
HABIT. Yunnan: prope Manhae, ad 200 m alt. (Mart. 1915, no. 5816, e *Handel-Mazzetii*).

DISTRIB. Extra-southern-China: Yunnan, (Southern district). Indo-china, Cambodia. India. Burma. Malay Peninsula. Sumatra. Java & Bali.

Borneo. Moluccas. Timor & Small Sunda Islands.

An aqueous extract of this plant is used as a febrifuge and a treatment for stomach trouble, indigestion, diarrhoea, and various other complaints. The roots of this plant contain Berberin, Picroretin, and Columbin.

(9) **Tinospora sagittata** (Oliver) Gagnepain in Bull. Soc. Bot. France LV (1908) 45; Diels, Menispermac. (1910) 138; Rehder et Wilsen in Sargent, Pl. Wilsonianae I-3 (1913) 390; Yamamoto, Phytogeogr. View of Menispermac. (1938) 312, 322, et in Journ. Soc. Agr. XIII (Apr. 1941) 40.

Limacia sagittata Oliver in Hooker, Icon. Pl. (1888) t. 2749; Diels, Fl. Centr. China, in Engl. Bot. Jahrb. XXIX (1900) 345; Forbes et Hemsley, Index Fl. Sinensis III, in Journ. Linn. Soc. XXXVI (1905) 490.

L. sagittata Oliv; ramulis gracilibus sulcatis parce hirtellis, foliis petiolatis oblongo-lanceolatis obtusiuscule acuminatis basi sagittatis v. hastato-sagittatis subtus praecique in nervis hirtellis, racemis ♂ paucifloris fasciculatis pedicellis laxis gracilibus bracteatis, racemis ♀ solitariis geminisve longiuscule pedunculatis 4-10-floris.

Folia 3-5 poll. longa, basi 1-2 poll. lata; lobis basalibus obtusis v. acutis, interdum divergentibus. Sepala elliptica, 3 exteriora minora. Petala carnosula obovato rotundata basi cuneata, sepalis breviora. Stamina 6 libera patentia v. recurva petalis longiora, antherae ovatae. Staminodia (fl. ♀) oblonga petalis brevioribus. Carpella 3 v. 4, stigmatibus papillosolobulatis.—cum pl. 1749. (*e descriptione prima Oliveri*)

NOM. VULG. Yarinoha-tuzurahuzi Jap., Ching-niu-tou Hupeh, China, Tykoutan China.

HABIT. Kweichow: Kiangkow, monte Van-Ching, ad 450m alt. *Y. Tsiang*, Dec. 1930, no. 7489, *-ramus foliifer*, in Herb. Inst. Sc. Shangh.. Szechuan: Ki-kiang Nan-chuan, monte Kinushan, *Hian-yo Ho! ex H. Migo!* Jul. 1935, no. 5375, *-ramus fructifer*, in Herb. SBT; Kin-shan, Shih-tzu-kou (e Diels, Fl. Centr. China). Hupeh: Ichang (Henry! no. 3431, *typus*. e DIELS, Fl. Centr. China).

DISTRIB. Southern China: Hupeh (Ichang), Szechuan (Kikiang), Kweichow; endemic in China.

(10) **Tinospora sinensis** (Loureiro) Merrill, Some Add. Kwangtung Plants in Sunyatsenia I-4 (1934) 193, et Commentary on Loureiro's Fl. Cochinchinensis in Trans. Amer. Philosoph. Soc. New. Ser. XXIV-2 (Jun.

1935) 158; Tanaka & Odashima, Census of Hainan Plants, Suppl. (1940) 197; Yamamoto, Enum. Menisperm. Hainan (1942) 73, fig. 5-6, et in Trans. Nat. Hist. Soc. Formosa XXXIV (Jun, 1944) 194.

Campylus sinensis Loureiro, Fl. Cochinch. (1790) 113, ed. Willdenow (1793) 140.

Tinospora malabarica. Miers in Ann. Nat. Hist. II-7 (185-1) 38; Diels, Menispermac. (1910) 142.

Differ. spec. Camp. caule scandente: foliis cordatis: flore racemose. Caulis fruticosus, crassus, longus, scandens, ramis vix ullis. Folia cordata, acuta, integrrima, utrinque tomentosa, pauca alterna: petiolis longis, genicularis. Flos albo-ruber, racemo terminali, longo, flexuoso, bracteis 3-lobis distincto. *Habitat in collibus nemorosis apud Sinas Cantoniensis. (e descriptione prima edit. Willdenowi).*

NOM. VULG. Ke-andawari-tuzurahuzi (Jap.). Chan-hing-lin Xeng-con-chan, (China). Pudma-goluncha (Bengal). Bu-kinda (Ceylon.)

HABIT. Kwangtung: Kwu-dzu, Tze-kung, (*C.L. Tso!* Apr. 1930, no. 21506, e *Merrilli*); Ching-shan, Coi Tang, (*McClure!* Apr 1831, e *Merrilli*); loco non indicato, (*Loureiro!* Herb. in Paris. Photogr. in Herb. "New York Bot. Garden" *-typus!*). Hainan: Pao-ting (ipse! Nov. 1940, *-ramus foliifer,* in Herb. SBT); Manning (ipse! Nov. 1940, *-ramus sterilis,* in Herb. SBT); prope Chungho (ipse! Apr. 1940, no. 51139 *-ramus sterilis,* in Herb. SBT); inter Batan et Tantas (ipse! Apr. 1942, no. 51265, *-ramus cum fructibus juvenioribus,* in Herb. SBT); prope Hoshui (ipse! Apr. 1942, no. 51315, *-ramus sterilis,* in Herb. SBT); cult. in Hort. Bot. Univ. Imp. Taihok. (ipse! Mart. 1944, *-ramus cum fl. femineis,* in Herb. SBT) prope Pao-ting, Lingshui, (*H.Y. Liang!* Maio 1932, no. 61729, e *Merrill*)

DISTRIB. Extra-southern China: Kwangtung; Hainan. India: Bengal, Sikkim, Ceylon; Khasia, Assam.

This stem is used as a medicinal sample, named Chan-hing-lim in China.

(**11**) **Tinospora capillipes** Gagnepain in Bull. Soc. Bot. France LV (1908) 44, et in Fl. Gén. Indochiné I (1908) 133, fig. 14 (11-18); Diels, Menispermac. (1910) 138; Yamamoto, Phytogeogr. View of Menispermac. (1938) 312; W. Y. Chun, Add. Fl. Kwangtung & South-Eastern China, III. in Sunyatsenia IV. 3-4 (Jun. 1940) 176, fig.

NOM. VULG. Yaanoimo-andawari (Jap. nov.).

HABIT. Kwangtung: Hsin-Yi Hsien, Fen-Hsiu Au, Pei-Ying Kang, (*S.P. Ko!* fruct. alb. 51454). Kwangsi: Hsiu-Yen, Hsien, Yao Shan, Kin-Hsiu, Lào-Shan, 1200m alt. (*C. Wang!* fruct. rosei, Dec. 1936); ex *Chun.*

DISTRIB. South. & Extra-south.—China (Kwangtung, Kwangsi). Indochina.

VIII. *Parabaena* MIERS (1851)

(12) **Parabaena sagittata** (Wall.) Miers in Ann. Nat. Hist. 2-ser. VII (1851) 39, et in Contrib. Bot. III (1871) 57, pl. 98; Hooker f. Fl. Brit. India I (1872) 96; Gagnepain in Fl. Gén. Indochine I (1908) 135; Diels, Menispermac. (1910) 149, fig. 71; Merrill, Bibliogr. Enum. Born. Pl. in Journ. Strait. Brit. Roy. Asiat. Soc. Special-No. (1921) 249; Yamamoto, Phytogeogr. View of Menispermac. (1938) 322, et Enumer. Menispermac. Pl. in Great-Sunda Islands (1944) 97.

Cissampelos sagittata Ham. ex Wall. Catalog. (1828) 4983.

Cissampelos oleracea Wall. Catalog. (1828) 4984.

Parabaena oleracea Miers in Ann. Nat. Hist. 2-ser. VII (1851) 39, nom. nudum.

Parabaena heterophylla Miers in Ann. Nat. Hist. 2-ser. (1851) 39, nom. nudum.

NOM. VULG. Xanone-uribo-tuzahuzi (Jap.).

HABIT. Yunnan: Szemao (*Henry!* no. 11866, *-ramus fl. masculinis* no. 12165, no. 12165A, *-ramus fructifer*, e *Diels*).

DISTRIB. Extra-southern China: Yunnan. India; Nepal, Sikkim, Darjeeling, Terai, Bengal, Curssiang. Khasia, Assam, Nangpo, Konoma, Dupari (*typus*), Patgong. Tenasserim. Addamans.

IX. *Hypserpa* MIERS (1851)

(13) **Hypserpa cuspidata** (Wall.) Miers in Ann. Nat. Hist. 2-ser. VII (1851) 40, et in Contrib. Bot. III (1871) 102, pl. 108; Diels, Menispermac. (1910) 206, fig. 71; Merrill, Bibl. Enum. Born. Pl. in Journ. Strait. Brit. Asiat. Soc. Special-No. (1921) 249; H. H. Chung, Catal. Trees & Shrubs of China (1924) 54; Yamamoto, Phytogeogr. View of Menispermac. (1938) 322, et in Journ. Soc. Trop. Agr. XIII-1 (Apr. 1041) 41, et Enum. Menispermac. in Great-Sunda Islands (1944) 97.

Cocculus cuspidatus Wall. Catalog. (1828) no. 4960.

Limacia cuspidata Hooker f. et Thoms. Fl. Ind. I (1855) 150; Bentham, Fl. Hongk. (1860) 12; Hooker f. Fl. Brit. Ind. I (1872) 100; Forbes et Hemsley, Index Fl. Sinens. I (1886) 28.

Limacia borneesis Miquel in Ann. Mus. Lugd.—Bat. IV. (1868) 83.

NOM. VULG. Enokiba-tuzurahuzi (Jap.). Badi-kauching (Borneo). Niri-wel (Ceylon, Singalea). Nalapau, Mamana (Philip.).

HABIT. Hongkong, (*Y. Tsiang!* Aug. 1929, no. 3006, *-ramus fructifer*, in Herb. SBT). Fukien: Amoy (*H. Migo!* Jul. 1938, *-ramus sterilis*, in Herb. SBT, et in Herb Inst. Sc. Shangh.).

DISTRIB. Southern & Extra-southern China: Fukien (Amoi); Kwangtung; Hongkong. Malay Peninsula. India: Ceylon, Sikkim, Khasia; Assam (*typus*); Andamans. Sumatra; Borneo. Philippines.

(**14**) **Hypserpa laevifolia** DIELS, Menispermac. (1910) 210; Merrill, IInd. Suppl. List of Hainan Pl. in Lingn. Sc. Journ. VI-4 (Dec. 1928) 326; Yamamoto in Trans. Nat. Hist. Soc. Formosa, XXVIII (Oct. 1938) 322, et in Journ. Soc. Trop. Agr. XIII-1 (1941) 41; Tanaka & Odashima, Census of Hainan. Pl. (Dec. 1938) 366; Yamamoto, Enum. Menispermac. Hainan (1942) 73.

Limacia cuspidata Gagnepain in Fl. Gén. Indochiné I (1908) 144.

NOM. VULG. Nindooba-tuzurahuzi (Jap.). Giay-seanh-ngot (Hainan. Gray-gian (Indochina).

HABIT. Hainan: monte Paak-shek (*T'sang!* Jun. 1928, no. 17426, *-ramus fructifer*, in Herb. Inst. Sc. Shangh.); Ngai, monte Yang-ling, *S. K. Lau!* Jun. 1932, no. 92, *-ramus floribus masculinis*, in Herb. Inst. Sc. Shangh., et in Herb. Tanakai, Univ. Taiwan.); loco non indicato, (*Henry!* no. 8563, e *Diels*.

DISTRIB. Extra-southern China: Hainan. Indochina: Annam (*typus*), Tonkin, Cambodia, Cochinchina.

(**15**) **Hypserpa nitida** Miers in Hooker, Kew Journ. III (1851) 258, et in Contrib. Bot. III (1871) 102; Diels, Menispermac. (1910) 210; Yamamoto, Phytogeogr. View of Menispermac. (1938) 322, et in Journ. Soc. Trop. Agr. XIII-1 (Apr. 1941) 41; Merrill et Chun in Sunyatsenia V. no. 1-3 (Aug. 1940) 56.

Limacia cuspidata Hooker f. et Thoms. Fl. Indica I (1855) 190, partim; Bentham, Fl. Hongk. (1961) 12.

Frutex vel arbuscula. Rami elongati sarmentosi, pubescentes. Foliorum petiolus circ. 1.5 cm longus striatus; lamina in utraque facie praeter costam parce pilosulam glabra laevis lucida (sicca subfusca), elliptico-ovata, apice breviter acuminata mucronata, 5-6 cm longa, 2.5-3 cm lata, nervi primarii praeter 2 basales utrinque circ. 2 adscendentes cum ner-

vulis reticulatis subtus vix prominuli. Inflorescentiae ♂ axillares pauci- (3-6-) florae pubescentes. Sepala exteriora bracteoliformia 4-5 margine ciliata, interiora 3-4 majora concava ciliolata; petala 4-5; stamina 6-7. Inflorescentiae ♀ masculis similes. Sepala et petala masculis similia; staminodia nulla; carpella 2, circ. 5-1.5 mm longa; ovarium semiobovoideum glabrum, stigma linguiforme, amplum, recurvatum ovarioque adpressum. Inflorescentia fructifera (arbortu) simplex drupam unicam gignens. Drupae majusculae circ. 10 mm longae, 8 mm latae; endocarpium compressum ambitu late obovatum subspiratum praeter lineam dorsalem rugis transversis ornatum. (*e descriptione Dielsi*)

NOM. VULG. Heriba-aotuzuraluzi (Jap.).

HABIT. Kwangtung: Tapu, prope Macao, in monte Tai-mao (*W. T. Tsang!* Jul. 1932, no. 21151, *-ramus sterilis*, in Herb. SBT) Hongkong, (*Hance!* no. 1910, *C. Wright!*, *typus -ramus floribus masculinis* et *ramus fructifer*, e *Diels*). Hainan: Po-Ting, Tai-Ping Kong, Chang-Sha, 300m. alt. (*F. C. How!* no. 72634); Hing-Lung Tung-Tieh Ling, (*F. C. How!* no. 73164); e MERR. et CHUN.

DISTRIB. South. & Extra-southern China: Kwangtung, Hongkong; Hainan; endemic in China.)

X. *Pericampylus* MIERS (1851)

(**16**) **Pericampylus glaucus** (Lam.) Merrill, Interpret. Herb. Amboin. (1917) 219, et Enum. Philip. Fl. Pl. II (1923) 148, et Enum. Hainan Pl. in Lingn. Sc. Journ. V (1927) 75; Kanehira & Sasaki, List of Hainan Pl. collected by Konishi & Katsumada, in Trans. Nat. Hist. Soc. Formosa XIX (1929) 268; Tanaka & Odashima, Census of Hainan Pl. (1938) 366; Yamamoto, Phytogeogr. View of Menispermac. (1938) 322, et in Journ. Soc. Trop. Agr. XIII-1 (May 1941) 42, et Enum. Menispermac. Pl. Hainan (1942) 74, et Enum. Menispermac. Pl. in Great-Sunda Islands (1944) 99.

Menispermum glaucum Lam. Dict. IV (1797) 100.

Cocculus glaucus De Candolle, Prodr. I (1824) 97; Miquel, Fl. Ind. Bat. I-2 (1859) 82.

Pericampylus lanuginosus Miquel, Fl. Ind. Bat. I-1 (1825) 82.

Cocculus corymbosus Blumé, Bijdr. Nederl. Ind. (1825) 24.

Stephania tomentosa Spreng. Linn. Syst. Veg. ed. 16, IV-2 (1827) 316.

Menispermum villosum Roxb. Fl. Ind. III (1832) 812, non Lam.

Pericampylus incanus Miers in Ann. Nat. Hist. 2-ser. VII (1851) 40; Bentham, Fl. Hongk. (1861) 13; Hooker f. Fl. Brit. Ind. I (1872) 102;

Forbes et Hemsley, Index Fl. Sin. I (1886) 29; Diels, Fl. Centr.-China (1900) 345; Gagnep. in Fl. Gén. Indochiné I (1908) 139; Diels, Menispermac. (1910) 217, fig. 74; Kooders, Exkursionsflora von Java II (1912) 234.

NOM. VULG. Oohoorai-tuzarahuzi, (Jap.). Kap-tsai-t'ang 哈仔藤, Chu-tsoi-t'ang 猪仔藤 (Hainan). Dailoitien (Cochinchina). Badi-metukang (Borneo). Currung (Sumatra). Aroy-geureung (Java). Tugian-tugian, Botang-botang (Philip.).

HABIT. Hainan: Fan-ta, (*McClure!* no. 9134, *Chun!* no. 5813, ex *Merrill*; Ling-shui, (ipse! Nov. 1930, *-ramus sterilis*, in Herb. SBT); monte Paak-shek *C. I. Lei!* Maio 1933, no. 688, *-ramus fructifer*, in Herb. Tanakai); Ngai, monte Yang-ling (*S. K. Lau!* Jun. 1932, no. 69, *-ramus fructibus* et *fl. femineis*, in Herb. Tanakai) et Herb. Inst. Sc. Shangh.); in monte Hung-shek (*W. T. Tsang!* Apr. 1928, no. 120, *-ramus fl. femineis*, in Herb. Inst. Sc. Shangh.). Kwangtung: Kochow (*Y. T'siang!* Maio 1929, no. 2092, *-ramus fl. femineis*, in Herb. SBT); Hongkong, (*Hance!* no. 2381, e *Diels*. Szechuan: Nan-chuan (e DIELS, Fl. Centr. China); Omei (*Faber! -fructus* e *Diels*); Yunnan: Mengtse *Henry!* no. 10656A.B, *-ramus femin.*, e *Diels*; Szemao, ad 1350m alt. (*Henry!* no. 10659F, *-ramus fl. masc.*, e *Diels*).

DISTRIB. South. & Extra-southern China: Szechuan (Nan-chuan), Kwangtung, Hongkong; Hainan. Indochina. India (*typus*) to Malay Peninsula. Philippines. Sumatra, Java, Borneo. Celebes, Timor, Moluccas.

The stem of this vine is used for rope in Java; and its roots and stem contain one of the alkaloids.

(17) **Pericampylus formosanus** Diels, Menispermac. (1910) 221, fig. 75; Chun, Fl. Kwangtung in Sunyatsenia I-4 (1934) 234; Yamamoto, Suppl. Icon. Pl. Formos. IV (1928) 7, fig. 3, et Phytogeogr. View of Menispermac. (1938) 322, et in Trans. Nat. Hist. Soc. Formosa XXIX (Jul. 1939) 198, et in Journ. Soc. Trop. Agr. XIII-1 (1941) 42, et Menispermac. Japans (1944) 6.

NOM. VULG. Ko-hoorai-tuzurahuzi (Jap.).

HABIT. Fukien: Kengmon (*H. Migo!* Jul. 1937, *-ramus sterilis*, in Herb. SBT). Hongkong: Richimod, (*Bodinier! -ramus fl. masc.*, e *Diels*. Kwangtung: Thai-yong, in monte, ad 2000 ped. alt. (det. *W. Edgar Evans*, in Herb. Edingburgh, ex *Chun*).

DISTRIB. Southern China: Kwangtung, Hongkong, Fukien, Formosa (*typus-Faurie!* no. 113, *-ramus fl. masculinis*). Ryu-kyu.

XI. *Diploclisia* Miers (1851)

(18) **Diploclisia glaucescens** (Blumé) Diels, Menispermac. (1910) 225, fig. 77, A-L; Merrill et Chun, Addit. of our Knowledge of Hainan Flora in Sunyatsenia II-1 (1934) 26; H. H. Chung, Catal. of Trees &

Shrubs of China (1824) 53; Yamamoto, Phytogeogr. View of Menispermac. (1938) 322, et Enum. Menispermac. Pl. Hainan (1942) 74, et Enum. Menispermac. in Great-Sunda Islands (1944) 100; Tanaka & Odashima, Census of Hainan Pl. (1938) 366.

Cocculus glaucescens Blumé, Bijdr. Nederl. Ind. (1825) 25; Miquel, Fl. Ind. Bat. I-2 (1859) 82.

Cocculus macrocarpus Wight, Illustr. I (1840) 22, t. 7; Wight et Arnott, Prodr. Fl. Ind. I (1834) 13; Hooker f. et Thoms. Fl. India (1855) 191; Hooker f. Fl. Brit. India I (1872) 101; Forbes et Hemsley, Index Fl. Sinens. I (1886) 28.

Diploclisia macrocarpa Miers in Ann. Nat. Hist. 2-ser. VII (1851) 42, ampl., et in Contrib. Bot. III (1871) 280, t. 127; Beccari in Malesia I (1877) 152; Gagnepain in Fl. Gén. Indochiné I (1908) 140, partim.

NOM. VULG. Uraziro-tuzurahuzi (Jap.) Handje-somek (Sunda). Beum-hias (Cochinchina).

HABIT. Hongkong, (*Wright! Seemann! Hance! Lamoho!* in Herb. Kew); ibidem, (*Bodinier!* no. 1136, *-fl.*, e *Diels*). Hainan: prope Tengchiao (ipse! Nov. 1940, *-ramus sterilis*, in Herb. SBT); Po-ting (ipse! Nov. 1940, *-ramus sterilis*, in Herb. SBT); inter Chunho et Huanliu (ipse! Dec. 1940, *-ramus sterilis*, in Herb. SBT); inter Peilei et Tungfang (ipse! Dec. 1940, *-ramus sterilis*, in Herb. SBT); prope San-a, (ipse! Nov. 1940, *-ramus sterilis*, in Herb. SBT); prope Po-ting, (*P.S. Lo!* Apr. 1932, no. 62624); Chim-shan, (*McClure!* Maio 1932, no. 20115. Yunnan: Szemao, ad circ. 1200m alt. (*A. Henry!* no. 12238A, e *Diels*).

DISTRIB. South. & Extra-southern China: Kwangtung, Hongkong, Yunnan & Hainan. Indochina: Laos, Cambodia, Cochinchina. India, Ceylon, Philippines. Sumatra, Java, (*typus*), Borneo. Celebes. New-Guinea.

(**19**) **Diploclisia affinis** (Oliver) Diels, Menispermac. (1910) 227; Yamamoto, Phytogeogr. View of Menispermac. (1938) 322.

Cocculus affinis Oliver in Hooker, Icon. Pl. (1888) t. 1760; Diels Fl. Centr. China, in Engl. Bot. Jahrb. XXIX (1900) 845; Hao in Engler's Bot. Jahrb. LXVII (1938) 600.

NOM. VULG. Hisiba-Urazirotuzurahuzi (Jap. nov.)

HABIT. Hupeh ocidentalis: Ichang, Nanto (*A. Henry!* no. 1887, no. 3818, *typus-ramus fl. masculinis*, et *ramus fructifer*, e *Diels*; ibidem, (*Wilson!* no. 2679, *-ramus fl. masc.* et *ramus fructifer*, e *Diels*); ibidem, (*Henry!* no. 3431, e *Diels*, Fl. Centr. China). Szechuan: Pa-hsien, ad 710m alt. (*Hao!-fl.* April. 1930, Nr. 28, e *Hao*).

DISTRIB. Southern China: West Hupeh (Ichang); Szechuan; Kwangtung; endemic in China.

(20) **Diploclisia chinensis** Merrill in Philip. Journ. Sc. XV (1919) 235; Handel-Mazzetti, in Symbolae Sinicae VII (1931) 260; Yamamoto, Phytogeogr. View of Menispermac. (1938) 322, et in Journ. Soc. Trop. Agr. XIII-1 (Apr. 1941) 42.

Frutex scandens, glaber; foliis late ovatis ad subreniformibus, 5 ad 10 cm longis, 7 ad 12 cm latis, apice acutis, basi 5-nerviis, late truncato-rotundatis ad leviter cordatis, petiolo 4 ad 7 cm longo; inflorescentiis axilaribus, pedunculatis, umbellato-cymosis, 1.5 ad 3 cm longis; floribus ♂ 6-meris, sepalis ellipticis ad obovatis, circiter 2.5 mm longis, lineolatis, petalis rhomboideis 1.5 mm longis, apice rotundatis, basi cuneatis, auriculis lateralibus acutis, inflexis.

NOM. VULG. Hazenoha-tuzurahuzi (Jap.).

HABIT. Hunan: inter Hsinhwa et Wukang, an 320m alt. (no. 12559, e *Handel-Mazzetti*). Kwangtung: Shiuchow, Fan-Kwai No Shan, (*To Kang Peng!* no. 2764, *typus-fl.* ♂, no. 2779, 19 Apr. 1019, e *Merrill*): Lokchong, (*C. L. Tso!* Maio 1929, no. 20875, *-ramus fructifer*, in Herb. Inst. Sc. Shangh. et in Herb SBT. Fukien: *Kengmon*, prope Mawi, (*H. Migo!* Jul. 1937, in Herb. SBT). Chekiang: Tientungssu, prope Ningpo, (*H. Migo!* Jul. 1936, *-ramus sterilis*, in Herb. SBT).

DISTRIB. Southern China: Hupeh South, Chekiang, Hunan, Fukien, Kwangtung; endemic in China.

XII. *Cocculus* DE CANDOLLE (1818)

(21) **Cocculus laurifolius** De Candolle, Syst. I (1818) 530, et Prodr. I (1824) 100; Deless. Icon, Selectae I (1820) t. 97; Colebr. in Trans. Linn. Soc. XIII (1822) 65; Hooker f. et Thoms. Fl. Indica (1855) 101; Hooker f. Fl. Brit. Ind. I (1872) 101; Miquel, Prol. Fl. Jap. in Ann. Mus. Lugd.—Bat. III (1867) 198, et Fl. Ind. Bat. I-1 (1855) 81; Franchet et Savatier, Enum. Pl. Jap. I (1874) 19; Henry, List Pl. Formos. (1896) 16; Matsumura et Hayata, Enum. Pl. Formos. (1906) 14; Scheffer in Nat. Tijdsch. Nederl. Ind. XXXII (1873) 399; Boerlage in Catal. Pl. Boerl. (1899) 39; Diels, Menispermac. (1910) 238, fig. 79; Kooders, Exkursionsflora von Java II (1912) 335; Merrill, Enum. Philip. Fl. Pl. II (1823) 149; A. Rehder, Notes on Ligneous Pl. described by H. Léveillé from Eastern Asia, in Journ. Arnold Arb. XVII (1936) 383; Yamamoto, Phytogeogr. View of Menispermac. (1938) 322, et in Trans. Nat. Hist. Soc. Formos. XXIX-190 (Jul. 1939) 199, et Menispermac. Japans (1944) 13, et Enum. Menispermac. in Great-Sunda Islands (Sept. 1944) 103, Merrill & Chun

in Sunyatsenia V. no. 1-3 (Aug. 1940) 55.

Menispermum laurifolium Roxb. Fl. Ind. III (1832) 815.

Cocculus angustifolius Hassk. Catal. Pl. Hort. Bogor. (1844) 172.

Holoperia australis Miers in Ann. Nat. Hist. 3-ser. XIX (1867) 29, nom. nudum, et in Contrib. Bot. III (1871) 277.

Holoperia laurifolia Miers in Ann. Nat. Hist. 3-set. XIX (1867) 29, nom. nudum, et in Contrib. Bot. III (1871) 276.

Cebatha laurifolia O. Kuntze, Rev. Gen. I (1891) 9.

Cocculus laurifolius Boerl. var. *angustifolius* Boerl. et var. *triplinervius* Boerl. in Catal. Pl. Bogor. (1898) 40.

Cocculus laurifolius var. *bariensis* Gagnep. in Fl. Gén. Indochiné I (1908) 141.

Cinnamomum Esquirolii Léveillé, Fl. Kouy-Tchéou (1915) 218.

NOM. VULG. Uyak (China). Koosyuu-uyak, Komogomezin (Jap.)

HABIT. Yunnan: prope Szemao, in monte, ad 1200 m alt. (*Henry!* no. 12940A, e *Diels*). Hainan: Kum-Yun, Shan-Mo Gwut. (*H. Y. Liang!* no. 63845); Bak-Sha, Po-Ting, (*S. K. Lau!* no. 27546); Kum-Yun, Ting-Gao, (*S. K. Lau!* no. 27737); Po-Ting Pa-Ma Ling, (*S. K. Lau!* no. 28073); e *Merrill et Chun*.

DISTRIB. South. & Extra-southern China: South-Hunan, Fukien, Kweichow, Kwangtung, Yunnan, Hainan, Formosa, Ryu-kyu. Southern Japan: Sikoku, Kyu-syu, South. Hondo. Philippines. Indochina. India (*typus*) through Burma to Siam. Sumatra. Java.

The roots which are called Uyak, are used as an insect powder, a diuretic, and a medicine for neuralgia & rheumatism. They contain some alkaloids, Coclaurine and others.

(22) **Cocculus mollis** Wallich, Catal. (1828) no. 4973; Hooker f. et Thoms. Fl. Ind. I (1855) 193; Hooker f. Fl. Brit. Ind. I (1872) 102; Diels, Menispermac. (1910) 235; Handel-Mazzetti in Symbolae Sinicae I (1931) 261; Wu, Beiträge zur Kenntnis der Fl. von Süd-China, in Engl. Bot. Jahrb. LXXI Bd.-2 (Nov. 1940) 174.

Nephroica mollis Miers in Ann. Nat. Hist. 3-ser. XIX (1867) 26, nom. nudum, et in Contrib. Bot. III (1871) 265.

Cebatha mollis O. Kuntze, Rev. Gen. I (1891) 9.

NOM. VULG. Kobano-aotuzurahuzi (Jap. nov.).

HABIT. Szechuan australis: Nanchuan (*von Roosthorn!* no. 2030, e *Diels*). Hupeh: Patung (*Henry!* no. 6124, in, Herb. Paris). Kweichow-Szechuan Occid.: Hwatjiao-ho, ad 900 m. alt. (no. 10385, ex *Handel-Mazzetti*). Kweichow: Hwatjiao-ho, (e *Diels*,

Fl. Centr. China). Yunnan: Mengtse, ad 1350–1500 m alt. (*Henry!* no. 9500 A, B, C; no. 10656C,D,E, *-ramus fl.* et *fructibus*, e *Dielsi*); Szemao ad circ. 1500 m alt. (*Henry!* no. 11902A, e *Diels*): Tali, Ta-pin-tse, Ki-chang (*Delavay!* no. 4359, in Herb. Mus. Paris); Beyendjjing, ad 1500–1600 m alt. (no. 6282, ex *Handel-Mazzetti*).

DISTRIB. South. & Extra-Southern China: Hupeh, Szechuan, Kweichow, Yunnan. India: Nepal, (*typus*), Khasia, Assam (Shillung), Naga (Kohima). Burma: Shan, Mairung, Maophlang.

(**23**) **Cocculus sarmentosus** (Loureiro) Diels, Menispermac. (1910) 283; Kooders, Exkursionsflora von Java, II (1912) 231; Merrill, Enum. Philip. Fl. Pl. II (1923) 149; Makino & Nemoto, Fl. Jap. ed. 2 (1931) 351; McClure, Plants of Lantau Island I, in Lingn. Univ. Sc. Bulletin No. 3 (1931) 17; Wu, Beiträge zur Kenntnis der Fl. Süd-China in Engl. Jahrb. LXXI. Bd. 2 (Nov. 1940) 174; Yamamoto, Phytogeogr. View of Menispermac. (1938) 322, et Enum. Menispeamac. Pl. Hainan (1942) 75, et Menispermac. Japans (1844) 11, et in Trans. Nat. Hist. Soc. Formos. XXXIV (1944) 198; Merrill & Chün in Sunyatsenia V. no. 1-3 (Aug. 1940) 55.

Nephroia sarmentosa Loureiro, Fl. Cochinch. II (1790) 692.

Menispermum ovalifolium Vahl in Pers. Ench. II (1807) 628; Spreng. Syst. Veg. II (1835) 157.

Cocculus ovalifolius DC. Syst. I (1818) 526, et Prodr. I (1824) 99; Blumé, Bijdr. Nederl. Ind. (1825) 25.

Cocculus Nephroica DC. Syst. I (1818) 531, et Prodr. I (1824) 100.

Menispermum reniforme Spreng. Syst. II (1825) 156.

Menispermum hexagynum Roxb. Fl. Ind. III (1832) 816.

Cocculus cuneatus Bentham in Journ. Linn. Soc. V-2, Suppl, (1861) 50; Forbes et Hemsley, Index Fl. Sin. in Journ. Linn. Soc. XXIII (1886) 28; Henry, List Pl. Formos. (1895) 16; Matsumura et Hayata, Enum. Pl. Formos. (1906) 14.

Nephroica sarmentosa Miers in Contrib. Bot. (1871) 261.

Limacia Kunstleri King in Journ. Asiat. Soc. XLVIII (1890) 383.

NOM. VULG. Hoozan-tuzurahui (Jap.). Wahe-bau-nau, Putto, Usatsookan (Taiwan). Thih-gu-jip-chioh (鐵牛入石), Kai-shi-kai-t'aug (鷄屎藤), (Kwangtung).

HABIT. Fukien: Amoy, (*Wilford!* no. 458, *-ramus fl. masculinis*, *Hance!* no. 148, *-ramus fl. masc.*, e *Diels*). Kwangtung: Canton, (*Wallich!* no. 4968, *Hance!* no. 638, e *Diels.*); Lanteu Island, Taa.-ue-shan, (*T'sang!* no. 16687, in Herb. Lingn. Univ.). Hongkong: Stanley, (*Ford! Bodinier!* no. 923, e *Diels.*). Hainan: loco non indicato, (*A. Henry!* no. 8693, *-ramus fl. masc.*, e *Dielc.*); Man-Ning, Tung-Shan Ling, (*F.C.*

How! no. 71458); Ling-Shui, inter Tien-Tou et Ka-Hsie-Huk, (*F. C. How!* no. 73933); e *Merr.* et *Chun.*

DISTRIB. South. & Extra-Southern China: Fukien, Kwangtung, Hongkong, Kwangsi, Hainan, Formosa. Indochina: Tonkin, Cochin-China (*typus*). Siam. Malay-Peninsula. Philippines. Sumatra, Java, Moluccas. Mascarene Islands.

The stem and roots are used as a tonic medicine, and as a cicatrizant and also for rheumatism. It contains some alkaloids, Trilobin, Isotrilobin, & Menisarin.

var. **pauciflorus** Wu, Beiträge zur Kenntnis der Flora von Süd-China, in Engl. Jahrb. LXXI. Bd. Heft 2 (Nov. 1940) 173.

Differt a typo: inflorescentiae 1- vel 2-. raro 3-flora; pedicelli ± 3 mm longi, parcissime pilosi; bracteolae 2, deltoideae, pilosae; sepala 9, 6 exter. minora inaequalia, ovato-deltoidea vel late elliptica, 1-1.7 mm longa et 0.9-1.1 mm lata; 3 inter. majora, inaequalia, late ovata vel elliptica, valde concava, subglandulosa, ± 2.2 mm longa et 2 mm lata, margine ± erosulo-denticulata; petala 6 inaequalia, 2 mm longa et 0.7 mm lata, apice bifida, lobis brevibus non valde patentibus. (*e descriptione prima*)

NOM. VULG. Sobana-hoozan-tuzurahuzi (Jap. nov.).
HABIT. Kwangsi: in monte, Dai-ming, ad 280m alt., (*Sin!* Aug. 1933, *typus*, no. 25306, ex *Wu*).

DISTRIB. Southern China: Kwangsi; endemic in China.

(24) **Cocculus trilobus** (Thunberg) De Candolle, Syst. I (1818) 522, et Prodr. I (1824) 98; Diels, Menispermac. (1910) 232, fig. 78, A-G, escl. H-L; Rehder et Wilson, in Sargent, Pl. Wilson. I-3 (1913) 388; Handel-Mazzetti in Symbolae Sinic. VII (1931) 260; Makino & Nemoto, Fl. Jap. ed. 2 (1931) 351; Yamamoto, Phytogeogr. View of Menispermac. (1938) 322, et Enum. Menispermac. Ryuu-kyuu (1939) 198, et in Journ. Soc. Trop. Agr. Taihok. XIII-1 (Apr. 1941) 43, et Menispermaceen Japans (1944) 9; Kitagawa, Lineamenta Florae Manshuaicae (1939) 230; Wu, Beiträge zur Kenntnis der Flora von Süd-China, in Engl. Bot. Jahrb. LXXI, Bd. 2 (Nov. 1940) 174.

Menispermum trilobum Thunberg, Fl. Jap. (1784) 194; Lam. Dict. IV (1805) 825,

Menispermum orbiculatum Thunb. Fl. Jap. (1784) 194, non Linn.

Cocculus Thunbergii DC. Syst. I (1818) 524, et Prodr. I (1824) 98; Miquel, Prolus. Fl. Japon. in Ann. Mus. Bot. Lugd.-Bat. III (1867) 10; Maximowicz, Mélang. Biol. XI (1883) 651; Forbes et Hemsley, Index Fl. Sin. I (1886) 28; Henry, List of Pl. Formos. (1895) 16; Diels, Fl. Centr. China (1901) 345; Matsum. et Hayata, Enum. Pl. Formos. (1906) 14; Hayata, Icon. Pl. Formos. I (1911) 35.

Nephroica caudata Miers in Ann. Nat. Hist. 3-ser. XIX (1867) 26, nom. nudum, et in Contrib. Bot. III (1871) 263.

Nephroica Thunbergii Miers in Contrib. Bot. III (1871) 263.

Nephroica cynanchoides Miers in Ann. Nat. Hist. 3-ser. XIX (1867) 26, nom. nudum, et in Contrib. Bot. III (1871) 267.

NOM. VULG. Aotuzurahuzi, Tuzura-kazura, Tintin-kazura, Kamiebi (Jap.) Mu-fang-chi 木防己, Chin-mu-hsiang 青木香, Pai-shan-fan-sgu 白山番薯, Fang-chi 防己; (Taiwan, China).

HABIT. Hupeh: Ichang, (*A. Henry!* no. 225, *-ramus fl.* et *fructibus*, e *Diels.*); loco non indicato, (*A. Henry!* nos. 225, 240, 697, 1495, 1655, 1688, 2944, 3255, 2640, 4226, *Wilson!* no. 502, e *Diels.*); Patung, (*Wilson!* no. 1929, e *Diels.*); Pachang, (*Wilson!* no. 2516, e *Diels.*). Shangtung: loco non indicato, (*Maingay!* no. 144, e *Diels.*); Kiau-tschou, (*Zimmermann!* no. 216, e *Diels.*). Shensi: Tui-kio, monte Ko-kou, (*Giraldi!* no. 6976, no. 6977, *-ramus fructifer*, e *Diels.*); Huo-kia-zaez, (*Giraldi!* no, 2061, e DIELS.); Lum-sanhuo, (*Giraldi!* no. 6978, e DIELS.). Anhwei: Hsi, (*H. Migo!* Jun. 1934, *-ramus fl. masc.* in Herb. Inst. Sc. Shangh.); prope Kaiting (*H. Migo!* Nov. 1933, *-ramus fl. masculinis*, in Herb. SBT). Kiangsu: Nanking, monte Tzuchin, (*H. Migo!* Sept. 1934, *-ramus fructifer*, in Herb. SBT); prope Shanghai (*H. Migo!* Nov. 1933, *-ramus sterilis*, in Herb. SBT, et in Herb. Inst. Sc. Shangh.); Shanghai, (*Maingay!* no. 458, *Faber! Bodinier!* no. 274, no. 275, e *Diels.*). Szechuan: Nan-chuan, (*Bock!* no. 2030, *-ramus floribus, Dielsi*); inter Djientschang, (no. 1876, ex *Handel-Mazz.*); Luschan, (no. 1957, ex *Handel-Mazz.*); Chao-hua-hsien, ad 600 m alt. (*K. S. Hao!* 1930, no. 310, form. *angustifolia* Diels.) Kweichow: Songli, (*Bodinier!* no. 1289, *-ramus fl. masc.*, e *Diels*); Pinfa, (*Bodinie!* no. 1077, e *Diels*); monte Nango, prope. Guiyang, ad 1300 m alt. (ex *Handel-Mazz.*); Kweitin, *Tsiang!* Jun. 1930, no. 5340, *-ramus fl. masc.*, in Herb. Inst. Sc. Shangh.) Chekiang: Yuengwu *Y. Y. Ho*, Oct. 1934, no. 3483, *-ramus fructifer*, in herb. SBT, et in herb. Inst. Sc. Shangh.); Haimen (*H. Migo!* Nov. 1935, *-ramus fructifer*, in Herb. SBT, et in Herb. Ins. Sc. Shangh.); Hotow, (*S. Watanabe!* Sept 1937, nos. 35,102, *-ramus floribus*, in Herb. SBT). Hunan: prope Hsinhwa, in monte Hsikwang-shan, an 100–650 m alt. (no. 12576, ex *Handel-Mazz.*). Kiangsi: Kaoan, (*Y. Tsiang!* Ang. 1932, no. 10392, *-ramus fl. masc.* in Herb. SBT). Fukien: prope Amoy, Hochi, (*H. Migo!* Jul. 1938, *-ramus sterilis*, in Herb. SBT). Hongkong, (*Faber! Bodinier!* no. 685, *Loher!*, e *Diels*). Kwangsi: Luchen, ad 1100 m alt. (*R. C Ching!* Jun. 1928, no. 6112, *-ramus fl. masc.*, in Herb. SBT). Yunnan: prope Loping, in mont. ad 1500–1800 m alt. (ex *Handel-Mazz.*)

DISTRIB. Northern China: Hupeh, Shensi, Kiangsu, Anhwei, Szechuan. South. & Extra-southern China: Chekiang, Hunan, Fukien, Kiangsi,

Kweichow, Hongkong, Kwangsi, Yunnan, Formosa. Ryû-kyû. Japan proper: Hokkaido, Honsyuu, Kyu-syû (*typus*). Korea. Philippines.

The roots and stem of this plant are used as a diuretic, a febrifuge, and an anodyne; they contain aome alkaloids, Trilobin, Homotrilobin, Trilobamin, and Normenisarin.

SPECIES EXCLUSA

Cocculus hirsuta (Linn.) Diels, Menispermac. (1910) 236.

Memispermmu hirsutum Linn. Sp. Pl. I (1753) 341.

Cocculus villosus De Candolle, Syst. Veg. I (1818) 525, et Prodr. I (1824) 98; Hooker f. Fl. Brit. Ind. I (1872) 101.

NOM. VULG. Ke-aotvzurahuzi (Jap. nov.).
HABIT. China austr? Cap Hsing-mun, (*Meyer! fl. femin. e Diels.*).

DISTRIB. South,-China.? Siam. Burma. India (includ. Ceylon & Belchistan). Tropical Africa.

XIII. *Pachygone* MIERS (1851)

(25) **Pachygone sinica** Diels, Miscellanea Sinensia IV. in Notizbl. Bot. Gart. Berlin, XI (1831) 209; Yamamoto in Journ. Soc. Trop. Agr. XIII-1 (Apr. 1941) 44.

Scandens, rami striato-sulcati. Foliorum petiolus gracilis strictus glaber 2-3 cm longus, lamina papracea supra glabra, subtus praeter ipsam basin nervorum primariorum pilosam glabra, ovata vel oblongo-ovata, apice acuta conspicue mucronulata, 4-8 cm longa, 2-5-4.5 cm lata, nervi nervulique reticulati in utraque facie prominuli. Racemi ♀ parce pilosi, stricti, 5-8 cm longi, fructiferi ad 12 cm elongati. Pedicelli circ. 2 mm longi. Sepala 3 exteriora 1 mm longa, 3 interiora latiora 1.3 mm longa, carpella 6 glabra cum style 0.8 mm longa. Drupae circ. 10 mm longae, 13 mm latae; endocarpium reniformi-speratum, firme pergameum, praeter lineam dorsalem haud elevatam obsolete transverse rugosum.

Species nova foliis gracili-petiolatis papyraceis fere glabris acutis *P. leptostchyae* (DC.) Miers timorensi similis; sed illa foliis laevibus, inflorescentia majis pubescenti, drupis minoribus a specie nostra differt. Specimen typicum carpellis 6 notabile est; an hexagynia speciei propria sit, ulterius inquirendum est.

NOM. VULG. Ooba-nikkei-tuzurahuzi (Jap.).
HABIT. Kwangtung: pr. Win-fu, ad 200 m alt., (*S. S. Sin!* Oct. 1928, no. 5315, *typus* speciei, *-ramus fl. femin.*, e *Diels*). Kwangsi: in monte Chin-lung, ad circ. 1200 m alt., (*R. C. Ching!* no. 6962, *-ramus cum fructu*, in Herb. Inst. Sc. Shangh.); in mont. Yao-shan, (*S. S. Sin!* Apr. 1929, no. 8044, no. 8119, *-ruct.*, e *Diels*).

DISTRIB. Southern China: Kwangtung, Kwangsi; endemic in China.

(**26**) **Pachygone valida** Diels, Menispermac. (1910) 243; Yamamoto, Phytogeogr. View of Menispermac. (1938) 322.

Rami cortice olivaceo tecti. Foliorum petiolus 2-3 cm longus; lamina coriacea, utrinque glabra, ovata vel elliptico-ovata, acuminata, 8-11 cm longa, 5.5-6 cm lata, nervi primarii 3- vel 5-palmati subtus prominuli secundarii et nervuli vix prominuli.--(Flores et ♂ et ♀ adhuc ignoti.)—Pseudoracemi fructiferi fasciculati, rhachis ± flexuosa, pedicelli brevissimi. Drupae subglobosae circ. 1.5 cm diametr.; endocarpium utrinque fasciis 3 levissime rugosis ornatum. (*e descriptione prima*).

NOM. VULG. Togairba-nilokei-tuzurahuzi (Jap. nov.).
HABIT. Yunnan: Men-tse, ad circ. 500m alt., (*Henry!* no. 13632, *typus-ramus fructifer*, e *Diels*).

DISTRIB. Extra-southern China: Yunnan; endemic in China.

XIV. *Sinomenium* DIELS (1910)

(**27**) **Sinomenium acutum** (Thunberg) REHDER et WILSON, in Sargent, Pl. Wilson. I-3 (1913) 387; Makino & Nemoto, Fl. Jap. ed. 2 (1931) 352; Handel-Mazzetti in Symbolae Sinicae VII (1931) 261, cum var. *cinereum;* Yamamoto, Phytogeogr. View of Menispermac. 1938) 322, et in Journ. Soc. Trop. Agr. XIII-1 (1941) 45, et Menispermae. (1944) 15.

Menispermum acutum Thunberg, Fl. Japonica (1784) 193.

Cocculus diversifolius Miquel, Prolus. Fl. Jap. in Ann. Mus. Bot. Lugd.—Bat. III (1867) 10, non DC.; Franchet et Savatier, Enum. Pl. Jap. I (1874) 20; Maximowicz, in Mél. Biol. XI (1883) 652, t. II. 21-35; Matsumura, Index Pl. Jap. III (1912) 132.

Cocculus acutus (Thunberg) Makino in Tokyo Bot. Mag. XXII (1908) 172.

Sinomenium diversifolium Diels, Menispermac. (1910) 254.

Cebatha Miqueliana O. Kuntze, Rev. Gen. I (1891) 9.

Cocculus heterophyllus Hemsley et E. H. Wilson in Kew Bulletin 150.

NOM. VULG. Ooturahuzi, Tuzura (Jap.). Han-fang-chi 漢防已, Chin-teng 青藤 (China).

HABIT. Hupeh: Ichang (*Henry!* no. 4105, e *Diels*); Changyang, (*Wilson!* no. 1203A, no. 2675, e *Diels*). Szechuan: Nanchuan, *Y. Y. Ho* no. 5377, *-ramus fl. mascul.*, in Herb. SBT); Omei 峨嵋, (*Wilson!* no. 4718, e *Diels*). Chekiang: Yueng-wu *Y. Y. Ho* Oct. 1934, no. 544, *-ramus sterilis*, in Herb. Inst. Sc. Shangh.).

DISTRIB. Northern & Southern China: Hupeh (Ichang, & Changyang), Szechuan, Chekiang, Kweichow. Japan: Honsyû (*typus*), Sikoku, Kyu-syu.

This plant is used as a deuretic and to cure rheumatism; it contains some alkaloids, Sinomenin, Disinomenin, Acutumin, Sinactin and (by H. Kondo, etc.).

Var. **cinereum** (DIELS) REHDER et Wilson, in Sargent, Pl. Wilson. I-3 (1913) 387; Makino & Nemoto, Fl. Jap. ed. 2 (1931) 352; Handel-Mazzetti in Symbolae Sinicae VII (1931) 261; Yamamoto, in Journ. Soc. Trop. Agr. XIII (1941) 45.

Cocculus diversifolius Miquel var. *cinereus* Diels in Engler's Bot. Jahrb. XXXVI (1985) Beibl. no. 82, 45.

Menispermum diversifolium var. *molle* Gagnepain in Bull. Soc. Bot. France LV (1908) 39.

Sinomenium diversifolium Diels var. *cinereum* Diels, Menispermac. (1910) 255.

Planta non solum ad inflorescentiam pilosa sed foliis supra pilosulis demum glabrescentibus subtus glaucis molliter pilosis. Flores typi. (*e descriptione prima Dielsi*)

NOM. VULG. Uraziro-ooturahuzi (Jap.). Chin-teng 青藤 (China).

HABIT. Schensi (boreal.): Kan-y-quo, (*Giraldi!* no. 4358, *typus -ramus florifer*, e *Diels*); Tui-kio-tsuen, *Giraldi!* no. 6992, *-ramus fructifer*, e *Diels*. Hupeh: Nanto, (*Henry!* no. 2014, no. 2590, *Wilson!* no. 1203, e *Diels*). Szechuan: Cheng-kou, (*Farges!* nos. 108, 306, e *Diels*); Nan-chuan, T'an-chia-wan, (*Rosthorn!* no. 399, e *Diels*); Yalung, in monte, ad 1950 m alt., (no. 2052, ex *Handel-Mazz.*); Ye-yuen, (*Schneider!* no. 4138, ex *Handel-Mazz.*). Kweichow: inter Lopuse et Wendwen, prope Duyun, ad 100 m alt., (no. 10700, ex *Handel-Mazz.*); Kwei-yang, (*Bodinier!* no. 2303, *-ramus fl. masc.*, no. 2372, *-ramus fl. masculinis*, no. 2373, *-ramus fl. femineis*, e *Diels*); in monte Ku-kai, (*Y. Tsiang!* Sept. 1930, no. 899, *-ramus fructibus longe racemosis*, in Herb. Inst. Sc. Shangh.). Yunnan: Maliwan, ad 2600 m alt. (*Maire!* ex *Handel-Mazz.*).

DISTRIB. Northern China: Shensi, Hupeh, Szechuan. South. & Extra-southern China: Kweichow; Yunnan.

XV. *Menispermum* LINN. (1737)

(28) **Menispermum dauricum** De Candolle, Syst. I (1818) 540, et

Prodr. I (1824) 102; Deless. Icon. I (1820) 26, t. 100; Bunge, Enum. Pl. Chin. Bor. (1835) 4; Ledeb. Fl. Ross. I (1842) 78; Maximowicz, Prim. Fl. Amur. (1859) 30, 468, 480, in Mél. Biol. XIII (1883) 647, t. II; Miquel, Prolus. Fl. Jap. Ann. Mus. Bot. Lugd.—Bat. III (1867) 10; Miers in Contrib. Bot. III (1871) 116; Hance in Forb. et Hemsley, Index Fl. Sin. I (1886) 29; Franchet, Pl. David. I (1883) 25; Matsumura, Index Pl. Jap. III (1912) 132; Makino & Nemoto, Fl. Jap. ed. 2 (1931) 342; Yamamoto, Phytogeogr. View of Menispermac. (1938) 323, et in Journ. Soc. Trop. Agr. Taihoku, XIII-1 (Apr. 1941) 46, et Menispermac. Japans (1944) 17; Nakai, Honda, Satake et Kitagawa, Index Florae Jeholensis in Report, Ist. Scientific Expedition to Manchou. IV-4 (Aug. 1936) 19; Kitagawa, Lineamenta Florae Manshuricae (1939) 231.

NOM. VULG. Koomri-kazura, Tuzurahuzi, (Jap.). Tschau-djia drua, Ta-tschiao-tschan, Han-fang-chi 漢阿已, Huang-tiao-hsiang 黃條香, (China: Shantung, Mongola).

HABIT. Kiangsu: Hai-wei, in monte, ad circ. 180 m slt., (*C. L. Tso!* Maio 1926, *-ramus fl. masc.*, in Herb. SBT ex Herb. Inst. Sc. Shangh.); Ishing (*Y. L. Keng!* Aug. 1929, no. 2534, *-ramus fructibus*, in Herb. SBT ex Herb. Inst. Sc. Schangh.); Nanking, Paohuashaw, (*H. Migo!* Nov. 1935, no. 984, *-ramus fructifer*, in Herb. SBT ex Herb. Inst. Sc. Shangh.); loco non indicato, (*Y. Tsiang*) Maio 1932, no. 9748, *-ramus fl. masc.*, in Herb. SBT ex Herb. Inst. Sc. Shangh.); Chinkiang, prope Chulinssu, (*H. Migo!* Apr. 1935, *-ramus sterilis*, in Herb. SBT ex Herb. Inst. Sc. Shangh.) Hopei: Peking *Bunge!* et *Bretschneider!*; e *Diels*); Jehol, (*David!* ex *Franchet*, ex *Forb.* et *Hemsley*); prope Peking, (*Bushell! Tatarinow! Bretschneider!* ex *Forb.* et *Hemsley*); Pohuashan, (*Bretschneider!* ex *Forb.* et *Hemsley*). Shensi: in monte Miao-nan, prope Pao-ki-shen, (*Giraldi!* no. 4357, e *Diels*). Shantung: Kiau-tschou, (*Hass!* no. 29, e *Diels*; Chefoo (*Favel!* ex *Franchet*, ex *Forbes* et *Hemsl.*). Kiangsi: Urb. Yung-shiu, ad 180 m alt., (*Y. Tsiang!* Aug. 1932, no. 10579, *-ramus fructifer*, In Herb. SBT ex Aerb. Inst. Sc. Shangh.).

DISTRIB. North. & Southern China: Hopei, Shensi, Shantung, Kiangsu, Kiangsi, Manchuria, Mongolia. Siberia (*typus*). Korea. Japan: Hokkaido, Honsyû, Sikoku, & Kyû-syû.

The roots and stem contain some alkaloids, Dauricin, (by Kondo, Narita, etc.) and Tetrandrin (by Kondo, Narita, & Murakami).

XVI. *Stephania* LOUREIRO (1790)

(**29**) **Stephania japonica** (Thunberg) Miers in Ann. Nat. Hist. 3 ser. XVIII (1866) 14, nom. nudum, et in Contrib. Bot. III (1871) 213; Makino in Tokyo Bot. Mag. XVIII (1904) 34; Diels, Menispermac. (1910) 277; Rehder et Wilson, in Sargent, Pl. Wilson. I-3 (1913) 389; Hayata, Gen. Index Fl. Formos. (1917) 3; Makino & Nemoto, Fl. Jap. ed. I (1925)

244, et ed. 2 (1931) 253; Merrill, Enum. Hain. Pl. in Lingn. Sc. Journ. V-1,2 (1927) 76; Handel-Mazzetti in Symbolae Sinicae VII (1931) 261; Yamamoto, Suppl. Icon. Pl. Formos. III (1927) 33, et Notes on the Genus, *Stephania*, in Japan Proper & Formosa, in Trans. Nat. Hist. Soc. Formos. XXVI-153 (Jun. 1936) 239, et Phytogeogr. View of Menispermac. (Oct. 1938) 317, 323, et in Journ. Soc. Trop. Agr. Taihoku, XIII (May 1941) 47, et Enum. Menispermac. Pl. Hain. (Apr. 1942) 76, et Menispermac. Japans (1944) 21.

Menispermum japonicum Thunberg, Fl. Jap. (1784) 193; Lam. Encycl. Méth. IV (1797) 96.

Cocculus japonicus DC. Syst. I (1818) 516, et Prodr. I (1824) 96; Siebold et Zuccarini, Fl. Jap. Fam. Nat. in Abhandl. Akad. Münch. IV-2 (1843) 189, no. 360.

Stephandia hernandifolia Miquel (non Walper), Prolus. Fl. Jap. in Ann. Mus. Bot. Lugd.—Bat. III (1867) 10; Franchet et Savatier, Enum. Pl. Jap. I (1875) 20; Maximowicz in Mél. Biol. XI (1883) 643, t.-II et fig. 1-9, partim; Matsumura et Hayata, Enum. Pl. Formos. (1906) 15; Hayata, Icon. Pl. Formos. (1911) 36.

Stephania intertexta Miers in Ann. Nat. Hist. 3-ser. XVIII (1866) 15, non. nudum, et in Contrib. Bot. III (1871) 222.

Stephania discolor Ito et Matsum. Tentam. Fl. Lutchuen. I (1899) 287; Matsumura, Index Pl. Jap. III (1912) 133; Nakai, Saisyuto narabini Kanto Syokubututyosa-Hookoku (1914) 47.

Stephania hypoglauca Miers in Ann. Nat. Hist. 3-ser. XVIII (1866) 15, nom. nudum, et in Contrib. Bot. III (1871) 227.

NOM. VULG. Hasunoha-kazura, Inutuzura (Jap.) Loe-piahtin 梨壁藤, Loe-piah-choau 梨壁草, (Taiwan). Ka-lai-pik-tang 假梨壁藤, (Hainan). Lunuketiya-wel (Ceylon, Singales).

HABIT. Hupeh: Ichang, (*Henry!* no. 1564, *-ramus fl. masc.* et *ramus fructifer*, e *Diels*). Chekiang: Ning-po (*Faber!* no. ?, e *Diels*); Insula Puto, (*H. Migo!* Oct. 1933, *-ramus fructifer*, in Herb. SBT, ex Herb. Inst. Sc. Shangh.); Haimenz (*H. Migo!* Nov. 1935, *-ramus fructifer*, in Herb. SBT, ex Herb. Inst. Sc. Shangh.). Hunan: prope Baotjing, (no. 12676, ex *Handel-Mazz.*); Yün-shan, prope Wukang, (no. 11234, ex *Handel-Mazz.*). Hainan: prope Sehekpik (*Arai!* Aug. 1940, *-ramus cum radice et foliis*, in Herb. SBT); Tungshanlin (ipse! Nov. 1940, *-ramus sterilis*, in Herb. SBT); inter Haikou et Syuyin (ipse! Dec. 1940, in Herb. SBT); Ng-chi-leng prope Reimon, (*McClure!* no. 9812); (ipse! *-ramus fl. masc.* in Herb. SBT); Tung-pin-tin, (*C. I. Lei* Jun. 1933, no. 737, *-ramus fructifer*, in Herb. Tanakai, UIT); Yeungling-shan, (*S. K. Lau!* Jun. 1932, no. 111, *-ramus fructifer*, in Herb. Tanakai); in mont. Ng-chi-leng (*F. A. McClure!* Maio 1922, no. 9812, *-ramus fructifer*, in Herb. Tanakai).

DISTRIB. South. & Extra-southern China: Hupeh (Ichang), Hunan, Formosa. Ryu-kyu. Japan: Central to Southern Honsyu, Sikoku, Kyu-syu (*typus*). Korea. Philippines. India: Concan, Nilgiri, Arrehatti, Noton; Ceylon; Prome; Tenasserim.

This plant is said to be of value in the cure of itches. The roots and stem contain Stephanin, Protostephanin, Metaphanin, Epislephanin, Stephalin, Homoetephalin, and allies.

(**30**) **Stephania longa** Loureiro, Fl. Cochinch. (1790) 608, et ed. Willdenow (1793) 747; Miers in Contrib. Bot. III (1871) 212; Diels, Menispermac. (1910) 278; Merrill, Enum. Hainan Pl. in Lingn. Sc. Journ. V-1, 2, (Nov. 1927) 76; Yamamoto, Phytogeogr. View of Menispermac. (Oct. 1938) 323; Tanaka & Odashima, Census of Hainan Pl. (Dec. 1938) 366; Yamamoto, Enum. Menisperm. Pl. Hainan (Apr. 1942) 76.

Stephania japonica (Thunb.) O. Kuntze, a. *glabra* O. Kuntze f. *parvifolia* O. Kuntze, Rev. Gen. I (1891) 9.

NOM. VULG. Ko-tin-hasunoha-kazura (Jap.).

HABIT. Hongkong, (*Wright!* no. 12, e *Diels*). Kwangsi: Lung-chou, (S. *Moore!* no. 356, e *Diels*). Kwangtung: Macao, (*Meyen!* Aug. 1831, *-fl. femineus*, e *Diels*). Hainan: loco non indicato, (*Herny!* no. 8156, *-fl. masc.*, e *Diels*); loco non indicato, (*Henry!* no. 8280, no. 8156. *-ramus fructifer*, e *Diels*.

DISTRIB. South. & Extra-southern China: Kwangtung, Hongkong, Kwangsi, Hainan. Indochina: Tonkin, Anam, Cochinchina (*typus*).

(**31**) **Stephania rotunda** Loureiro, Fl. Cochinch. (1790) 608, edit. Willdenow (1793) 747; Miers in Contrib. Bot. III (1871) 215, partim; Diels, Menispermac. (1910) 275; Moore in Journ. Bot. LIII (1925) 288; Merrill, Comment. Loureiro's Fl. Cochinch. (1935) 156; Yamamoto, Phytogeogr. View of Menispermac. (Oct. 1938) 323, et in Journ. Soc. Trop. Agr. XIII (1941) 48.

NOM. VULG. Marubano-hasunoha-kazura (Jap.).

HABIT. Yunnan: Kintung, Tsukai, ad 1400 m alt., (*Y Tsiang!* Oct. 1933, no. 12251, *-ramus fructifer*, in Herb. Inst. Sc. Shangh.); loco non indicato, (*R. P. Farges!* in Herb. Hort. Bot. Bogoriensis).

DISTRIB. Extra-southern China: Yunnan. Cochinchina (*typus*). Himalaya.

(**32**) **Stephaniah ernandifolia** (Willd.) Walper, Repert. I (1842) 96; Miers in Ann. Nat. Hist. 2-ser. VII (1851) 40, et in Contrib. Bot. III

(1871) 222; Hooker f. et Thoms. Fl. Indica I (1855) 196, partim; Bentham, Fl. Austral. I (1863) 56; Diels, Fl. Central-China (1901) 345, et Menispermac. (1910) 279; Gagnepain in Fl. Gén. Indochiné I (1908) 147; Yamamoto, Phytogeogr. View of Menispermac. (1938) 323, et in Journ. Soc. Trop. Agr. XIII (Apr. 1941) 47, et Enum. Menispermac. in Great Sunda Islands, III (Oct. 1944) 138; Merrill in Journ. Arn. Arboret. XIX-4 (Oct. 1938) 340.

Cissampelos hernandifolia Willdenow, Sp. Pl. IV (1805) 861; De Candolle, Syst. I (1818) 533, et Prodr. I (1824) 100; Roxb. Fl. Indica III (1832) 482.

Cocculus Roxburghianus DC. Syst. I (1818) 516, et Prodr. I (1824) 96, non Wallich.

Clypea discalor Blumé, Bijdr. Nederl. Ind. (1825) 26.

Clypea hernandifolia Wight et Arnott, Prodr. I (1834) 14; Wight, Icon. Pl. Ind. Orient. (1840) t. 939.

Stephania discolor Spreng. Syst. Veget. ed. 16, IV-2 (1827) 316, non De Candolle.

Stephania latifolia Miers in Ann. Nat. Hist. 3-ser. XVIII (1866) 15, et in Contrib. Bot. III (1871) 224.

Clypea oxyphylla Miers in Ann. Nat. Hist. 3-ser. XVIII (1866) 270, et in Contrib. Bot. III (1871) 206.

Stephania hernandifolia Walper var. *pubescens* Tevsm. et Binnend. Catal. Bogor. (1866) 173.

Stephania discolor Walper, Repertor. I (1842) 96; Miers in Contrib. Bot. III (1871) 244.

Stephania hernandifolia Walper var. *discolor* Miquel in Ann. Mus. Lugd.—Bat. IV (1868) 85.

Stephania japonica (Thunb.) O. Kuntze, var. b. *puberula* O. Kuntze, Rev. Gen. I (1891) 10.

NOM. VULG. Kebano-hasunoha-kszura (Jap.), Ojot-minjak, Arenj-geureung, (Java).

HABIT. Hupeh: Ichang, (*Henry!* no. 225, *-ramus fl.* et *ramus fructifer*, e Diels-Fl. Centr.-China). Szechüan: Nanchuan (*Bock! von Rosthorn*, no. 310, e *Diels*-Fl. Centr.-China). Kwangi: Lin-yen, K'si (*R.C. Ching!* Aug. 1928, no. 6709, *-ramus fructifer*, in Herb. Inst. Sc. Shangh.). Yunan: Szemao in monte, ad circ. 1350 m alt., (*Henry!* no. 12291B, no. 12317B, *-ramu sfl. masculinis*, e *Diels*).

DISTRIB. South. & Extra-southern China: Hupeh (Ichang), Szechuan, Kwangsi, Yunnan. Indochina. India: (Nepal), Khasia, Sikkim (*typus*).

Assam; Burma. Siam. Malay Peninsula. Sumatra. Java, Bali. Borneo. Timor. Soenba. Moluccas. Celebes. New Guinea. North- & East-Australia.

(33) **Stephania herbacea** Ganepain in Bull. Soc. Bot. France LV (1908) 40; Diels, Menispermac. (1910) 272, fig. 90-A, B.
(Descriptio prima).—

NOM. VULG. Kusadati-tuzurahuzi (Jap. nov.). Ou-hui-tiao (china).
HABIT. Honan: Cheng-kow. in monte, ad 1400 m alt., (*Farges!* no. 902, *typus*, *-fl. mnsc.* et *fl. femin.*, e *Diels*); biaem, (*Henry!* no. 6089, no. 6089A, *-fl. femin.*, e *Diels*). Kweichow: loco non indicato, (*Perny!* ex *Gagnepain.*, e *Diels*.

DISTRIB. North. & Southean China: Honan (Cheng-kow), Kweichow; endemic in China.

(34) **Stephania sinica** Diels, Menispermac. (1910) 272; Merrill, Vth. Suppl. Hainan Pl. in Lingn. Sc. Journ. XIII-1 (Jan. 1934) 57; Yamamoto, Phytogeogr. View of Menisperm. (1938) 323, et in Journ. Soc. Trop. Agr. XIII-1 (Apr. 1941) 48, et Enum. Menispermac. Pl. Hainan (1942) 75; Tanaka & Odashima, Census of Hainan Pl. (Dec. 1938) 366.

Frutex scandens. Rami striati fistulosi, glabri. Foliorum petiolus 20-36 cm longus, lamina tenerrime membranacea glaberrima subtus pallidior, late triangulari-rotundata obsoletissime repanda, apice obtusa mucronata, 10-15 cm longa, 14-10 cm lata, nervi primarii sursum circ. 5, deorsum 4, cum nervulis nonnisi colore conspicui. Inflorescentiae ♂ succosae subcarnosulae, pedunculus circ. 4 cm longus, radii 1-1.5 cm longi; pedicelli 0.7 mm longi; flores subarticulato-decidui; speala 6 glabra subcarnosula anguste obovato-oblonga, circ. 1 mm longa; petala 3-4, breviter et late obovata, intus biglandulosa, 0.8 mm longa; synandrium breve, 0.8 mm longum. Inflorescentiae fructiferae pedunculus 5 cm longus, radii fructiferi striati robustiores 1-1.5 cm longi. Drupae endocarpium circ. 6 mm longum et latum, obovatum, faciebus planis depressum concavum, in parte elevata a costa utrinque costulis transversis medio obsoletis 15-18 ornatum. (*e descriptione prima Dielsi*)

NOM. VULG. Usuba-hasunoha-kazura, Sina-hasunoha-kazura. (Jap.).
HABIT. Hupeh: loco non indicato, (*Henry!* no. 4693, no. 6662, *typus*, *-fl. masc.* et *fructus*, e *Diels*). Honan: Cheng-kow, (*Farges!* no. 345, *-fuctus*, e *Diels*). Szechuan: Nan-chuan, (von *Rosthorn!* no. 310 e *Diels*); in mnnte Onei, (*Baihi!* Aug. 1935, no. 333, *-ramus fructifer*, in Herb. Inst. Sc. Shangh.). Hainan: in monte Hung-mo, (*W. T. Tsiang!* Maio 1922, no. 17562, ex *Merrill*).

DISTRIB. North. South. & Extra-southern China: Hupeh, Honan (Cheng-kow), Szechuan (Nan-chuan), Kwangsi, Hainan; endemic in China.

This species is closely allied with an Indochinese species, *Stephania rotunda*.

(34) **Stephania Delavayi** Diels, Menispermac. (1910) 275; Handel-Mazzetti in Symbolae VII (1931) 261; Yamamoto, Phytogeogr. View of Menispermac. (1938) 323, et in Journ. Soc. Trop. Agr. Taihoku, XII (1940) 244, et in l. c. XIII-1 (1941) 46.

Suffrutex ramis scandentibus vel volubilibus praeditus. Rami sulcati, graciles, tenues cortice pallide cinereo tecti, ramuli perbreves 0.5–1 cm longi flexuosi folia et inflorescentios gignentes, nonnumquam longius accrescentes. Foliorum petiolus strictus basi et apice geniculatus laminae peltato-insertus, 2–8 cm longus; lamina parva herbacea, glabra, vel pulverulento-papillosa, supra saturate viridis, subtus pallide glauca, e basi rotundata rotundato-ovata vel subtriangularis nonnumquam fere orbicularis, margine pallida, saepe irregulariter obsoletissime sinuata apice obtusa, 2.5–7 cm longa et lata, nervi sursum 3–5–, deorsum plerumque 3-palmati utrinque prominuli, nervuli reticulati colore saturato notati. Umbellae ♂ : pedunculus gracilis 1–1.5 cm longus, flores cymulae pauci, pedicellati, pedicelli ad 2 mm longi; sepala 6, (sicca) coeruleo-atra, 3 exteriora oblanceolato-oblonga, 1.8 mm longa, 0.6 mm lata, 3 interiora paulo breviora sed non angustiora, petala 3–4 carnosula late obcuneato-rotundata, 0.7 mm longa, 0.5–0.6 mm lata; synandrium 0.7 mm longum, pars filamentosa crassiuscula. Umbellae ♀ : pedunculus gracilis 2–4 cm longus, radii breves 1–1.2 cm longi, flores fere sessiles, sepala 3–4 membranacea glaberrima, inaequalia, obovata vel suborbicularia, 1–1.5 mm longa, 0.7–1.5 mm lata, petala 2–3 obtriangulari-orbicularia carnosa 0.5–0.8 mm diamet.; carpellum glabrum anguste semiovoideum 1–1.2 mm longum, stigmata tripartita divaricato-patentia. Drupae anguste obovoideae compressae, (siccae) olivaceae, 7 mm longae, ca. 4.5 mm latae, endocarpium in faciebus depressis excavatum, ceterum in dorso utrinque costulis transvarsis 16–20 nonnumquam obsoletis ornatum. (*e descript. prima Dielsi*)

NOM VULG. Yunnan-hasunohakazura (Jap.)

HABIT. Yunnan: Ta-pin-tse, Nien-kia-se, (*Delavay! typus, fl. femin.*, e *Diels*); prope Yunnan-fu, *Schoch!* no. 131, ex *Handel-Mazz.*; Lankong, Lo-ko-shan, (*Delavay!* e *Diels*); Meng-tse, ad circ 1400 m alt., (*Henry!* no. 10312, *-ramus fl. femin.*, no.

13677, *-ramus fl. masc.*, e *Diels*) ; Szemao, in monte, (*A. Henry!* no. 10312C, *-fl. femin.*, et no. 10312B, *-ramus fruct.*, e *Diels*) ; prope Yunnan-fu, in monte, ad 1600–2750 m alt., (*Schoch!* no. 131, ex *Handel-Mazz.*). Kweichow : Tuyun, Ma-tsoon-ling, ad 500 m alt., (*Y. Tsiang!*, Jul 1930, no. 5739, *-ramus fructifer*, in Herb. Sc. Shangh.).

DISTRIB. South. & Extra-southern China : Kweichow ; Yunnan. Upper Burma.

(**36**) **Stephania brachyandra** Diels, Menispermac. (1910) 275 ; Yamamoto, Phytogeogr. View of Menispermac. (Oct. 1938) 323.

Rami sulcati glabri. Foliorum petiolus 9–14 cm longus ; lamina tenerrime membranacea subtus pallidior ad nervos minute papillis rufis puberula ceterum glaberrima, late ovata vel obsoletissime angulato-sinuata vel fere integra apice obtusa vel acuta mucronulata, 10–18 cm longa, 9–15 cm lata, nervi primarii sursum et deorsum circ. 5, subtus nonnisi colore conspicui. Inflorescentiae ♂ e ramulis abbreviatis tortuosis ortae ; pedunculus 5–6 cm longus, umbellae radii 2–2.5 cm longi ; flores lutei ; sepala 6 membranacea, 3 exteriora 1.7–2.2 mm longa, 1.3 mm lata, 3 interiora nigro-striolata obovata basi angustata, 1.8–2 mm longa, 1.6 mm lata ; petala conchiformia crassa marginibus involuta 0.8–1 mm longa, 1.5–1.8 mm lata ; synandrium perbreve, vix 0.5 mm longum. Drupae endocarpium obovatum basi saepe excisum, 9 mm longum, 8 mm latum, in facie laevi perforatum, a costa utrinque seriebus binis spinularum apice hamato-dilatatarum ornatum. (*e descript. prima*)

NOM. VULG. Oo-hasunohakazura (Jap. nov.).
HABIT. Yunnan : Mentse, ad circ. 1500–1600 m alt., (*A. Henry!* no. 10776A et no. 10776B, *typus*, *-fl. masc.* et *fruct.* e *Diels*).

DISTRIB. Extra-southern Chtna : Yunnan (*typus*). Burma : Martaban, Khoni.

(**37**) **Stephania hispidula** (Yamamoto) Yamamoto in Trans. Nat. Hist. Soc. Formos. XXVI (1936) 140, et Phytogeogr. View of Menispermac. (1938) 323, et in Journ. Soc. Trop. Agr. Taihoku XII-3 (Oct. 1940, 244, et Enum. Menispermac Pl. Hainan, (Apr. 1942) 76, et Menispermac. Japans (1944) 23.

Stephania japonica var. *hispidula* Yamamoto, Suppl. Icon. Pl. Formos. III (1927) 34, fig. 11 ; Sasaki, List Pl. Formos. (1928) 188 ; Makino & Nemoto, Fl. Jap. ed. 2 (1931) 353.

Stephania hernadifolia (non Walper) Henry, List Pl. Formos. (1896) 17 ; Hayata in Matsum. et Hayata, Enum. Pl. Formos. (1906) 15.

NOM. VULG. Ke-hasunohakazura (Jap.). Ka-lai-pik-tang (Hainan).
HABIT. Fukien: Keng-mon, prope Mawi, *H. Migo!* 5 Jul. 1937, *-ramus fl. masc.*, in Herb. SBT). Kwangsi: Hoo-chih, Kwei, ad circ. 510 m alt., *R. C. Ching!* Jul. 1928, no. 6391, *-ramus fructibus*, (in Herb. Inst. Sc. Shangh.). Hainan: Tai-wong-ling (*-ramus inflorescentiis hispidulis*, in Herb. Tanakai, UIT).

DISTRIB. South. & Extra-southern China: Fukien, Kwangsi, Hainan, Taiwan (*typus*).

(38) **Stephania graciliflora** Yamamoto in Journ. Soc. Trop. Agr. XII-3 (Oct. 1940) 243.

Rami gracillimi, glabri, striati, raro ramulosi. Petiolus foliorum gracilis, 3-5 cm longus, glaber striatusque, basi geniculatus, utrinque vix incrassatus; lamina subpapyracea vel membranacea, utraque facie glabra, supra viridis, subtus pallida glaucescensque, vulgo late ovata, 2.5-6.0 cm longa et lata, apice obtusissima et ad summum mucronata vel retuso-mucronata, basi rotundata vel truncata et ad angulos rotundata, margine integra vel raro obsolete repanda; nervis primariis sursum et deorsum vulgo 5 a medio radiatim divergentibus cum nervulis subtus tenuiter prominentibus. Inflorescentiae masculinae axillares, vel in ramulis gracillimis brevibus aphyllis ortae, usque glabrae; pedunculus filiformis, 1.5-3.0 cm longus; umbellae radii saepe 6-10 gracillimis saepe inaequali-longis 2-3 mm longis basi cum bracteis linearibus 1 mm longis apice eorundem subumbellatim vel cymose divergentibus. Flores minores in pedicellis brevissimis cymoso-ramosis siti, expansi 1.2 mm in diametro, circ. 1 mm longi, usque glabri. Sepala 6, membranacea, subaequalia; 3 exteriora obovata vel spathulata, apice rotundata, basi cuneato-angustata, circa 1 mm longa et 0.7 mm lata; 3 interiora late ovata, apice rotundata, basi subito acuta, 0.8 mm longa et 0.7 mm lata; petala 4 vel 3, libera, subcrassa, aequalia, late obovata vel cuneata, apice truncata et haud lobata, basi acuta, utroque latere involuta, 0.5 mm longa et lata; synandrium plerumque 6-loculare, circ. 1 mm longum, apice ad medium pilosum. Inflorescentiae femineae axillares, usque glabrae; pedunculus elongato-gracillimus, leviter striatus, 4.5-4.5 cm longus, apice umbellatus; umbellae radii filiformes inaequali-longi, 1.5-2.0 cm longi, apice umbellulati; umbellulae radii circ. 5 mm longi, apice subumbellatim pedicellati, pedicellis circ. 2 mm longis. Drupae in sicco nigricantes, obovoideae, applanatae, circ. 5 mm longae, 4 mm latae et 2 mm crassae; endocarpium dorso costulis 8-10 transversis 8-10 ornatum. (*e descript. prima*)

NOM. VULG. Kobana-tuzuranuzi (Jap.).

HABIT. Yunnan: Menghwa, Weipaochan, ad circ. 700 m alt., (*Y. Tsiang!* Sept. 1923, on. 12017, *typus-ramus fi. masc.*, in Herb. Inst. Sc. Shangh. ex "Herb. Metropol. Mus. Nat. Academia Sinica, Nanking"); Shui-ching-lung, in monte Anlu-shan, Chenbyuan, ad 1500–2000 m alt., (*Y. Tsiang!* Nov. 1933, no. 12600, *typus, -ramus fructifer*, in Herb. Inst. Sc. Shangh. ex "Herb. Mus. Nat. Hist. Academia Sinica, Nanking").

DISTRIB. Extra-southern China: Yunnan; endemic in China.

(**39**) **Stephania Dielsiana** Wu, in Engl. Bot. Jahrb. LXXI, Bd. 2 (Nov. 1940) 174.

Frutex scandens. Ramuli ± 5 mm in diam., glabri sulcatostriati, cortice sicco cineraeo-brunneo. Folia peltata, petiolis tenuibus glabris, striatis, 10–14 cm longis, a margine foliorum circ. 1.5 ad 2.5 cm peltato-insertis. Lamina tenerrime membranacea, 9–11 cm longa et 10–12 cm longa et 10–12 cm lata, late deltoideo- vel subovato-rotundata, basi truncato-rotundata, apice obtusa mucronulata, supra saturate viridis, subtus pallide glauca, papillosa, margine subintegra vel repanda vel sinuata; nervi primarii sursum plerumque 5, deorsum 4, subtus leviter prominentes. Umbellae compositae, axillares, pedunculis ad 7.5 cm longis, radiis primariis 4–5 cm longis, secundariis ± 1 cm longis. Flores pedicellati. Sepala 6, 3 exteriora inaequalia, obovata vel subelliptica, nonnumquam late lanceolata, 1.5 mm longa et 0.9 mm lata, membranacea, margine suberosulo-denticulata; 3 interiora illis similia, vel a basi subito angustata, concava. Petala 3, saepe conchiformia, 0.8 mm longa et 1 mm lata, basi incrassata; synandrium 0.3 mm longum. Drupae 0.7 mm longae et 0.6 mm diam. obovoideae, compressae, basi truncatae vel concavotruncatae; endocarpium 6.5–7 mm longum, 5.5–6 mm latum, basi excisum, costa utrinque seriebus binis atque costulis transversis utrinque spinarum praeditum. Spinae circ. 18–20, cornutae, curvatae, ± 1 mm longae. (*e descript. prima*)

NOM. VULG. Diirusu-hasunoha-kazura (Jap. nov.).

HABIT. Kwangsi: Yao-shan, ad circ. 300 m alt., (*Sin!* Jun. 1928, no. 334, ex *Wu*); ibidem, adcirc. 1600 m alt., (*Sin!* Maio 1931, no. 21410, *typus, -fi. masc.* ex *Wu*); ibidem., ad circ. 1330 m alt., (*Sin!* Jul. 1931, no. 22371, *typus, -fi. femin.* ex *Wu*); ibidem, ad circ. 600 m alt. (*Sin!* Jun. 1931, no. 20485, *fi. masc.* ex *Wu*). Kweichow: Tuh-shan, ad circ. 330 m elt., (*Y. Tsiang!* Sept. 1930, no. 676, *-fructus*, ex *Wu*); ibidem, inter Hsi-tanling et Tuh-shan, ad ciac. 500 m alt., (*Y. Tsiang!* no. 7074, ex *Wu*).

DISTRIB. Southern China: South Kweichow, Kwangsi; endemic in China.

(**40**) **Stephania cepharantha** Hayata, Icon. Pl. Formos. III (1913) 12, fig. 4; Yamamoto, Suppl. Icon. Pl. Formos. III (1927) 33, et l. c. IV (1928) 10, fig. 5, 6, 7, et in Trans. Nat. Hist. Soc. Formos. XXVI (1936) 241, et Phtogeogr. View of Menispermac. (1938) 317, 323, et in Journ. Soc. Trop. Agr. Taihok. XI-4 (Dec. 1939) 277, et in l. c. XIII-1 (Apr. 1941) 48, et Report no. 76, in Governm. Agric. Research Inst. Taiwan, (Jul. 1940) pl. I-XI, et in ed. Hasegawa, Kekkaku-no-Kagakuryoohoo-nikansuru-Kenkyu, I (Oct. 1942) 282-300, pl. I-XII, et Menispermac. Japans (1944) 25.

Stephania tetrandra S. Moore, var. *glabra* Maximowicz in Mél. Biolog. XI (1883) 647; Diels, Menispermac. (1910) 282, non *Stephania glabra* Miers.

Stephania disciflora Handel-Mazzetti, in Symbolae Sinicae VII (Aug. 1931) 261.

NOM. VULG. Tamazaki-tuzurahuzi (Jap.). Tao-ti-kung 倒地拱, Bugedo-rapassu (Taiwan).

HABIT. Hupeh: Ishang (*A. Henry!* no. 4114, *-ramus fl. masc.*, *-ramus fructifer*, e *Diels*. Chekiang: Ling-yin Hangchow (*H. Migo!* Jun. 1931, *-ramus fl. masc.*, in Herb. SBT, ex Herb. Inst. Sc. Shangh.); loco non indicato, (*S. Chen!* Jul. 1934, in Herb. Inst. Bot. Univ. Imp. Tokyoensis); in monte Ningpo (*Faber!* *-ramus fl. masc.* et *ramus fructifer*, e *Diels*). Kweichw: Yung-fou-shan prope Keiting, Pingfa, ad 600 m alt., (*Y. Tsiang!* Jul. 1930, no. 5527, *-ramus fl. femin.* in Herb. Inst. Sc. Shangh.); inter Badscuai et Tailaohsin, ad 750-1100 m alt., (Jul. 1917, no. 10766, *typus*, *Stephania disciflora*, ex *Handel-Mazz.*; inter Duyun et Loqu-se, (Jul. 1817, no. 10693, ex *Handel-Mazz.*). Kwangsi: Luchen (*R. C. Ching!* no. 6092, *-ramus fl. masc.*, in Herb. Inst. Sc. Shangh.); Lang-shian, (*Ching!* Jun. 1928, on. 5667, e *Handel-Mazz.*); Bin-long, Miu-shan, N. Luchen, (*R. C. Ching!* Jun. 1928, no. 6092, *-ramus fl. masc.*, ex *Handel-Mazz.*).

DISTRIB. Southern China: West Hupeh (Ichang), Chekiang, Fukien, Kwangtung, Kwangsi, Kweichow, Taiwan (*typus*), Kiangsi & Hunan?.

The roots (tubers) of this climber contain some alkaloids, Cepharanthin ($C_{37}H_{38}N_2O_6$), Isotetrandrin ($C_{38}H_{42}O_6$), Berbamin ($C_{37}H_{40}N_2O_6$), and Methylischondodendrin, (by Kondo, Tomita, Satomi, Ikeda, etc.), of which Cepharanthin is used as an efficacious medicine (in tablets or in injection-ampullae) for tuberculosis and is also said to be of value for leprosy.

In Formosa, it is now cultivated in the field at low and medium altitudes on the main island

(41) **Stephania tetrandra** S. Moore, in Journ. Bot. XIII (1875) 225; Maximowicz in Mélong. Biolog. XI (1883) 616, t. II (10-16); Forbes et Hemsley, Index Fl. Sin. I (1886) 30; Henry, List Pl. Formos. (1896) 17; Hayata in Matsum. et Hayata, Enum. Pl. Formos. (1906) 16; Hayata, Mater. Fl. Formos. (1911) 23, et Icon. Pl. Formos. I (1911) 37, t. VIII; Diels, Menispermac. (1910) 282; Merrill & Chun, Contrib. Kwangt. Fl. in Sunyatsenia I-1 (1930) 57; Yamamoto, Suppl. Icon. Pl. Formos. III (1927) 35, fig. 12, et l. c. IV (1928) 13, fig. 8, et in Trans. Nat. Hist. Soc. Formos. XXVI (Jun. 1936) 242, et Phytogeogr. View of Menispermac. (1938) 323, et in Journ. Soc. Trop. Agr. Taihoku, XIII-1 (1941) 49, et Menispermac. Japans (1944) 26.

Foliis deltoideo-ovatis peltatis mucronatis, fl. mas. capitatis, capitulis racemosis racemis gracilibus canescentibus folio longioribus, sepalis carnosis deltoideis basi cuneatis, petalis semioircularibus unguiculatis ungue laminom paulo excedente, columna staminea apice peltata, antheris 4 oblongts 1-locularibus, fl. fem.——, fructus——. Voluvills. Caulis teres, costatus, glaber. Folia $1\frac{1}{2}$ unc. longa et lata, crispe pubescentia, petioli folia aequantes, glabri. Capitula minima. Sepala et petala 4. (*e descriptione prima S. Moorei*).

NOM. VULG. Kenboi. Sima-hasunohakazura (Jap.). Tao-ti-kiuong 倒地棋, Ta-Wei-Wûn 大包魂, (Taiwan). Rapassu (Taiwan: Raisha).

HABIT. Chekiang: loco non indicato, (*Hickin!* -*ramus fi. masc.*, e *Diels*). Kiangsi: Kiu-kiang (*Sheare! typus*, -*ramus fi. masc.*, e *Diels*); Lingchuan, ad 115 m alt., (*Y. Tsiang!* Jun. 1932, no. 9806, -*ramus fi. masc.* in Herb. Inst. Sc. Shangh.). Fukien: Amoy, Nanbuda (*H. Migo!* Jul. 1937, in Herb. Inst. Sc. Shang.). Kwangtung: Lok-chang, (*C. L. Tso!* no. 20280, Maio 1929, *Merrill* et *Chun*).

DISTRIB. Southern China: South-Anhwei, Chekiang, Kiangsi, Fukien, Kwangtung, Kwangsi, Taiwan.

The plant (roots & stem) is used as an excellent vulnerary for snake bites and for treatment of gastroenteric diseases; it contains some alkaloids, Tetrandrin ($C_{38}H_{42}N_2O_6$), & others.

(42) **Stephania dolichopoda** Diels, Menispermac. (1910) 282; Yamamoto, Phytogeogr. View of Menispermac. (1938) 323.

Foliorum petiolus ad 20 cm longus; lamina tenerrima membranacea, glaberrima late ovato-orbicularis apicem versus angustata obsolete repando-lobata, circ. 18 cm longa et lata, nervi primarii 5- -7-palmati,—(Flores ♂ adhuc ignoti). Inflorescentia ♀ disciformi-congregata pedunculo 12 cm

longo praedita.—(Drupae adhuc ignotae.). (*e descript. prima Dielsi*)

NOM. VULG. Ooba-tamazakituzurahuzi (Jap. nov.).
HABIT. Yunnan: Szemao in monte, ad circ. 1300 m alt., *A. Henry!* no. 12008B, *typus, -ramus fl. femineis*, in Herb. Kew. e *Diels*).

DISTRIB. Extra-southern China: Yunnan; endemic in China.

XVII. *Paracyclea* KUDO et YAMAOTO (1937)

(43) **Paracyclea densiflora** Yamamoto, Enum. Menisperm. Pl. Hainan (Apr. 1942) 77, fig. 3.

Cyclea tonkinensis (non Ganepain) Merrill & Chun in Sunyatsenia V. no. 1-3 (Aug. 1940) 5-6.

Frutex scandens vel voluvilis. Rami sulcato-striati, superne pilosi. Petiolus foliorum pubescens et inferne densior, gracilis, circ. 1.5 cm longus, laminae ad marginem vel juxta marginis insertus; lamina membranacea vel subpapyracea, supra glabra, subtus tomentosa, apice acuminata et mucronata, basi cordata vel emarginata, margine integra vel undulata, cordato-ovata, 4.5-5 cm longa, 3 cm lata; nervi primarii 5-7 palmatim divaricatis cum nervulis subtus prominentibus. Inflorescentiae masculinae pedunculatae, in axillis foliorum 2-3-fasciculatae, superne multissime divaricato-cymosae, usque tomentosae, cum pedunculis et pedicellis filiformibus 5-6 cm longae, expansae circ. 4 cm latae. Flores ad pedicellos 2.5 mm longos superne plus minusve incrassatos pubescentes siti, basi bracteati; bracteis lineari-lanceolatis 1.5 mm longis 0.3 mm latis pubescentibus; sepala 5, obovata vel ovata, extus pubescentia, superne involuta, 1 mm longa, 0.5 mm lata; petalum 1 minute reductum et rotundatum, glabrum; synandrium 0.3 mm longum, 0.4 mm in diametro, 4-loculare.—(Inflorescentiae femineae et drupae adhuc ingnotae). (*e descriptione prima Yamamotoi*).

NOM. VULG. Mituzaki-tuzurahuzi (Jap.)
HABIT Hainan: Ling-shui, Poting ad circ. 335 m alt., (*F. C. How!* Aug. 1935, no. 74568, *typus, -ramus fl. masc.*, in Herb. SBT, ex "Herb. Arnold Arboretum, Harvard University"); Yaichow, Siu Po-Kong, (*H. Y. Liang!* on. 62500); Tung-Hang, occ. (*H. Y. Liang!* no. 62377): Po-Ting, Hing-Lung, Ou Ku Ling, (*F. C. How!* no. 71944); ibidem, *F. C. How! fl. masc.* no. 73488); e *Merr.* et *Chun.*

DISTRIB. Extra-southern China: Hainan; endemic in China.

(44) **Paracyclea sutchuenensis** (GAGNEPAIN) YAMAMOTO, in Journ. Soc. Trop. Agr. Taihoku, XII-3 (Oct. 1940) 247.

Cyclea sutchuenensis Gagnepain in Bull. Soc. Bot. France, LV (1908) 37; Diels, Meniepermac. (1910) 319; Yamamoto, Phytogeogr. View of Menispermac. (1938) 323; Chun in Sunyatsenia IV. 3-4 (Jun. 1940) 178.

Rami tenues striati glabri. Foliorum petiolus glaber 2-6 cm longus laminae juxta (1-3 mm) marginem insertus; lamina papyracea utrinque glabra, supra lucida subtus glaucescens, ovata vel lanceolata, antrorsum sensim longissime acuminato-caudata acuta, 6-12 cm longa, 2-5.5 cm lata, nervi primarii basales 3- 5-palmati subtus prominentes, secundarii paulum prominuli. Pseudoracemi axillares breviter pedunculati, angusti, 10-20 cm longi, glabri, nigricantes; rhachis nonnumquam flexuosa; flores 2-3-fasciculati; bractea ovata vel lanceolata nonnumquam apiec ciliolata, 1-1.5 mm longa. Pedicelli ♂ 2.5-3.5 mm longi; flores eis geniculato-inserti; sepala 4 basi connata cetera libera crasse carnosa elliptica vel ovato-oblonga obtusa, 2.5 mm longa, 1.5 mm lata; petala crasse carnosa 4 raro libera plerumque cunnata, 0.4-0.6 mm longa; synandrium in columella crassiuscula 4-loculare, 1.5 mm longum. Pedicelli ♀ 1.5 mm longi stricti apice incrassati; sepala 2 carnosa late obtusato-ovata 1 mm longa, 0.7 mm lata; petala nulla; staminodia 1-2 vel nulla; ovarium glabrum gibboso-ovoidoum, stigmate trifido coronatum. Drupae 5 mm diam.; endocarpium verrucosum. (*e descriptione Dielsi*).

NOM. VULG. Suttyueu-tuzurahuzi (Jap. nov.).

HABIT. Honan: Cheng-kow, Ki-min-se, ad 1200 m alt., (*Farges!* no. 1067, *typus, ramus fl. masc.* et *ramus fl. femin.*, e *Diels*). Kwei-chow: Tsin-gai, Kao-po, (*Cavalerie!* no. 1172, e *Diels*). Yunnan: in monte, ad 2000 m alt., (*Henry!* no. 10660, *ramus fl masculinis*, e *Diels*). Kwangtung: Hsin-Yi Hsien, Fen-Shui Au, Chang Kang, *S. P. Ko! fl.* no. 51461, no. 52893); Ta-Chiao, Ching-Chi Tung, (*Ko!* no. 52792); Niu-Chiao Lung. (*Ko! fruct.* no. 54714); ex *Chun*. Kwangsi: Chuen Hsien, Pao-Ting, Tai Shi Ling, *Z. S. Chung!* no. 83341) ex *Chun*.

DISTRIB. North, South, & Extra-southern China: Honan (Cheng-kow); Kweichow; Szechuan (*Chun*), Kwangtung & Kwangsi (*Chun*); Yunnan; endemic in China.

Var. **sessilis** (Wu) Yamamoto, comb. nov.

Cyclea sutchuenensis Gagnepain var. *sessilis* Wu, in Engl. Bot. Jahrb. LXXI Bd. 2 (Nov. 1941) 175.

A typo differt: bractea lanceolata, apice acuminata, 1.5 mm longa et

0.5 mm lata, pedicelli ♂ sessiles, sepala elliptica, 4.2 mm longa et 1.2 mm lata, petala coalita, subinfundibuliformia, ± 1.2 mm in diam. (*e descriptione prima*).

NOM. VULG. Enasi-Suttyuen-tuzurahuzi (Jap.nov.).
HABIT. Kwangsi: in monte Yao, ad circ. 800 m alt., (*Sin!* Maio 1931, no. 22197, *typus variet. -ramus fl. masc.* ex *Wu*).

DISTRIA. Southern China: Kwangsi; endemic in China.

XVIII. *Cissampelos* LINNÉ (1737)

(**45**) **Cissampelos pareira** Linn. Sp. Pl. ed. I (1753) 1031, ampl.; Diels, Menispermac. (1910) 286.

var. a. **typica** Diels, Menispermac. (1910) 288.

Cissampelos Pareira b. Linn. Sp. Pl. ed. I (1753) 1031.

Menispermum orbiculatum L. Sp. Pl. ed. I (1753) 341.

Cissampelos Pareira Lam. III. Fl. (1791) 830; Swartz, Observ. (1791) 380, t. X. fig. 5; De Candolle, Syst. I (1818) 533, et Prodr. I (1824) 100; Hooker in Trans. Linn Soc. XX (1851) 233; Hooker f. Thoms. Fl. Ind. (1855) 198, partim; Miers in Contrib. Bot. III (1871) 139; Hooker f. Fl. Brit. Ind. I (1872) 104; partim; Gagnep. in Fl. Gén. Indochiné I (1908) 149.

Cissainpelos Pareira Linn. var. *peltata* in Nat. Tijsch. XXXII (1873) 401.

Cissampelos convolvulacea Wiild. Sp. Pl. IV (1805) 863; DC. Prodr. I (1824) 101; Roxb. Fl. Ind. III (1832) 842; Wight et Arn. Prodr. I (1834) 14; Miers in Contrib. Bot. III (1871) 194.

Cissampelos discolor DC. Syst. I (1818) 534, et Prodr. I (1824) 101; non Miers.

Cocculus orbiculatus DC. Syst. I (1818) 523, et Prodr. I (1824) 98.

Cissampelos orbiculata DC Prodr. I (1824) 101; Miers in Contrib. Bot. III (1871) 196.

Cissampelos tetrandra Roxburgh, Fl. Ind. III (1832) 842.

NOM. VULG. Gunbai-tuzurahuzi (Jap. nov.). Areuj-tjam-tjuar, (Java). Dijamitta (Ceylon, Singales). Tejo-malla (India) Batutpoti (Nepal). Akanapi (Hindu). Veniuel (Bombay, India).
HABIT. Yunnan: Manhao, *A.Henry!* no. 9532, *-ramus fl. femineis*, e *Diels*.

DISTRIB. Extra-southern China: Yunnan. Indochina: Tonkin, Laos, Cambodgea, Cochinchina. Siam. Burma. Tenasserim. India, (*typus*) Ceylon, Nepal, Sikkim. Philippines. Borneo. Celebes. Molccas. Small-Sunda Islands; Timor. North-Australia. Africa. Central-America; Antillia; Mexico (*typus*).

The roots and stem of this plant contain some alkaloids, Cissampelin, Speerin, and Berberin.

XIX. *Cyclea* ARNOTT (1840)

(**46**) **Cyclea barbata** (Wallich) Miers in Ann. Nat. Hist. 3-ser. XVIII (1866) 19, *nom. nudum*, et in Contrib. Bot. III (1871) 237; Diels, Menispermac. (1910) 314; Kooder, Exkursionsflora von Java II (1912) 237; Craib, Fl. Siamen. Enum. I (1931) 71; Merrill, Enum. Pl. Collect. in Sumatra, in Contrib. Arn. Arboretum VIII (1934) 57; Yamamoto, Enum. Menispermac. Pl. Hainan, (1942) 78, et Enum. Menispermac. Pl. in Great-Sunda Islands, III (1944) 144; Merrill & Chun in Sunyatsenia V. 1-3 (Ang. 1940) 56.

Cissampelos barbata Wallich, Catalog. (1828) no. 4978, *nom. nudum*.

Cissampelos Pareira Linn. var. *villosa* Teysm. et Binnend. Catalog. Bogor. (1866) 173.

Cyclea peltata Miquel in Ann. Mus. Lugd. Batav. IV (1868) 85; Scheffer in Nat. Tijdschr. Nederl. Ind. XXXII (1873) 404, t. XV; Gagnepain in Fl. Gén. Indochiné I (1908) 151, non Hooker f. et Thoms.

NOM. VULG. Biroodo-tuzurahuzi (Jap.). Sam-nam, Nhan-sam, Plou, (Indochina). Badi-gumbang (Borneo). Areuj-tawheloe. Areuj-tarawoeloe, (Java).

HABIT. Hainan: Kiung-shan (ipse! Dec. 1940, *-ramus fl. masc.*, in Herb. SBT); Nanshanlin (ipse! Dec. 1940, *-ramus cum radice*, in Herb. SBT); Ioh-an (ipse! Dec. 1940, *-ramus sterilis*, in Herb. SBT; inter Pei-lei et Chiang-yuen (ipse! Dec. 1940, *-ramus sterilis*, in Herb. SBT; inter Chiang-yueng et Shelu (ipse! Dec. 1940, in Herb. SBT); inter Pei-lei et Chiang-yeng (ipse! Dec. 1940, *-ramus fl. masc.* in Herb. SBT); prope Teng-chiao (ipse! Nov. 1940, *-ramus sterilis*, in Herb. SBT); Po-Ting, Hing-Lung, Shum-Ching Ling, 250m. alt. (*F.C. How!* no. 71871); Ou-Ku Ling, circ. 200 m, alt. (*F.C. How!* 71969); 7337; (*F.C. How!* 71969; 73377; *How! et Chun!* no. 70052; e *Merr. et Chun.*)

DISTRIB. Extra-southern China: Hainan, common throughout the Island. Indochina. Burma (*typus*), Siam. Malay-Peninsula. Sumatra. Java. Borneo.

(**47**) **Cyclea hypoglauca** (Schauer) Diels, Menispermac. (1910) 319;

Merrill, Suppl. List of Hainan Pl. in Lingn. Sc. Journ. VI-3, (Sept. 1928) 276, et Chinese Sp. Described in Henry's Observat. Botanicae, in Journ. Arn. Arboretum XVIII (1937) 54; Yamamoto, Phytogeogr. View of Menispermac. (1938) 323, et in Journ. Soc. Trop. Agr. XII-3 (Oct. 1940) 247, et Enum. Menispermac. Pl. Hainan (1942) 78; Tanaka & Odashima, Census of Hainan Pl. (Dec. 1938) 366.

Cissampelos hypoglauca Schauer in Nov. Act. Acad. Leop. Carol. XI, Suppl. I (1843) 479.

Cyclea deltoidea Miers in Kew Journ. Bot. III (1851) 258, et in Contrib. Bot. III (1871) 244; Bentham, Fl. Hongk. (1861) 14; Forbes et Hemsley, Index Fl. Sinens. I (1886) 29.

Rami graciles praeter foliorum axillas barbatas glabri glaucescentes. Foliorum petiolus 1.5–3.5 cm longus, 5–6 mm a margine laminae peltato-insertus, parce pilosus vel glaber; lamina membranacea vel papyracea supra glabra subtus pallida glaucescens, parce pilis longis conspersa vel glabra, basi subrotundata vel truncata, subovato-triangularis, apice mucronulata margine subrevoluta, 3–6 cm longa, 2–4 cm lata, nervi primarii 5–7-palmati subtus tenuissime prominuli, secundarii cum nervulis glaucescenti-nigrescentibus reticulati. Inflorescentiae ♂ axillares solitariae vel paucae fasciculatae basi ramosae vel simplices, 4–12 cm longae, cymulas remotas sessiles globoso-capituliformes paucifloras bractea parva lanceolata suffultas 1.5–3 mm diamet. gignentes; sepala 4 subcarnosa obovata 1–1.2 mm longa, 0.6 mm lata; petala libera vel coalita in corollam infundibuliformem circ. 1–1.5 mm longam et latam; synandrium 1–1.2 mm longum 4 (–6 ?)-loculare, filamentum latum et crassum. Inflorescentiae ♀ angustatae, 3.5–8 longae; bracteae pilosae; rhachis subflexuosa; pedicelli pauci (saepe bini). Drupae glabrae, compresso-obovoideae, 4–5 mm longe; edocarpium costulis utrinque 3 tuberculatis ornatum. (*e descriptione Dielsi*)

NOM. VULG. Uraziro-tuzurahuzi (Jap.). Tsing-teng-tze 青藤子 (China).

HABIT. Hongkong: in monte Victoria, (*Champion! typus, -ramus fl. femin.*, e *Diels*); ibidem, (*Hance!* no. 10162, c. *Wright!*, e *Diels*); Richmond Terrace, (*Bodinier! -ramus fructifer*, e *Diels*. Kwangtung: Lo-fau-shan, (*Ford! -ramus fructifer*, in Herb. Kew; Cap-Syngmoon, *Meven! typus, -fl. masc.*, e *Diels*). Hainan: Lin-fa-shan (*W. T. T'sang!* no. 15744; ibidem, *W. T. T'sang!* no. 245, *-ramus inflorescentiis femineis*, in Herb. SBT).

DISTRIB. South. & Extra-southern China: Kwangtung, Hongkong, Kwangsi; Hainan; endemic in China.

(48) **Cyclea racemosa** Oliver in Hooker, Icon. Pl. (1896) t. 1938: Diels, Fl. Central-China (1900) 345, et Menispermac. (1916) 318, fig. 93, G-K; Yamamoto, Phytogeogr. View of Menispermac. (1938) 323; Chun in Sunyatsenia IV. (3-4) (Jun. 1940) 177.

C. racemosa, Oliv. ramis costatis primum pilosis deinde glabratis, foliis ovato-deltoideis peltatis, apice tenuiter et breviter acuminatis, basi truncatis, supra parce pilosulis subtus pallidioribus pracipue in nervis pilosis, floribus in racemis angustis axillaribus saepius solitariis geminisve basi breviter ramosis plus minus pilosis, bracteis parvis lanceolatis cymbiformibus pedicello brevioribus; floribus ♂ pedicello longioribus glabris, calyce breviter 3-4-fido lobis ovatis obtusis, petalis 4 obovatis rotundatisve marginibus recurvis columna staminum 3-plo brevioribus; fl. ♀ ovario setoso-hispido, fructibus parce setulosis, (sicco) radiatim rugulosis. (*e descriptione prima Oliveri*)

Folia $2\frac{1}{2}$-3 poll. longa, 2-2.8 poll. lata; petiolus pilosus lamina brevior. Racemi fl. ♂ 1-2 poll. longi; fl. ♀ $1\frac{1}{2}$-3 poll longi. Fl. ♂, calyx 1/8-1/6 poll. longus.

NOM. VULG. Tubozaki-tuzurahuzi Jap. nov.

HABIT. Hupeh: Ichang (*Henry!* no. 2030, *-ramus fl. femin.*, n. 5539A, et no. 5539, *typus*, *-ramus fl. masc.* et *ramus fl. femin.*, e *Diels*, no. 3628, no. 3925, *-ramus fructibus juvenibus*, no. 6113 et no. 5539B, *-ramus fructibus maturis*, e *Diels*); Shih-kai, (*Wilson!* no. 179A, *-fl. masc.*, e *Diels*). Szechuan: Nan-chuan, (*von Rosthorn!* no. 2027, *-ramus fructifer*, e *Diels*). Kweichow: inter Pinga et Tu-shan, (*von Rosthorn!* no. 924 et no. 1352, *-fl.* et *fruct.*, in Herb. *Leveille*, e *Diels*); prope Gan-pin (*L. Martin!* apud *Bodiner*, no. 2067, in Herb. *Leveille*, *Diels*. Kwangtung: Yu-Yueu Hsiew, Ta-Ling Ch'ao, (*S. P. Ko!* fe. Mart. 1934; ibidem (*Kwak! Ko!* ex *Chun*).

DISTRIB. Southern China: Hupeh, (Ichang), Szechuan (Nanchuan), Kweichow, Kwangtung; endemic in China.

(49) **Cyclea polypetala** Dunn in Journ. Linn. Soc. XXXV (1903) 485; Diels, Menispermae. (1910) 317, fig. 93, P-Q; Yamamoto, Phytogeogr. View of Menispermac. (1938) 323.

Cyclea polypetala, Dunn; petalis ad omnibus *Cycleis* aliis distinguenda. Frutex alte scandens, caulibus sulcatis, hirsutis, tarde glabrescendentibus, fuscis, pallescentibus. Folia subcoriacea, supra glabra, subter molliter hirsuta, venis prominedtibus, cordata, vel saepius subpeltata, breviter vel longe acuminata, $3\frac{1}{2}$-$7\frac{1}{2}$ poll. longa. Paniculae solum in planta infima juxta humum enatae (A. Henry). Flores masculi (feminei ignoti) virides (A. Henry), laxe paniculati, 1 lin. longi. Petala cylindrica, libera. Drupae

albidae (A. Henry), globosae, 2 lin. diam., in paniculis pyramidalibus densis, $2\frac{1}{2}$-$3\frac{1}{2}$ poll. longis dispositae. (*e descriptione prima*).

NOM. VULG. Riben-tuzurahunzi (Jap. nov.).
HABIT. Yunnan: Mentse in monte, ad 1500 m alt., (*Henry!* no. 11460, e *Diels*); Szemao ad 1500-1300 m alt., (*Henry!* no. 12072, no. 12072A, no. 12072B, no. 12072C, *-ramus fi. masc. et ramus fruct. -typus, Diels*); ibidem, (*A. Henry!* no. 11979A, *-ramus fructibus juvenibus*, e *Diels*).

DISTRIB. South. & Extra-southen China: Yunnan, Hupeh, Szechuan, Kwangtung, Siam.

(**50**) **Cyclea tonkinensis** Gagnepain, in Soc. France LV (1908) 38, et in Fl. Gén. Indochiné I (1908) 151, fig. 15 (15-21); Diels, Menispermac. (1910) 318; Yamamoto, Phytogeogr. View of Menispermac. (1938) 323, et Enum. Menispermac. in Great-Sunda Islands III (Oct. 1944) 146; Chun in Sunyatsenia IV. (3-4) (Fun. 1940) 177.

NOM. VULG. Tonkin-tuzurahuzi (Jap. nov.).
HABIT. Kwangsi: Lungchow. (*H. Y. Liang! Fruct.* ex *Chun*). Yuunan: Mentse in monte, ad 1500 m alt., (*A. Henry!* no. 9406, A, B. *-ramus fi. femin.*, e *Diels*).

DISTRIB. Extra-southern China: Yunnan, Kwangsi. Indochina: Tonkin (*typus*). Sumatra (Siborangit).

(**51**) **Cyclea hainanensis** Merrill, Diagnosis of Hainan Pl. II in Philip. Journ. Sc. XXIII-3 (Sept. 1923) 240, et in Lingn. Sc. Journ. V (1927) 75; Tanaka & Odashima, Census of Hainan Pl. (Dec. 1938) 366; Yamamoto, Enum. Menispermac. Pl. Hainan (1942) 78.

Frutex scandens, ramis ramulisque glabris; foliis ovatis vel triangulari-ovatis, chartaceis, olivaceis, circiter 11 cm longis et 8 cm latis, tenuiter acute acuminatis, basi late truncatis, vix cordatis, angulis late rotundatis, angustissime peltatis, 7-nerviis, nervis reticulisque subtus perspicuis et leviter ciliatis; petiolo 4 cm longo; paniculis ♀ caulinis, anguste pyramidatis, e basi ramosis, circiter 7 cm longis, ferrugineo-hirsutis, ramis inferioribus circiter 7 cm longis, patulis; floribus numerosis, subconfertis, bracteis anguste lanceolatis, hirsutis, 1 mm longis; sepalis 2, orbicularis, carnosis, glabris, 1 ad 1.2 mm diametro; petalis O; ovarium glabrum. (*e descript. prima*)

NOM. VULG. Hrinan-tuzurahuzi (Jap.)
HABIT. Hainan: Yik-tsek-maau ad pedem montis, Ng-chi-leng (*McClure!* 18 Maio 1922, no. 9688, *typus, -ramus fi. femineis*, e *Merrill*).

DISTRIB. Extra-southern China : Hainan ; endemic in China.

(**52**) **Cyclea Migoana** Yamamoto, in Journ. Soc. Trop. Agr. Taihoku, XIII-1 (Apr. 1941) 49, fig.

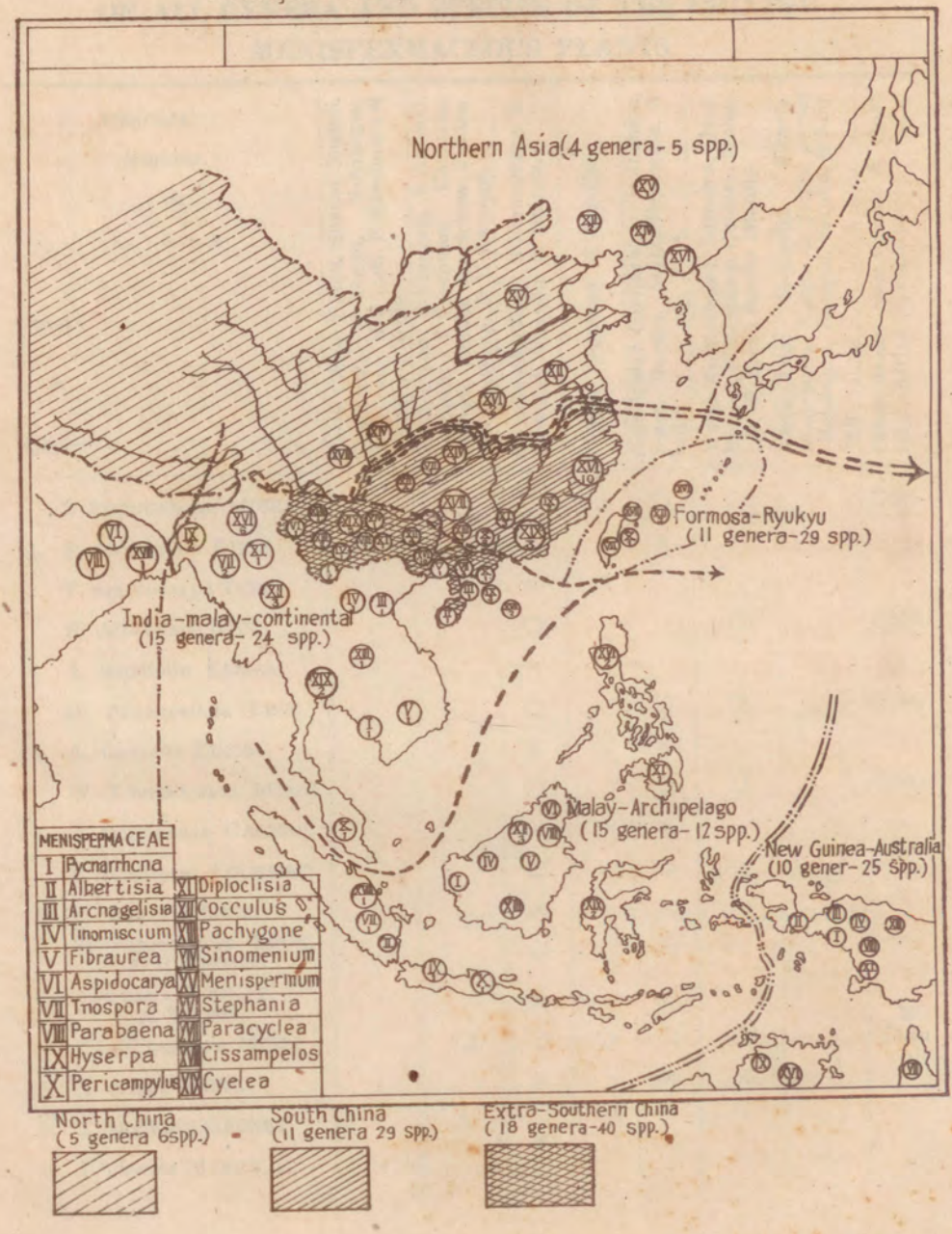
Rami graciles, striati, hispido-pilosi. Petiolus foliorum gracilis, 3-5 cm longus, basi geniculatus, apice laminae 5-8 mm trans marginem peltato-insertus, leviter sulcatus, hirsuto-pilosus. Lamina tenuissime membranacea, utrinque subglabra sed subtus inferiore saepe hirsuta, supra viridis, subtus pallide glauca, ovata vel ovato-lanceolata, apice obtusa et ad sammum mucronata, basi truncato-rotunda, margine leviter repanda ; nervis primariis sursum et deorsum 5-palmatim divaricatis cum secundariis tenuibus prominentibus. Inflorescentiae ♂ axillares, gracillimae, pleraeque solitariae, cum pedunculo 3-6 cm longae, usque sericeo-pubescentes, superne laxe ramosae, e cymulis parvis plerisque paucifloris pseudo-racemose compositae ; bractea oblonga, apice acuta et basi truncata, extus hirsuta, 0.7 mm longa et 0.1 mm lata. Flores ♂ parvi pedicellati, glabrati, basi cum bracteola glabra et oblonga notati ; calyx basi tubulato-connatus, superne profunde 4- vel raro 5-partitus, partibus oblongis 0.4 mm longis 0.2 mm latis apice subnaviculaeformibus ; corolla depresso-cyathiformis, margine integro-involuta ; synandrium breve, inclusum, 4-loculare. Flores feminei et fructus adhuc ignoti. (*e descript. prima*).

NOM. VULG. Hime-tuzurahuzi (Jap.).

HABIT. Fukien : Huai-pi-hsian, (*H. Migo!* Jul. 1937, *-ramus fioribus masculinis*, in Herb. SBT, et in Herb. Inst. Scient. Shangh .

DISTRIB. Southern China : Fukien ; endemic in China.

The Map Showing the Distribution of the Chinese Menispermaceous Plants (Y. Yamamoto, 1946)



III. A TABLE SHOWING THE DISTRIBUTION OF ALL GENERA AND SPECIES OF THE CHINESE MENISPERMACEOUS PLANTS

Genera & Species \ Districts, Regions, & Areas.	*North.-China*: Chihli, Shansi, Shensi, Shantung, N-Honan, N-Kiangsu, N-Anhwei, N-Hupeh, N-Szechuan, & Western Provines	*South.-China*: S-Kiangsu, S-Anhwei, S-Hupeh, S-Szechuan, Chekiang, Kiangsi, Hunan, Kweichow, Fukien, N-Kwangtung, & N-Kwangsi.	*Extra-south.-China*: S-Kwangtung, S-Kwangsi, Yunnan, & Hainan.	*Taiwan (Formosa) & Ryu-Kyu.*	*Indo-Malay.-Continental*: Indochina, Siam, Burma, Malay-Peninsula, & India	*Malay-Archipelago*: Sumatra, Java, Borneo, Philippines, Celebes, Moluccas, & Small-Sunda Islanda.	*North.-Asia*: Mongolia, Siberia, Manchuria, Korea, & Japan proper (Hokkaido, Honsyu, Sikoku, & Kousyu.	*Other Areas*: New Guinea & Australia, Africa & America.
I. Pycnarrhena MIERS			○		○	○		○NG
1. P. fasciculata DIELS			×		×			
2. P. macrocarpa DIELS			×					
II. Albertisia BECC.			○			○		○NG
3. A. laurifolia YAMAM.			×					
III. Arcangelisia BECC.			○		○	○		○NG
4. A. Loureiri DIELS			×		×			
IV. Tinomiscium MIERS			○		○	○		○NG
5. T. tonkinense GAGNEP.			×		×			
V. Fibraurea LOUREIRO			○		○	○		
6. F. tincroria LOUR.			×		×			
VI. Aspidocarya HOOK. F. et THOMS.			○		○			
7. A. uvifera HOOK. F. et THOMS.			×		×			
VII. Tinospora MIERS		○	○	○	○	○		NG ○Au Af
8. T. crispa MIERS			×		×	×		
9. T. sagittata GAGNEP.	×	×	×		×			
10. T. sinesis MERRILL	×							

11. T. T. capillipes GAGN.		×	×		×			
VIII. Parabaena MIERS			○		○	○		○NG Au
12. P. sagittata MIERS			×		×			
IX Hypserpa MIERS		○	○		○	○		○NG Au
13. H. cuspidata MIERS		×	×		×	×		
14. H. laevifolia DIELS			×		×			
15. H. nitida MIERS		×	×					
X. Pericampylus MIERS		○	○	○	○	○		
16. P. glauca MERRILL		×	×	×	×	×		
17. P. formosana DIELS		×						
XI. Diploclisia MIERS		○	○		○	○		○NG
18. D. glaucescens DIELS		×	×		×	×		
19. D. affinis DIELS		×						
20. D. chinensis MERRILL		×						
XII. Cocculus DC.	○	○	○	○	○	○	○	○Ab Am
21 C. laurifolius DC		×	×	×	×	×	×	
22. C. mollis WALLICH		×	×		×			
23. C. sarmentosus DIELS		×	×	×	×	×		
var. paucifiorus WU		×						
24. C. trilobus DC.	×	×	×	×	○	×	×	
XIII. Pachygone MIERS		○	○			○		NG ○Au Af
25. P. sinica DIELS		×	×					
26. P. valida DIELS			×					
XIV. Sinomenium DIELS	○	○	○				○	
27. S. acutum REH. et WILS. var. cinereum R. et W.	×	×	×				×	
XV. Menispermum LINN.	○	○					○	
28. M. dauricum DC,	×	×					×	
XVI. Stephania LOUR.	○	○	○	○	○	○	○	NG ○Au Af
29. S. japonica MIERS		×	×	×	×	×	×	
30. S. longa LOUREIRO		×	×		×			

31.	S. rotunda LOUR.			×		×			
32.	S. hernandifolia WALP.		×	×		×	×		×
33.	S. herbacea GAGNEP.	×	×						
34.	S. sinica DIELS	×	×	×					
35.	S. Delavayi DIELS		×	×		×			
36.	S. brachyandra DIELS			×		×			
37.	S. hispidula YAMAMOTO		×	×	×				
38.	S. gracilifiora YAMAM.			×					
39.	S. Dielsiana WU		×						
40.	S. cepharantha HAYATA		×		×				
41.	S. tetrandra S. MOORE		×		×				
42.	S. dolichopoda DIELS			×					
	XVII. Paracyclea KUDO et YAMAM.	○	○	○	○				
43.	P. densifiora YAMAM.			×					
44.	P. sutchuensis YAMAMOTO	×	×	×					
	var. sessilis YAMAM.		×						
	XVIII. Cissampelos L.			○		○	○		○Ab Am
45.	C. pareira LINN.			×		×	×		×
	XIX. Cyclea ARNOTT		○	○		○	○		
46.	C. barbata MIERS			×		×	×		
44.	C. hypoglauca DIELS		×	×					
48.	C. racemosa OLIVER		×						
49.	C. polypetala DUNN			×		×			
50.	C. tonkinensis GAGNEP.			×		×	×		
51.	C. hainanensis MERR.			×					
52.	C. Migoana YAMAMOTO		×						
Total & Per cent of Genera	19 100%	5 26.3	11 57.9	18 94.7	5 26.3	15 78.9	15 78.9	4 21.1	12 63.2
and Species	52 100%	6 11.5	31 59.6	41 78.8	8 15.4	26 50.0	12 23.1	5 9.6	3 5.8