編號：CCMP98-RD-026

台灣常用藥用植物圖鑑英文版專書編修

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摘　要

「台灣常用藥用植物圖鑑I冊」(謝，2002)之英文翻譯工作乃自2009年1月始，並於同年12月完成，為期一年。 為更進一步將台灣中醫藥推向國際化，促進國際交流並使國際人士更加認識台灣藥用植物資源，中醫藥委員會將「台灣常用藥用植物圖鑑I-III冊」之英文翻譯工作計畫由植物學分類專家及中藥學者組成團隊，共同分擔植物形態及成分、藥理、效用之英譯工作，期使國際人士能更加瞭解台灣之藥用植物資源。

本計畫由植物學分類專家及中藥學者組成團隊人員為黃增泉、張永勳、陳世輝、邱少婷、何玉鈴、蕭錦隆、黃俊溢、張天豪、高資棟、王有禎、曹靖雯、惠凱平、連國元等，為期一年完成第一冊之英譯工作。

翻譯之第一冊裡共涵蓋了328種植物，包括綠藻門3種，褐藻門2種，紅藻門2種，藍綠藻1種，真菌門14種，地衣門一種，苔蘚門1種，蕨類植物門57種，裸子植物門56種，以及230種被子植物門植物。

英文版主要乃依據中文版(謝，2002)翻譯，然書中乃多有變更：11個分類群名稱訂正，4個分類群的學名拼法訂正，41禎錯誤照片置換，21禎品質不良照片替換，全文多數的描述依標準格式重寫，並將過長的描述縮減。

在翻譯的過程中，我們理解到這不僅是將中文翻譯成英文而已，而是需要重新一一檢視各項目、全文並予以訂正。由於計畫期限短促，我們很難能有效率地翻譯的同時，並能做好訂正內容的工作，亟今仍有51種植物需再檢視其內文中成份及效用的部份。

關鍵詞：常用藥用植物、圖鑑、台灣、英文版

Number: CCMP98-RD-026

Editing of English Edition of “The Illustration of Common Medicinal Plants in Taiwan”

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ABSTRACT

The translation and revision of “The Illustration of Common Medicinal Plants in Taiwan (Hsieh, 2002)”was carried out within one year period between January to December of 2009.

In order to advance international cooperation and to help foreigners better understand Taiwan medicinal plants, “The Illustration of Common Medicinal Plants in Taiwan (Hsieh, 2002)”was approved for a English translation by the Committee on Chinese Medicine and Pharmacy, Department of Health, Executive Yuan,to make Taiwan medicinal plant resources better known worldwide.

The translation team (or editorial members) composed by experts in botany and Chinese medicine has been organized in January 2009 for the volume one. They are: Huang, Tseng-Chieng, Chang, Yuan-Shiun, Chen, Shih-Huei, Chiu, Shau- Ting, Ho,Yu-Ling, Hsiao, Huang Juinn-Yih, Chang, Tien-Hao, **Kao, Tzu-Tong,** Wang, Yu-Chen, Tsao, Ching-Wen, Hui, Kai-Ping, and Lian, Kuo-Yuan,.

Three hundreds and twenty-eight species including three species of green algae, two species of brown algae, two species of red algae, one specie of blue green algae, 14 species of fungi, one specie of lichen, one specie of moss, 57 species of ferns and fern allies, 56 species of gymnosperms and 230 species of angiosperms are translated in this volume.

This English version was based on the Chinese version (Hsieh, 2002), but it differs vastly from the original book. It contains the revised nomenclature of 11 taxa, the spelling corrections of 4 taxa, the replacements of 41 incorrect pictures and 21 poor quality pictures, and corrected or condensed substantial description of text

completed with a standardized format for presentation.

During the course of English translation, we realize that our project needs more than English translation. We also have to revise the book to keep it up to date. Since this project is only for one year, we are unable to translate efficiently and revise it simultaneously in such a short period of time. Specifically, 51 taxa needs re-examination or reconfirmation the accuracy statements of medicinal content and efficacy.

Keywords: Common medicinal plants, Illustration, Taiwan, English version

壹、前言

行政院衛生署中醫藥委員會於2000年委託謝文全教授，彙整過去甘偉松教授及謝教授團隊調查全省常見藥用植物1200種，分上、中、下三冊，出版「台灣常用藥用植物圖鑑」（I-III冊）(謝，2002)。每種藥用植物簡列其名稱、學名、科名、別名、形態、產地、分佈、成分、藥理及效用等諸項，並附上植物彩色圖，對開發、推廣台灣藥用植物資源有很大之助益。

「台灣常用藥用植物圖鑑I冊」之英文翻譯工作乃自2009年1月始，並於同年12月完成，為期一年。

為更進一步將台灣中醫藥推向國際化，促進國際交流並使國際人士更加認識台灣藥用植物資源，中醫藥委員會將「台灣常用藥用植物圖鑑I-III冊」之英文翻譯工作本計畫由植物學分類專家及中藥學者組成團隊，共同分擔植物形態及成分、藥理、效用之英譯工作，期使國際人士能更加瞭解台灣之藥用植物資源。

貳、材料與方法

本計畫由植物學分類專家及中藥學者組成團隊人員為黃增泉、張永勳、陳世輝、邱少婷、何玉鈴、蕭錦隆、黃俊溢、張天豪、高資棟、王有禎、曹靖雯、惠凱平、連國元等，為期一年完成第一冊之英譯工作。

並於期中召開審查會議(附錄三)，對撰好之稿件審查，並對本書成書前的內容予以審訂，解決此間所遭遇的問題。

參、結果

翻譯之第一冊裡共涵蓋了328種植物，包括綠藻門3種，褐藻門2種，紅藻門2種，藍綠藻1種，真菌門14種，地衣門一種，苔蘚門1種，蕨類植物門57種，裸子植物門56種，以及230種被子植物門植物。十二月中完成出版。

另依計畫內容，本期應完成半數之第二冊的翻譯部份，譯妥之初稿置於(附錄五)。

計畫執行期間，發現的應訂正部份，我們所遭遇之問題與困難及解決辦法，條列如下： 一、植物名稱與所附之圖不相符者，超過41種以上(表一)。

計畫執行期間，我們向植物學專家詢問並儘量購買照片補充，已獲中醫藥委員會特別簽核購買版權之費用。

而即便是盡了最大努力，仍有未能收集到之照片，如表一所列之第4項(品質不好)、第37項(學名錯誤，已更正學名)及第49項(品質不好)。

二、文中許多植物描述用語多不夠準確(表二)，需特別花精神推敲改以植物學專用辭彙。

要求撰稿專家依特定之格式(附錄一)撰寫，並詳加考訂更正，結果如附錄二之例。

三、學名問題：命名法上的三種問題(表三)。

原書中的學名出現三種與植物命名法規抵觸的問題，出現最多者為使用異名，其次有使用不合被棄之學名，以及鑑定錯誤而援用的學名。此三者皆已訂正。但是這引發另一個問題，訂正學名後，其描述及藥效是否出現不一致，是否所指的植物種類之藥效仍然相同？尚需更多的時間，人力，經費及資料加以確認。

四、中文版植物的描述格式未統一，較為凌亂。

英文版已予以明確規範(附錄一)，盡可能使每一種植物的描述有統一的內容格式。

五、版面問題：

部份種類的描述較長，佔較多版面，依審查會議(附錄三)決議，應予以適度刪節。此問題在最後定稿時出現極大困擾，在衡量其刪節的合適性時，需多花額外的精力時間為之。

肆、討論

英文版主要乃依據中文版(謝，2002)翻譯，然書中乃多有變更：11個分類群名稱訂正，4個分類群的學名拼法訂正，41禎錯誤照片置換，21禎品質不良照片替換，全文多數的描述依標準格式重寫，並將過長的描述縮減。

伍、結論與建議

在翻譯的過程中，我們理解到這不僅是將中文翻譯成英文而已，而是需要重新一一檢視各項目、全文並予以訂正。由於計畫期限短促，且經費有限，我們很難能有效率地翻譯的同時，並能做好訂正內容的工作，亟今仍有51種植物需再檢視其內文中成份及效用的部份。

誌謝

本研究計畫承蒙行政院衛生署中醫藥委員會，計畫編號CCMP98-RD-026提供經費贊助，使本計畫得以順利完成，特此誌謝。

陸、參考文獻

謝文全，2002。台灣常見中草藥圖鑑（I）。台北：行政院衛生署中醫藥委員會。

柒、表格

表一、台灣常用藥用植物圖鑑英文版第一冊植物圖片替換清單

項次	圖序	植物中文名	植物學名	替換原因
1	1	滸苔	*Enteromorpha prolifera*	照片錯誤
2	3	石蓴	*Ulva lactuca*	品質不好
3	5	海帶	*Laminaria japonica*	品質不好
4	6	江蘺	*Gracilaria verrucosa*	品質不好
5	7	鷓鴣菜	*Digenea simplex*	照片錯誤
6	28	玉柏	*Lycopodium obscurum*	品質不好
7	40	紫萁	*Osmunda japonica*	品質不好
8	44	金毛狗脊	*Cibotium barometz*	照片錯誤
9	46	大葉骨碎補	*Davallia formosana*	照片錯誤
10	47	海州骨碎補	*Davallia mariesii*	照片錯誤
11	52	日本金粉蕨	*Onychium japonicum*	品質不好
12	55	半邊旗	Pteris semipinnata	照片錯誤
13	56	鐵線蕨	*Adiantum capillus-veneris*	品質不好
14	57	鞭葉鐵線蕨	Adiantum caudatum	照片錯誤
15	58	菲律賓鐵線蕨	*Adiantum philippinense*	照片錯誤
16	59	鳳了草	*Coniogramme japonica*	照片錯誤
17	61	巢蕨	*Asplenium nidus*	品質不好
18	62	烏毛蕨	*Blechnum orientale*	品質不好
19	64	頂芽狗脊蕨	*Woodwardia unigemmata*	品質不好
20	68	貫眾	*Cyrtomium fortunei*	照片錯誤
21	72	槲蕨	*Drynaria fortunei*	照片錯誤
22	73	崖薑蕨	*Pseudodrynaria coronans*	照片錯誤
23	74	抱樹石葦	*Pyrrosia adnascens*	品質不好
24	77	書帶蕨	*Vittaria flexuosa*	照片錯誤
25	78	蘋	*Marsilea crenata*	品質不好
26	79	槐葉蘋	*Salvania natans*	照片錯誤
27	87	百日青	*Podocarpus nakaii*	照片錯誤
28	88	菲律賓羅漢松	*Podocarpus fasciculus*	照片錯誤
29	89	台灣華山松	*Pinus armandii* var. *masteriana*	照片錯誤
30	90	馬尾松	*Pinus massoniana*	品質不好
31	95	紅檜	*Chamaecyparis formosensis*	照片錯誤
32	108	水柳	*Salix warburgii*	品質不好
33	121	榔榆	*Ulmus parvifolia*	照片錯誤
34	129	台灣天仙果	*Ficus formosana*	品質不好
35	130	榕樹	*Ficus microcarpa*	照片錯誤

項次	圖序	植物中文名	植物學名	替換原因
37	152	石薯	*Gonostegia pentandra* var. *hypericifolia*	照片錯誤
38	161	忍冬葉桑寄生	*Taxillus lonicerifolius*	照片錯誤
39	162	檜葉桑寄生	*Taxillus matsudai*	照片錯誤
40	166	刀葉桑寄生	*Viscum multinerve*	品質不好
41	172	芋葉杜衡	*Asarum hypogynum*	照片錯誤
42	177	毛蓼	*Polygonum barbatum*	照片錯誤
44	180	水蓼	*Polygonum japonicum*	照片錯誤
46	192	藜	*Chenopodium album*	品質不好
47	197	土牛膝	*Achyranthes aspera* var. *indica*	照片錯誤
48	228	瞿麥	*Dianthus superbus*	照片錯誤
49	231	女婁菜	*Silence aprica*	品質不好
50	232	蠅子草	*Silene fortunei*; *Silene fissipetala*	照片錯誤
51	261	臺灣白匏子	*Mallotus paniculatus* var. *formosanus*	照片錯誤
52	265	油柑	*Phyllanthus emblica*	品質不好
53	267	細葉油柑	*Phyllanthus virgatus*	照片錯誤
54	271	白花八角	*Illicium anisatum*	照片錯誤
55	272	紅花八角	*Illicium arborescens*	照片錯誤
56	273	南五味	*Kadsura japonica*	品質不好
57	291	香葉樹	*Lindera communis*	照片錯誤
58	296	豬腳楠	*Machilus thunbergii*	品質不好
59	300	兒島氏草烏	*Aconitum kojimae*	照片錯誤
60	305	毛柱鐵線蓮	*Clematis meyeniana*	照片錯誤
61	312	台灣唐松草	*Thalictrum urbaini*	照片錯誤
62	314	玉山小蘗	*Berberis morrisonensis*	照片錯誤
63	317	十大功勞	*Mahonia japonica*	照片錯誤
64	326	蘭嶼千金藤	*Stephania merrilii*	照片錯誤

表二、部份不適合之描述用語之修訂內容與原文對照表。

頁碼	原文	更正
5	Sargassum fulvellum C. Agrdh	Sargassum fulvellum (Turner) C. Agrdh
7	藻紅元	藻紅素 (phycoerythrin)
8	藤松藻科	松節藻科
9	一般直徑0.5mm，…達6mm以上	一般直徑0.5cm，……達6cm以上
42	長2-5 mm, 寬3-10cm (Ophioglossum)	長2-5cm, 寬1-2 cm
43	Osmunda banksiaefolia (Presl) Kuhn	Osmunda banksiifolia (C. Presl) Kuhn
81	水龍骨科Polypodiaceae	書帶蕨科Vittariaceae
110	單性，雌雄同株，雌雄合生	Flower uisexual. Plant monoecious
112	花被密生毛	苞片密生毛
116	花單性，雌雄同株...中央一穗常為兩性花序...兩性花穗下方....	矛盾
117	子房下位	子房上位/ ovary superior
136	有單性花及兩性花2種隱頭花序，兩性花成熟之瘦果(種子)即愛玉子...	矛盾
141	聚花果球形	多花果球形
143	聚合果	多花果
262	托葉撕裂狀流蘇形	
266	柱頭3歧，流梳狀	
270	橢圓狀長構圓形 /橢圓狀長橢圓形(？)	

表三、學名更正項目列表。

No.	Species code	Subject name	Correct name	Criteria
1	1	*Enteromorpha prolifera*	**Ulva prolifera**	Synonym
2	3	*Sargassum lactuca*	**Sargassum fulvellum**	Synonym
3	5	*Laminaria japonica*	**Gracilaria gracilis**	Synonym
4	13	*Coriolus versicolor*	**Trametes versicolor**	Synonym
5	14	*Ganoderma japonicum*	**Ganoderma sinense**	Synonym
6	152	*Gonostegia pentandra var. hypericifolia*	**Gonostegia pentandra**	Synonym
7	299	*Aconitum formosanum*	**Aconitum fukutomei var. formosanum**	Synonym
8	323	*Cocculus sarmentosus*	**Cocculus orbiculagtus**	Synonym
9	49	*Nephrolepis auriculata*	**Nephrolepis cordifolia**	Reject
10	232	*Silene fortunei*	**Silene fissipetala**	Reject
11	6	*Gracilaria verrucosa*	**Carpopeltis maillardii** ?	Misapplied
12	68.	*Cyrtomium fortunei*	**Cyrtomium falcatum**	Misapplied
13	72	*Microsorium fortunei*	***Drynaria fortunei***	Misapplied
14	198.	*Achyranthes aspera* var. *rubro-fusca*	**Achyranthes bidentata**	Misapplied
15	77	*Polypodiaceae*	**Vittariaceae**	Misapplied

捌、附錄

附錄一、撰寫格式凡例。

General Guidance

The translation team and editorial members have decided for these guidelines to be followed:

1. The code for numbering each taxon (species code) must be kept as the original Chinese version (Hsieh, 2002-2004). When there are more than one taxon within the same species or genus, they are to be organized in alphabetical order. The numbering of each species should not change even when the name has been corrected, such as for the species code number 72 for *Microsorium fortunei* (Moore) Ching would be kept, even if the name is replaced by Drynaria fortunei (Kunze ex Mett.) J. Sm. in the translated version.
2. The photographs of the plants must be original except if there has been improved quality or if the pictures were not accurate.
3. The categories and order for each species are arranged as family name, species name and/or infraspecies (Latin), followed by the popular Chinese name in bracket(s), synonym, rejected name, misapplied name or misspelled name, english name if applicable, geographical distribution, plant description (habit, morphology, ecology, etc.), chemical (content / pharmacology), and efficacy. Other Chinese common/vernacular names are intentionally deleted such as Nu-lo [Shih-ching]; Sung-shan-chi-seng [Kan-mu]; Hsueh-feng-teng (Ssuchuan) for *Usnea longissima* Ach. When the scientific name of an original book is altered, the original subject (taxon) name will be placed in either the synonyms, rejected names, misapplied names or misspelled names. These are examples written in the arranged style for the description of the english names, synonyms, rejected names, misapplied names and misspelled names. The english names for species code 23, *Usnea longissima* Ach. are "old man's beard", "beard lichen", "tree moss" etc.. There are four forms of the original subject (taxon) names that have been altered. They are:
   (1) Synonym: Seven synonyms have been applied based on their descriptions and scientific names. They are: 1. Ulva prolifera Müller for *Enteromorpha prolifera* (Müller) J. Ag.; 5. Gracilaria gracilis (Stackhouse) M. Steentoft, L. M. Irvine & W. F. Farnham for *Gracilaria verrucosa* (Huds.) Papent.; 13. Trametes versicolor (L.: Fr.) Pilat. for *Coriolus versicolor* (Linn. ex Franchet) Quelet; 14. Ganoderma sinense Zhao, Xu et Zhang for *Ganoderma japonicum* (Fr.) Lloyd; 152. Gonostegia pentandra (Roxb.) Miq. for *Gonostegia pentandra* (Roxb.) Miq. var. *hypericifolia* (Blune) Masam.; 299. *Aconitum fukutomei* Hayata var. formosanum (Tamura) Yang & Huang for Aconitum formosanum Tamura; and 323. Cocculus orbiculagtus (Linn.) DC. for *Cocculus sarmentosus* (Lour.) Diels.
   (2) Rejected name: Two rejected names have been improved. They are 49 Nephrolepis cordifolia (Linn.) C. Presl for *Nephrolepis auriculata* (Linn.) Trimen and 232. Silene fissipetala Turcz var. kiiruninsularis (Masm.) Veldk. for *Silene fortunei* Vis.
   (3) Misapplied name: Three misapplied names have been improved. They are 72. Drynaria fortunei (Kunze ex Mett.) J. Sm. for *Microsorium fortunei* (Moore) Ching; 198. Achyranthes bidentata Blume for *Achyranthes aspera* Linn. var. *rubro-fusca* Hook. f., and 77. Vittariaceae for *Polypodiaceae*.
   (4) Misspelled name: Four misspelled names have been corrected. They are: 75 Pyrrosia lingua for *Pyrrosia lingus*; 157 Grevillea robusta for *Grevillea rotusta*; 159 Thesium

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chinense for *Thesium chinene*; and 162 Taxillus matsudae for *Taxillus matsudai*.

4. In order to achieve uniformity in presentation, the descriptive order of the plant body, specifically for vascular plants, are standardized to conform with the guideline of *Flora of Taiwan*, 2nd edition (Huang et al, 1984) as below:
   (1) Note "Punctuation": Cap at start and (.) at end.
   (2) General modifiers (large, small, coarse, evergreen, parasitic, epiphytic, insectivorous, etc.).
   (3) Sex of plant (monoecious, etc.).
   (4) Plant duration (annual, perennial).
   (5) Habit (tree, shrub, vine, herb).
   (6) Stem (nodes, internodes)
   (7) Leaves: duration; structure (simple, compound); arrangement; blade (color, texture, shape or form, size (length, width), apex, base, margin, surface, venation), sheath, ligule; petiole; stipule.
   (8) Inflorescence: type; position (terminal, axillary); peduncle, and /or rachis; bracts or bractlets =bracteole; pedicel.
   (9) Flower: sex (perfect or imperfect); symmetry; calyx or sepals; corolla or petals; stamens, filaments, anther, staminodes; carpels; ovary (position first), placentation, ovule, style, stigma; receptacle or hypanthium; pedicel.
   (10) Fruits: type, receptacle, pedicel.
   (11) Seeds: type, seed coat, embryo, endosperm.
   (12) Flowering and fruiting data.
   (13) Descriptive sequence for each structure treated:
   (14) General: male before female; chasmogamy before cleistogamy; combined structure before single; tube before lobes; upper surface (use "above") before lower surface (use "beneath" or "below").
   (15) Specific symmetry; number of parts; fusion of parts; color; texture; shape or form; size (length, width); apex; base; margin; surface; venation.
5. The correct scientific names follow *Flora of Taiwan* VI. 2nd edition (Boufford et al., 2003).
6. English plant names published by Hsieh and Yang (1969), Yang (1982) and Liu (1960-2) have been adopted in this book.
7. Chinese plant names have kept their originality unless they are misapplied, such as species code 88. *Podocarpus fasciculus* De Laubenfels, the Chinese name (菲律賓羅漢松) should be changed as 叢花百日青.
8. Plant distribution stays unaltered unless the range of distribution vary to a certain extent with current knowledge, such as species number code 147. *Debregeasia orientalis* C. J. Chen for the range of distribution as "Japan, eastern and southern China, India, Bhutan, Nepal and Taiwan" to replace the original distribution as "Distributed in South China, Japan, Ryukyu, and Taiwan"and number code 88. *Podocarpus fasciculus* De Laubenfels for the range of distribution as "endemic" to replace the original distribution as "Northern Philippines and northern hills of Hengchun peninsula of Taiwan".
9. The translation of Chinese botanical usages/terms in this book follows Huang (1977, 2003).
10. For the translation on [Content/Pharmacology]and [Efficacy], the WHO International

Standard Terminologies on Traditional Medicine in the Western Pacific Region are adopted (http://www.wpro.who.int/publications/PUB_9789290612487.htm).

11. In the text, the article, "a" and "the" for the description of plant body are intentionally deleted, such as "Annual herb" to replace the formal usage "An annual herb" or "apex acute" to replace "the apex acute", or "on both surfaces" to replace "on the both surfaces", etc. for simplicity and briefness.
12. "Flowers monoecious, unisexual" are very common botanical usages in the Chinese version or Chinese articles elsewhere, but they should be corrected as "Plants monoecious….Flowers unisexual", e.g., species number code 144. *Boehmeria densiflora* Hook. & Arn. Where Flowers monoecious, unisexual in Chinese version should be described as "Small evergreen monoecious shrub…Flowers unisexual" ".
13. The citations in the Chinese names include old references and the local names in certain area(s) follows the standard Romanization WG System, except the China's Provinces.
14. The translations of China's Provinces will be the following: Anhui (安徽), Chechiang (浙江), Chianghsi (江西), Chiangsu (江蘇), Chiling (吉林), Chinghai (青海), Fuchien (福建), Hainan (海南), Heilungchiang (黑龍江), Honan (河南), Hopei (河北), Hong Kong (香港), Hsitsang (=Tibet) (西藏), Hunan (湖南), Hupei (湖北), Kansu (甘肅), Kuangtung (廣東), Kuanghsi (廣西), Kueichou (貴州), Liaoning(遼寧), Macao(澳.門), Mongolia (內蒙古), Ninghsia (寧夏), Peking (北京), Shanghai (上海), Shanhsi (山西), Shantung (山東), Shenhsi (陝西), South China Sea Islands(南海諸島), Singchiang (新疆), Ssuchuan (四川), Tienchin (天津), Yunnan(雲南)
15. The text of this book uses one font type and font size of print, *i. e.*, Times New Roman Normal font type and 12 font size. However, special uses are: bold face of font style for the correct name of taxon; *Italic face* of font style for synonyms, rejected names, misapplied names or the correct name used in the description, and also for book name; and small cap of font effect for family names.
16. The bibliography style follows that of Medical Journal as: Cheng H. F., Su, Y. M., Yeh J. R., and Chang K. J.: Alternative transcript of the nonselective type endothelin receptor from rat brain. Mol Pharmacol 1993; 44:533-538.

附錄二、完稿實例。以1、5、6、172為例。

ULVACEAE

1. Ulva prolifera Müller (滸苔)

[Synonym] *Enteromorpha prolifera* (Müller.) J. Ag.

[English name] Green laver, aonori, green seaweed, blue seaweed

[Distribution] Growing much on coastal areas of Chechiang and Fuchien of China, and Taiwan.

[Morphology] Thalli form light green to dark green; rosette growth with obvious main axis; irregular branching, branches slender, 3~15cm high and even up to 30 cm; young cells laying down horizontally, gradually inconspicuous at maturity; surface cells with polygonal to squared shape; 10~20 μm wide, 12~18 μm long; each cell with a single chloroplast and a pyrenoid.

[Content/Pharmacology] The algae contains 28-isofucosterol, 24-methylene cholesterol, cholesterol, phytol, cis-7-heptadecene, eicosane, 3, 4-benzopyrene, 2, 6 ,10-trimethy 1-7 (3-methylbutyl)-dodecane and sulfated polysaccharides. It is beneficial for lowering the serum cholesterol level. After feeding rats with forage that contained *Ulva prolifera* dry powder, the level of serum cholesterol, low-density lipoprotein cholesterol and very-low-density lipoprotein cholesterol of these rats decreased by 34.9%, 42.7% and 31.4% respectively, while the high-density lipoprotein cholesterol increased by 58.3%. The effectiveness of *Ulva prolifera* dry powder in the inhibition of Ehrlich ascites carcinoma was 51.7%.

[Efficacy] Dissipating hard mass and dispelling stagnation; resolving phlegm and qi stagnation; and detoxifying to disperse swelling. It has curative effects for scrofula, carbuncle, swelling and sores; removing food retention and parasites in the abdomen; and relieving abdominal distention.

1

5. *Laminaria japonica* Aresch (海帶)

[English name] kelp, black kelp, green kelp.

[Distribution] Growing on seashore rocks around low tide limit; distributed on coastal areas of Pingtan or Putien, Kingmen and also cultivated in Matsu.

[Morphology] Thalli dark brown, black after drying, leathery, 1.5~3 m high, even up to 4-7 m; holdfast dendroid, several whorls overlapped; stipe base cylindrical or flat circular, middle solid, 4~12 cm long, 3~7 mm in diameter; blade above stipe, flat, smooth, more or less wrinkled, 20~35 cm wide,3~5 mm in thickness; 1~2-pinnatifids, band-shaped in central zone, deep cleft lobes on both sides, long tongue-shaped, entire or serrate margin; sporangial layer forming near the surface of the blade.

[Content/Pharmacology] It has therapeutic effects for hypothyroidism due to iodine deficiency. Sodium alginate can carry out anti-radiation effects by reducing the absorption of radioactive decays in the intestines. Intravenous injection of laminine citric acid salt into anesthetized rabbits can temporarily decrease their blood pressure, even in the presence of atropine; however it does not affect the rise of blood pressure caused by norepinephrine injection or two-side carotid artery occlusions.

[Efficacy] The algae has curative effects for tuberculosis, coughing, chronic bronchitis, bloody stool, amoebic dysentery, senile cataract, edema, swelling of testis, struma and lymphoma.

GRACILARIACEAE

6. **Gracilaria gracilis** (Stackhouse) M. Steentoft, L.M. Irvine & W.F. Farnham (江蘺)

[Synonym] *Gracilaria verrucosa* (Huds.) Papent.

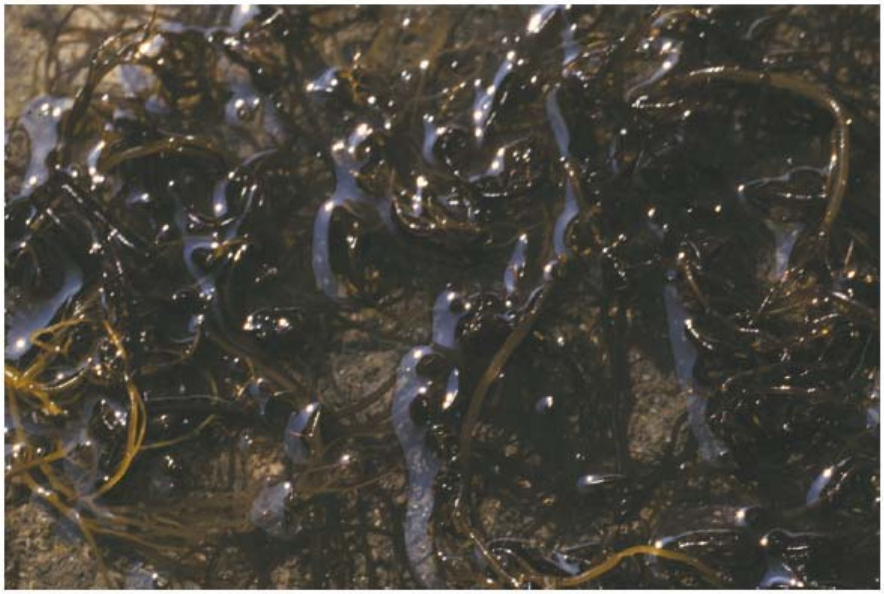
[English name] Sea thread vegetable.

[Distribution] Growing best in fertile, nourish and calm bay. Distributed in coastal areas of China and Taiwan.

[Morphology] Thalli erect, growing in clusters, 10~50 mm high, possibly up to 1 m, purplish brown, sometimes greenish, brown after drying, cartilaginous, linear, cylindrical; base with a discoid holdfast, a main axis with 1~2 mm in diameter, multiple branching, alternate or inclined toward all directions, branch diameter 0.5~1 mm. Cross section of thalli, medullary cells are parenchyma in the central zone, 2-6 cells layer of cortex reducing sizes centrifugally. Tetrasporangia purplish red, scattered near the surface of the algae, embedded in the cortical cells, cruciated division. Spermatangia developing in shallow tunnel or submerged pit of receptacles, light yellow; cystocarps globular or hemisphere.

[Content] It contains phycoerythrin, cholesterol 0.0315% and agarpectin.

[Efficacy] The whole plant can dissipate hard mass and resolve phlegm; clear heat and promote urination. It can relieve goiter, qi retention, and obstructed urination; alleviate internal heat-syndrome, resolve phlegm and dysentery due to intestinal heat.



6

ARISTOLOCHIACEAE

172. *Asarum hypogynum* Hayata (芓葉杜衡)

[English name] Wild ginger

[Distribution] Distributed at median altitude in mountains of Taiwan.

[Morphology] Perennial rhizomes with annual vegetative branches. Leaves taro-leaf-like narrowly elliptic, narrowly cordate to cordate, 12~15 cm long, 8~9 cm wide, base cordate to auriculate, glabrous, above flacks pattern, along with cordate outline as V-shape, 7-nerved, prominent, petioles 20~30 cm long, arrangement. Flowers solitary, developing from the base of rhizome or basal petioles as epigeal pockets borne from the ground.

[Content] It has similar contents as other medicinal herbs in the *Asarum* genus.

[Efficacy] The aboriginals use it to treat abdominal pain by decocting its leaves with *Aristolochia cucurbitifolia* and *Botrychuim lunaria*. It has curative effects for wounds; other than being decocted, the dregs can be used to cover local injured areas. It can be used to treat syphilis, vinereal inguinal lymphadenitis by meshing its leaf and sprout together with *Gynostemma pentaphyllum, Piper kadsura, Pueraria lobata, Blumea riparia* and *Dendrolobium umbellatum* and then apply it externally.

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附錄三、審查會議會議記錄。

「台灣常用藥用植物圖鑑英文版專書編修(2-1)」審查會議

會議記錄

時　　間：98年6月10日下午13:30

地　　點：國立台灣大學生命科學館3F會議室

審查會議議程：

一、主持人報告：

(一) 原書格式 (黃增泉 教授)

(二) 內容

1. 藥理、效用 (張永勳 教授)
2. 植物描述 (邱少婷 教授)

二、討論

(一) 格式(何玉鈴教授)

1. 書的大小：
2. 封面、內容之字形、字體
3. 其他

(二) 學名更正(邱少婷 教授)

1. 學名引用錯誤：
2. 同物異名 (synonym)：
3. 照片與學名不符：
4. 中文名稱
5. 其他

(三) 其他(張永勳教授)

1. 委員書面意見
2. 翻譯或是修訂？
3. 圖片經費不足
4. 其他建議

三、結論：(含審查委員意見)

(一) 格式：

張永勳：中文文獻來源之故，翻英文不易。參考大陸化學資料。WHO頒之『傳統醫學國際標準用語』。『中醫辭典』：療效。審查會之召開：依計畫之要求：尊重原書之精神，然若有錯應予更

正。

何玉鈴：尊重原著，應維持原版面。

決議結論：

1. 版面應較原書小些以利翻閱。
2. 凡例：英文版的凡例應包含在前言之中。
3. 較高分類群的頁面保留。
4. 頁碼：標於頁尾外側。
5. 原書中諸多的頁面底圖、裝飾用小圖棄之不用。
6. 譯文若過於冗長，應予適度修裁。
7. 參考文獻依原書項目。

(二) 審查意見：

張憲昌：翻譯工作相當吃力，對於譯本能付梓，樂觀其成。

1. 學名錯的須予以修正；同物異名處理應予適當加註；照片與學名不符者宜更換；
2. 中文名加註英文名；
3. 中文內容部份須先修正再翻譯(包括形態描述、效用)，效用宜以主要療效為主；
4. 書之篇幅宜略小一些，參見Flora of Taiwan, 2nd ed.或其他專業書，例如：蕭培根或趙中振之著作；
5. 封面設計，橫式英文書名，並加註中文書名(字體較小)；
6. 書中頁碼位置於頁面下外側；內容文字一致，行距宜一致。

吳明洲：

1. 書的大小：可將書的四周空白處刪減、適度縮小，方便使用。
2. 照片內容與學名不符，是否為"學名鑑定錯誤"？
3. 原照片之植物為實際被使用之藥材？有必要釐清。

246. Chamaesyce thymifolia (Linn.) Milisp. (小飛揚草)

267. Phyllanthus virgatus Forester f. (細葉油柑子)

說明：照片錯誤，原照片是Phyllanthus amarus Schum. & Thonn. (小返魂)

232. 蠅子草Silene fortunei Vis

說明：

a. 學名依J. F. Velkamp之見解(Taiwania 53: 410-413,

2008)應更正為Silene fissipetala Turcz.

b. 照片錯誤，原照片不是蠅子草。

呂勝由：圖片品質有待提昇。

88 菲律賓羅漢松，學名誤。圖片應為蘭嶼羅漢松。

89 台灣華山松圖片誤。

95 紅檜圖片誤。

121 榔榆圖片誤。

136 白肉榕圖片誤。

161 忍冬葉桑寄生，圖片誤。

172 芋葉杜衡，圖片誤。

261 台灣白匏子圖片誤。

273 南五味子圖片誤。

291 香葉樹圖片誤。

300 圖片為Aconitum fukutomei Hayata var. formosanum (Tamura)Yang & Huang 蔓烏頭。

305 毛柱鐵線蓮，學名為邁氏鐵線蓮，但圖片又為琉球鐵線蓮。

314 玉山小蘗圖片誤。

317 台灣不產Mahonia japonica，分布北部山區宜採用Mahonia tikushiensis Hayata 竹子山十大功勞。

327 華南木防己圖片誤。

黃星凡：

1.相片不符：

p. 48 金毛狗脊蕨。

p. 140 白肉榕。

p. 172 芋葉杜衡。

p. 291 香葉樹。

p. 294 潺槁樹。

p. 324 金線吊烏龜 (用p.324相片) 。

p. 326 蘭嶼千金藤。

2.相片轉正：

p. 236 蠅子草

3.其他意見：

(1)相片很多種類不清晰，可考慮更換。

(2)書本太大，可考慮變小。

黃淑芳：

1. 參考附件：
2. 請先將中文版內容及圖片修正後，再翻成英文，以免誤導讀者。尤其英文版主要做國際交流之用，應避免錯誤。

附錄四、第一冊完稿稿件(電子檔，PDF檔)。 本稿件為十月底之成稿。最終印製前稿預計十一月底完成，十二月初出 版完成。

附錄五、第二冊翻初稿

※ 說明：

第二冊譯稿按原書有植物描述(含英名[English name]、分布[Distribution]、形態描述[Morphology])及藥理(成份[Content]及效用[Efficacy]) 等二大部份，分別由不同專家撰寫。植物描述之譯稿分別由陳世輝教授、羅漢強教授、吳明州教授、黃俊溢先生及張天豪先生譯寫；藥理部份則由張永勳教授及何玉鈴教授撰寫。此二部份分別譯述達1/2內容(共436項)，合併稿件如次。

329. **Euryale ferox** Salisb. (芡)

NYMPHAEACEAE

[English name]

[Distribution] Distributed in China and Taiwan.

[Morphology] Large, aquatic annual herb, prickly throughout. Rhizomes stout, short, with whitish fibrous roots and inconspicuous stems. Primary leaves submersed, sagittate or elliptic-reniform, 4-10 cm long, both surfaces and petioles without prickles; leaves following the primary floated, coriaceous, elliptic-reniform to orbicular, 10-130 cm across, the upper surface green and wrinkled, the lower dark purple, pubescent, with raised veins, margins curved upward; petioles and peduncles stout, up to 25 cm long. Flowers solitary, opening in daytime and closing at night, 5 cm across; sepals 4, lanceolate, 1-1.5 cm long, purplish inside, petals numerous, in several whorls, elliptic-lanceolate, 1.5-2 cm long, purplish red, stamens numerous, pistil 8-carpelled, ovary inferior, stigma red, discoid and compressed. Fruit a berry, globose, 3-5 cm across, spongy, dark purplish red. Seeds globose, 10 mm across, blackish. Flowering during July and August. Fruiting during August and September.

[Content] The seed contains starch, proteins and fats. In addition, it contains Ca, P, Fe, vitamins B_1, B_2, C, nicotinic acid, β-carotene, etc.

[Efficacy] The seed and fruit can strengthen the kidneys to prohibit seminal emission and strengthen the spleen to cease diarrhea. It can treat seminal emission, white turbid and leucorrhea.

330. **Nelumbo nucifera** Gaertn. (蓮)

NYMPHAEACEAE

[English name] East Indian lotus
[Distribution] Distributed in Taiwan, South China and Japan, cultivated as an ornamental in some places.
[Morphology] Aquatic perennial herb. Rhizomes several-noded, the internodes clyindrical-spindled, leaves arising from the nodes. Leaves orbicular, peltate, centrally depressed, subacute at apex, whitish-green, with radiate veins; petioles long, erect and rising above the water surface, green, cylindrical, prickly. Flowers large and showy, red, pale red to white, on an emersed peduncle; sepals 4-5, small, petals many, obovate, with numerous striations, stamens many, anthers yellow, style short, receptacle swelled to a spongy cupule when fruiting. Fruit ellipsoid, sclerified, blackish. Seeds with thick, white cotyledons, and green epicotyls. Flowering during May and June. Fruiting during July and October.
[Content/Pharmacology] Nelumbo nucifera contains flavonoids such as quercetin, etc. The awn contains roemerine, luteolin, etc. The lotus receptacle contains proteins, fat, carbohydrates and many kinds of vitamins. The lotus seed contains large quantities of starch, raffinose, etc. The pot contains oxoushinsunine, etc. The lotus seed kernel contains liensinine, isoliensinine, neferine, flavonoids, etc. The lotus root contains starch, proteins, asparagine, etc. The nodus contains tannins. The leaf contains roemerine, etc. The oxoushinsunine component in the pod can constrain nasalpharyngeal carcinoma. The lotus seed kernel and the stem can lower blood pressure.
[Efficacy] The lotus seed kernel can treat vexation and thirst. The testa can treat heart and gastric fire. The awn can treat seminal emission and seminal efflux. The receptacle can treat flooding and profuse menstruation. The stems can treat diarrhea and dysentery. The leaf can treat diarrhea due to summer dampness and dizziness. The lotus root can quench thirst due to the heat syndrome, and hematemesis. The lotus nodus can treat hemoptysis and epistaxis. The lotus rootlets can clear vexing toxin (煩毒?). The root powder has curative effects on blood loss due to deficiency, diarrhea and poor appetite.

331. **Nymphaea tetragona** Georgi (睡蓮)

NYMPHAEACEAE

[English name] Pygmy water lily
[Distribution] Widespread in Taiwan, cultivated in ponds.
[Morphology] Aquatic perennial herb. Rhizomes stout, short, with blackish, linear hairs. Leaves rosette, floating on the water surface; blades chartaceous, cordate-ovate or elliptic-ovate, 5-12 cm long, 3.5-9 cm wide, rounded at apex, deeply auriculate at base, the auricles acute or obtuse, clasping or slightly spreading, margins entire, the upper surface green, shiny, the lower reddish or dark purple, glabrous and dotted on both surfaces; petioles slender, about 6 cm long. Peduncles slender, with emersed flowers 3-5 cm across. Calyx rhomboidal at base, sepals 4, coriaceous, broadly lanceolate, 2-3.5 cm long, persistent, petals 8-17, white, broadly lanceolate, or obovate, 2-2.5 cm long, in numerous whorls, stamens many, shorter than petals, anthers rib-shaped, yellow, stigma broadly ovate,

spatulate, with 5-8 radiate striations. Fruit a berry, 2-2.5 cm across, soft, within the persistent calyx. Seeds ellipsoid, 2-3 mm across, blackish. Flowering during June and August. Fruiting during August and October.
[Efficacy] The flower, stem and leaf can relieve summer heat, sober up and calm shock. They can treat heatstroke, polydipsia due to drunkenness, and infantile convulsion.

332. **Nuphar japonicum** DC. (日本萍蓬草)

NYMPHAEACEAE

[English name]
[Distribution] Distributed from China, Korea, Japan to Taiwan; indigenous or cultivated in ditches, ponds and pools.
[Morphology] Aquatic perennial herb. Rhizomes horizontal, stout. Leaves clustered, arising from the apex of rhizome, long-petiolate; blades elongated ovate to oblong, thick, the upper surface dark green, glabrous, shiny, the lower light purplish brown or yellowish green, with a hairy midvein. Flowers of disk-shaped corollas, sepals 5, petaloid, yellow, broadly obovoid, about 2.5 cm long, somewhat coriaceous, petals numerous, smaller, quadrate, stamens numerous, yellow, ovary broadly ovate, stigma disk-shaped, margins with radiate-arranged, shallow notches. Fruit a berry, globose, with a persistent calyx. Seeds ovoid, 5 mm across. Flowering during spring and summer.
[Content/Pharmacology] The rhizome contains nupharamarine, deoxynupharidine, nupharamine and nupharidine. The leaf contains luteoline-7-glucoside. The leaf bud secretion contains rhamnosan and nupharine. The desoxynupharidin content has anaesthetizing effect on the central nervous system.
[Efficacy] The rhizome has nourishing, body strengthening, deficiency reinforcing, stomach invigorating, blood cleaning, hemorrhage ceasing, stasis resolving and menstruation regulating effects. It can be used to treat weakness after sickness, mal-digestion, neurasthenia, puerperal bleeding, cystitis, puerperal painful and swelling breasts, menstrual irregularity and pyrogenic infections. The seed can treat deficiency and body weakness, mal-digestion and menstrual irregularity.

333. **Nuphar shimadai** Hayata (台灣萍蓬草)

NYMPHAEACEAE

[English name]
[Distribution] Endemic to Taiwan.
[Morphology] Aquatic perennial herb. Rhizomes stout, horizontal. Leaves clustered, with a petiole 15-30 cm long; blades floating or emersed, at times raised out of the water, ovate or broadly ovate, 6-13 cm long, 5-8 cm wide, obtuse at apex, with a deep sinus at base, the basal lobes auriculate, acute at apex, margins entire, the upper surface dark green, glabrous. Flowers solitary, with a peduncle 16-35 cm long, elevated above the water, brigt yellow, 2.5-3 cm across, sepals 5, coriaceous, petaloid, yellow, petals numerous, subquadrate-ovate, emarginate, yellow, stamens numerous, ovary superior, stigma disk-shaped, with a radiate cleft. Fruit a berry, ovoid-globose, 1.5-1.8 cm across. Flowering throughout the year, full bloom in late autumn.

[Efficacy[The rhizome and seed both have deficiency supplementing, blood purifying and soothing, stomach invigorating and menstruation regulating efficacies. It can treat asthenia after sickness, mal-digestion, neurasthenia, menstrual irregularity, postpartum bleeding, wound bleeding, and swelling pain of the breasts. The seed can fortify the spleen and strengthen the intestines, helping one to resist starvation.

334. **Ceratophyllum demersum** Linn. (金魚藻)

CERATOPHYLLACEAE

[English name] Hornwort
[Distribution] Widespread in China and Taiwan, occurring in ponds and ditches.
[Morphology] Perennial submerged herb, dark green. Stems slender and soft, 20-60 cm long, much-branched. Leaves in whorls of 5-12 around the stem, sessile; blades 5-25 mm long, 2-forked or segmented, the segments linear, 1.5-25 mm long, with sharp teeth on the margin. Flowers small, unisexual, monoecious or dioecious, axillary, petals absent, bracts 8-12, awl-shaped; male flowers of numerous stamens; female flowers of a pistil, ovary elongated-ovoid, superior, 1-loculed, style awl-shaped. Fruit a small achene, ovoid, glabrous, with two spines at base and a persistent style appearing as a spine. Flowering during June and July. Fruiting during August and October.
[Content/Pharmacology[*Ceratophyllum demersum* contains plastocyanine and ferredoxin of which one is a Cu-containing protein and the other is an Fe-containing protein, respectively. Animal experiments on mice have shown that its efficacy in reducing the blood cholesterol is stronger than seaweed. The ether extract is not as efficacious as the residues from the processed ether.
[Efficacy] The whole plant can cool blood, cease bleeding, clear heat and drain dampness. It can treat blood-heat hematemesis, hemoptysis and heat strangury.

335. **Argemone mexicana** Linn. (老鼠?)

PAPAVERACEAE

[English name]
[Distribution] Native to tropical Americas; distributed from Mexico, the United States of America, East India, Java, Malaysia, the Philippines, South China to Taiwan and Japan.
[Morphology] Annual herb. Stems erect, 50-90 cm high, usually branching in the upper part, stems and leaves covered with prickles, with milky sap white turning to yellow when broken. Leaves alternate, sessile, amplexicaul, 10-20 cm long, 3-5 cm wide, glaucous and with white striations on the lower surface, irregularly pinnatifid, the segments with spines on the margin. Flowers yellow, terminal, solitary, subsessile; sepals 2-3, horned on surfaces, with caducous bristles at apex; petals 4, obovate, 3 cm long, stamens numerous, stigma disk-shaped, 5-lobed. Capsules ellipsoid, 3 cm long, spiny, with numerous seeds. Flowering and fruiting during winter and summer the next year.
[Content] The whole plant contains protopine and berberine. The seed and flower have anaesthetizing and vomit inducing efficacies.
[Efficacies] The whole plant can clear heat, promote sweating and detoxify when used fresh. It can treat painful parotid glands and turbid urination. It can also be used to wash furuncles. It can end strangury and cestode infections. The seed and flower have

anaesthetizing effects. The seed has vomit and excretion promoting effects. It can treat syphilis and toothache. The seed oil can treat hernia pain. The juice can treat edema, jaundice, dermatosis, strangury, cracks on the eyelids, and warts. It can be used to wash the eyes in treating conjunctivitis. It is also a safe purgative medicine.

336. **Corydalis decumbens** (Thunb.) Pers. (伏延胡索)

PAPAVERACEAE

[English name]
[Distribution] Distributed in Fukien province of China, and in Taiwan and Matsu areas.
[Morphology] Perennial herb, glabrous, 16-30 cm high. Tubers subglobose, 3-9 mm across, blackish brown, with adventitious roots originating from the surface, young tubers above the older, the older tubers become hollowed when the young appear. Stems 2-3, tufted, slender, soft, not branched. Radical leaves usually one, long-petiolate, blades farinose underneath, deltoid in outline, 6 cm long, 2-ternate, the terminal leaflets sessile, narrowly obovate, entire; cauline leaves 3-4, alternate or opposite, on the middle and upper parts of stems, similar to radical leaves, smaller, with a short petiole. Inflorescence a terminal raceme, 1.5-4 cm long, loosely several-flowered, bracts ovate or narrowly obovate, 5-7 mm long, entire. Flowers pale purplish red, the lower ones with a pedicel up to 12 mm long; outer petals 14-18 mm long, suborbicular, emarginate, undulate at margins, the spur cylindrical, 6-8 mm long, stigma with 4 papillae. Capsules linear oblong, torulose. Seeds small, 2-ranked. Flowering during April and May. Fruiting during May and June.
[Content] The earthnut contains decumbenine, corlumidine, bicuculline, palmatine, α-allocryptopine, berberine, jatrorrhizine, tetrahydropalmatine, etc.
[Efficacy] The whole plant can expel wind and remove dampness, relax sinews and activate blood, free the collateral vessels to ease pain and lower blood pressure. It can treat rheumatic arthritis, hemiplegia due to stroke, sciatica, poliomyelitis sequelae, lumbar muscle injury due to excessive hard work, falling injuries and hypertension.

337. **Corydalis tashiori** Makino (台灣黃堇)

PAVAVERACEAE

[English name]
[Distribution] Distributed in China and Taiwan.
[Morphology] Herb, 20-60 cm tall, glabrous, with a pyramidal taproot. Stems erect or ascending, ridged, sparsely branched. Leaves alternate, long petiolate; blades broadly ovate to ovate in outline, 8-16 cm long, bipinnate to tripinnate, pinnae in 2 to 3 pairs of segments, short-petiolate, the terminal segment ovate, all segments shallowly lobed, margins crenate, green above and farinose below. Inflorescence a terminal raceme, bracts ovate to lanceolate, 4-10 mm long. Flowers with a pedicel a little shorter than bracts; corolla yellow, 12-18 mm long, spurs one-third the length of the upper petal, with a recurved base, ovary linear, stigma bilobed. Capsules linear, straight, 25-40 mm long. Seeds compressed orbicular, 1-2 mm across, black, punctate on surfaces, with a boat-shaped caruncle. Fruiting during April and June. Fruiting during June and August.
[Efficacy] The whole plant can clear heat and resolve toxin, disperse swelling and ease

pain. It can treat ulcerative carbuncles and pyogenic infections, persistent tinea and traumatic injuries.

338. **Papaver rhoeas** Linn. (虞美人)

PAPAVERACEAE

[English name] Carn poppy, Shirley poppy
[Distribution] Cultivated as an ornamental in yards in China and Taiwan.
[Morphology] Annual or biennual, 30-90 cm high, hispid. Stems erect, branched. Leaves alternate, the lower petiolate, the upper sessile; blades lanceolate, pinnatifid, lower ones pinnatisect, margins serrate, pale yellow-hispid on both surfaces, midribs sunken above, raised below. Flowers solitary, terminal, nodding before opening; sepals 2, elliptic, green, 1-1.8 cm long, hirsute outside, petals 4, suborbicular, 2-3.5 cm across, purplish red, with whitish margins and dark purplish spots 0.8 cm long from the base, anthers oblong, 2-3.5 cm long, yellow, ovary obovate, glabrous, stigma 5-18, radially arranged. Capsules broadly obovate, 1-2.2 cm long, glabrous, inconspicuously ribbed, with a compressed, crenate-margined disk, poricidal. Seeds many, oblong-reniform. Flowering during April and May. Fruiting during May and July.
[Content/Pharmacology] The whole plant contains coptisine, tetrahydrocoptisine, rhoeadine, rhoeagenine, imrhoeadine, protopine, glaudine, etc. The flower contains anthocyanidin and cyaniding. The testa contains morphine. Rhoeadine can significantly decompress the intraocular pressure and mildly activate respiration. The polysaccharides from the seed have anticancer effects; which can inhibit Yoshida sarcoma and Ehrlich ascites carcinoma and promote the lifespan of animals.
[Efficacy] The whole plant can suppress coughing, suppress pain and cease diarrhea. It can treat coughing, splitting headache, abdominal pain and dysentery.

339. **Cleome gynandra** L. (白花菜)

CAPPARIDACEAE

[English name]
[Distribution] Widespread in pantropic areas of the world, also in south-middle China and Taiwan.
[Morphology] Annual herb, densely glandular, with a strong odor. Stems erect, much-branched, green or green flushed with purple, 40-100 cm high. Leaves alternate, with a petiole 3-7 cm long, palmate, leaflets 5, obovate or rhombic-obovate, 2.5-5 cm long, 1-2 cm wide, cuneate at base, acute or obtuse at apex, entire or serrulate at margin, upper surface glabrous, lower surface with veins pubescent. Inflorescence a terminal raceme, bracts 3, leafy, bearing at base of pedicels. Sepals 4, ovate, acute at apex, petals 4, white, 1 cm long, 5 mm wide, basally with a long, white or purplish spur, stamens 6, filaments adnate to the stipe of ovary, ovary long-stiped, exserted, one-loculed, style short, stigma a compressed head. Siliques 5-10 cm long, with stigma persistent. Seeds reniform, small, concave, wrinkled on surfaces, blackish brown. Flowering and fruiting during May and August.
[Content/Pharmacology] The whole plant has a pungent evaporation oil, which is similar

to garlic oil and mustard seed oil. The leaf has anti-irritation efficacies. It can cause intoxication if ingested in large quantity.
[Efficacy] The whole plant can direct qi downward, clear heat, promote urination and dissipate stasis. It has curative effects for wind-dampness obstructive pain, dysentery, leucorrhea, traumatic injury, hemorrhoid and malaria.

340. **Cleome viscosa** L. (向天黃)

CAPPARIDACEAE

[English name]
[Distribution] Widespread in the tropics, also in South China and Taiwan.
[Morphology] Annual herb, 30-100 cm high, with a strong odor, yellowish-pubescent and glandular, branched in the upper part. Leaves alternate, with a long petiole, palmate, leaflets obovate, obovate-orbicular, to ovate-lanceolate, 1-3.5 cm long, 1-1.5 cm wide, cuneate at base, obtuse or acute at apex, entire at margin, glandular or glabrous on both surfaces. Inflorescence a raceme, axillary, bracts leafy, 3-5-lobed. Sepals lanceolate, 3-5 mm long, petals 4, yellow, purplish at base, obovate, 8-10 mm long, stamens 10-20, ovary linear, densely pale yellow-glandular, stigma capitate. Capsules cylindrical, 3-6 mm long, with longitudinal striations, glandular. Seeds many, brown, wrinkled. Flowering during April and June. Fruiting during May and July.
[Content] The whole plant contains ergosta-5-ene-3-o-α-L-rhamnopyraside, etc. The root contains β-amyrenol, lupeol, etc. The leaf contains cleemeolide. The seed contains cleosamdrin, cleomiscosin A,B and stigmasta-5,24(28)-diene-3β-O-α-L-rhamnoside. The main components are essential oil and fatty oil.
[Efficacy] The whole plant can treat abdominal pain, dysentery and hernia pain. It is used externally to treat swelling pain due to trauma, lumbago due to excessive hard work, ulcerative carbuncle, pyogenic infection and otitis. The seed can treat abdominal pain. The whole plant is slightly poisonous.

341. **Crateva adansonii** DC. **subsp. formosensis** Jacobs (台灣魚木)

CAPPARIDACEAE

[English name] Spider tree
[Distribution] Widespread in Africa, India, Malaysia, the Philippines, southern China, Taiwan and Japan.
[Morphology] Deciduous tree, trunks with conspicuous lenticels, branches and pedicels dark purple. Leaves alternate, with a long petiole, ternate, leaflets elongated ovate or ovate-lanceolate, 7-20 cm long, 3-7 cm wide, the lateral leaflets suboblique at base, the terminal cuneate at base, all leaflets acuminate or acute, entire, gray green below. Inflorescence a terminal cyme. Flowers polygamous, 4-6 cm across; sepals 4, linear, 3-4 mm long, petals 4, with a claw, ovate or rhombic-orbicular, obtuse or acute at apex, firstly greenish yellow turning to light purple, stamens numerous, adnate to pistils, ovary stalked, one-loculed. Fruit a berry, subglobose, 2.5-4 cm across. Seeds many. Flowering during spring and winter.
[Efficacy]The root can clear heat and resolve toxin, soothe sinews and activate blood. It has

curative effects for common cold, hepatitis, dysentery, diarrhea, malaria, rheumatic arthritis and gastric diseases. The bark and root bark can clear heat and act as suppressants. It can treat common cold fever, urinary tract related diseases, swelling pain in the feet and wind-dampness arthritis. The leaf can clear heat, invigorate the stomach and resolve toxin. It can treat heat syndrome induced eruptive diseases, ulcers, menstrual irregularity, venomous snake bites, dysentery and abdominal pain.

342. **Brassica alboglabra** Bail. **var. acephala** DC. (芥藍菜)

CRUCIFERAE

[English name] Chinese kale, Common kale
[Distribution] Cultivated in China and Taiwan.
[Morphology] Annual herb. Stems thick, erect, 20-60 cm tall. Leaves crowded at stem tips, glabrous, green and subfarinose, turing to purple in autumn, the apical leaves 20-50 cm long, variable in color, purplish red, bright red, pale red to white. Inflorescence a raceme. Corolla pale yellow, cross-shaped, petals 4, stamens 6, tetradynamous.
[Content/Pharmacology] The above-ground parts are rich in Ca, P and Fe. It is also rich in vitamin B. The aqueous extracts of the leaf and stem show antiseptic effects on S.aureus *in vitro*, but the aqueous extract of the root is not effective; these solutions can also inhibit the growth of *Neurospora crassa* cysts.
[Efficacy] The whole plant is rich in minerals; the tender leaves can be served as healthy vegetable. It has antiseptic effects on *E.coli*. It can also be used for decoration.

343. **Brassica campestris** L.. **var. oleifera** DC. (油菜)

CRUCIFERAE

[English name]
[Distribution] Distributed in the reaches of Yangtze River and the northwestern part of China, and Taiwan.
[Morphology] Biennial herb, 30-90 cm high, glabrous, subfarinose. Stems erect, stout, simple or branched. Radical leaves 10-20 cm long, pinnate, the terminal lobes orbicular or ovate, the lateral lobes in 5 pairs, ovate; lower cauline leaves pinnatifid, the base expanded, amplexicaul, hispid on both surfaces, ciliate at margins, upper cauline leaves lyrate or oblong-lanceolate, the base auriculate, amplexicaul, entire or undulate and serrulate. Inflorescence a terminal raceme, somewhat corymbose. Sepals 4, yellowish green, petals 4, bright yellow, obovate or orbicular, clawed, stamens 6, tetradynamous, the long stamens 8-9 mm long, the short 6-7 mm long, filaments linear, ovary cylindrical, 10-11 mm long, narrower toward the apex, style distinct, stigma swollen into a head. Siliques cylindrical, 3-8 cm long, 2-3 mm wide, beaked at apex, with a stipe 5-15 mm long. Seeds globose, reddish brown or black. Flowering during March and May. Fruiting during April and June.
[Content/Pharmacology] The whole plant contains glucoinapin, glucobrassi, canapin, glucoiberin, glucoraphanin, glucoalyssin, gluconasturtiin, glucorapiferen, etc. It can also decompress the intraocular pressure.
[Efficacy] The whole plant can cool and dissipate blood, resolve toxin and disperse swelling. It can treat bloody dysentery, erysipelas, carbuncles due to heat toxin, acute

mastitis, rubella and hematemesis.

344. **Brassica chinensis** L. (菘)

CRUCIFERAE

[English name] Pickled cabbage

[Distribution] Native to China, cultivated as a vegetable in Taiwan.

[Morphology] Annual or biennial, 25-70 cm high, glabrous, farinose. Stems erect, branched. Radical leaves obovate, dark green, shiny, tapering gradually to a wide petiole, flesh and thick, white or pale green; cauline leaves elongated-ovate or broadly lanceolate, the base auriculate, amplexicaul, entire, subfarinose. Inflorescence a terminal panicle, the rachis gradually elongated after flowering. Sepals 4, pale green, clawed, petals 4, pale yellow, oblong or suborbicular, clawed, stamens 6, tetradynamous, the long stamens 6-6.5 mm long, the short stamens 4-4.5 mm long, filaments linear, pistil 1, ovary cylindrical, style slender, stigma swollen, capitate. Siliques cylindrical, with a slender beak, pericarps reticulate and conspicuously midveined. Seeds globose, purplish brown or yellowish brown, 1-1.5 mm across. Flowering during April and May. Fruiting during May and June.

[Content] The tender stem and leaf contain proteins, fat, sugars, crude fiber, Ca, Fe, carotene, riboflavine, nicotinic acid and vitamin C.

[Efficacy] The whole plant can clear heat and get rid off restlessness, promote body fluid secretion and quench thirst, clear lungs and dissipate phlegm, free the intestines and stomach. It has curative effects for pulmonary fire induced coughing, thirst and dehydration, constipation, accumulation, erysipelas and lacquer sore.

345. **Brassica juncea** (Linn.)Czern. & Coss. (大芥)

CRUCIFERAE

[English name] Leaf mustard

[Distribution] Native to China, cultivated in Taiwan.

[Morphology] Annual herb, 30-50 cm high, glabrous, sometimes hispid, frost-tolerating. Stems branched. Radical leaves with leaf-segments on petioles, the blades broadly ovate to obovate, margins lobed or denticulate; lower cauline leaves small, lobed or sometimes crenate at margins, not amplexicaul, upper cauline leaves narrowly lanceolate to oblong, unconspicuously loosely toothed or entire at margins. Inflorescence a raceme, elongated after flowering. Sepals pale yellow, petals 4, bright yellow, broadly elliptic or broadly oblanceolate, truncate at apex, entire-margined, with a claw at base, stamens 6, tetradynamous, the long stamens 8 mm long, the short stamens 6 mm long, pistil 1, ovary cylindrical, 1 mm long, style slender, stigma capitate. Siliques cylindrical, 3-5.5 cm long, with a slender beak 6-12 mm long, stipe 5-15 mm long. Seeds subglobose, 1-1.8 mm across, bright yellow to yellowish brown, scarcely dark reddish brown, reticulate on surfaces. Flowering during April and May. Fruiting during May and June.

[Content] The rhizome contains methyl isothiocyanate, isopropyl isothiocyanate, allyl isothiocyanate, sec-butyl isothiocyanate, n-butyl isothiocyanate, 4-pentenyl isothiocyanate, phenyl isothiocyanate, 3-methylthiopropyl isothiocyanate, benzyl isothiocyantate, etc.

[Efficacy] The whole plant can clear the lungs and resolve phlegm, disperse swelling and stagnation. It can treat cold fluid retention and coughing, adverse flow of qi due to phlegm

stagnation, oppressive fullness in the chest, sand strangury, stone strangury, gingivitis, acute mastitis, swelling hemorrhoid, frostbite and liquor sore.

346. **Brassica oleracea** L. **var. botrytis** L. (花柳菜)

CRUCIFERAE

[English name] Cauliflower
[Distribution] Native to Europe, cultivated in China and Taiwan.
[Morphology] Biennial herb. Stems thick and hard, 40-80 cm high, distinctly with leaf scars. Leaves large, 30-50 cm long, lanceolate, acute at apex, obtuse at base, wavy, irregularly denticulate-margined, glabrous. Flowers clustered in a fleshy head, green or white.
[Content] The stem, leaf and seed have antiseptic effects. It is an excellent vegetable.

347. **Brassica oleracea** L. **var. capitata** L. (甘藍)

CRUCIFERAE

[English name] Cabbage
[Distribution] Cultivated everywhere in the world, as a vegetable in Taiwan.
[Morphology] Biennial herb. Stems formed in the first year fleshy, not branched, radical leaves many, chartaceous, soft, blades oblong-obovate or suborbicular, overlapped in a rounded, cordate or compressed-orbicular cluster 2-2.5 kg in weight, the outer blades pale bluish green, farinose, fleshy, the inner blades milky white, up to 30 cm long and wide, abruptly narrow at base; stems formed in the secondary year branched, with cauline leaves, radical leaves bluish green, farinose, thick, blades broadly elliptic or oblong, entire or shallowly serrate at margins, slightly auriculate at base, cauline leaves conspicuously serrate, amplexicaul, the uppest ones linear. Inflorescence a raceme, terminal or axillary. Flowers large; sepals 4, yellowish green, glabrous, with a sac at base, petals 4, milky yellow, broadly elliptic-ovate or oblong, rounded at apex, with a long claw at base, stamens 6, teradynamous, pistil 1, ovary cylindrical, style slender, stigma swollen, with a beak. Siliques cylindrical, with a short beak. Seeds orbicular. Flowering during April and May. Fruiting during May and June.
[Content/Pharmacology] The root contains gluconaslurtin. The whole plant contains glucosinalates, which can hydrolyze into a product that contains allyl isothiocyanate, goitrin, etc. The seed oil contains large quantities of erucic acid, linoleic acid and linolenic acid. It has anti-cancer effects. It can reduce the gastric acid level and increase pepsin in the elementary tract.
[Efficacy] The leaf can drain dampness and clear heat, disperse nodules and ease pain, strengthen kidney s and reinforcing deficiency. It has curative effects for jaundice, elementary tract ulcers, unsmooth joints and consumption.

348. **Brassica oleracea** L. **var. caulorapa** DC. (球莖甘藍)

CRUCIFERAE

[English name]
[Distribution] Native to Europe, cultivated in China and Taiwan.
[Morphology] Biennial herb. Parts of stems swollen to globose or compressed ovoid 3-8 cm across, fleshy, white, scarcely fibrous, crowned with long leaves. Leaves oblong, undulate, deeply lobed, with a long petiole.
[Content/Pharmacology] The seed contains allyl isothiocyanate 0.142%. The aqueous and alcoholic effusions of the root have antiseptic effects on *S.aureus* and *E.coli in vitro*; the aqueous effusions of the seed and the seed sprout can inhibit the growth of neurospora crassa cysts.
[Efficacy] The stem has antiseptic effects against *S.aureus* and *E.coli.* It is also an excellent vegetable.

349. **Capsella bursa-pastoris** (L.) Medik. (薺)

CRUCIFERAE

[English name]
[Distribution] Distributed in China, Korea, Japan and Taiwan.
[Morphology] Biennial herb. Stems erect, green, branched, pilose. Radical leaves in a rosette, long-petioled, obovate, irregularly deeply pinnatifid, leaf-segments shallowly lobed or irregularly serrate, the terminal segments deltoid or ovate-lanceolate; cauline leaves oblong or linear-lanceolate, auriculate-clasping, margins lobed, serrate to subentire, the upper cauline leaves sagittate or linear, acuminate at apex, margins serrate or subentire, pilose on both surfaces and ciliate on margins. Inflorescence a raceme, terminal or axillary. Sepals 4, green, ovate, truncate at base, petals 4, white, obovate, clawed at base, stamens 6, with a basal green gland, pistil 1, ovary superior, deltoid-ovate, style short. Silicles obdeltoid, compressed, emarginate at apex, with a short persistent style. Seeds 20-25, small, obovate. Flowering during February and May. Fruiting during March and July.
[Content/Pharmacology] The whole plant contains organic acids, amino acids, sucrose, lactose, etc. The seed contains diosmin. The seed contains fatty oils and proteins. The whole plant has contractive effect on the uterus; it can cease bleeding and lower blood pressure, dilate the coronary artery, contract the tracheal and intestinal smooth muscles, promote urination and clear heat. Dumplings made with the leaves can help with digestion.
[Efficacy] The whole plant can treat headache, painful and swelling eyes, retinal hemorrhage, hematemesis, pulmonary hemorrhage, uterine bleeding, abortive bleeding, etc. It can bring dry and painful sensation of the eyes to an end. The seed can treat infantile dyspepsia and dysentery. The seed can treat painful eyes, glaucoma, corneal opacity and jaundice.

350. **Raphanus sativus** L. (萊菔)

CRUCIFERAE

[English name] Radish
[Distribution] Native to Europe, cultivated everywhere in the world and Taiwan.

[Morphology] Annual or biennial herb. Taproots large, thick and fleshy. Stems striated and grooved, much-branched when flowering. Radical leaves in a rosette, lyrate, pinnatifid, up to 30 cm long, crenate or dentate, cauline leaves smaller toward the stem tips, sessile or subsessile; blades rhombic-orbicular, acute at apex, shallowly serrate or subentire. Inflorescence a terminal raceme. Sepals 4, flushed with pale purple outside, petals 4, obovate-lanceolate, with a long claw at base, white, pink or pale purple, stamens tetradynamous, pistil 1, ovary narrowly cylindrical. Siliques cylindrical, with a sharp beak at apex. Seeds compressed ovoid, reddish brown. Flowering times variable, usually during February and May.
[Content/Pharmacology]The earthnut mainly contains glucose, sucrose and fructose. Each part also contains ferulic acid, many kinds of amino acids and vitamins, etc. The seed contains fatty oils. It also contains an antiseptic molecule, raphanin. The alcoholic extract of the fresh root has antiseptic effect. The seed has inhibitory effects on *S.aureus* and *E.coli.*
[Efficacy] The fresh leaves can treat food accumulation with distending fullness, coughing phlegm and loss of voice, hematemesis, epistaxis, thirst and dysentery. The root can bring coughing with excessive phlegm, food accumulation and qi stagnation, abdominal pain due to oppressive fullness and shortness of breath due to edema. The leaf can treat hiccup due to stuffiness and fullness of the abdomen, food accumulation, diarrhea, throat ache and obstructed breast milk flow. The seed can treat coughing with phlegm and shortness of breath, oppression in the chest and fullness in the abdomen, and tenesmus.

351. **Raphanus sativus** L. forma **raphanistroides** Makino (濱萊菔)

CRUCIFERAE

[English name]
[Distribution] Cultivated in China including Kwangsi, Yunnan, Hunan, Szechuan and Chekiang provinces, and in Taiwan.
[Morphology] Biennial or annual, 30-100 cm high. Taproots fleshy, ellipsoid, globose or pyramidal, green, white or red outside. Stems branched, glabrous, slightly farinose. Radical and lower cauline leaves pinnatifid, the terminal segments ovate, the lateral segments 4-6 paired, oblong, crenate at margins, loosely hispid, upper cauline leaves oblong, margins serrate or subentire. Inflorescence a raceme, terminal or axillary. Sepals oblong, petals 4, ovate, 1.5-2 cm across, white, purple or pink, with purple striations, long-clawed at base, stamens 6, tetradynamous, pistil 1, ovary curved, style terete. Siliques cylindrical, 3-6 cm long, constracted and divided by a spongy septa between seeds, with an apical beak 1-1.5 mm long. Seeds 1-6, ovoid, slightly compressed, about 3 mm long, reddish brown, minute-reticulate. Flowering during April and May. Fruiting during May and June.
[Content/Pharmacology] The root contains glucosinolate and glucoraphanin. It also contains glucose, caffeic acid, ferulic acid, phenylpyruvic acid, gentisic acid and oxalic acid, erucic acid, linoleic acid and amino acids. The alcoholic extract has an antiseptic effect to which G+ bacteria are especially sensitive; it also has anti-fungal and antiviral effects. It has anti-influenza effects. It can prevent the formation of gall-stone and therefore is used for its treatment.
[Efficacy] The root can treat mal-digestion, distending fullness due to food accumulation,

gastroesophageal reflux disease, vomiting, diarrhea, dysentery, constipation, and coughing due to phlegm heat.

352. **Nasturtium officinale** R.Br. (水芥菜)

CRUCIFERAE

[English name]
[Distribution] Distributed in wilds of China and Taiwan.
[Morphology] Aquatic perennial herb, glabrous, 20-40 cm high. Stems decumbent or floating on water, much-branched, with adventitious roots from nodes. Leaves odd-pinnate, leaflets 3-9, broadly ovate, oblong or suborbicular, the terminal leaflets larger, obtuse or emarginate at apex, slightly repand or subentire, truncate at base, with petiolules slender and compressed, the lateral leaflets similar to the terminal, oblique at base; petioles auriculate, slightly clasping the stem. Inflorescence a terminal raceme, many-flowered. Sepals 4, margins membranous, the base subsaccate, petals white, obovate or broadly spatulate, couspicuously veined, rounded at apex, the base gradually tapering to a slender claw, stamens 6, tetradynamous, pistil 1, ovary subterete. Siliques cylindrical, compressed, with a spreading or incurved stipe. Seeds biseriate in a locule, compressed-orbicular or slightly elliptic, reddish brown, loosely conspicuously reticulate on surfaces. Flowering during April and May. Fruiting during May and July.

352. *Rorppa indica* (L..) Hiern.
【Content/Pharmacology】 The whole plant contains guconasturtiin and vitamins, proteins, fat, sugars, amino acids, etc. The seed contains erucic acid and glucosinolate. The aqueous extract can inhibit the growth of *E.coli,* but not *S.aureus*. The whole plant regulates menstruation and can disturb ovum implantation and pregnancy, resulting in contraception and abortion. The stem and root contain a kind of heat resistant molecule that can break down riboflavine.
【Efficacy】 The whole plant can clear lungs, cool blood, promote urination and resolve toxin. It can treat blood disease, urinary tract inflammation, swelling and painful furuncle and skin itch.

353. **Wasabia japonica** (Miq.) Matsum. (山芥菜)

CRUCIFERAE

[English name] Japanese horseradish
[Distribution] Occurring in shady valleys of Japan, cultivated in Ali-Mountain areas of Taiwan.
[Morphology] Perennial herb. Rhizomes stout, pyramidal, leaf-scars conspicuous, with numerous fibrous roots. Leaves several, arising among roots, 30 cm long, long-petioled, cordate at base, margins irregularly unconspicuously toothed. Stems several arising among leaves, 30 cm high. Inflorescence a short raceme, terminal or axillary. Flowers white, cruciform; sepals elliptic, whitish at margins, petals 4, oblong, obtuse at apex, stamens tetradynamous, pistil 1; peduncles elongated after flowering, loosely bearing some siliques.

Siliques curved, beaked at apex.
[Content/Pharmacology] The whole plant contains sinigrin that will decompose into allyl isothiocyanate with the addition of water, ie. allyl mustard oil. It contains minerals and sugars. The allyl mustard oil has a volatilize irritating aroma that causes tearing; blisters would result if contacted with the skin.
[Efficacy] The rhizome is also known as "shan kuai gan," which can increase one's appetite and has antiseptic and pain suppressing effects. It is used to treat rheumatism, *neuralgia by applying it onto the affected parts because it can reduce pain. The juice can detoxify fish and bird meat poisons.*

354. **Drosera burmannii** Vahl. (錦地羅)

DROSERACEAE

[Distribution] Widely distributed in tropical area of Asia, Australia, Africa and Taiwan.
[Morphology] Small perennial herb. Leaves radical, rosulate, creeping, obovate, 6-10mm long, 3-6mm wide, pale-green sometimes with dark red, apex obtuse or round, base cuneate, upper margins or surface densely covered with purplish red glandular to stick and catch insects. Scapes 1-3, stretch out from leaves, 6-22cm high, delicate, glabrous; flowers raceme, often curly backward, 10 or more per inflorescence, flower with short pedicel, 3mm long; calyx campanulate, 5 partite, 3mm long, narrow ovate, apex short acute; petals 5, white to pink, truncate-obovate; stamens 5; ovary.close to globular, glabrous, styles 5, linear, stigma lobed crested. Capsules loculicidal, 3 valved; seeds many. Flowering during May and June.
[Content] The whole plant contains proteases, dyes, malic acid, citric acid and tannins.
[Efficacy] The whole plant clears heat, detoxifies, dispels putridity and regulates mild malnutrition with accumulation. It can treat coughing due to pulmonary fire, hymoptysis due to TB, swelling pain of the throat, pus inside ears, mild infantile malnutrition with accumulation, white and red dysentery, miasma and sore-toxin.

355. **Drosera indica** L. (長葉茅膏菜)

DROSERACEAE

[Distribution] Tropical areas of廣東, Japan, India, Malaysia, Australia, Africa and Taiwan.
[Morphology] Perennial herb, 6-20cm high, whole body covered with glandular, rhizome globular(Flora寫沒有tuber?). Leaves unapparently pettiolate, alternate, narrowly linear, 4-10cm long, 2-2.5mm wide, densely covered with pale yellowish-green glandular. Racemes subopposite leaves, 6-25cm long, loosely flowered. Flowers with pedicels; sepals 5, about 4mm long, lanceolate; petals 5, white to pink, oblanceolate, 6mm long; stamens 5; ovary terete, styles 3, partite nearly to base. Capsules ovoid. Seeds many, tiny, black. Flowering during February and April; fruiting during April to June.
[Efficacy] The whole plant is slightly toxic. However it dispels wind and removes dampness, resolves sputum and clears accumulation, cools blood and detoxifies, activates blood and eases pain; therefore it can be used to treat wind-dampness pain, pain due to sprain and gore, traumatic injury, tympanitis, hemoptysis, swelling and painful

throat, coughing due to pulmonary fire, enteritis, dysentery, infantile malnutrition with accumulation and urticaria. It is applied externally to treat pyogenic infection and ulcerative carbuncles.

356. **Bryophyllum pinnatum** (Lam.) Kurz (落地生根)

CRASSULACEAE

[English name] Air plant, Life plant, Floppers
[Distribution] Native to tropical Africa, widespread throughout the tropics and Taiwan.
[Morphology] Perennial succulent herb, 50-100 cm high. Stems erect, distinctly noded, slightly woody at base, grayish brown, flushed with purplish red in the upper, densely covered with elliptic lenticels. Leaves opposite, flushed with purple, slightly amplexicaul at base, simple or pinnate, leaflets of pinnate 3-5, elliptic, obtuse at apex and base, crenate at margins, glabrous on both surfaces. Inflorescence a paniculate cyme, terminal or axillary, with bisexual, pendulous, lantern-shaped flowers, bracts 2, opposite, leafy, narrowly lanceolate. Calyx tubular, with purplish striations outside, 4-lobed, the lobes deltoid, acute at apex, corolla urceolate, the base globose, the middle constracted into a neck, the upper inflated, 4-lobed, partly projecting beyond the surrounding calyx-tube, purplish red, stamens 8, in two whorls, filaments adnate to corolla-tube, anthers purple, pistils 4, with a basal scale, ovaries green, styles unequal, stigmas small. Follicles 4. Seeds many. Flowering in spring.
[Content/Pharmacology] The leaf contains malic acid, citric acid, isocitric acid, fumaric acid, vitamin C, quercetin-3-diarabinoside, kaempferol-3-glucoside, 1-β- amyrin, sitosterol, etc.
[Efficacy] The whole plant can cease bleeding, dissipate inflammation, ease pain, disperse swelling, promote tissue generation and resolve toxin. It can treat hematemesis, bleeding due to trauma, stomach pain, arthralgia, swelling pain of the throat, tympanitis, acute mastitis, furuncle, ulcers and scalds.

357. **Kalanchoe gracilis** Hance (大返魂草)

CRASSULACEAE

[English name]
[Distribution] Widespread throughout Asia and tropical Africa, cultivated in Fukien, Kwangtung, Kwangsi and Yunnan provinces of China, and Taiwan.
[Morphology] Perennial succulent herb. Stems erect, 50-100 cm high, green and glabrous. Leaves opposite, petiolate; blades variable, irregularly pinnatifid, the segments lanceolate, unequal, entire or irregularly crenate-margined; the leaves in the upper stems smaller, lanceolate. Inflorescence a terminal paniculate cyme, bearing erect many flowers. Calyx green, deeply 4-lobed, corolla yellow or flushed with orange, salverform, 1.5-2 cm long, limbs acute, stamens 8, in two whorls, filaments short, carpels 4. Fruit a follicle. Seeds minute, numerous. Flowering and fruiting throughout the year.
[Content] It contains a large quantity of mucilage. Decocting this plant with half water and half alcohol is known as a life reviving medicine. It has immunological effects.

[Efficacy] The whole plant clears heat, detoxifies, ceases bleeding, dissipates stagnation and disperses swelling. It can treat meningitis, hypertension, itching eczema, ulcerative carbuncle and pyogenic infection, traumatic injury, traumatic bleeding and scalds.

358. **Sedum formosanum** N.E.Br. (台灣景天)

CRASSULACEAE

[English name]
[Distribution] Distributed in southern China, Japan, Ryukyu, Taiwan and the Philippines.
[Morphology] Perennial succulent herb, 10-20 cm high, glabrous, tufted or mat-forming. Stems decumbent, rooting from the nodes, branches 2 or 3-forked. Leaves opposite or slightly opposite, sessile, obovate to ovate-lanceolate, 1.5-2.5 cm long, 0.8-1.2 cm wide, yellowish green, tapering toward the base, obtuse or acute at apex, entire. Inflorescence a terminal or axillary cyme, densely many-flowered. Flowers subsessile, with a leafy bract; sepals 5, unequal, linear lanceolate, acuminate, petals 5, bright yellow, ovate-lanceolate, acute to acuminate at apex, 6-8 mm long, stamens 10, ovary 5-carpelled, broadly lanceolate, 5-6 mm long, style short. Fruit a slender pyramidal follicle, with styles persistent. Seeds numerous. Flowering and fruiting during summer and autumn.
[Content]The whole plant contains triterpenes, which contains δ-amyrenone and δ-amyrenol.
[Efficacy] The whole plant clears heat, regulates qi, cools blood, disperses swelling, ceases pain and quenches thirst. It can treat throat ache, diabetes, food accumulation resulting in abdominal pain, enteritis and dysentery.

359. **Astilbe longicarpa** (Hayata) Hayata. (落新婦)

SAXIFRAGACEAE

[Distribution] China and Taiwan.
[Morphology] Perennial herb, 40-60cm high, rhizome thick. Radical leaves with long petiole covered with brown scales on the lower part, ternate, bipinnate to tripinnate, leaflets ovate to elliptic-ovate, 3-10cm long, 2-5cm wide, apex long acuminate, base unequal round, margin fine duplicate-serrate, both surface covered with hirsute, especially more on veins. Scapes 30-50cm long, densely covered with brown pilose on the upper part and brown scales on the basal part; narrow raceme, flowers small, nearly unpedicellate; calyx shallow-cup shape, 5 lobed, yellowish; petals 5, white or purple, 4 times the length of the sepal; stamens 10, filament bluish-purple, anther bluish, cream-colored after mature; carpals 2, free, connect on the base, half-inferior ovary. Follicle; seeds numerous. Flowering during June and July; fruiting during August and September.
[Content] The whole plant contains hydrogen cyanide. The flower contains quercetin. Additionally, plants in the *Astilbe* genus contain 2-hydroxyphenylacetic acid, and their roots contain bergenin, starch and tannins.
[Efficacy]The whole plant can expel wind, clear heat and stop coughing. It can treat wind-heat common cold, pain in the head and body, and coughing. The root activates blood, ceases pain and detoxifies. It can treat traumatic injury, joint and sinew pain, stomach pain and pain after operation. In Taiwan, its rhizome is used to replace *Cimicifuga foetida* to

clear heat and suppress pain. It can treat headache and pharyngitis.

360. **Deutzia pulchra** Vidal. (大葉溲疏)

SAXIFRAGACEAE

[English name] Evergreen deutzia
[Distribution] Philippine, Luzon and Taiwan.
[Morphology] Evergreen shrub or small tree. Whole body densely covered with stellates; bark of old trunk peeling; branches thin and long . Leaves opposite, short-petiolate, long ovate or long elliptic, 5-12cm long, 3-5cm wide, apex acute or acuminate, base cuneate or obtuse round, margin entire or remotely serrate, adaxial surface deep green, abaxial suface usually grayish-white. Inflorescence a terminal or axillary panicle; calyx campanulate, 5 lobed, lobes broad-ovate, apex short acuminate; corolla white, petals 5, long elliptic; stamens 10, various in length; inferior ovary, 4-5 rooms, styles 4-5. Capsules subglobular, 6-8mm across, apex truncate, dark brown when mature, shallow grooved, 4-5 lobes; seeds tiny. Flowering during April and May; fruiting during July and November.
[Efficacy] The root and the thick stem have heat clearing, malaria resisting and detoxifying effects. It can treat common cold fever, undulant fever, malaria and chest fullness. The fruit can clear gastric fire, drain dampness and promote the flow of qi. It is used to relieve skin heat and enuresis.

361. **Deutzia taiwanensis** (Maxim.) Schneider. (台灣溲疏)

SAXIFRAGACEAE

[English name] Taiwan deuzia
[Distribution] Endemic in Taiwan.
[Morphology] Shrub to small tree. Whole body covered with stellates; branches thin and long . Leaves opposite, ovate-long-elliptic or ovate-lanceolate, 4-8cm long, 2-4cm wide, apex acuminate, base obtuse round or slightly cuneate, margin fine serrate, adaxial surface coarse and covered with stellates; petiole 3-6cm. Inflorescence panicle, flowers numerous, pedicel 3-5cm long; calyx campanulate, 5 lobed, lobes broad-subovate, apex acuminate; corolla white, petals 5, long elliptic, erect or slightly open; stamens 10-12, various in length; inferior ovary, urceolate, styles 3-5. Capsules urceolate, edged, apex truncate, sepals remain, dark brown when mature, 3-5 lobes. Flowering during summer; fruiting between summer and autumn.
[Efficacy] The root and the thick stem have heat clearing, malaria resisting and detoxifying effects. It can treat fever, undulant fever, hypertension and enuresis.

362. **Hydrangea chinensis** Maxim. (華八仙)

SAXIFRAGACEAE

[English name]Chinese hydrangea
[Distribution] South China, Ryukyu, Taiwan.
[Morphology] Evergreen small shrub, 1-2m high. Leaves opposite, coriaceous, both sides glabrous, oblong, 5-7cm long, 2-3cm wide, acute at both ends, remotely mucronate-serrate, adaxial surface dark green, abaxial surface green with glaucous, petiole 1-1.5cm.

Inflorescence axillary on the end of branch, umbellately arranged corymb, sterile flowers with 4 white broad orbicular or rectangular orbicular petaloid sepals, sepals attach to ovary; petals 4, valvate; stamens 8-10; inferior ovary. Capsules globose, 0.5cm cross, persistent styles edges, black when ripen. Flowering and fruiting between March and October.
[Pharmacology/Content] The whole plant contains sugars, tannins and flavonoids. The root contains alkaloids and phenols. Its water soaked solution has anti-malarial effect.
[Efficacy] The root can expel wind, dissipate stagnation, cease pain, activate blood to promote tissue regeneration, clear heat, promote urination, disperse pyogenic infection and treat malaria. It can treat bone fracture, traumatic injury, TB, headache, malaria, abdominal fullness and strangury disease. It is rubbed onto the skin to treat skin itch.

363. **Hydrangea macrophylla** (Thunb.) Seringe. (紫陽花)

SAXIFRAGACEAE

[English name] Big hydrangea
[Distribution] Widely cultivated in Taiwan.
[Morphology] Defoliate shrub, 1m high, branch thick with obvious lenticel and leaf scar. Leaves slightly thick, opposite, glabrous, elliptic to ovate elliptic, oblong, 8-16cm long, 4-9cm wide, apex short acuminate, base broad cuneate, margin rough serrate except base part, adaxial surface emerald green, abaxial surface glabrous or hispid on vein, yellowish green. Inflorescence terminal corymb, globose, 10-20cm cross; pedicel puberulous, all flowers sterile, white, pink or blue, petaloid sepals 4, broad ovate, 1-2cm, unlobed. Flowering during June and September.
[Content/Pharmacology] The whole plant contains hydrangin. The root and other parts of the plant contain daphnetin derivatives and udmbelliferone. The leaf contains hydrangenol, hydrangenol-8-O-glucoside, etc. The leaf contains skimming, and cis-2,4-di-p-D-glucosyloxycinnamic acid. The above-ground parts contain hydrangenoside A,B,C and D. The fresh leaves contain p-aminophenyl-α-D-glucoside. The root contains hydrangeic acid and lunularic acid. The decoction has an obvious anti-malarial effect; it also has stimulating effects on the uterus and the intestines.
[Efficacy] Its indications are malaria, heart fire and fright palpitations, restlessness, throat obstruction, scrotal eczema and scabies.

364. **Parnassia palustris** L.(梅花草)

SAXIFRAGACEAE

[Distribution] Widely distribute from temperate area of North Hemisphere to sub-frigid area, China, Korea, Japan and Taiwan.
[Morphology] Perennial herb, 10-35cm high, branch and tufted. Basal leaves tuft, heart-shape or broad ovate, 1-3cm long, 1-3cm wide, apex obtuse, base cordate, entire; long petiole with various length. Often bearing one petiole-less and smaller leaf between scapes. Single flower, terminal, white as plum blossom, 1.5-2.5cm cross; sepals 5, oblong; petals 5, broad ovate or elliptic, unlobed; stamens 5, alternate with petals, staminodes filiform splitting with capitate gland on the apex; ovary superior, 4 carpels united, short style, stigma 4 lobed. Capsules ovate-round, 10-12mm cross, apex 4 lobed. Seed numerous.

Flowering during June and August; fruiting during September and October.
[Content] The whole plant contains kaempferol, rutin, hyperin, glucose, glucoside, flavonoids, sugars, gelatine, tannins, etc. The root contains alkaloid and phenols.
[Efficacy] The whole plant has heat-clearing and detoxifying, cough ceasing and phlegm resolving, blood cooling and swell dispersing effects. It has curative effects for swelling pain of the throat, pertusis, coughing with excessive phlegm, jaundice hepatitis, vasculitis, bacterial dysentery, ulcerative carbuncle and pyogenic infection.

365. **Pileostegia viburnoides** Hook. f. & Thoms. (青棉花)

SAXIFRAGACEAE

[English name] Pileostegia, Green cotton vine
[Distribution] South of Yangtze River in China, South Japan, Ryukyu and Taiwan.
[Morphology] Evergreen large climber, often with aerial roots, young branches glabrous, pale-green, short branches and petioles often dark purple. Leaves opposite or partially alternate, leaves on vegetative branches often lanceolate, leaves on reproductive branches oblong, obovate oblong or lanceolate, 8-16cm long, 2-6cm wide, apex acuminate or obtuse, base cuneate, margin entire or sometimes rough wave-shaped, both sides glabrous; petiole 1-2.5cm long. Inflorescence terminal panicle, thin villous; buds globose, 3-4mm cross, bracts linear lanceolate; flowers numerous, perfect, white or greenish white, calyx-tube ob-cone shape, 4-5 lobed, petals 4-5, calyptrate, caducous; stamens 8-10; inferior ovary, styles united, stigma 6 rough lobed. Capsules top-shape half globose, 3-4mm cross, with vertical edge. Seeds oblong, wings on the apex. Flowering during August and September; fruiting during October and November.
[Content] The whole plant contains lumularic acid, abscisic acid, quercetin and leucocyanidin.
[Efficacy] The root and thick stem can expel wind and drain dampness, dissipate stagnation and activate blood, detoxify and ease pain. It can treat wind-dampness pain, lumbago and foot pain, postpartum tidal fever. It is applied externally to treat traumatic injury. The leaf and branch can treat ulcerative sore toxin, traumatic bleeding and traumatic injury.

366. **Saxifraga stolonifera** (L.) Meerb.. (虎耳草)

SAXIFRAGACEAE

[English name] Strawberry geranium
[Distribution] Middle and south part and south-west part of China, warm area of Honshu, Shikoku, Kyushu in Japan and Taiwan.
[Morphology] Perennial evergreen herb with hairs, fleshy. Creeping stems reddish purple, linear, generate new individual when touching the ground. Leaves tuft on the base of stems, base expand, round or kidney-shape, fleshy, 3-8cm long, 3-9cm wide, apex round, base cordate or cuneate, margin shallowly lobulate, every lobe with 3-4 teeth, adaxial surface green, abaxial surface often purplish red, dotted; petioles 4-12cm long. Inflorescence raceme, 12-20cm long; scapes axillary, more than twice the height of leaves, red; pedicels densely covered with reddish purple glandular; bracts ovate-elliptic, apex acute; sepals 5,

ovate, unequal size, apex acuminate; petals 5, white, irregular, lower two bigger and upper three smaller; stamens 10, length uneven; gynoecium 1, superior ovary globose, stigma 2 lobed and the apex thin. Capsules ovate-rounded, apex 2 deep lobed, beak-shaped. Seeds ovate with tumor-shape protuberance. Flowering during April and July; fruiting during July and December.
[Content] The whole plant contains alkaloids, potassium nitrate, potassium chloride and arbutin. The chlorophylls contain enzymes that can oxidate cis-caffeic acid, and the product in turn can naturally transform into esculitin.
[Efficacy]The whole plant can expel wind, clear heat, cool blood and resolve toxin. It can treat tymphanitis, erysipelas, pulmonary abscess, flooding, hemorrhoid, coughing and hematemesis, pertusis, rubella, eczema, poisonous insect bites and traumatic bleeding.

367. **Schizophragma integrifolium** Oliv. var. **fauriei** (Hayata) Hayata. (圓葉鑽地風)

SAXIFRAGACEAE

[English name] Taiwan hydrangea vine
[Distribution] Endemic in Taiwan.
[Morphology] Climbing shrubs. Leaves opposite, slightly coriaceous, broad ovate or ovate-rounded, 6-12cm long, 4-8cm wide, apex obtuse or short acuminate, base shallowly cordate or near rounded, margin entire or dentate; petioles 4-6cm long. Inflorescence cyme, corymb shaped, terminal or axillary on the top, white pubescent; the outer flowers sterile, sepals petaloid, large, greenish white, pedicel long, ovate or ovate-oblong; the central flowers bisexual, calyx tube ob-cone shaped, shallowly 5 lobed, lobes triangular, petals 5, long ovate; stamens 10; inferior ovary, 5 chambers, stigma capitate with vertical ridges. Capsules ob-cone shaped. Flowering during July and August; fruiting during September and November.
[Efficacy[The root and stem can expel wind-dampness, activate blood to ease pain, and detoxify to disperse swelling. It can treat wind-dampness ostealgia, beriberi and pain due to wind-dampness, wind pain of sinews and bones, gore, and red swelling due to sore-toxin, and filarial worm infection.

368. **Ribes formosanum** Hayata. (台灣茶藨子)

GROSSULACEAE

[English name] Formosan gooseberry
[Distribution] Endemic in Taiwan.
[Morphology] Shrubs, branched, branches long and thin, pliable but strong, grayish white, with 1-3 tufting unequal spines. Leaves 1-3, tuft on branchlets, chartaceous, broad rounded or fan-shaped, 1-2.5cm long and wide, apex obtuse or near rounded, base cordate with 3-5 unequal shallow or deep lobes, middle margin rough serrate, abaxial surface pubescent; petioles 1.5-2.5cm. Flowers single, axillary, pedicel 1-1.5cm long, with bracts at the middle; calyx tubes long-tube shaped obovate, base part enlarge, 6-8mm cross; petals 5, scale-like, attach on the throat of the calyx tube; stamens 5, alternate to petals; inferior ovary, globose, 1 room, styles 2. Berry globose, about 10mm cross, crowned with the persistent calyx, dark red to dark purplish red when ripen. Flowering during summer;

fruiting during autumn.
[Content] The fruit contains malic acid, citric acid, tartaric acid, etc.
[Efficacy] The root or the whole plant can activate blood and soothe sinews, dissipate stasis and ease pain, strengthen sinews and bones, regulate menstruation, ease menstrual pain, treat enteritis and purge dysentery. The fruit can nourish the body, invigorate the stomach and resolve toxin. It has curative effects for common cold fever, abdominal pain due to gastritis, biliary-hepatic diseases and deficiency of bile secretion. The seed can promote urination and unblock the meridian. It can treat edema and menstrual irregularities.

369. **Pittosporum pentandrum** (Blanco) Merr.

369. *Pittosporum pentandrum* (Blanco) Merr. (七里香) Pittosporaceae
[English name] Fragrant pittosporum
[Distribution] The Philippines, Celebes, Indo-China peninsula, and Taiwan.
[Morphology] Evergreen small tree. Bark green-gray and with prominent lenticels; branchlets brownish pubescent. Leaves coriaceous, alternate, usually crowded at tip of branches or whorled-like, ovate to oblong, 4~6 cm long, 2~3 cm broad, apex nearly rounded or acute, base acute, margin entire or slightly wave-like; petioles about 1 cm long. Inflorescence paniculate, terminal, brownish pubescent; flowers small, crowded about 5 mm across, cream, and fragrant; sepals 5, ovate; petals 5, oblong to linear. Capsules globose, about 8 mm across, slightly apiculate, yellow or orange when mature. Seeds 5~6. Flowering during March and June; fruiting during June and October.
【Efficacy】 The bark can treat paralyzed lower limbs, persistent sluggishness of blood circulation, lumbago and leg pain, white and red dysentery, wind-dampness and pyogenic infection. The root can treat traumatic injury. The branches and leaves can treat dermatosis and skin itchiness.

370. Pittosporum tobira Arr.
【Content/Pharmacology】 The bark contains erythaline, amino acids and organic acids. The seed contains saturated organic acids and unsaturated organic acids, it also contains hypaphorine. The leaf contains alkaloids such as dl-scoulerine. Pittosporum tobira bark aqueous effusion has varying degrees of inhibitions against Trichophyton violaceum and Achorion Schonleinii.
【Efficacy】 The bark can expel wind-dampness, unblock the meridian, disperse swelling and ease pain, and kill worms. It can treat wind-dampness obstructive pain, toothache, scabies and dysentery. The leaf can treat infantile malnutrition with accumulation, and ascarid infection. The flower can treat incised wound and cease bleeding.

371. *Agrimonia pilosa* Ledeb. (龍芽草) **Rosaceae**
[English name]
[Distribution] Mainland China, Korea, Japan, Ryukyus, Southeastern Asia, North America, North Africa, and Taiwan.

[Morphology] Hirsute perennial herb; stems erect, stiff and green. Leaves alternate, imparipinnate, usually 3~9- foliolate, the cauline ones with small leaflets interspersed between large leaflets; leaflets oblong to lanceolate, thinly pilose on both sides, apex acute, base cuneate and slightly oblique, margin coarsely serrate; stipules semi-cordate, unevenly serrate. Flowers in racemes, terminal or axillary, 10~20 cm long; pedicels stout, bracts 3 at base; sepals tubular, 5 lobes at apex, lobes obovate, densely armed with hooked bristles; petals 5, yellow, obovate, emarginated; stamens about 10; styles 2, stigmas capitate. Achenes enclosed within persistent calyx. Flowering during June and September; fruiting during September and October.

【Content/Pharmacology】 *Agrimonia pilosa* contains agrimonie, tannins, sterols, organic acids and phenols. The root contains agrimonol, agrimonolide and apigenin. The stem and leaf contain apigenin-7-β-glucoside. Roughly made paste can promote coagulation and contract peripheral blood vessels. The bleeding time of mice is decreased after intravenously injecting agrimonine. After intravenously injecting agrimonine into the rabbit, its platelet number is increased and the coagulation time decreased. The ethanol extract of the aqueous effusion can decrease the blood pressure of rabbits. The perfusions with lower concentrations will induce blood vessel contraction in rabbits and frogs; on the other hand high concentrations will dilate blood vessels. The aqueous extract of *Agrimonia pilosa* has inhibitory effects on isolated hearts. The aqueous and alcoholic extracts have inflammation dissipating effects on *S.aureus* or mustard oil induced conjunctivitis. This is because they contain tannins that can be derived into phdobaphene which possesses astringent efficacts.

【Efficacy】 The whole plant can cease bleeding and invigorate the stomach. It can treat hemoptysis, hematemesis, hematuria, bloody stool, white and red dysentery, flooding and leucorrhea, over exertion, carbuncle, traumatic injury, traumatic bleeding and Trichomonas vaginalis infection.

372. *Chaenomeles lagenaria* (Loisel.) Koidz. (貼梗海棠) **Rosaceae**

[English name]

[Distribution] Eastern, Central, and Southwestern China, also cultivated in Taiwan.

[Morphology] Deciduous shrub, about 2 m high. Branchlets erect or spreading, purplish brown or dark brown, with sparsely pale brown lenticels. Leaves alternate, ovate to elliptic, base cuneate to broadly cuneate, margin sharply serrate; petioles short; stipules large, herbaceous, reniform or semicircular, glabrous, margin sharply serrate. Flowers developing before leaves, 3~5 fasciculate in 2-years old branches; pedicels stout; calyx-tube campanulate; sepals erect, apex rounded or obtuse, margin entire or crenate; petals scarlet, rarely pink or white, obovate to nearly rounded, base extended to short claw; stamens 45~50, about half the petal length; styles connate at base, glabrous or nearly so, stigmas capitate, slightly lobed, length equal to stamens. Fruits globose or ovoid, yellow or yellow-green, punctate, fragrant, without persistent calyx, stipes short or nearly sessile. Flowering during March and May.

【Content/Pharmacology】 The fruit contains malic acid, tartaric acid and citric acid. Its liver protecting effect can inhibit the swelling of hepatocytes and promote

cell repair, and significantly decrease the content of almine amino transferase in the blood serum. In selection of antiseptic drugs, it was discovered that papaya had a stronger antiseptic effect, which is more obvious for intestinal bacteria and staphylococci; it is also efficacious against Shigella dysenteriae, Shigella *Flexneri*, Shigella *sonnei*, Staphylococcus aureus and Pseudomonas aeruginosa. Papaya extract has inhibitory effects against Ehrlich ascites cancer in mice, it also has inhibitory effects on the macrophages in the mouse peritoneal cavity.

【Efficacy】 The fruit can soothe sinews and free the collateral vessels and dissipate dampness in the stomach. It can treat wind-dampness obstructive pain, trunk and limb aches, sinew spasms, spasm due to vomiting and diarrhea, beriberi and eczema.

373. *Duchesnea indica* (Andr.) Focke (蛇莓) **Rosaceae**

[English name]

[Distribution] Temperate to tropical zone worldwide, widely distributed in Mainland China and Taiwan.

[Morphology] Perennial herb. Stems multi-branched, slender, villous, rooting at nodes of stolons. Leaves alternate, 3- foliolate, leaflets obovate or rhombic-ovate, apex obtuse, base oblique and entire, margin serrate or finely serrate, glabrous above, thinly pubescent beneath; stipels very short; stipules ovate-lanceolate. Flowers solitary and axillary, 12~15 mm across; pedicels pubescent, longer than petioles, bracts obtriangular or obovate; sepals ovate or lanceolate; petals 5, yellow, obovate; stamens numerous; recepticles semi-globular. Achenes numerous, sunken on spongy receptacles, in globose fleshy aggregate fruits, red to dark-red. Flowering and fruiting during Summer and Autumn.

【Content/Pharmacology】 The seed contains fatty acids. It contains behenic acid, sterols, alcohols and hydrocarbone. The whole plant has inhibitory effects against Neisseria meningitides, Corynebacterium diphtheriae, Bacillary Dysentery, Salmonella typhi, Staphylococcus aureus, etc.

【Efficacy】 The whole plant can clear heat, cool blood, cease bleeding, dissipate stasis, disperse swelling, resolve toxin and kill worms. The root can clear heat, promote urination, cool blood, cease bleeding and resolve toxin. It can be used to treat internal heat, tidal fever, hematemesis, keratitis, conjunctivitis and water intoxication.

374. *Eriobotrya japonica* (Thunb.) Lindley (枇杷) **Rosaceae**

[English name] Loquat

[Distribution] Native to Mainland China. Widely cultivated in Vietnam, Myanmar, India, Indonesia, Japan, and Taiwan.

[Morphology] Evergreen small tree. Branchlets stout. Leaves alternate, oblong to obovate-oblanceolate, apex acute, base cuneate, margin remotely serrate, dark green above, densely rusty tomentose beneath; petioles short or nearly sessile; stipules 2, triangular. Flowers numerous in terminal panicles, multi-branched, covered with rusty hairs; sepals 5, tomentose; petals 5, white, obovate; stamens numerous; ovary inferior, 5-celled, styles 5, stigmas capitate. Fruits globose, nearly globose or obovoid, yellow or orange when mature, fleshy. Seeds globose or semi-globose. Flowering during September and December;

fruiting during March and May.

【Content/Pharmacology】 The leaf contains evaporation oil. It mainly contains nerolidol, farnesol, α,β-pinene, α,β-farnesene and α-ylangene. The flower contains oligosaccharides. The fruit contains sugars, fats, proteins, pectin and minerals. The seed contains amygdalin, 4-methylene-DL-proline, fatty acids, starch, ceryl alcohol and free hydrogen cyanide. The leaf extract has the capacity of inhibiting many kinds of bacteria. It contains amygdalin which can stop coughing, suppress pain, resolve phlegm and soothe dyspnea. It can also inhibit intestinal yeast fermentations.

【Efficacy】 The root can suppress pain, stop coughing and promote lactation. The white wood bark has qi descending effect. The flower can moisten the throat to cease coughing. It has curative effects for common cold and coughing. The fruit can moisten the five visceral organs, quench thirst, direct qi downward and nourish the body. The seed can dissipate phlegm to cease coughing, soothe the liver and regulate qi, drain dampness to stop pain. It can treat coughing, hernia, edema, swelling pain of the throat and arthritis. Syrups made with Eribotrya japonic can clear lungs, soothe the stomach, resolve phlegm and stop coughing. It has curative effects for pulmonary fire induced coughing, unstopping coughs, abundant phlegm induced vomiting and coughing.

375. *Fragaria hayatai* Makino (早田氏草莓)　　Rosaceae

[English name]

[Distribution] Endemic to Taiwan.

[Morphology] Perennial herb, villous pubescent. Stems multi-branched, slender, rooting at nodes of stolons, roots filiform. Leaves radical, alternate, usually in rosette, 3- foliolate, leaflets obovate to rhombic, 2~3 cm long, apex rounded, base cuneate, margin coarsely dentate, villose pubescent on both surfaces, especially along the veins beneath; petioles long, villous. Flowers white, several in cymes; sepals 5, lanceolate, apex abruptly acute, green and persistent; epicalyx 5, oblong, apex acuminate, densely pubescent outside; petals 5, elliptic; stamens numerous; carpels numerous. Achenes numerous, receptacles enlarged and fleshy after flowering, red and fragrant when mature. Flowering during May and June; fruiting during June and July.

【Content】 The fruit contains sugars and dyes.

【Efficacy】 The receptacle can be ingested, used to make alcoholic beverages and made into jam. The whole plant can cease bleeding and expel pus. It has curative effects for pulmonary static blood.

376. *Malus doumeri* (Bois.) Chev. C. R. (台灣蘋果)　　Rosaceae

[English name] Formosa crob apple

[Distribution] Southern China. Taiwan, at altitudes 700~2300 m throughout this island.

[Morphology] Deciduous medium tree, 2~3 m high; winter buds brown, glabrous. Branchlets covered with soft hairs and thorns, glabrous in age. Leaves coriaceous, alternate, oblong, 9~14 cm long, 4~6 cm broad, apex acute, base rounded, margin serrate, veins reddish; petioles long. Flowers 4~5 in corymbs, terminal, pubescent; pedicels 1.5~2.5

cm long; sepals 5 lobes, white-gray pubescent on both surfaces; petals 5, cream or white, emarginate; stamens numerous; ovary inferior, 5-celled, ovules 2 in each cell, styles 4~5. Pomes globose, yellow to red when mature, about 4 cm across. Flowering during April and May; fruiting during August and September.

【Content】 The fruit contains many kinds of acidic and carbohydrate contents; such as malic acid, vitamin C, glucose, fructose, etc.

【Efficacy】 The fruit decoction can invigorate the stomach, resolve accumulation, help digestion and treat dysentery.

377. *Potentilla chinensis* Ser. (委陵菜) **Rosaceae**

[English name] Cinquefoil

[Distribution] Mainland China, Korea, Japan and Taiwan.

[Morphology] Perennial herb with a thick caudex, 30~60 cm high; roots thick and long. Stems crowned, erect or ascending, white villous. Leaves alternate, imparipinnate, 15~31-foliolate, leaflets oblong-ovate to oblong, pinnately deeply incised, lobes triangular-lanceolate, densely white tomentose beneath, rachis covered with long hairs; radical leaves with petioles, cauline leaves similar to radical ones but smaller; stipules adnate to the base of the petiole. Cymes terminal, peduncle white tomentose; petals 5, yellow; stamens numerous; carpels numerous, 1-celled, ovule 1, styles deciduous. Achenes numerous, tiny, ovoid, ridged, aggregate on tomentose receptacles. Flowering during May and August; fruiting during August and Octobor.

【Content/Pharmacology】 The root contains saponins and tannins. The whole plant contains fats, proteins, starch, vitamin C, phosphorus pentaxide, calcium oxide, ursolic acid, etc. The decoction has inhibitory effect against amoebas. The whole plant decoction has inhibitory effect against Bacillary Dysentery; the root and leaf decoctions have inhibitory effects on intestines in vivo or in vitro.

【Efficacy】 The root or the whole plant can clear heat, resolve toxin, cease bleeding and unobstruct the meridian. It can treat coughing due to dyspnea, coughing, pertusis, laryngitis, hemoptysis, hematemesis and bloody stool. It can also treat amoebic dysentery, and malaria.

378. *Potentilla discolor* Bunge (翻白草) **Rosaceae**

[English name]

[Distribution] Northeastern, Northern, Eastern China, Shenhsi, Ssuchuan, and Taiwan.

[Morphology] Perennial herb; roots thick, fleshy, usually spindle-like. Stems erect, densely white tomentose. Leaves alternate or sometimes opposite, imparipinnate, 5~9- foliolate, leaflets sessile, oblong or oblong-lanceolate, 1~5 cm long, 5~8 mm broad, apex obtuse or rarely acute, densely white tomentose beneath, cauline leaves 1~2, 3~5- foliolate; petioles densely white tomentose, sometimes also villous; stipules membranous or herbaceous, ovate or broadly ovate, margin usually incised dentate, densely white tomentose beneath. Flowers bisexual, in cymes; sepals triangular-ovate, tomentose outside; epicalyx lanceolate, shorter than calyx, white tomentose outside; petals 5, yellow, obovate, emarginate or rounded, longer than calyx; styles terminal. Achenes reniform, glabrous. Flowering and

fruiting during May and September.

【Content/Pharmacology】 The root contains tannins, condensed tannins and flavonoids. The whole plant contains fumaric acid, gallic acid, protocatechuic acid, quercetin, naringenin, kaempferol and *m*-phthalic acid. It has antiseptic effects: monomer compounds isolated from *Potentilla discolor* were tested for their efficacies in treating bacterial dysentery, it was discovered that quercitrin and gallic acid have the strongest antiseptic effects, and these components have varying inhibitory effects on *Shigella Flexneri and Shigella dysenteriae*.

【Efficacy】 The root or the whole plant can clear heat and resolve toxin, and cool blood to cease bleeding. It has curative effects for pulmonary fire induced coughing and difficulty of breathing, dysentery, malaria, hemoptysis, hematemesis, bloody stool, flooding, carbuncles, sore toxin and tuberculosis.

379. *Prinsepia scandens* Hayata (台灣扁核木) **Rosaceae**

[English name] Taiwan prinsepia

[Distribution] Endemic to Taiwan.

[Morphology] Scandent shrub, 3~9 m high. Lateral branches slender, vine-like, green, glabrous, with thick thorns. Leaves coriaceous, alternate, ovate-lanceolate to lanceolate, 3~7 cm long, 1~2 cm broad, apex acute or acuminate, base obtuse or cuneate, margin finely serrate, glabrous and dark green on both surfaces; petioles about 1 cm long. Flowers axillary or terminal, solitary or in a few-flowered raceme. Calyx copular, 5 lobes, lobes nearly rounded, glandular; petals 5, white, nearly rounded; stamens numerous, inserted around receptacles, anthers 2-celled; ovaries superior, carpel 1, ovules 2, styles lateral, stigmas capitate. Drupes long ovoid, green. Flowering during winter and spring; fruiting in summer.

【Efficacy】 The root can clear heat and resolve toxin, activate blood and disperse swelling, constringe the lungs to stop couging, treat parotitis, coughing due to deficiency, chronic coughing, and coughing due to tuberculosis. The leaf and branch have blood activating, stasis dissipating, detoxifying, swelling dispersing, deficiency reinforcing and fracture connecting effects. This plant has curative effects for ulcerative carbuncles, sore toxin, hemorrhage, traumatic bone fractures, lymphadenitis, mastitis, wind-dampness arthritis, bleeding gum, anemia and menstrual irregularity. The fruit can invigorate the stomach, help with digestion and remove corneal opacity. It can also treat mal-digestion.

380. *Prunus campanulata* Maxim. (山櫻) **Rosaceae**

[English name] Red cherry, Taiwan cherry

[Distribution] Yangtze River Basin of China, Japan, Korea, and Taiwan.

[Morphology] Deciduous tree, 6~10 m high, glabrous. Young branchlets densely pubescent; axillary winter buds 3 with 2 lateral flower buds and 1 central leaf bud, flowers developing before leaves or at the same time. Leaves alternate, elliptic or obovate, 3~6 cm long, 2.5~3 cm broad, apex acute, base obtuse or cuneate, margin finely and sharply serrate. Flowers 3~5 in corymbs, pedicels and calyx glabrous; petals one whorled, pink or white, 1 cm long. Drupes globose, about 1 cm across, red when mature. Flowering during April and May;

fruiting during May and June.

【Content】 The leaf contains quercitrin, and the wood contains tomenin and some glycosides.

【Content】 Decorative garden plant. The fruit can boost qi and arrest nocturnal seminal emission. It can treat dysentery and seminal emission. Its indications are profuse diarrhea, heat clearance, internal regulation and spleen qi boosting.

381. *Prunus japonica* Thunb. (郁李) **Rosaceae**

[English name] Dwarf flowering cherry

[Distribution] Mainland China, also cultivated in Korea, Japan, and Taiwan.

[Morphology] Deciduous shrub. Bark gray-brown; stems multi-branched, young branchlets yellow-brown or purplish, glabrous. Leaves alternate, long ovate or ovate, 3~6 cm long, 2~3 cm broad, apex acuminate, base nearly rounded, margin unevenly double serrate, pubescent along veins beneath. Flowers developing before leaves, 2~3 fasciculate, surrounded by several scales at base, scales oblong, densely rusty pubescent; pedicels 2~5 mm long, ridged, sparsely pubescent; sepals 5, saucer-like at base, apex acute, margin slightly serrate; petals 5, pink or nearly white, obovate or obliquely oblong, sparsely crenate, with pale brown veins; stamens numerous, filaments unequal, anthers globose or slightly square; carpel 1, ovary oblong, 1-celled, styles pubescent. Drupes nearly globose, fleshy, sour, red when mature. Flowering in May; fruiting during June and July.

【Content】 Prunus japonica contains bitter contents, fatty oil, evaporative organic acids, crude proteins, fatty acids, starch, plant sterols and cellulose. The stem contains tannins and vitamins. The leaf contains vitamin C.

【Efficacy】 The root can move qi, resolve accumulation, cease pain and kill worms. It has curative effects for toothache, qi stasis and accumulation, and cestode infections. The kernel can moisten dryness, lubricate the intestines, direct qi downward, drain dampness, dissipate blood stasis and disperse swelling. It can treat qi stagnation, obstructive dryness, unsmooth urination, acute pain in the bladder, abdominal edema, edema in the four limbs, edema in the face and eyes, beriberi and angina.

382. *Prunus mume* (Sieb.) Sieb. & Zucc. (梅) **Rosaceae**

[English name] Flowering apricot

[Distribution] Mainland China. Widely cultivated in China and Taiwan for economic and garden purpose.

[Morphology] Deciduous small tree, multi-branched. Leaves alternate, ovate to oblong-ovate, apex caudate or abruptly acute, base cordate or broadly cuneate, margin finely and sharply serrate; petioles with glands. Flowers solitary or 2~3 fasciculate, developing before leaves, white or pink, pedicels short, bracts scale-like, calyx-tube campanulate; calyx 5 lobes; petals one or several whorled, usually 5, broadly obovate; stamens numerous, inserted at margin of hypanthium; carpel 1, ovary pubescent, styles slender and curved. Drupes globose, about 2~3 cm across, with one shallow groove, pubescent, yellow when mature. Flowering during January and February; fruiting during April and May.

【Content/Pharmacology】 The fruit contains citric acid, malic acid, succinic acid,

carbohydrates and sitosterol. Ripe fruits contain hydrogen cyanide. The decoction has inhibitory effects on Bacillus anthrax, Corynebacterium diphtheriae, Staphylococcus, Bacillus Subtilis and Streptococcus pneumonia in vitro. It also has inhibitory effects against Shigella *sonnei*, Proteus mirabilis, Salmollella typhi, Salmonella paratyphi, Pseudomonas aeruginosa, Vibrio cholerae, etc.

【Efficacy】 The fruit has body fluid secretion promoting, astringent and ascarid-parasiticidal effects. It has curative effects for chronic coughing, prolonged malarial disease, prolonged dysentery, dysentery, constipation, hematuria, flooding, restlessness and thirst due to deficienct heat, abdominal pain due to ascarid infection, psoriasis, vomiting, and mal-digestion. It can end wind obstruction, on and off dysentery and cholecystitis. The flower can soothe the liver and stomach, and resolve phlegm. It can treat qi pain of the liver and stomach, poor appetite, abdominal pain, dizziness and improve appetite.

383. *Prunus persica* (L.) Batsch (桃) **Rosaceae**

[English name] Peach

[Distribution] Hopei, Shanhsi, Shenhsi, Kansu, Shantung, Honan, Ssuchuan, and Yunnan, also cultivated in Taiwan.

[Morphology] Deciduous small tree, 3~8 m high. Branchlets green or red-brown on one side, glabrous. Leaves alternate, or fasciculate on short shoots, elliptic-lanceolate to obovate-lanceolate, margin finely serrate, glabrous; petioles with 1~several glands. Flower usually solitary, developing before leaves, with short pedicels; sepals 5, connate at base, pubescent outside; petals 5, obovate, pink or rarely white, obovate; stamens numerous; ovary 1-celled, styles slender, stigmas small and capitate. Drupes nearly globose, short tomentose; flesh white or yellow, adnate to stone or not. Seed 1, compressed ovate to cordate. Flowering during March and April; fruiting during June and July.

【Content/Pharmacology】 The seed kernel contains methylene, cycloartanol, citrostadienol, etc. The kernel has inflammation dissipating and pain suppressing pharmacological effects. The kernel oil contains unsaturated fatty acids; mainly oleic acid and linoleic acid. For the circulatory system, the kernel oil can reduce the resistance inside coronary blood vessels; it can also reduce coagulation and inhibit the formation of thromboses, resulting in the prolonging of coagulation time. The seed kernel aqueous extract has a quite strong inflammation dissipating effect. The aqueous extract can inhibit the generation of hemolytic factors in the blood serum. The alcoholic extract can restrain allergic reactions on the skin induced by auto-antibodies. The fatty acids can moisten the intestinal tract, which can enhance purgation. The kernel has cough suppressing effects.

【Effect】 The fruit or leaf can activate blood and dissipate stasis, moisten the intestine and purge excretion. It can treat dysmenorrhea, amenorrhea due to static blood, postpartum stasis induced abdominal pain, clot, traumatic injury, bloody phlegm and swelling pain, pulmonary abscess, intestinal abscess, and constipation due to intestinal dryness.

384. *Prunus persica* (Linn.) Batsch var. *compress* (Loud.) Bean. (水蜜桃) **Rosaceae**

[English name] Juicy peach

[Distribution] Widely cultivated in China and highlands of Taiwan.

[Morphology] Deciduous small tree, 3~6 m high. Branchlets green or red-brown on one side, glabrous. Leaves alternate, or fasciculate on short shoots, elliptic-lanceolate to obovate-lanceolate, widest at middle part, apex long acuminate, base broadly cuneate, margin finely serrate, glabrous; petioles usually with 1~several glands. Flower usually solitary, developing before leaves, with short pedicels; sepals 5, connate at base, red, pubescent outside; petals 1~several whorled, usually 5, obovate, pink or rarely white, obovate; stamens numerous; ovary 1-celled, styles slender, stigmas small and capitate. Drupes nearly globose, short tomentose; flesh white or yellow, adnate to stone or not; stones very hard, with concave pits and deeply groove. Seed 1, compressed ovate to cordate. Flowering during March and April; fruiting during June and July.

【Conten/Pharmacology】 The fruit contains proteins, fats, sugars, crude fibers, Ca, P, Fe, carotene, thiamin and nicotinic acid. It also contains evaporation oil and organic acids such as maonlic acid, citric acid, glucose, fructose, sucrose, etc. The whole plant can be used as a purgative medicine and a worm repellent, and also for the treatments of worms and pertusis.

【Efficacy】 The fruit can be ingested, which can promote the generation of body fluid, moisten the intestine, activate blood and resolve accumulation. The kernel can break blood and dissipate stasis, moisten dryness and lubricate the intestine. It can treat amenorrhea, abdominal mass, coughing and asthma.

385. *Prunus salicana* Lindl. (李) **Rosaceae**

[English name] Plum

[Distribution] Widely distributed in Mainland China and Taiwan except Neimongolia, Singchiang, and Tibet.

[Morphology] Deciduous tree, 9~12 m high. Bark gray-brown, rough; branchlets purplish-brown, glabrous and shined. Leaves alternate, oblong-obovate or elliptic-obovate, apex mucronate or acuminate, base cuneate, margin finely and shallowly double serrate; petioles with 2~3 glands near top. Flowers bisexual, usually 3 fasciculate, calyx-tube cupular; sepals 5; petals 5, white, obovate; stamens numerous, in 2 irregular rows; carpel 1, distinct with hypanthium, stigmas discal. Drupes globose or ovoid, 3.5~5 across, up to 7 cm in some cultivated series, apex slightly acute, base sunken, green, yellow or purplish-red, shined and glaucous; stones ovoid or oblong, finely wrinkled. Flowering during April and May; fruiting during July and August.

【Content】 The fruit contains gibberellin A32. It also contains β-carotene, cryptoxanthin, violaxanthin, neoxanthin, lutein and vitamin A.

【Efficacy】 The fruit can clear heat, generate body fluid and dissipate accumulation. It can treat steaming bone due to consumption, consumptive disease and food accumulation.

386. *Pyracantha fortuneana* (Maxim.) Li (火棘) **Rosaceae**

[English name] Chinese firethorn, Scarlet firethorn

[Distribution] Mainland China, also cultivated in Taiwan.

[Morphology] Evergreen small shrub, 1~3 m high. Stems multi-branched, usually with thick thorns, branchlets rusty tomentose when young. Leaves alternate, or fasciculate,

elliptic or obovate-lanceolate to obovate-oblong, 1.5~6 cm long, 0.8~1.4 cm broad, apex rounded, obtuse or sometimes mucronate, base decurrent, margin finely crenate, dark green above, pale green beneath; petioles short; stipules small, deciduous. Flowers numerous, in compound corymbs, white, about 1 cm across; sepals 5~6, 1 mm long; petals 5~6, obovate, apex rounded or emarginate, with short claw at base; stamens 20, filaments white tomentose at base, anthers yellow; carpels 5, distinct, lower part adnate to hypanthium abaxially, stigmas capitate. Pomes globose or compressed globose, with persistent calyx, red when mature; nutlets 5. Flowering during May and July; fruiting during August and next February.

【Efficacy】 The root can treat steaming bone due to deficiency and consumption, pain in sinews and bones, traumatic injury and amenorrhea. The leaf can clear hepatic fire and detoxify sore toxin. It can treat conjunctivitis and acnes. The fruit can treat, glomus lump in the chest, mal-digestion, accumulation, diarrhea, dysentery, postpartum sicknesses, static blood, flooding and leucorrhea.

387. *Pyrus calleryana* Decne (豆梨) **Rosaceae**

[English name] Mountain pear

[Distribution] Eastern China, Hupei, and Taiwan.

[Morphology] Deciduous tree, 5~8 m high. Branchlets stout, cylindrical, tomentose when young, gray-brown in 2-years old branches. Leaves alternate, broadly ovate to ovate, rarely oblong-ovate, 4~8 cm long, 3.5~6 cm broad, apex acuminate or rarely mucronate, base rounded to broadly cuneate, margin obtusely serrate, glabrous on both surfaces; petioles 2~4 cm long, glabrous; stipules chartaceous, linear-lanceolate, 4~7 mm long, glabrous. Flowers bisexual, 2~2.5 cm across, 6~12 in umbel-like raceme; peduncles and pedicels glabrous, pedicels 1.5~3 cm long, bracts membranous, linear-lanceolate, 8~13 mm long, tomemtose inside; sepals 5, lanceolate, apex acuminate, margin entire, about 5 mm long, glabrous outside, tomentose inside especially at margin; petals 5, white, ovate, about 13 mm long, 10 mm broad, with short claw at base; stamens 20, slightly shorter than petals; styles 2 or rarely 3, glabrous. Pomes globose, about 1 cm across, dark-brown, punctate; stipes slender. Flowering in April; fruiting during August and September.

【Efficacy】The fruit can fortify the spleen and clear food accumulation, and dry the intestines to cease dysentery. It can be used to treat food accumulation and dysentery.

388. *Pyrus serotina* Rehd. (粗梨) **Rosaceae**

[English name] Sand pear

[Distribution] Central, Western China, Yangtze River Basin, Korea, Japan, and Taiwan.

[Morphology] Deciduous tree, 6~12 m high. Current-year branchlets glabrous or tomentose, second-year branchlets with lenticels, purple or red-brown; buds slender and acute, scales ovate, glabrous except in margin. Leaves alternate, thin-coriaceous, ovate-oblong or ovate, apex acuminate, base rounded, subcordate, or broadly cuneate, margin aristate, the teeth curved inward, glabrous on both surfaces, or tomentose when young and glabrate in age, dark green above, pale green beneath; petioles slender, glabrous, or slightly hairy and soon glabrous. Flowers 6~9 in corymbs; sepals deeply 5 lobes, lobes triangular-

ovate, about twice length of calyx-tube, apex acuminate, margin glandular serrate, glabrous or slightly hairy outside, yellow tomentose at base inside; petals 5, ovate, apex irregularly incised, base with short claw; stamens 20; styles 4~5, glabrous, lengths about equal to stamens. Pomes globose, red-brown, pale green punctate, without persistent calyx. Seeds cuneate-ovate, slightly compressed, dark brown. Flowering in April; fruiting in September.

【Efficacy】 The flower can be used to remove blackheads. The leaf can treat continuing vomiting due to cholera because its decoction can expel wind; oral administration of the leaf juice can treat infantile cold hernia and to clear bacterial toxins. The bark can relieve exogenous febrile diseases and pestilence. The fruit can be made into syrup to treat coughing. The fruit can treat coughing with phlegm, promote urination and defecation, clear heat, quench thirst and clear alcoholic poisoning. The flower decoction can treat cholera, vomiting and dysentery.

389. *Rhaphiolepis indica* (Linn.) Lindl. (石斑木) **Rosaceae**

[English name] India hawthorn

[Distribution] Chechiang, Fuchien, Kuantung, Kuanhsi, and Taiwan, also occurred in Vietnam.

[Morphology] Evergreen small tree or shrub, 1~2 m high. Stems multi-branched, brown pubescent when young. Leaves coriaceous, alternate, fasciculate, or crowded at tip of branches and whorled-like, obovate, 6~7.5 cm long, 2~6 cm broad, apex obtuse, base acute, decurrent to winged near petioles, margin serrate but entire at base, glabrous on both sides, dark green and shined above, veins slightly concave on both surfaces, reticulate veins prominent beneath; petioles very short. Inflorescences racemose or paniculate, bracts easily deciduous; flowers white or reddish; calyx-tube tubular, 5 lobes, lobes long-linear, apex acute; petals 5, obovate, apex slightly obtuse; stamens numerous; carpels 2, styles 2, ovules 2 in each cell. Drupes globose, black when mature.

【Content】 The leaf and fruit contain sbrootol. The fruit contains anthocyanin. The bark and leaf contain dyes. The root can expel wind and drain dampness, activate blood and dissipate stasis, constringe to cease bleeding.

【Efficacy】 It is planted for decoration. It can treat wind-dampness ostealgia, traumatic injury and hemiplegia. The branch and leaf can dissipate inflammation, detoxify and cease pain. They can treat ulcerative carbuncles and dysentery.

390. *Rosa chinensis* Jacq. subsp. *indica* Koehne (月季) **Rosaceae**

[English name] Monthly rose

[Distribution] Widely cultivated in Mainland China and Taiwan.

[Morphology] Erect small shrub. Branchlets armed with stout and hooked prickles. Leaves imparipinnate, 3~5- foliolate, alternate, leaflets broadly ovate or ovate-oblong, 2~6 cm long, 1~3 cm broad, apex acuminate, base broadly cuneate or nearly rounded, margin sharply serrate, glabrous on both sides; petioles and rachis sparsely covered with prickles and glandular hairs; stipules adnate to petioles more than half their length, glandular-hairy and serrate along the margin. Flowers about 5 cm across, solitary or several in corymbs; pedicels long, sparsely covered with short glandular hairs; sepals ovate, apex acuminate,

pinnatisect and glandular-hairy along the margin; petals several whorled, red or dark red, slightly fragrant; styles distinct, ovaries pubescent. Fruits ovoid or pear-like, 1.5~2 cm long, with persistent calyx, red when mature. Flowering during April and September; fruiting during June and November.

【Content/Pharmacology】 Terpenoid compounds: mostly geraniol, nerol and citronellol. It also contains gallic acid, querciten, tannin, dyes, etc. The flower has a quite strong anti-fungal effect; it shows inhibitory effects against 17 fungi at a concentration of 3% already. Its antifungal component has already been found to be gallic acid.

【Efficacy】 The flower or the outer layer of the root can activate blood and regulate menstruation, detoxify and disperse swelling. It can treat menstrual irregularity, dysmenorrhea, amenorrhea, traumatic injury, swelling pain due to static blood, carbuncles and scalds.

391. *Rosa rugosa* Thunb. (玫瑰) **Rosaceae**

[English name] Rose

[Distribution] Shangtung, Chiangsu, Chechiang, and Guantung, also cultivated in Taiwan.

[Morphology] Erect shrub. Branch stout, armed with hooked prickles and setose hairs; branchlets densely tomentose. Leaves imparipinnate, 5~9- foliolate, alternate, leaflets thick, elliptic or elliptic-obovate, margin obtusely serrate, glabrous and shined above, pale, pubescent and glandular beneath, veins prominent; petioles and rachis tomentose, sparsely covered with small prickles and setose hairs; stipules adnate to petioles more than half their length. Flowers solitary or 3~6 in corymbs, pedicels pubescent and setose; petals 5 or numerous, purplish-red or white, fragrant; styles distinct, pubescent, stigmas slightly exerted. Fruits compressed globose, red, glabrous, with persistent calyx. Flowering during May and June; fruiting during August and September.

【Content/Pharmacology】 The fruit contains citric acid, malic acid, quinic acid, ascorbic acid, isoquercetin, etc. The seed oil contains a large quantity of unsaturated fatty acids, it also contains β-sitosterol. The seed contains vitamin E. The leaf and stem contain flavonoid components; such as rutin, appgenin, etc. The flower extract has antiviral effects against HIV, leukemia virus and human T－cell leukemia virus. The flower decoction can help mice to clear away the toxic effect from forage containing antimony. The oil has bile secretion promoting effects.

【Efficacy】 The flower can regulate qi and relieve depression, soothe blood and regulate menstruation. It has curative effects for liver qi depression due to fullness and oppression in the chest, distending pain of the diaphragm, swelling of the breasts, menstrual irregularity, dysentery, leucorrhea, traumatic injury and carbuncles.

392. *Rosa taiwanensis* Nakai (小金櫻) **Rosaceae**

[English name] Taiwan rose

[Distribution] Endemic to Taiwan. Occurred at medium altitudes of this island.

[Morphology] Scandant evergreen shrub. Branch armed with sharply hooked prickles; branchlets pubescent. Leaves imparipinnate, 5~7- foliolate, alternate, leaflets chartaceous, ovate or obovate, 2~3 cm long, 1-1.5 cm broad, apex obtuse, base obtuse, margin sharply

serrate, with short stipes; stipules lanceolate or triangular, adnate to petioles. Flowers in compound corymbs, white, 2~3 cm across; sepals lanceolate, villous along margin, tomentose on both surfaces, the hairs curved downward; petals obovate, apex broadly emarginate; carpels white villous on lower part. Hips globose, fleshy, about 7 mm across, red when mature. This species similar to *Rosa laevigata* but with smaller leaves, flowers and fruits; leaves and flowers also glabrous different from the latter. Flowering during October and next May.

【Efficacy】 Ripe fruits soaked in alcoholic solution and the fruit decoction are both nourishing and strengthening medicines. The flower distillate can prevent sudoral eruptions. The fruit and root decoction can treat strangury disease, menstrual irregularity, diabetes, traumatic injury and seminal emission.

393. *Rubus buergeri* Miq. (寒莓) **Rosaceae**

[English name] Buerger's raspberry

[Distribution] Chechiang, Chiangsu, Hupei, Ssuchuang, Fuckien, and Taiwan, occurred on shaded places of slopes.

[Morphology] Evergreen scandant shrub. Stem usually decumbent, about 30 cm high, tomentose, unarmed or with sparse prickles; stolen up to 2 m long. Leaves simple, alternate, nearly rounded, 4~8 cm across, apex rounded or obtuse, base cordate, margin shallowly 5-lobed, serrate, nearly glabrous above, tomentose beneath; petioles tomentose. Racemes short, axillary, flowers 5~10; peduncles gray tomentose; sepals 5, tomentose outside. Aggregate fruits nearly globose, red. Fruiting during October and November.

【Content/Pharmacology】 The whole plant and leaf contain acidic contents and tannins; the decoction is efficacious for coughing.

【Efficacy】 It can nourish yin and replenish essence, it can be used as a strengthening medicine. The root can clear heat and resolve toxin, activate blood and cease pain. It can treat stomach pain and gastroesophageal reflex disease, jaundice hepatitis, vomiting and diarrhea, leucorrhea and hemorrhage. The meshed fresh berry juice can be used to cover watery ulcers. The fresh leaves can treat hemoptysis due to tuberculosis.

394. *Rubus formosensis* Ktze. (台灣懸鉤子) **Rosaceae**

[English name] Formosan raspberry

[Distribution] Distributed in Mainland China and Taiwan, occurred at medium altitudes of this island.

[Morphology] Evergreen scandant shrub. Stem and branches zigzag, unarmed, densely red-brown tomentose. Leaves simple, alternate, thick, 7.5~9.5 cm long, 7~9 cm broad, cordate in outline, apex obtuse, base cordate, margin shallowly 5-lobed, unevenly and sharply serrate, veins palmate, main veins 5; petioles long; stipules lanceolate, entire or serrate. Racemes stout and short, axillary or terminal, flowers sparsely arranged; calyx 5 lobes, lobes ovate and 2-forked; petals broadly ovate, base cuneate. Aggregate fruits globose, liquid, dark-red when mature, with persistent styles. Fruiting during October and November.

【Efficacy】 Inserting the root into cavities or chewing on the root with the infected tooth

can relieve toothaches. The whole plant can end skin itch and hemorrhage.

395. *Rubus parvifolius* Linn. (紅梅消) **Rosaceae**

[English name] Japanese raspberry

[Distribution] Mainland China, Hainan, Ryukyus, Korea, Japan, Australia, and Taiwan.

[Morphology] Herb with woody stem, usually scandant or decumbent, 45~150 cm high. Branchlets armed with hooked prickles, pubescent. Leaves imparipinnate, 3~5- foliolate, alternate, terminal leaflets rhombic-ovate to broadly obovate, lateral leaflets broadly obovate, apex obtuse or mucronate, base broadly cuneate, margin shallowly lobed or unevenly serrate, sparsely pubescent above, densely gray-white pubescent beneath, with short stipes; petioles long; stipules linear-lanceolate. Flowers in lax cymes, terminal or axillary; pedicels 1.8~3 cm long, prickled; calyx 5 lobes, lobes ovate-lanceolate, apex acute, pubescent on both surfaces; petals 5, pale purplish red or pink, obovate; stamens numerous; carpels numerous, styles persistent. Aggregate fruits globose, liquid, red when mature. Flowering during March and May; fruiting during June and August.

【Content】 The root contains flavonoids, sugars and tannins.

【Efficacy】 The root can treat common cold fever, swelling pain of the larynx, wind-dampness bone diseases, edema due to nephritis, urinary tract infection, hemoptysis, hematemesis, gastric diseases and hepatitis, chronic hepatitis, calculi, diarrhea, enteritis, strangury disease, urinary tract inflammation, uterus inflammation, skin itch, menstrual irregularity, leucorrhea, flooding, ulcerative carbuncle and pyogenic infection, and traumatic injuries. The whole plant can treat hematemesis, coughing, dysentery, postpartum blood stasis and abdominal pain, scrofula, skin itch, hemorrhage, traumatic bleeding, swelling and painful eyes, and toothache.

396. *Sanguisorba officinalis* Linn. var. *longifolia* (Bertol.) Yu & Li (台灣地榆)

Rosaceae

[English name]

[Distribution] Mainland China. Taiwan, occurred on the field at low altitudes in the northern part.

[Morphology] Perennial herb, more than 1 m high, glabrous. Leaves alternate, imparipinnate, 15~17- foliolate, chartaceous, radical leaves oblong-ovate in outline, about 13 cm long, terminal leaflets linear, about 3 cm long, apex acute or obtuse, base acute, margin finely serrate, lateral leaflets like terminal ones but smaller, cauline leaves usually 3- foliolate. Spikes cylindrical, erect, with long penducles; flowers small, purplish or white; calyx-tube obconical, 4-winged, with 4 lobes, outer 2 lobes tiny, oblong, inner 2 lobes obovate; petals abscent; stamens 4; carpels 1, included in calyx-tube, styles tiny, stigmas peltate. Achenes tiny, black, with persistent calyx.

【Content】 The rhizome contains tannins and sangnisorbin.

【Efficacy】 The root decoction can clear heat. The root and rhizome can be used as astringent and blood ceasing medicines.

397. *Spiraea cantoniensis* Lour. (麻葉繡球) **Rosaceae**

[English name] Reeves' spiraea, double bridal wreath, double reeves
[Distribution] Mainland China, Japan, also cultivated in Taiwan.
[Morphology] A shrub, 1~1.5 m high, glabrous. Branchlets curvedly arched. Leaves alternate, rhombic-oblong to rhombic-lanceolate, 3~5 cm long, 1.5~2 cm broad, apex obtuse or acute, base acute, lower part of margin entire, upper part of margin incised-serrate, glabrous; petioles 4~8 mm long. Inflorescences cymose corymbs, terminal, flowers numerous and densely arranged, pedicels 8~14 mm long; calyx-tube campanulate, villous on both surfaces, lobes triangular or ovate-triangular; petals 5, white, nearly rounded or obovate; stamens 20~28; carpels 5, ovaries superior, styles slender. Follicles erect, slightly ascending, long ovoid-ellipsoid. Flowering during spring and summer; fruiting during summer and autumn.【Efficacy】 The root and leaf can clear heat, cool blood, dissipate stasis, disperse swelling and ease pain. It has curative effects for common cold headache, swelling pain in the larynx, leucorrhea, scabies, traumatic injuries and furuncles.

398. Abrus precatorius LINN.
【Content/Pharmacology】 The whole plant contains glycyrrhizin, trigonelline and precatorine. The seed contains abrine, abraline, hypaphorine and flavonoid compounds. The seed capsule contains gallic acid and abranin. The alcoholic extract of the root has anti-estrogen effects. The seed's soluble protein components have anti-cancer effects. The sterols have contraceptive effects. The protein components have oxytocin-like effects. The seed capsule's alcoholic extract can inhibit S. aureus, E.coli and Bacilus Dysentery. The toxic proteins from the seed are cytotoxins, which can induce hemaglutinin, hemolysis, destructions of tissues and cells, spotting of the serous membrane, swelling of lymph nodes and spleemagoly. Just half of the seed can cause intoxication in human beings.
【Efficacy】 The root can clear heat and promote urination. The vine and leaf can promote body fluid generation, quench thirst, moisten the lungs, clear heat and promote urination. The seed can open up the nine orifices. It can treat heart and abdominal qi. The whole plant can treat headache due to heat-oppression and wind-phlegm. It can kill all kinds of parasites inside the abdomen, and treat scabies and chronic eczema.

399. Acacia caesia (LINN.) WILLD.
【Content】 The leaf contains abrusoside A, B, C, D, 5,7,4'-trihydroxyflavane glycoside, 7,4'-dihydroxyflavonol diglycoside, tasifolin(e)-3-glucoside, glycyrrhizin, galactose, arabinose, xylose, abruslactone, methyl abrusgenate and abrusgenic acid.
【Efficacy】 The whole plant can clear heat, detoxify and promote urination. It has curative effects for common cold, swelling pain of the larynx, pulmonary fire induced coughing, acute mastitis, ulcerative furuncles and hepatitis.

400. Acacia confuasa MERR.
【Content】 The bark contains tannic acid.
【Efficacy】 The bark can treat traumatic injuries. The tender branches and leaves can activate blood and dissipate stasis. This plant can be used to treat traumatic injuries,

hematemesis due to traumatic injuries and venomous snake bites.

401. Acacia farnesiana WILLD.
【Content】 The bark contains catechutannin.
【Efficcy】 The branch can constringe, cease bleeding and relieve coughing. It can treat seminal emission, leucorrhea, rectocele, wound bleeding and chronic coughing and dyspnea.

402. Aeschynomene indica LINN.
【Efficacy】 The whole plant can clear heat and drain dampness, expel wind to improve vision and free the mammary ducts. It has curative effects for heat straungury, blood strangury, edema, dysentery, furuncle, scabies, swelling and painful eyes, corneal opacity, night blindness, arthritis and oligogalactia.

403. Albizia julibrissin DURAZZ.
【Content】 The bark contains tannins. The leaf contains tannins, proteins and crude fibers. The tender leaf also contains vitamin C. The seed contains albizzin and amino acids.
【Efficacy】 The bark can treat uneasiness, insomnia due to depression, coughing, pulmonary abscess, yellow phlegm, carbuncle, scrofula, infantile common cold, accumulation, hernia, strangury disease, wind-dampness arthritis, falling and fighting injuries. The flowers and flower buds can treat chest oppression due to deficiency, neurasthenia, insomnia, forgetfulness, blurry vision, wind-fire eye disease, swelling pain of the larynx, ulcerative carbuncles and furuncles, and traumatic injury pain.

404. Albizia lebbeck (LINN.) BENTH.
【Content】 The seed contains lebbekanin A, B. The flower contains lebbekanin F, G, H, β-sitosterol, glyoxylate and oxalacetate. The flower and leaf contain three kinds of nonprotein sulfur-containing amino acids. The leaf contains α-oxoglutarate, vicenin II, reynoutrin, rutin, myricitrin and robinin. The pod contains lebbekanin C. The wood contains lebbekanin E. The seed oil contains lamitic acid, oleic acid and linoleic acid.
【Efficacy】 The bark can disperse swelling and ease pain, constringe and cease diarrhea. It can treat traumatic injury swelling and pain, ulcerative furuncle, pyrogenic infection, eye inflammation, ulcerative gingivitis, hemorrhage and diarrhea. The flower and flower bud can treat insomnia and forgetfulness.

405. Alysicarpus vaginales DC.
【Efficacy】 The whole plant can activate blood and free the collateral vessels, connect bone fractures and disperse swelling, clear heat and resolve toxin. It can treat bone fractures, sinew pain, wound bleeding, abstinent ulcers, parotitis and chronic hepatitis.

406. Arachis hypogaea LINN.
【Content/Pharmacology】 The leaf contains 1-pentene-3-ol, 1-hexanol, etc. The seed contains fatty acids, starch, Nitrogen containing substances, vitamins, etc. The cotyledon

and plumular axis contain stigmasterol, campesteral, etc. The seed capsule contains sterols, monoglycerides, diglycerides, triglycerides and free fatty acids. The nutshell contains 1,3-二苯基丙二醇-1,2-酮-3, which has effects on the cardiovascular system. The peanut can reduce the bleeding of haemophilic patients, but is not much effective for serious bleedings. The peanut peel's hemorrhage ceasing effect is 50 times stronger than the peanut kernel. The seed contains plant lectins. The aflatoxin generated from malted peanuts can induce cancer.

【Efficacy】 The branch and leaf can treat insomnia, hypertension, hemorrhage and traumatic injuries. The peanut kernel can treat coughing due to dryness, chronic coughing, infantile pertussis, gastroesophageal reflex disease, stomachache due to cold abdominal mass, beriberi, all kinds of bleeding, chronic bronchitis, TB, frost bite and oligogalactia. The seed can treat infectious hepatitis with jaundice, infectious conjunctivitis, acute bacterial dysentery and intestinal obstruction due to ascarid infection.

407. Archidendron lucidum (BENTH.) I. NIELSEN

【Efficacy】 The seed can expel wind and disperse swelling, cool blood and resolve toxin, constringe and promote tissue generation. It can treat wind-dampness ostealgia, traumatic injuries, scalds and ulcers.

408. Astragalus sinicus LINN.

【Content】 The whole plant contains many kinds of flavonoid contents: glycoside of quercetin, apigenin, isorhamnetin and luteoin. In addition, it contains trigonelline, choline, adenine, fat, histidine, arginine and malonic acid. The pollen contains proteins, lactate dehydrogenase, aspartic transaminase, alanine transaminase, etc. The leaf contains leaf protein concentrate.

【Efficacy】 The whole plant can clear heat and resolve toxin, expel wind to improve vision, and cool blood to cease bleeding. It can treat throat ache, wind-phlegm induced coughing, swelling and painful eyes, rooted furuncle, shingles, hemorrhoid, wound bleeding, menstrual irregularity, leucorrhea and purpura.

409. Bauhinia championii (BENTH.) BENTH.

【*Content/Pharmacology*】 *The root contains falvonoids, which can dilate the isolated coronary vessels and revert inotropy state in the heart muscle of guinea pigs. They can restrain the activities of serotonin and relax isolated uteruses. It has antibacterial, antifungal and antiprotozoan effects. They can inhibit platelet aggregation.*

【*Efficacy*】 *The root can be used to treat qi pain of the stomach, wind-dampness ostealgia, lumbago, traumatic injuries, infantile malnutrition with accumulation, internal and external hemorrhoids. The vine can treat wind-dampness ostealgia, bone fracture,* hundred-pace viper bite and gastric-enteric ulcers. The leaves can be used to fume or wash the eyes to treat corneal opacity. The seed can treat heart qi pain, gastric and hepatic pains, and traumatic injuries.

410. Bauhinia purpurea LINN.

【Efficacy】 The root and the outer layer of the stem can fortify the spleen and cease bleeding. The whole plant can treat mal-digestion, acute gastritis and enteritis, hepatitis, coughing and hemoptysis, arthritis and traumatic injury.

411. Caesalpinia decapetala (ROTH.) ALSTON

【Efficacy】 The root and the outer layer of the stem can detoxify and remove dampness, cease coughing and resolve phlegm, and kill worms. They can treat dysentery, malaria, chronic bronchitis, infantile malnutrition with accumulation, and abdominal parasitic diseases.

412. Caesalpinia pulcherrima (LINN.) SW.

【Efficacy】 The flower and leaf decoction can treat fever and constipation. The leaf and flower decoction can treat fever. The root is meshed to treat infantile convulsion. The bark can cease diarrhea. The leaf together with Quercus acutissima and Delia antiqua can treat gastric dilation. The flower is an insect repellant, and its decoction can cease coughing and treat chronic conjunctivitis. The aqueous extract of the leaf can treat fever, and since it has purgative effects, it can induce abortion. This plant is a strong body strengthening, stimulating and meridian freeing medicine. The root can treat cholera. The leaf is a meridian freeing, stimulating and purgative medicine. The bark is a strong meridian freeing medicine. The flower decoction can cease coughing, clear heat, treat bronchitis, wheezing and dyspnea, and malarial fever.

413. Caesalpinia sappan LINN.

【Content/Pharmacology】 The heartwood contains sappanchalcone, protosappanin A, B, C, 10-O-methylpotosappanin B, calsalpin J, P, β-sitosterol and taraxerol. The (water decocted alcoholic solution? 水煎醇液) can help to restore the blood flow, circulation and arterial diameter of small arteries. It can increase blood flow in the coronary artery, decrease resistance in the coronary artery, decrease the heart rate, decrease the workload of the left ventricle, however the oxygen uptake is increased. It can decrease the blood viscosity, and has cytotoxicities against lymphoma cell lines, human erythroleukemic cell lines and mouse fibroblastic cell lines. It can inhibit the reduction of aldose, and its antiseptic activities are stronger for Staphylococcus aureus, *Streptococcus* haemolyticus, Streptococcus pneumoniae, Corynebacterium diphtheriae, Haemophilus Influenza serotype C; it also has quite strong antiseptic effects on Bordetella pertussis, Salmonella typhi, Salmonella paratyphi A and B, and Klebsiellar pneumonia.

【Efficacy】 The heartwood can activate blood and dissipate stasis, disperse swelling and suppress pain. It can treat blood stasis induced amenorrhea, dysmenorrhea, postpartum stagnation induced heartache and abdominal pain, carbuncle, traumatic injury and tetanus.

414. Cajanus scarabaeoides (LINN.) du PETIT-THOUARS

【Efficacy】 The root can clear heat, promote urination and resolve toxin. It has curative

effects for toothache, throat ache, strangury, and wind-dampness arthritis. Use adequate

amounts when applied externally. The decoction can be used to wash scabies.

415. Canavalia ensiformis DC.

【Content】 The seeds inside the sickle shaped pod contain proteases and special alkaloids.

【Efficacy】 The root can treat head wind and stuffy nose. The leaves are meshed to cover acnes and pimples. The pod is a body strengthening medicine; it can help one to gain strengths after recovering from sickness. The decoction made with the seed and cockroach
feces can treat heat rash. The seed powder taken with water can stop hiccup and treat esophageal and laryngeal diseases. The seed decoction can suppress coughing, resolve phlegm and promote excretion.

416. Canavalia gladiata (JACQ.) DC

【Pharmacology】 The sickle shaped pod contains canavanine. The leaf contains canavanine, enzymes, alkaloid, glycoside, etc. It has anti-cancer effects. It can induce the metamorphose of human lymphocytes; for example when lymphocytes are stimulated, they will transform into lymphoblasts, but no responding cytotoxicities occur; other cytotoxicities induced by YAC can also be inhibited.

【Efficacy】The root can treat wind-head, lumbago and spine pain due to wind-dampness, hernia, chronic dysentery, amenorrhea and traumatic injuries. The seed can treat hiccup due to deficiency and cold, vomiting, distension in the abdomen, obstructive fullness in the chest, kidney vacuity lumbar pain, and shortness of breath due to excessive phlegm. The shell can treat retch, nasusea, obstruction in the throat, chronic dysentery, blood and qi pains, and amenorrhea.

417. Canavalia lablab LINN.

【Efficacy】 The seed is used for vomiting and diarrhea due to food poisoning. It is also used to detoxify alcoholic poisoning, treat vomiting due to drunkenness, detoxify balloonfish poisoning, and treat wasting thirst. As a source of food, it is a mild nourishing supplement, which is easy to digest and can relieve chronic dysentery. The flower is a dysmenorrheal medicine, it is also used to treat red and white dysentery. The rhizome decoction can clear ear heat and treat eye diseases. The powder made from fresh seeds can be applied externally to treat pyogenic infections. The leaf juice can be taken to treat intestinal abscess, vomiting and diarrhea; the topical application made from the leaves, rice noodles and curcuma mash can be used to treat eczema. The solution made from its leaf juice and Sterespermum fimbriatum leaf juice can be dropped into the ear to treat ear pain; the soaked solution can treat strangury. The legume juice with salt added can treat inflammations in the ears and the throat.

418. Canavalia lineate (THUNB. ex MURRAY) DC.

【Content】 The seed contains proteins, enzymes and special kinds of alkaloids, and it has anti-cancer effects.

【Efficacy】 The root, stem and leaf can clear heat and resolve toxin, dissipate stasis and

disperse swelling, dissipate inflammation and ease pain. They have curative effects for hepatic diseases, lumbago due to nephritis, wind-dampness pain. The shell can regulate qi and cease diarrhea. It can treat hiccup and dysentery. The seed can reinforce qi and nourish the body.

419. Canavalia maritime (ANBL.) PIPER.

【Efficacy】 The whole plant can clear heat, induce sweating, detoxify and disperse swelling. The root can drain dampness, disperse swelling, detoxify and ease pain. It can treat hepatitis. The seed is slightly poisonous. It can strengthen the middle energizer to descend adverse flow of qi, invigorate the intestines and stomach, and regulate qi to descend the diaphragm.

420. Cassia fistula LINN.

【Content/Pharmacology】 The fruit contains unsaturated waxes and barbaloin. The seed contains galactose, mannose, fistucacidin, barbaloin and rhein. The bark contains condensed tannins *and 3,4-dihydroxyl flavonoids. The leaf contains tannin-like compounds. The fruit has purgative effects. It can induce intoxication in mice when it is peritoneally injected. It can prolong the hypnotic effect induced by barbital; therefore it also has suppressing effects. The fruit and seed have antiseptic effects.*

【*Efficacy*】 *The seed can treat* 心膈熱風, 心黃, *bone-steaming fever and* cold*, and kill all kinds of* **worm***s. Its indications are* febrile diseases*, phlegm clearance,* **worm** *killing and meridian freeing. The seed can treat infantile malnutrition, resolve phlegm and* unblock the meridian *in* febrile diseases*. The fruit is a mild purgative medicine. The bark and leaf contain a tannic acid which can treat dermatosis.*

421. Cassia siamea LAM.

【*Content*】 *The root and the outer layer of the stem contain cassiamine, siameanin, simeadine, betuline, betulinic acid and lupeol. The heartwood contains chrysordin. The leaf and pod contain* tannins*.*

【*Efficacy*】 *The root can dissipate stasis, drain dampness, clear heat and repel helminth worms. It can treat dizziness, distending fullness in obstructed abdomen, intestinal parasites, wind-dampness arthritis,* sprain *ankles and infantile convulsion. The heartwood has a mild purgative effect. It can treat habitual constipation.*

422. Cassia sophora LINN. var penghuana Y. C. LIU et F. Y. LU.

【*Content*】 *The seed contains ascorbic acid, dehydroascorbic acid, rhein, oleic acid, etc. It can treat swelling and painful eyes, dizziness and distending pain of the head, ulcers in the oral cavity, habitual constipation, infantile malnutrition with accumulation, dysentery and malaria. It has purgative effect when taken in large dosages.*

423. Chamaecrista mimosoides (LINN.) GREEN

【*Content*】 *The whole plant contains crude proteins and fats. The leaf contains* tannins*. The fruit contains aloe-emodin.*

【*Efficacy*】 *The whole plant can clear the liver to improve vision, invigorate the stomach to clear accumulation, and drain dampness to dissipate stasis. It can treat heat-dampness jaundice, vomiting and diarrhea due to summer heat, nephritis, edema, beriberi, coughing due to internal injury, stagnation due to excessive hard work, infantile malnutrition with accumulation, ulcerative carbuncle and rooted furuncle. The seed can promote urination, improve vision, regulate the intestines and invigorate the stomach. It can treat constipation and* venomous *snake bites.*

424. Christia obcordata (POIR.) BAKH. f. ex van MEEUWEN

【*Efficacy*】 *The whole plant can clear heat, promote urination, free strangury, clear accumulation and* resolve toxin. *It can treat hepatits, nephritis, cystitis, urethritis, unsmooth urination, strangury, leucorrhea, conjunctivitis, swelling and painful eyes, mammary inflammation, acute mastitis, hemoptysis, hematemesis, scabies, ulcer, traumatic injury,* sprain *sinews,* venomous *snake bite and uremia.*

425. Clitoria ternatea LINN.

【*Contetn/Pharmacology*】 *The whole plant contains* saponins, *flavonoids and alkaloids. The leaf contains kaempferol-3-glucoside. The flower contains delphinidn 3, 3',5-triglucoside, etc. The seed is poisonous, which has a slight purgative effect, the root has purgative effect as well. The water soaked solution has no antiseptic effects on S.aureus or E.coli* in vitro. *The Korean style decoction has cough suppressing and phlegm resolving effects on mice.*

【*Efficacy*】 *The root has mild purgative and urine promoting effects, which can treat ascites, fever and chronic bronchitis. The leaf decoction can treat rash and ear related diseases. The seed and root both induce vomiting, promote defecation and urination, unblock the meridian and* **repel worms**. *The flower can treat eye inflammation.*

426. Crotalaria albida HEYNE ex ROTH

【*Efficacy*】 *The whole plant can resolve phlegm and purge pulmonary fire, clear heat and remove dampness, resolve toxin and disperse swelling. It can treat shortness of breath due to excessive phlegm, heat-dampness diarrhea and dysentery, jaundice, strangury pain, insomnia due to vexation, acute mastitis, carbuncle and sore toxin.*

427. Crotalaria calycina SCHRANK

【*Efficacy*】 *The whole plant can resolve accumulation and malnutrition, clear heat and* resolve toxin, *relieve strangury and promote urination. It can treat infantile malnutrition with accumulation, nephritis, cystitis, urethritis, coughing and dyspnea with phlegm, carbuncle and rooted furuncle.*

428. Crotalaria pallida Arr.

【*Content/Pharmacology*】*The seed contains alkaloids such as: mucronatine, mucronatinine, usaramine, nilgirine, crotastriatine, integerrimine, etc. It also contains β-sitosterol, luteolin and plant* agglutinin. *It has an obvious blood pressure lowering effect,*

and can also relax muscles and resolve spasms. The seed and leaf contain large quantities of alkaloids, which can be absorbed through the skin, and they are mainly toxic to the liver; resulting in the reduction of serum total protein and delay of coagulation. The leaves picked during its blooming season can induce intoxication in the goat, however dried leaves are no longer poisonous.

【*Efficacy*】 *The whole plant can clear heat and drain dampness, detoxify and disperse nodule. It can treat dysentery, heat-dampness diarrhea, strangury, infantile malnutrition with accumulation, and mammary inflammations.*

429. Crotalaria verrucosa LINN.

【*Content/Pharmacology*】 *The whole plant contains amino acids: mainly of aspartic acid, glutamic acid, alanine, threonine, serine and glycine. The alkaloids have obvious anti-cancer effects, which show obvious cytotoxicities against human liver cancer cell line. Intravenous injection can lower the blood pressure of dogs and mildly restrain respiration, the higher the dosage, the stronger the blood pressure lowering effect. Its alkaloid can also induce instantaneous and persistent contraction of isolated dog bronchioles, activation of rat uteruses; furthermore it has antiviral effects. When it is applied onto skin cancers, it can be absorbed and degenerated.*

【*Efficacy*】 *The whole plant can clear heat, drain dampness, detoxify and clear accumulation. It can treat dysentery, heat strangury, coughing, wind-dampness obstructive pain, rooted furuncle,* venomous *snake bites, infantile malnutrition with accumulation and malignant tumors.*

430. Dalbergia sisoo DC.

【*Content/Pharmacology*】 *The root and heartwood contain 3'-methoxydaidzeinisoliq uiritigenin, fomononetin and bowdichione. It is a blood activating and phlegm resolving traditional Chinese medicinal herb; it has been proven experimentally that its high molecular dextrose can reduce blood viscosity. Its blood lipid lowering mechanism is related to HMG-COA reductase. It can also inhibit platelet aggregation. Dalbergia sisoo can induce an obvious blood pressure lowering effect by inhibiting the* angiotensin *receptors. Perfusion of the alcoholic extract will prolong the sleeping time of rats, inhibit the electro-convulsion frequency and suppress pain in mice.*

【*Efficacy*】 *The* wood *can activate blood and dissipate stasis, cease bleeding and suppress pain, descend qi and* repel foulness*. It can treat pain in the diaphragm, traumatic injury, wound bleeding, hernia pain, vomiting and abdominal pain due to foulness obstruction.*

431. Delonix regia (BOJ.) RAFINISQUE

【*Content/Pharmacology*】*The bark contains lupeal. The leaf contains 1-azetidine-2-carboxylic acid. The flower contains hentriacontane, hentriacontanol, etc. The petal contains 29 kinds of carotenes, mainly of phytoene, phytofluene, etc. The fatty acids contained in the seed are: palmitic acid, stearic acid, oleic acid and* linoleic acid*. It also contains carbohydrates, amino acids, etc. The aqueous extract of the bark has inhibitory*

effects on the central nervous system. The aqueous extract of the flower has antiseptic effects on S. aureus, Staphylococcus albus*, E. coli and Pseudomonas aeruginosa.*
【*Efficacy*】 *The root can treat wind-dampness diseases. The bark can clear heat, activate blood and lower blood pressure; it is used for the treatments of hypertension and dizziness.*

432. *Derris trifolliata* LOUR.
【Efficacy】 The vine contains rhametin-3-O-β-neohesperidoside, 4s,5s-dihydroxypiperidine and 2,5-dihydroxymethyl-3,4-dihydroxypymolidine. The root contains tubaic acid, β-tabaic acid, elliptinol, degulin, tephrosin, maackiain and rotrone. The root can poison fish and insects to death; it is poisonous and should be used carefully.
【Efficacy】 The root can dissipate stasis and ease pain, kill worms and ease itchiness. It has curative effects for traumatic swelling and pain, arthralgia, scabies and eczema.

433. *Desmodium caudatum* (THUNB. ex MURRAY) DC.
【Content】 The whole plant contains alkaloids. The leaf contains swertisin, caoavanine, phenols and sugars.
【Efficacy】 The whole plant can clear heat, drain dampness, clear accumulation and kill worms. It can treat hematemesis, leucorrhea, edema, abdominal pain, ulcers, infantile malnutrition with accumulation and traumatic injury. *The Taiwanese* Minnan people use this plant to expel evils, calm and soothe the heart.

434. Desmodium renifolim (LINN.) SCHINDLER
【Efficacy】 The whole plant can clear heat, promote urination, soothe blood and resolve toxin. It can treat common cold fever, hepatitis, nephritis, uremia, urethritis, unsmooth urination and strangury.
435. Desmodium sequax WALL.
【Efficacy】 The whole plant can clear heat and purge fire, activate blood to dissipate stasis, and constringe wounds. It can treat red eyes due to wind heat, retention of placenta, amenorrhea due to blood stasis, and scalds.

436. Desmodium triflorum (LINN.) DC.
【Efficacy】 The whole plant can expel wind, clear heat and resolve toxin. It can treat swelling and painful eyes, jaundice, strangury, dysentery, itchiness due to scabies, furuncles, and menstrual period discomforts. It can be used to treat wounds when applied externally.

437. Dumasia villosa DC. ssp. bicolor (HAYATA) OHASHI & TATEISHI
【Efficacy】 The leaves are meshed to treat beriberi and corns.

438. Entada Phaseoloids (LINN.) MERR.
【Efficacy】 The kernel can clear many kinds of medicinal toxicities. The legume and stem can be used to wash turbidity. The seed can be played as a toy. The bark, seed and legume can be used for medicine.

439. Erythrina corallodendron LINN.

【Content/Pharmacology】 The bark contains alkaloids, which contains erythrocoralloidin. The flower contains choline, hypaphorine, tryptamine and alkaloids; it has inhibitory effects for the central nervous system. The seed has curare-like effects.

【*Efficacy*】 *The bark has anaesthetizing and calming effect, which can treat insomnia, infantile malnutrition with accumulation, lumbago, leg pain and small post-operational pain.*

440. Erythrina variegate LINN.

【*Content*】 *The bark contains erythraline, amino acids and organic acids. The seed contains saturated and unsaturated organic acids, and hypaphorine. The leaf contains alkaloids such as dl-scoulerine, etc. The aqueous effusion of the bark has varying inhibitory effects on* Tricophyton violaceum*,* Achorion Schonleinii*,* Microsporum *ferrugineum and* Inguinal trichophyton*.*

441. Euchresta formosana (HAYATA) OHWI

【*Content/Pharamcology*】 *The root contains alkaloids: matrine, oxymatrine, anagyrine, methyl cytosine, cytosine, sophocarpine, sophoramine, sophoranone, etc, also* total polysaccharides; it can boost up the immune system and promote the functions of antibodies. It is especially stimulating to the central nervous system.

【Efficacy】 The root can dissipate inflammation, kill bacteria, disperse swelling and ease pain. The branch and leaf can treat throat ache. The seed is a stimulant. Fragile, deficient or stomach-cold patients are prohibited from taking this TCM.

442. Flemingia macrophylla (WILLD.) KTZE. ex. PRAIN

【Content】 The root, stem and leaf can expel wind-dampness, benefit the spleen and kidneys, strengthen sinews and bones. It can treat wind-dampness ostealgia, strain of lumbar muscle, weak limbs, hemiplegia, impotence, menstrual irregularity, leucorrhea, abdominal distention, poor appetite and swelling feet due to qi deficiency.

【Efficacy】 The root, stem or leaf can expel wind-dampness, benefit the spleen and kidneys, strengthen sinews and bones. It can be used to treat wind-dampness ostealgia, overexertion of lumbar muscles, paralysis of limbs, hemiplegia, impotence, menstrual irregularity, leucorrhea, abdominal fullness, poor appetite and foot swelling due to qi deficiency.

443. Flemingia prostrate ROXB.

【Content】 The root contains many kinds of flavonoids; confirmed components include: flemiphilippinin C, D. In addition, there are also flemichin D, lupeol and β-sitosterol.

【Efficacy】 The whole plant can expel wind and remove dampness, strengthen sinews and bones, activate blood and resolve toxin. It can treat wind-dampness obstructive pain, strain of lumbar muscles, weakness in the four limbs, traumatic injuries and throat swelling pain.

444. Glycine tabacina (LABILL.) BENTH.

【Efficacy】 The root or stem can remove wind-dampness, strengthen sinews and bones, benefit the spleen and kidneys. It can treat wind-dampness ostealgia, swelling feet due to qi deficiency, weakness in the lumbar and knees.

445. Glycine tomentella HAYATA

【 Efficacy 】 The people in Kinmen county claim it has similar efficacies as Flemingia macrophylla.

446. Indigofera hirsute LINN.

【Content】 The leaf contains kaempfeml-3,5-β-D-digalactoside, sitosterol, glucoside; in addition it also contains alkaloids, flavonoids, coumarin, etc. The seed contains many kinds of amino acids, including methonine and tryptophan. Albumin and globulin are also isolated from the seed.

【Efficacy】 The whole plant can detoxify and disperse swelling, kill worms and ease itchiness. It can treat furuncles, venomous snake bites, skin itch and scabies.

447. Indigofera tinctoria L.

【 Content 】 The whole plant contains indicant, deguelin, dehydrodeguelin, rotenol, rotenone, tephrosin, sumatrol and histamine. The leafage contains holoside and galactomannan. The stem, leaf and fruit contain apigenin, kaempferol, lutmlin and guercetin.

【 Efficacy 】 The whole plant can clear heat and resolve toxin, cool blood and cease bleeding. It can treat encephalitis B, parotitis, acute pharyngitis, lymphnoditis, red eyes, oral cavity ulcers, carbuncle and furuncles, erysipelas, scabies, insect and snake bites, and hematemesis.

448. *Kummerowia striata* (THUNB. ex MURRAY) SCHINDL.

【Pharmacology】 The whole plant contains flavonoids, etc. The alcoholic extract has a slight antiseptic effect against *Shigella flexneri*.

【Efficacy】 The whole plant can treat common cold fever, coughing induced chest pain, heat-dampness jaundice, infectious heptatitis, vomiting and diarrhea due to summer dampness, lumbago and abdominal pain, infantile malnutrition with accumulation, *exanthem, malaria, urinary tract infection, heat strangury, white turbid, uterine prolapse,* rectocele and pyogenic infection.

449. *Lespedeza cuneata* (DUM. d. COURS.) G. DON

【Content/Pharmacology】 The whole plant contains pinitol, β- sitosterol, flavonoids, phenols and tannins. It can cease coughing, resolve phlegm, soothe coughing; it has selective activating effects, antiseptic effects, etc.

【Efficacy】 The whole plant can treat seminal emission, enuresis, white turbid, leucorrhea, wheezing and dyspnea, stomach pain, strain, infantile malnutrition with accumulation, traumatic injury, poor vision, red eyes and mastitis.

450. *Leucaena leucocephala* (LAM.) de WIT

【Content/Pharmacology】 The whole plant contains ferrodxin. The stem contains D-ononitol. The bark contains tannins. The leaf contains amino acids, mimosine, leucenine, leucenol, etc. The flower contains quercetagetin and patuletin. The seed contains fatty oil, carbohydrates, sterols and dyes. The sprout contains o-acetyl-l-serinelyase. The seed can retard growth; it can lower the blood sugar and cholesterol of mice. The mimosine component of the seed is a poisonous substance.

【Efficacy】 The root and outer layer of the root can treat insomnia due to vexation, pulmonary abscess, carbuncle, traumatic injury and bone fracture. The seed can treat diabetes.

451. *Medicago lupulina* LINN.

【Content】 The whole plant contains estrogen-like substances. The pod contains oil, scleroprotein, soluable carbohydrates and fibers. The seed contains saponins and galactoglucomanna.

【Effecacy】 The whole plant can treat jaundice hepatitis, sciatica, bloody stool and hemorrhoid bleeding. Applied externally, can treat ulcerative carbuncle, pyogenic infection, venomous snake bites, centipede bite and wasp sting.

452. Medicago polymorpha LINN.

【Content】 The whole plant contains amino acids; such as leucine, serine, phenylalanine and vitamins. The seed contains carotene.

【Efficacy】 The whole plant can treat accumulative heat in the spleen and stomach, hepatic diseases and jaundice, vexation in heat syndrome, sand strangury, stone strangury, vesical calculi, edema, hemorrhoid bleeding. It can end jaundice, alcoholic jaundice, night blindness, restlessness in febrile diseases, yellow and red eyes, yellow urine, sand and stone strangury induced pain, and vesical calculi.

453. Melilotus officinalis (LINN.) PAIL.

【Efficacy】 The leaves collected at the flower blooming period can be made into congee like pads, pillows or pastes. It is also the raw material to make coumar, which is a deodorizing medicine. The whole plant contains molasses, which was used for medicinal purposes in ancient time. It has hemorrhage ceasing and wound healing efficacies.

454. Melilotus suaveolens LEDEB.

【Content/Pharmacology】 The whole plant contains evaporation oil and coumarin. It also contains fatty oil, pectin and lignin. It has anti-malarial, antiseptic and hemolytic effects.

【Efficacy】The whole plant can treat heat-dampness chest obstruction, headache, distending-like headache, bad breath, malaria, strangury disease and skin ulcers. The root can treat lymphatic tuberculosis.

455. Millettia reticulata BENTH.

【Content/Pharmacology】 The root and stem can treat qi and blood deficiencies, anemia,

menstrual irregularities, amenorrhea, white and red leucorrhea, seminal emission, white turbid, night sweat due to deficiency, hand and feet numbness and paralysis, lumbago and knee pain, arthralgia, wind-dampness ostealgia, traumatic injury, schizophrenia and cold stomach pain. It is poisonous, therefore the dosage must be cautioned.

【Efficacy】 The root and stem can be used to treat qi and blood deficiencies, anemia, menstrual irregularity, amenorrhea, red and white leucorrhea, seminal emission and white turibid, night sweat due to body deficiency, numbness and paralysis of hands and feet, sore pain of the waist and knees, arthritis, wind-dampness ostealgia, traumatic injury, schizophrenia and cold pain of the stomach. It has toxicity and its dosage must be cautioned.

456. Mimosa pudica LINN.

【Content/Pharmacology】 The whole plant contains mimosine, flavonoids, phenols, amino acids and organic acids. The root contains alkaloids and lactones. The leaf contains myosin-like contraction proteins. The seed contains oils, stearic acid and sterols. The root can cease coughing, expel phlegm, inhibit bacteria and relax the smooth muscle.

【Efficacy】 The whole plant can treat enteritis, gastritis, infantile malnutrition with accumulation, swelling and painful eyes, insomnia, deep abscess and shingles. It can end gastritis, infantile mal-digestion, bronchitis and wind-dampness pain.

457. Phaseolus mungo LINN.

【Content/Pharamcology】 The seed contains carotene, riboflavine: the main protein component is blobulin, which is composed of many amino acids such as methionine, tryptophan and tyrosine. The sugars are mostly fructose, glucose and maltose. The phosphatides are phosphatidylcholine, phosphatidylethanolamine, phosphatidylinmitol, phosphatidyiglycerol, phosphatidylserine and phosphatidic acid. Powders made from the seed or the sprouted seed can lower lipids and prevent atherosclerosis. As a forage, it can prevent high lipid levels in animals. It can lower the total cholesterol level. Its lipid lowering mechanism is related to its polysaccharides and globulins which can inhibit the absorption of cholesterol into the intestine; it can also promote cholesterol degredation in the liver and secret bile salt.

【Efficacy】 The seed is a detoxifying medicine, which can promote urination and clear heat. Chewing and sucking out juice from the fresh seeds can treat erysipelas and heat exanthem. The seed capsule can clear heat toxin, drain dampness, clear corneal opacity, and resolve polydipsia. The flower can clear alcoholic poisoning.

458. Phaseolus vulgaris LINN.

【Content】 Extracting the plant with hot water will obtain flavanol tannins. The seed contains procyanidin B_1 and B_3. It also contains 3-furanmethanol-D-glucopyranoside, catechin-7-O-D-glucopyranmid, etc.

【Efficacy】 The fruit and seed can drain dampness, disperse swelling, clear heat, detoxify and resolve carbuncle. It can treat edema, beriberi, jaundice, strangury disease, bloody stool, pyogenic infection and ulcers, and tinea.

459. Phyllodium pulchellum (LINN.) DESV.

【Content】 The whole plant contains many kinds of tryptamines and gramine such as: bufotenine, N,N-dimethyltryptamine, etc. The seed contains Physcion-1-gluco-rhamnoside, galactose and galactomannan.

【Efficacy】 The whole plant can treat common cold, wind-dampness obstructive pain, physconia, laryngeal spasm, toothache and traumatic injury. It can end spleemagaly and hepatomegaly, arthritis, menstrual irregularity, amenorrhea, uterine prolapse, carbuncle and rooted furuncle, and traumatic injury.

460. Pisum sativum LINN.

【Content/Pharmacology】 The seed contains proteins, fats, carbohydrates, vitamins A, B_2 and C, etc. It also contains lecithin, cholesterin, betaine, trigonelline, choline, adenine, lysine, erepsin, leucine, arginine, tryptophan, phytagglutinin, abscisic acid, etc.

【Efficacy】 The seed can soothe the internal and direct qi downward, regulate the spleen and stomach, promote urination, free the mammary duct, disperse swelling and detoxify sore toxin. It can treat cholera, vomiting and dysentery, spasm, beriberi, carbuncle and acnes.

461. Pongamia pinnata (LINN.) PIERRE

【Content/Pharmacology】 The root contains furoflovone. The bark contains tannins. The flower contains kaempferol and waxes. The seed contains raranjin, fatty oil, oleic acid, linoleic acid, arachidonic acid, stearic acid, etc. The seed and root of the plant is more toxic, which can induce vomiting and intoxicate fish. Raranjin has a slight inhibitory effect on Mycobacterium tuberculosis.

【Efficacy】 The root decoction can be used to wash odorous ulcers and heal fistulas. The bark can treat hemorrhoid bleeding, abortion and beriberi. The leaves can be used to treat ulcers. When the decoction is used for bathing, it can treat wind-dampness pain. The flower can treat diabetes. The seed can treat dermatosis, scabies, psoriasis, ringworm, pityriasis and eczema. Oral administration of the decoction can treat pertusis and bronchitis.

462. Psoraea corylifolia LINN.

【Efficacy】 The seed is purgent, warmth invigorating and poisonless. It can tonify the life gate, fuel kidney qi, and can be used as a body strengthening medicine. It can treat wind deficiency cold, spermatorrhea due to cold kidneys, and (blood qi abortion? 血氣墮胎).

463. Pueraria lobata (WILLD.) OHWI

【Content】 The root is rish in arachidic, β-sitosterol, daidyiu, daidzein and puretariu. The powder can clear heat and lower the blood sugar level; it is a sweat promoting medicine.

【Efficacy】 The earthnut can be processed to substitute the root. It can clear heat and expel worms. It can treat febrile diseases and thirst.

464. *Pueraria Montana* (LOUR.) MERR.

【Content/Pharmacology】 The root contains *Pueraria Montana* starch, daizin, etc. The

powder can clear heat and lower blood sugar.
【Efficacy】 The earthnut can clear heat, outthrust rashes, promote body fluid generation and cease coughing. It can treat unerupted measles, coughing due to pulmonary fire, thirst and ulcers in the oral cavity.

465. *Rhynchosia minima* (LINN.) DC.
【Content】The leaf contains atyloside, vitesin, pinitol, hentriacontane, β-sitosteryl glucoside, hexacosanyl palmitate, hexacosanyl stearate, hexacosanyl arachidate, etc.
【Efficacy】 The whole plant can dispel wind to release the exterior, resolve dampness and cease bleeding. It can treat common cold, throat swelling pain, toothache, diarrhea due to summer dampness, edema, lumbago and wound bleeding.

466. *Rhynchosia volubilis* LOUR.
【Efficacy】 The whole plant cools blood and resolves toxin. It can treat headache, lumbago and abdominal pain, postpartum heat, scrofula, carbuncle, dysmenorrheal and venomous snake bites. It can bring infantile malnutrition with accumulation to an end.

467. *Senna occidentalis* (LINN.) LINK
【Content/Pharmacology】 The leaf contains dianthronic heteroside. The root contains 1,8-dihydroxyanthraquinone, emodin, quercetin, etc. The seed contains homodianthrone and rhein. The seed oil contains linolenic acid, oleic acid, palmetic acid, etc. The fruit peel contains homodianthrone and rhein. The evaporation oil inside the root, leaf and seed has antiseptic effects against many bacteria. The aqueous and alcoholic extracts from the stem and leaf have activating effects on animal uteruses. The seed has purgative effects.
【Efficacy】 The stem and leaf can treat coughing, wheezing and dyspnea, abdominal obstructive pain, blood strangury, constipation, headache, red eyes, rooted furuncle and pyogenic infection, and snake and insect bites. The seed can treat swelling and painful eyes, distending-like headache, maldigestion, stomach pain, abdominal pain, dysentery and constipation.

468. *Senna surattensis* BURM. f.
【Efficacy】 The seed and flower can clear heat and promote excretion. Its indications are constipation due to intestinal dryness, and hemorrhoid bleeding.

469. *Senna tora* (LINN.) ROXB.
【Content/Pharmacology】 The whole plant has suppressing effect on many immune cells; however it enhances the phagocytosis of macrophages. The hot water extract has mild liver protecting and detoxifying effects on carbon tetrachloride intoxicated mice. When *Senna tora* is degreased with petroleum ether, extracted with chloroform, then extracted again with methyl alcohol, the final product shows obvious liver protecting effect. *Senna tora* has a mild purgative effect. Oral administration of the paste to an empty stomach can induce gastric juice secretion.
【Efficacy】 The seed can clear up the liver and improve vision, drain water and promote

excretion. It can treat swelling and painful eyes, tearing and photophobia, glaucoma, night blindness headache and dizziness, dull vision, ascites due to hepatocirrhosis, unsmooth urination, habitual constipation, pyogenic infection and tinea.

470. *Sesbania cannabiana* (RETZ.) POIR

【Content】 The whole plant contains pentosan and fats. The seed contains *Sebania cannabiana* gelatin, and its main content is d-galactose and d-mannose.

【Efficacy】 The whole plant can promote urination and clear heat, cool blood and resolve toxin, dissipate inflammation and ease pain. The root can treat diabetes, resolve accumulation, and relieve red and white leucorrhea in female. The leaf can treat fever, urethritis, hematuria, sprain joints, arthralgia and venomous snake bites. The seed is an inflammation dissipating medicine, which can be used to treat pleurisy.

471. Sesbania grandiflora (LINN.) PERS.

【Efficacy】 The whole plant can clear heat and resolve toxin, drain dampness and constringe wounds. It can treat ulcerative carbuncles and pyogenic infections, eczema and chronic ulcers.

472. Sophora flavescens AITON

【Content/Pharmacology】 The root contains alkaloids, etc. It also contains xanthohumol. The decoction and Sophora flavescens alkaloids have urine promoting and salt discharging effects. High concentration decoctions have inhibitory effects against TB and dermatophytes. The alcohol extract paste has antitrichomonal effect.

【Efficacy】 The root can treat bloody dysentery due to heat toxin, bloody diarrhea, infantile pneumonia, red and white leucorrhea, jaundice, hemorrhoid, rectocele, dark and itching skin, scabies and malignant ulcers, wet and itching genital ulcers, scrofula and scalds. The root is used clinically to treat bacterial dysentery, acute gastro-intestinal enteritis, acute infectious hepatitis, infantile pneumonia, acute tonsillitis, chronic bronchitis, etc.

473. Sophora tomentosa LINN.

【Content】 The root and seed contain cytosine.

【Efficacy】 The root or the whole plant can clear heat and drain dampness, resolve phlegm, disperse swelling and ease pain, invigorate the stomach, mildly promote excretion and kill bacteria to cease dysentery. It can treat esophageal and laryngeal swelling pain. The root can treat cholera, diarrhea, abdominal pain and biliary gasing.

474. Tadehagi triquetrum (LINN.) OHASHI.

【Content】 The leaf contains SiO_2, K_2O and tannins.

【Efficacy】 The root can treat wind-heat coughing, pulmonary diseases, jaundice, tonsillitis, stomach and spleen deficiencies, mal-digestion, stomach pain, wind-dampness arthralgia, paralyzed hands and feet, carbuncle, bone tuberculosis, scrofula, venomous snake bites and leprosy in females. The branch and leaf can treat common cold fever,

esophageal and laryngeal pain, dysentery due to enteritis, pregnancy vomiting, five kinds of malnutrition in infants, wind-dampness arthralgia and hook worm diseases.

475. Uraria macrostachya WALL.

【Content】 The leaf contains vitexin, vitexin-7-O-glucoside, orientin-7-O-glucoside, saponaretin-4'-O-glucoside, etc.

【Efficacy】 The whole plant can treat infantile malnutrition with accumulation, infantile growth retardation, infantile dysfunction of spleen syndrome, spleen and stomach deficiencies, gastric diseases, gastro-duodenal ulcers, pulmonary abscess, coughing, hematemesis, hemoptysis, hematuria, uterine prolapse and pyogenic infection. The root can treat infantile deficiencies in the spleen and stomach, poor apetite, growth retardation due to parasitic diseases, heart and abdominal qi pain, seminal emission due to kidney deficiency, coughing due to excess phlegm and infantile convulsion.

476. Vicia feba LINN.

【Content】 The seed contains lecithin, phosphatidyl, ethanolamine, inositol, galactosyl, diglyceride and phmphatide. It also contains choline, pipecolic acid, putrescine, spermidine, spermine, norspermine, ascorbic acid, vicine and convicine. The root contains fumaric acid, betulin, D-glyceric acid and poly-β-hydroxlybutyric acid.

【Efficacy】 The seed can fortify the spleen and drain dampness, detoxify and disperse swelling. It can treat food accumulation, edema and sore toxin.

477. Vicia hirsute (LINN.) S. F. GRAY

【Content】 The leaf contains apiin and quercetin. The seed contains thermospermine, aminopropyl, homospermidine, putrescine, spermidine and spermine.

【Efficacy】 The whole plant can clear heat and drain dampness, regulate menstruation and cease bleeding. It can treat jaundice, malaria, menstrual irregularity and leucorrhea.

478. Vicia sativa Linn.

【Content】 The fruit contains isoquercitrin, rutin, antoside, bioquercetin, cosmosiin, cholesterol, stigmasterol, β-sitosterol, stigmasterol, xanthotoxin, bergapten, umbelliferone, esculetin, scopoletin, carotene, lutein, zeaxanthin, violaxanthin and neoxanthin. Amino acids: lysine, tryptophane, glutamic acid, glutamine, arginine, alanine, aspartic acid, asparagine, proline. Elements: Ni, Cu, Ba, Pl, Mn, Al, Fe, Ca, Ke, Mg. It also contains lecithin, phosphatidyl, etc. The proteins include legumin, vicilin and albumin.

【Efficacy】 The whole plant can nourish the kidneys, drain water, cease bleeding and stop coughing. It can treat kidney vacuity lumbar pain, seminal emission, jaundice, edema, malaria, palpitation, coughing with excess phlegm, menstrual irregularity, ulcers and pyogenic infection.

479. Wisteria floribunda (WILLD.) DC

【Efficacy】 The root and stem have astringent, detoxifying and inflammation dissipating effects. The vine nodules have anti-cancer effects. The seed is a mild purgative medicine.

480. Zornia cantoniensis MOHLENB.
【Content】 The whole plant contains coumarin.
【Efficacy】 The whole plant and root can clear heat and release the exterior, cool blood and resolve toxin, remove dampness and promote urination. It can treat wind-heat common cold, esophageal pain, red eyes, acute mastitis, ulcers and pyogenic infection, venomous snake bites, jaundice, dysentery and infantile malnutrition with accumulation.

481. *Distylium racemosum* Sieb. & Zucc. (蚊母樹) Hamamelidaceae
[English name] Flowers acemes distylium
[Distribution] Hainan, Kuantung, Fuckien, Chechiang, Chiangsu, Japan, and Taiwan.
[Morphology] Evergreen shrub to small tree. Branchlets and leaves stellate lepidote. Leaves alternate, thickly coriaceous, oblong-elliptic, elliptic or obovate, 3~7 cm long, 1.5~3 cm broad, apex obtuse or acute, base broadly acute or decurrent, margin entire; petioles 7~10 mm long. Inflorescences racemose, 1.5~2 cm long, bisexual flowers borne on upper part, male flowers borne on lower part; bracts lanceolate; calyx-tube shortly tubular, stellate lepidote, with unequal lobes, lobes deciduous after flowering; petals abscent; stamens 5~6, filaments about 2 mm long; ovaries superior, 2-celled, stellate, styles 2, gynoecium abscent in male flower. Capsules ovoid, about 1 cm long, densely stellate or pubescent, septicidal and loculicidal when mature. Flowering during January and February; fruiting during March and May.
【Content/Pharmacology】 The bark contains tannins. The wood contains distylin, and it has antiseptic and anticancer effects.
【Efficacy】 The root can drain dampness and resolve stasis, detoxify and disperse swellings and inhibit cancers.

482. *Liquidambar formosana* Hance (楓香) Hamamelidaceae
[English name] Sweet gum
[Distribution] Southern China, Hainan, and Taiwan.
[Morphology] Deciduous monoecious tree. Bark smooth and gray-brown when young, rough, cracked, and dark-brown when old. Leaves alternate, or fasciculate on tip of branches, palmately 3-lobed, sometimes 5-lobed in young leaves, chartaceous, glabrous, apex acute or caudate, base rounded or cordate, margin finely serrate, turned red in autumn; petioles 8~10 cm long. Inflorescences and leaves appeared at the same time; bracts deciduous; perianth abscent. Male flowers numerous in racems, fasciculate, stamens numerous, mixed with small scales, filaments glabrous, anthers 2-celled. Female flowers in slender, pubescent, peduncled, solitary, globose heads, ovaries 2-celled, with 4~5 spined scales at base, ovules numerous. Fruiting heads globose, formed by many capsules, spiny from the persistent styles, dehiscent apically when mature, including 1~2, winged, ovoid complete seeds and numerous irregularly ridged incomplete seeds. Flowering and fruiting during March and September.
【Content/Pharmacology】 The main components of the leaf are α- pinene and camphene. The resin contains cinnamic acid, ester, etc. The solution of Liquidambar formosana made with 60% alcohol can prevent onchosphere invasions into the mouse skin. The alcoholic

extract can be used to make hemorrhage-ceasing powder; it has hemorrhage ceasing effects for femoral artery bleeding in dogs, traumatized liver and spleen, amputation wound bleeding, etc.

【Efficacy】 The root can treat carbuncle, rooted furuncle, and wind-dampness arthralgia. The bark can treat diarrhea, dysentery, and violent pathogenic wind leprous sores. The leaf can treat acute gastritis and enteritis, dysentery, postpartum discomforts, tetanus neonatorium and back carbuncles. The fruit can treat paralysis, amenorrhea, carbuncle, hemorrhage fistula, eczema and scabies. The balata can treat carbuncles, scabies, incised wound, scrofula, unicada*, hematemesis and bleeding nose.*

483. *Loropetalum chinensis* (R. Br.) Liver. (檵木) Hamamelidaceae

[English name]

[Distribution] Central, Southern, and Southwestern China, scarcely cultivated in Taiwan.

[Morphology] Evergreen shrub or small tree, 1~4 m high. Bark dark gray; branchlets, leaves, inflorescences, abaxial side of calyx and capsules yellowish stellate. Leaves alternate, coriaceous, ovate or ovate-elliptic, 1.5~6 cm long, 0.8~2 cm broad, apex mucronate, base obtuse, oblique, margin entire; petioles 2~3 mm long; stipules deciduous. Flowers 6~8 fasciculate, nearly sessile; sepals 4, short; petals 4, linear, pale cream; stamens 4, filaments very short, anthers valvate and incurved, connective exerted and spined; ovary half-inferior, 2-celled, styles 2, very short. Capsules globose, woody, about 1 cm long, brown, dehiscent apically. Seeds 2, long ovate, 4~5 mm long. Flowering during April and May; fruiting in October.

【*Content/Pharmacology*】 *The flower contains quercetin and isoquercitrin. When the flower is meshed into powder, it shows hemorrhage ceasing effect on the incised femoral arteries of dogs.*

【Efficacy】 The flower can clear heat and cease coughing, constringe and cease bleeding. It can treat coughing due to pulmonary fire, hemoptysis, bloody stool, dysentery and flooding.

484. *Platanus orientalis* LINN.

【Content】 The bark contains palmitic acid, plant sterols and tannins. The leaf contains allantoin, linolenic acid, bromine, manganese oxide, and titanium oxide. The sprout and flower contain allantoin, guanine and asparagine.

【Efficacy】 The bark has astringent and purgative effects. It can treat diarrhea, dysentery, hernia and toothache. Meshed fresh leaves can be used to treat eye inflammation.

485. *Actinidida callosa* Lindl. (硬齒獼猴桃) Actinidiaceae

[English name] Formosan Actinidia

[Distribution] Endemic to Taiwan. Occurred in the northern and central parts of the island.

[Morphology] Scandant shrub. Branchlets tomentose, with prominent, yellow and extended lenticels; pith lamellate. Leaves alternate, chartaceous, oblong, lanceolate-oblong to ovate, 6~14 cm long, 3~6 cm broad, apex shortly acute, base obtuse or nearly rounded, margin finely serrate, the teeth acute, lateral veins about 6 pairs, veinlets prominent, glabrous

on both surfaces except vein axils with tuft hairs; petioles 3~5 cm long. Cymes axillary, pubescent, staminate flowers 10~15; bracts linear; sepals 5; petals 5; stamens numerous; rudimentary ovary densely tomentose. Berry obovoid or ellipsoid, 2~3 cm long, covered with lepidote scales and yellow-brown hairs.

【Efficacy】 The fruit is edible. It can quench thirst, invigorate the stomach, promote internal secretion and help with digestion.

486. *Actinidia chinensis* Planch. (獼猴桃) Actinidiaceae

[English name] Chinese Actinidia

[Distribution] Shenhsi, Chiangsu, Anhui, Chechiang, Chianghsi, Fuchien, Ssuchuang, Kueichou, Yunnan, and Taiwan.

[Morphology] Woody monoecious liana. Branchlets and petioles densely gray-brown pubescent. Leaves alternate, chartaceous, orbicular, ovate or obovate, base broadly cuneate to cordate, margin dentate and setose-like, dark green above, densely gray-brown stellate tomentose beneath; petioles about 6 cm long. Flowers 1~several axillary, polygamous, with unisexual and bisexual flowers; pedicels pale brown tomentose; sepals 5, pale brown tomentose; petals 5, white when newly opened, then turned yellow; stamens numerous, anthers dorsifixed; ovary superior, many-celled, styles numerous, filiform. Berry ovoid or long ellipsoid, densely brown villous, fragrant. Seeds tiny, black. Flowering during June and July; fruiting during August and September.

【Content/Pharmacology】 The fruit contains actinidine, zeatin, 9-ribosylzeatin, emodin, physcion, questin, ω-hydroxyemodin, emodic acid, emodin-8-β-D-glucoside, amino acids, sugars, organic acids, vitamins C and B, dyes, tannins and evaporative enols. Fresh fruits have anticancer effects. The fruit contains an abundant source of ascorbic acid. It has aging-delaying, anoxia-resisting, blood lipid decreasing, liver protecting and anti-inflammation effects.

【Efficacy】 The fruit can clear heat, quench thirst, invigorate the stomach and free strangury. It can treat heat induced restlessness, dry coughs due to pulmonary fire, mal-digestion, heat-dampness jaundice, stone strangury and hemorrhoids.

487. *Actinidia chinensis* Planch. var. *setosa* Li (台灣羊桃) Actinidiaceae

[English name] Taiwan Actinidia

[Distribution] Mainland China. Taiwan, occurred at medium altitudes 1600~2800 m.

[Morphology] Deciduous dioecious woody liana. Stem, branch, leaves and petioles densely covered with rusty bristles; pith lamellate. Leaves alternate, broadly ovate or nearly orbicular, 10~16 cm long, 10~16 cm broad, apex shortly acute, base cordate, margin glandular dentate, veinlets prominent, densely gray-brown stellate tomentose; petioles about 3 cm long. Cymes axillary, flowers 2~5, about 1.5 cm across, yellow; peduncles about 3 cm long; calyx 5 lobes, lobes triangular, apex obtuse; petals 5, obovate, about 10 mm long; stamens numerous, anthers T-shaped. Berry nearly globose or ellipsoid, about 3.5 cm long, densely brown tomentose.

【Efficacy】 Ripe fruits are sour and edible. They can promote gastric acid secretion, help with digestion and boost up the immune system; they are excellent organic fruits.

488. *Dillenia indica* Linn. (第倫桃) Dilleniaceae

[English name] Indian Dillenia, Hondapara

[Distribution] Yunnan, also cultivated in Taiwan.

[Morphology] Evergreen tree, up to 30 m high. Bark red-brown, cracked, peeling in big pieces; branchlets brown pubescent when young, glabrate in age, with prominent leaf scars. Leaves simple, alternate, coriaceous, oblong or obovate-oblong, 15~40 cm long, 7~14 cm broad, apex shortly acute, base broadly cuneate, margin serrate, pubescent on both surfaces when young, soon deciduous except veins beneath, lateral veins 25~56 pairs, prominent after drying; petioles 5~7 mm long, narrowly winged. Flower solitary, axillary near branch tips, 12~20 cm across; pedicels stout, pubescent; sepals thick succulent, nearly orbicular, 4~6 cm long, pubescent outside; petals white, obovate, 7~9 cm long; stamens numerous, inner ones less in numbers but longer, anthers longer than filaments, apical pore dehiscent; carpels 16~20, ovules numerous. Fruits globose, 9~15 cm across, indehiscent, with succulent, persistent calyx. Seeds compressed, pubescent at margin. Flowering during April and May; fruiting during June and August.

【Content】 The bark contains betulinaldehyde, betulin, lupeol, β-sitosterol, betdinic acid, myricetin, 3-β-hydroxylupane-13-β-28-lactone, ditydroisorhamnetin, kaempferol, glucoside and quercetin derivatives. The leaf contains cycloartenone and n-hentriacontanol. The fruit and heartwood contain betulin and β-sitosterol. The fruit contains acidic polysaccharides. The fruit peel contains dillenetin.

【Efficacy】 The bark and fruit have astringent and detoxifying effects; they can be used to treat dysentery, diarrhea, etc.

489. **Camellia japonica** Linn. (山茶)

THEACEAE

[English name] Common camellia

[Distribution] Originally distribute in East of China, currently widely cultivate in China and Taiwan.

[Morphology] Evergreen shrubs or small trees, 10m high. Bark grayish brown, young branches brown. Leaves simple, alternate, coriaceous, obovate or elliptic, 5-10cm long, 2.5-6cm wide, apex acuminate and obtuse, base cuneate, margin fine serrate, adaxial surface deep green with luster, abaxial surface pale green, both sides glabrous, yellowish after dry; petiole long. Flowers bisexual, single or opposite, axillary or terminal, 5-8cm cross; sepals 5, broad ovate, abaxial surface white pubescent; petals 5-7, mostly multiplicate, white, pale red etc., near rounded, apex emarginated, base slightly united; stamens numerous, outer filaments united at base and attach to the base of petals, inner filaments separated; superior ovary, glabrous, styles 3. Capsules near globose, pericarp thick, glabrous, loculicidal. Seeds near globose, ridged, dark brown. Flowering during April and May; fruiting during September and October.

[Content/Pharmacology] The flower contains anthocyanin, leucoan, thiocyanin, cyaniding-3-galactoside, rutin, glucoside, cyaniding-3-glucoside, hyacinthin, quercetin, kaempferol, etc. It has anticancer effects and can inhibit the formation of rhabdomyosarcoma triggered by cancer inducing agents. *Camellia japonica* tannin has obvious anti-cancer effects. The

leaf and pedal contain a saponin which causes abnormal budding of fungal cysts.
[Efficacy] The tea and flower can cool blood and cease bleeding, dissipate stasis and disperse swelling. They can treat hematemesis, hemoptysis, bloody stool, hemorrhoid bleeding, red and white dysentery, blood strangury, flooding, leucorrhea, scalds and traumatic injuries.

490. **Camellia oleifera** Abel. (油茶)

THEACEAE

[English name] Oiltea camellia
[Distribution] Yangtze River area and South of Yangtze River, also cultivate in Taiwan.
[Morphology] Evergreen shrubs or small trees, 3-4m high. Barks pale yellowish-brown, smooth without fissure; branchlets slightly puberulous. Leaves simple, alternate, thick coriaceous, ovate or ovate-elliptic, 3.5-9cm long, 1.8-4.2cm wide, apex acute but obtuse, base cuneate, margin fine serrate, adaxial surface green with luster. Flowers bisexual, 1-3 axillary or terminal; sepals usually 5, near rounded, abaxial surface sericeous; petals 5-7, white, separate, obovate to lanceolate, apex often emarginated, adaxial surface pubescent; stamens numerous, glabrous, outer filaments united at base; superior ovary, densely covered with white tomentose, apex of stigmas 3 shallowly lobed. Capsules near globose, pericarp thick, ligninous, loculicidal, 2-3 lobes. Seeds abaxial side rounded and adaxial side flat. Flowering during October and November; fruiting next October.
[Content/Pharmacology] The seed contains oleipherone, and its hydrolyzed products are camelliagenin A, theasapogenol A,B, D-lucuronic acid, D-glucose, D-galactose, D-xylose, angelic acid, tiglic acid and α-methylbutyric acid. The crude saponins in the seed can significantly lower the blood cholesterol in guinea pigs; the hemoglobulin concentration is significantly reduced, proving it to be hemolytic. The seed extract does not irritate the vagina; it has no inhibitory effects on lactobacillus and has antifungal effects.
[Efficacy] The leaf can move qi, moisten the intestines and kill worms. It can treat abdominal pain due to qi stasis, constipation due to intestinal dryness, filarial worm and hookworm infections, and scabies itchiness.

491. **Eurya nitida** Korthals. (柃木)

THEACEAE

[English name] Common eurya
[Distribution] Chechiang, Hunan, Ssuchuan and Taiwan.
[Morphology] Shrubs, 1-3m high, young branchlets ridged, glabrous. Leaves coriaceous, distichous, elliptic to long-rounded lanceolate, 3-6cm long, 1.5-3cm wide, apex acute or acuminate, slightly emarginated, base cuneate, margin rough serrate, adaxial surface deep green, abaxial surface yellowish green, both sides glabrous, midrib impressed above, lateral veins unapparent; petioles 2-5mm. Plant diecious, flowers often 1-3 tuft axillary and terminal, drooping, pedicels short; sepals 5, near rounded, persistent; petals 5, white or yellowish green, ovate, united at the base; stamens of male flowers numerous, shorter than petals, with or without reduced ovaries; female flowers without stamens, styles short, apex 3 shallow lobed. Berry rounded globose, 5mm cross, purplish black when ripen. Flowering

during March and April; fruiting during July and August.
[Content] Fresh leaves contain vitamin C. The fruit contains chrysanthemin, cyaniding, 3-acetylmtinoside, euryanoside, halleridone and cornside.
[Efficacy] The whole plant can expel wind and clear heat, drain water and disperse swelling, cease bleeding and promote tissue regeneration. It can treat wind-dampness obstructive pain, distending fullness of the abdomen due to ascites, fever and mouth dryness, swelling pain due to traumas, and wound bleeding.

1492. **Ternstroemia gymnanthera** (Wight et Arn.) Sprague. (厚皮香)

THEACEAE

[English name] Japanese ternstroemia
[Distribution] Anhui, Chechiang, Chianghsi, Fuchien, Hunan, Hupei, Kuangtung, Kuanghsi, Kueichou, Ssuchuan, Yunnan and Taiwan.
[Morphology] Shrubs or small trees, 3-8m high, glabrous. Barks grayish brown, branchlets thick and strong, cylinder shape, brownish, whorled or forked many times. Simple leaves, alternate, often tuft on the top of branches, coriaceous, long-rounded obovate or elliptic, 4-11cm long, 2.5-5cm wide, apex mucronate, acuminate or obtuse, base cuneate or decurrent, margin entire, midrib impressed above, lateral veins unapparent; petioles 5-15mm. Flowers bisexual, single, axillary or tuft on the top of branchlets, pale yellow, 1.8cm cross; pedicels 1-2cm long, usually bend downward; bractlets 2, ovate-triangular; sepals 5, almost rounded, 4mm long, slightly united at the base, persistent; petals large, obovate, 5-8mm long, united at the base; stamens numerous, arranged as 2 whorls; superior ovary, 2-3 rooms, style 1, thick and short, stigmas 3 lobes. Capsules dry berry-like, near globose or elliptic-shaped ovoid, 1-1.5cm cross, yellow. Seeds red. Flowering during July and August; fruiting during August and October.
[Efficacy] The whole plant can clear heat and resolve toxin, resolve stasis and disperse swelling. It can treat carbuncles, and pyogenic infections, and mastitis.

493. **Thea sinensis** Linn. (茶)

THEACEAE

[English name] Tea
[Distribution] Original distribute in South China, currently widely cultivated in Yangtze River area, South of Yangtze River and Taiwan .
[Morphology] Evergreen shrubs, 1-3m high, young branchlets and leaves with villous. Simple leaves alternate, thin coriaceous, elliptic or obovate-elliptic, 5-12cm long, 1.8-4.5cm wide, apex short-acute or obtuse-acute, base cuneate, margin serrate, abaxial surface glabrous, about 8 pairs of obvious lateral vein; petioles long. Flowers bisexual, white, fragrant, usually single or 2 axillary; sepals 5-6, rounded, puberulous, margin membranaceous with eyelash-shape hairs, persistent; petals 5-8, broad obovate; stamens numerous, outer filaments united into short tube; superior ovary, tomentose, 3 rooms, style1, apex 3 lobes. Capsules near globose or flat-triangular, pericap coriaceous. Seeds usually 1 or 2-3, near globose or slightly angular. Flowering during October and November; fruiting during next October and November.

[Content/Pharmacology] The leaf contains alkaloids: caffeic acid, theobromine, theophylline and xanthine. The gallic acid is composed of epigallocatechin gallate, epigallocatechin, epicatechin gallate, epicatechin, catechin gallate, gallic acid, theaflavin and isotheaflavin. It also contains essential oil and β-r-heptenol, which can prevent atherosclerosis, inhibit cancers and can kill off *Vibrio cholerae*.
[Efficacy] The leaf can clear the mind and eyes, relieve polydipsia, clear food accumulation, resolve phlegm, promote urination and resolve toxin. It can treat headache, blurred vision, red eyes, sleepiness, common cold, thirst due to vexation, food accumulation, bad breath, dyspnea with phlegm, carbuncle, unsmooth urination, swelling throat, ulcers and furuncles, and fire or hot water burns.

494. **Thea sinensis** Linn.**var. assamica** Pierre (阿薩姆茶)

THEACEAE

[English name] Assam tea
[Distribution] South China, Yunnan, Kueichou and Taiwan.
[Morphology] Evergreen small trees to trees, 10-17m high, young branchlets pubescent. Leaves simple, alternate, coriaceous, ovate-elliptic to oblong-lanceolate, 10-20cm long, apex acuminate, base cuneate, margin fine serrate, glabrous; petiole long. Flowers white, fragrant, 4cm cross; sepals 5,persistent, adaxial surface glabrous; petals 7-9,unite at the base and attach to outer stamens; stamens numerous, 2 whorls, outer filaments united, inner stamens 5-15, free, glabrous; superior ovary, 3 rooms, pubescent, stigmas fork at apex. Capsules flat-round. Seeds near round.
[Content/Pharmacology] Its caffeic acid quantity is almost no different in comparison with green tea and black tea, however its raw sugar and tannin contents are far less than green tea and black tea. Neverthless it contains a medicinal content which has reducing effects. The antioxidative effect of its aqueous extract is stronger than black tea and green tea; its reducing content not only constricts the natural oxidation of linoleic acid, but can also restrain the over oxidization of NADPH in the mitochondria and ribosome of rat liver. The adrenalin induced break down of fat is increased; proving it to have triglyceride break down effect.
[Efficacy] The leaf can clear heat and promote body fluid generation, repel foulness and resolve toxin, clear food accumulation and sober up, clear the mind and outthrust rashes. It can quench thirst due to summer heat; treat blurred vision due to headache, abdominal pain due to exanthem, dysentery, food accumulation, alcoholic poisoning, tiredness and sleepiness, and unsmooth thrusting of measles.

495. **Thea viridis** Willd. (烏龍茶)

THEACEAE

[English name] Oolong tea
[Distribution] Original distribute in China, also cultivate in Japan, .India, Sri Lanka, Java and Taiwan.
[Morphology] Evergreen shrubs, forked much, young branches with hairs. Leaves simple, alternate, oblong, lanceolate or ovate-lanceolate, apex acuminate, margin serrate, 1 gland-

like tooth near the apex of serrate tooth, base cuneate, thick, coriaceous when old, adaxial surface dark-green, luster, glabrous, abaxial surface pale green, abaxial surfaces of young leaves puberulous, midrib protuberated on the abaxial surface, lateral veins apparent both sides and slightly bulged; petioles short, slightly flat and thick, adaxial surface with shallow groove, abaxial surface semicircular shape. Flowers axillary with pedicels, slightly hanging down; bracts 2, opposite below the sepals; sepals 5, persistent, dark-green, imbricate, unequally sized, near semicircular, slightly unite at the base, margin puberulous or almost glabrous; petals 5, white, slightly fragrant, near round or broad obovate; stamens numerous, several whorls, anthers yellow, versatile, filaments silk-like; carpels at the central, superior ovary, flat-globose, densely covered with grey villous, 3 rooms, styles thick-filament shape, apex 3 lobed. Capsules lignified, flat-rounded triangular, ripen next autumn, dark-brown, loculicidal. Seeds ovate-rounded, surface smooth, brown. Flowering during October and November; fruits ripened next year.

[Efficacy] The leaf can treat stupor due to stroke, sleepiness and sunstroke. With vinegar, it can treat diarrhea, red and white dysentery due to heat toxin. When it is decocted with the fistular onion stalk of *Ligusticum chuanxion*g, the decoction can cease headache; condensed decoction can induce the vomiting of wind-heat phlegm and saliva. The seed can treat coughs due to acute dyspnea, clear phlegm and oiliness.

496. *Calophyllum inophyllum* Linn. (瓊崖海棠) Guttiferae

[English name] Indiapoon beautyleaf

[Distribution] Kuangtung, Hainan, and Taiwan.

[Morphology] Evergreen tree, 5~12 m high. Bark dark gray-brown, smooth. Leaves simple, opposite, thickly coriaceous, elliptic or broadly elliptic, 8~15 cm long, 4~8 cm broad, apex obtuse or rounded, base obtuse or rounded, margin entire or wave-like, midvein concave above, convex beneath, lateral veins numerous, close, parallel, nearly perpendicular to midvein, convex on both surfaces; petioles stout. Inflorescences racemes or sometimes paniculate, born in upper leaf axils; flowers bisexual, white, fragrant; sepals 4, outer 2 smaller and with emarginate apex, inner 2 bigger and petaloid; petals 4; stamens numerous; ovary nearly globose, stipate, styles far longer than stamens, stigmas peltate. Drupes globose, yellow when mature, fleshy.

【Content/Pharmacology】 The seed contains calophyllolide, calophyllic acid, inophyllolide, imphyuoidic acid A,B, calophynic acid, leucocyanidin. The leaf contains inophyllolide derivatives, friedelin, canophyllal and canophyllol. The flower contains myhricetin-7-glucoside, myricetin and quercetin. The heartwood contains euxanthone and

1,5,6-trihydroxyxanthone. The bark contains β-sitosterol, β-amyrin and friedelinol. *In vitro*, antiseptic effects have been been demonstrated against *S.aureus, Bacillus Subtilis, E.coli, Klebsiellar pneumonia, Proteus mirabilis, Pseudomonas aeruginosa*, etc. Calophyllolide has anti-inflammatory effect on carrageenan induced foot swelling in rats; it also has strong anti-inflammatory effects on formaldehyde induced arthritis, adjuvant induced arthritis and cotton ball granuloma.

【Efficacy】 The whole plant can dissipate stasis and cease pain. It can treat wind-dampness pain, traumatic injury, dysmenorrhea and wound bleeding.

497. *Garcinia multiflora* Champ. (福木) Guttiferae
[English name] Many-flowered Garcinia
[Distribution] Southern China. Taiwan, occurred in the southern parts of the island.
[Morphology] Evergreen dioecious tree or shrub, about 3 m high. Stems multi-branched, leaves densely arranged; branchlets straight and glabrous. Leaves simple, opposite, chartaceos or slightly coriaceous, 6~9 cm long, 2.5~3.5 cm broad, glabrous on both surfaces, midvein flattened above and convex beneath, lateral veins indistinct above and prominent beneath; petioles about 1.5 cm long. Male flowers in cymose panicles, terminal; sepals 4, imbricate, emarginate, outer 2 bigger, inner 2 smaller; petals 4, cream, obovate, about 1 cm long, 3 mm broad; stamens 4, with numerous anthers, cells 2 in each anther, filaments short and stout; rudimentary ovary clavate but enlarged at apex. Fruits globose, up to 3 cm across. Flowering and fruiting during summer and autumn.
【Efficacy】The wood can be made into different objects, and the fruit is edible. The bark and fruit have astringent, inflammation dissipating, and pain relieving effects; which can be used to treat carbuncles and pyogenic infection.

498. *Hypericum geminiflorum* Hemsl. (銳萼金絲桃) Guttiferae
[English name]
[Distribution] Endemic to Taiwan.
[Morphology] Shrub, 50~150 cm high. Branches slender, usually pending, 4-ridged. Leaves opposite, nearly sessile, 2~4 cm long, 0.5~2.2 cm broad, apex obtuse or mucronate, base cuneate, margin entire, dark-green, pale-green punctate. Flowers 2~3, axillary or terminal; sepals 5; petals 5, yellow, shined, ovate or obovate; stamens numerous; ovary superior, nearly ovate, styles 5, stigmas capitate. Capsules narrowly ellipsoid. Flowering during June and July; fruiting during August and October.
【Efficacy】 The stem and branch can activate blood, regulate menstruation, ease pain and disperse swelling. They can treat epistaxis, hematemesis, uterine bleeding, menstrual irregularity, hepatitis, ulcerative furuncle and traumatic injury.

499. *Hypericum japonicum* Thunb. ex Murray (地耳草) Guttiferae
[English name] Japanese St. Johnswort
[Distribution] Yangtze River Basin and Southern China. Taiwan, throughout the island.
[Morphology] Annual small herb, 10~40 cm high. Stems multi-branched from base, erect or ascending, 4-ridged. Leaves simple, opposite, sessile, ovate, 3~15 mm long, 1.5~8 mm broad, ascending, apex obtuse, base cordate or amplexicaul, margin entire, adaxial side with numerous, tiny, paler, glandular dots. Inflorescences dichasial cymes, terminal; flowers small, pedicels slender; sepals 5, lanceolate or elliptic, apex acute, with glandular dots above; petals 5, yellow, ovate-oblong, about equal to calyx; stamens 5~30, base connate in 3 fascicles, filaments filiform; ovary superior, 1-celled, ovoid to elliptic, about 2 mm long, styles 3, filiform. Capsules ellipsoid, 3-valvated when mature, with nearly equal and persistent calyx. Seeds numerous. Flowering during May and June; fruiting during September and October.
【Content/Pharmacology】 The whole plant contains quercitrin, isoquercitrin, quercetin-

7-rhamnoside, sarothralin, sarothalen A,B, uliginosin B, filixic acid, saroaspidin A,B,C, japonicine A,B,C and D. It has strong inhibitory effects against *Salmollella typhi* and cow type TB; it also has inhibitory effects against *Streptococcus pneumoniae, Staphylococcus aureus, Salmonella choleraesuis, Pseudomonas aeruginosa, Corynebacterium diphtheriae, Shigella Flexneri and Shigella dysenteriae. Quercitrin A and B have obvious inhibitory effects on Plasmodium malariae. Hypericum japonicum's effects on the heart is activation first, then inhibition. Drug overdose can induce heart fibrillation and result in sudden death; it can also lower blood pressure.*

【*Efficacy*】 *The whole plant can clear heat and drain dampness, resolve toxin, dissipate stasis and disperse swelling, and ease pain. It can treat heat-dampness jaundice, dysentery, intestinal abscess, pulmonary abscess, tonsillitis, oral cavity ulcer, swelling and painful eyes, venomous snake bites, traumatic injury; the herbal tea can prevent summerheat stroke.*

500. *Hypernicum sampsonii* Hance (元寶草) Guttiferae

[English name]

[Distribution] South of Yangtze River Basin and Taiwan.

[Morphology] Perennial herb, about 65 cm high. Stems simple, erect, cylindrical, glabrous, woody at base, branched on upper part. Leaves simple, opposite, oblong-lanceolate, apex obtuse, base connate in perfoliate pairs, leaves ascending and like silver ingots and stem penetrate its central part, scattered with numerous paler and dark glandular dots on both surfaces. Inflorescences dichasial cymes, terminal or axillary, flowers small; sepals 5, scattered with numerous paler and dark glandular dots; petals 5, yellow; stamens numerous, base connate in 3 fascicles, anthers with dark glands; ovary broadly ovoid, with transparent glands, styles 3-fid. Capsules ovoid, about 8 mm long, 3-celled, with red-brown glands. Seeds numerous, tiny, pale brown. Flowering during June and July; fruiting during August and September.

【Efficacy】 The whole plant can cool blood and cease bleeding, clear heat and resolve toxin, activate blood and regulate menstruation, expel wind and free the collateral vessels. It can treat hematemesis, hemoptysis, blood strangury, enteritis, dysentery, acute mastitis, carbuncle and sore toxin, scalds, venomous snake bites, menstrual irregularity, dysmenorrhea, leucorrhea, traumatic injury, wind-dampness obstructive pain, lumbago and leg pain. External applilcation can treat head lice, oral cavity ulcers and corneal opacity.

501. *Elaeocarpus serratus* Benth. (錫蘭橄欖) Elaeocarpaceae

[English name] Ceylon olive

[Distribution] Native to Sri Lanka and India, also cultivated in Taiwan.

[Morphology] Evergreen tree. Branch smooth, with leaf scars. Leaves irregularly alternate, coriaceous, oblong or lanceolate, 10~28 cm long, 5~10 cm broad, apex acuminate or acute, base rounded, obtuse or acute, margin remotely serrate; petioles 3~5 cm long; stipules 2, linear. Racemes axillary, flowers with short pedicels, downward, hook-like; sepals 5, ovate, cream, apex acute; petals 5, white, fimbriate at apex; stamens 28~33, filaments slightly curved; pistil 1, ovary conic, styles acute; disc prominent, lobed, pale yellow. Drupes

ellipsoid, pale green, 4~4.5 cm long, glabrous, flesh sour and bitter. Seeds oblong, acute at top ends, seeds coat firm, with 3 shallowly grooves, pale yellow brown. Flowering during June and October; fruiting during December and next February.

【Content】 The fruit contains crude fats, reducing sugar, non-reducing sugar and pectin. The seed kernel contains a rich amount of oil. It is a non-drying oil that has very little free fatty acids, similar to olive oil. It can be used in food or other industrial applications.

【Efficacy】The root can invigorate the stomach, soothe the liver, moisten the lungs, regulate qi, clear qi, expel wind and ease pain. It can treat gastric diseases, kidney depletion, turbid urine, lumbago, wind-cold dampness obstruction, and sinew and bone pains.

502. *Elaeocarpus sylvestrs* (Lour.) Poir (杜英) Elaeocarpaceae

[English name] Common Elaeocarpus

[Distribution] Kuangtung and Taiwan, also distributed in Japan.

[Morphology] Evergreen tree, 18~21 m high. Leaves alternate, petiolate, oblong-lanceolate, or oblanceolate, margin remotely serrate, usually turned red before falling. Spikes; sepals lanceolate; petals cuneate, cream, fimbriate at apex. Drupes ellipsoid, dark purple. Flowering and fruiting during summer and autumn.

【Content】 The bark contains 11.92% tannins. The seed contains 40% oil.

【Efficacy】 The wood can be made into different objects; the bark can be made into dyes.

503. Corchorus aestuans Linn. (假黃麻)

TILIACEAE

[Distribution] Widely distributed in tropical Africa, Asia and Taiwan.

[Morphology] Annual herbaceous undershrubs, 30-100 cm high, whole plant pubescent, much branched from the base spreading over ground or obliquely up wards; stems reddish-brown. Leaves alternate. Blades ovate to ovate-lanceolate, 2-5 cm long, 2-3 cm wide, rounded or obtuse at base, bi-tailed laterally, obtuse or acute at apex, serrulate, glabrescent or pubescent on both surfaces, veins distinct, rugate. Leaves from lower part of stem smaller, subcircular; petioles 1-2 cm long, stipules subulate. Flowers 1-4 axillary in cluster on a short peduncle; pedicels short, with node; flowers small, yellow; sepals and petals 4-5, petals oboval-spatulate, stamens many. Capsules cylindrical, 1.8-3 cm long, 6-8 ridges, of which 3-4 ridges winged, 3-4 beaks at apex, seeds small. Flowering and fruiting in July to October.

[Content] The whole plant contains quercetin.

[Efficacy] The whole plant can clear heat, detoxify and cease bleeding. It can treat infantile malnutrition with accumulation, dysentery due to febrile diseases, diarrhea due to wind attack, scabies and carbuncles, measles, sinew and bone pains, and traumas.

504. Corchorus capsularis Linn. (黃麻)

TILIACEAE

[English name] Jute

[Distribution] In southern Mainland China and Taiwan commonly cultivated.

[Morphology] Erect woody herbs, 1-2 m high, whole plant glabrous. Leaves simple,

alternate; blades papery, ovate to oblong-lanceolate, 5-12 cm long, 2-5 cm wide, acuminate at apex, rounded at base, coarsely serrate, the basal 2 serrulas subulate and curved down wards, glabrescent at both surfaces; 3-nerved, the 2 lateral nerves extending less than half way, the midrib with 6-7 pairs of lateral veins; petioles ca. 2 cm long, pubescent. Flowers solitary to several in axillary cymes with short peduncles, pedicels short; sepals 4-5; petals yellow, oboval, as long as sepals; stamens 18-22, free; ovary glabrous, stigma slightly lobed, capsules globose, 1 cm in diameter or bigger, without beaks at apex, surfaces with longitudinal dull ridges and fine warty projections, 5-valved. Flowering in summer. Fruits mature after autumn.
[Content] The leaf can regulate qi to stop bleeding, expel pus and resolve toxin. It can treat, hemoptysis, hematemesis, flooding, bloody stool, abdominal pain, diarrhea and dysentery, ulcerative carbuncles and eczema.

505. **Grewia biloba** Wall. (厚葉捕魚木)

TILIACEAE

[English name] Two-lobed fruit grewia
[Distribution] In southern Mainland China and Taiwan
[Morphology] Shrubs to small trees, 1-4 m high. Much branched, young shoots hirsute. Leaves alternate; blades thin-leathery, elliptic to oboval-elliptic, 4-9 cm long, 2.5-4 cm wide, acuminate at apex, tapered or obtuse at base, sparsely stellate-hirsute on both surfaces, margins serrulate; 3-nerved at base, lateral 2 extending longer than half way, midrib with 3-5 pairs of lateral veins; petioles 4-8 mm long, hirsute; stipules subulate, 3-4 mm long. Cymes axillary, with many flowers, peduncle shorter than 1 cm; pedicels 3-6 mm long; bracts subulate, 3-5 mm long; sepals narrow oblong, 4-7 mm long, hairy outside, glabrous inside; petals 1-1.5 mm long; gynandrophore ca. 0.5 mm long, hairy; stamens 2 mm long; ovary pubescent. Style exserting as long as sepals, stigma expanded, disc-like, shallowly lobed. Drupes reddish, of 2-4 mericarps. Flowering from May to July. Fruiting from June to August.
[Efficacy] The whole plant can fortify the spleen and boost qi, expel wind and remove dampness, secure essence and cease leucorrhea. It can treat poor appetite due to spleen deficiency, rectocele due to chronic diarrhea, infantile parasitic diseases, ascarid infection, wind-dampness obstructive pain, seminal emission, 靡漏, leucorrhea and uterine prolapse.

506. **Triumfetta bartramia** Linn. (黃花虱母子)

TILIACEAE

[Distribution] In Taiwan, Fuchien, Kuangtung, Hainan, Kuanghsi, Yunnan etc.
[Morphology] Undershrubs. Young shoots with short, grayish brown trichomes. Leaves alternate; blades papery, that at lower part of stems broad ovate, 3-8 cm long, 2-6 cm wide, often tri-lobed at apex, rounded at base; blades at upper part of stems oblong; sparsely hairy above, stellate pubescent below, margins irregularly crenate; 3-5-nerved at base, lateral 2 reaching end of lobes; petioles 1-5 cm long. Several cymes axillary, both peduncles and pedicels very short; sepals narrow oblong, 5 mm long, with beaks at apex, long-hairy; petals slightly shorter than sepals, yellow, ciliate at margins; stamens 10; ovary

with spinules. Fruits globose, indehiscent, with grayish-yellow pubescences, and hooked spines of 2 mm in length, 2-6 seeded. Flowering in summer and fall.
[Efficacy] The whole plant can clear heat, remove dampness and free strangury. Its indications are wind-heat induced common cold, dysentery, calculi in the urinary system, scabies and venomous snake bites.

507. **Firmiana simplex** (Linn.) W. F. Wight (梧桐)

STERCULIACEAE

[English name] Chinese parasol, Phoenix tree
[Distribution] In most area of Mainland China, Taiwan and also in Japan.
[Morphology] Deciduous trees, up to 16 m high. Bark green, smooth. Leaves simple, alternate; blades cordate, palmately 3-5-lobed, lobes triangular, acuminate at apex, cordate at base, glabrous on both surfaces; 7-nerved at base; with long petioles. Raceme terminal, flowers unisexual or polygamous, light yellowish-green; calyx-tube long, lobes 5, linear, recurved outwards, with light yellowish short pubescences on the outside, without petals; staminate flowers with 10-15 connate stamens, filaments united into a column, as long as the calyx; pistilate flowers often with staminodes surrounding bases of ovaries, which composed of 5, partially free carpels, style long, stigma 5-lobed. Follicles 5, papery, stalked, 6-11 cm long, 1.5-2.5 cm wide, with short tomentums or almost glabrescent, each carpel dehiscent along the ventral suture and becoming leaf-like valves before ripening. Seeds 4-5, globose, surface rugose when drying, attached at edges of leaf-like valves. Flowering from June to July. Fruiting from October to November.
[Contetn/Pharmacology] The fatty acids include oterculic acid, malvalic acid, etc. It contains alkaloids and caffeins that have hemorrhage ceasing effects; resulting in instantaneous decrease in blood pressure. It has been shown experimentally that the blood pressure lowering effect has to do with M receptors; however there are no obvious effects on the coagulation time, Calcium recovering time and platelet count. Therefore, the hemorrhage ceasing effects of the seed and its alkaloids might be related to its promotion of platelet aggregation and adhesions.
[Efficacy] The seed can soothe qi and the stomach, fortify the spleen and clear food accumulation, and cease bleeding. Its indications are stomach and abdominal pains, diarrhea due to spoiled food, hernia and infantile oral cavity ulcers.

508. Helicteres augustifolia Linn. (崗脂麻)

STERCULIACEAE

[English name] Narrow-leaved screw tree
[Distribution] Taiwan, Fuchien, Chianghsi, Hunan, Kuangtung, Hainan, Kuanghsi, Yunnan, Taiwan etc.
[Morphology] Small shrubs, up to 1 m high. Shoots with short, grayish-green pubescences. Leaves alternate; blades oblong or linear lanceolate, 3.5-5 cm long, 1.5-2.5 cm wide, obtuse or acute at apex, rounded at base, glabrescent above, with grayish-pale pubescences below, among them hirsute hairs scattering, margins entire; petioles long, with short, stellate pubescences. Cymes axillary, with 2 to several flowers; each pedicel usually with

4, subulate bracteoles; calyx tube-like, with short, stellate pubescences, 5-lobed, lobes triangular; petals 5, unequal, light reddish or purple, slightly longer than calyx, with 2 ear-like appendages at base; stamens 10, staminodes 5, linear; ovary 5-celled, hairy, short than style, 10 ovules in each cell. Capsules oblong-ovoid, acute at apex, densely stellate-hairy mixed with long tomentums. Seeds small, brownish, with elliptic spots. Flowering and fruiting lasting almost for whole year.
[Content/Pharmacology] The root contains β-sitosterol, betulic acid, oleanolic acid, methyl helicterate, methyl helictehrilate, helicterilic acid and heliclactone. The root bark contains mansonone, which has inhibitory effects on *S.aureus* and *Pseudomonas aeruginosa.* At the same time, it can reduce the effects of transaminsae.
[Efficacy] The whole plant can clear heat and resolve toxin. It can treat common cold fever, coughing due to pulmonary fire, swelling pain of the larynx, measles, enteritis, dysentery, carbuncle, hemorrhoid and venomous snake bites.

509. Heritiera littoralis Dryand. (銀葉樹)

STERCULIACEAE

[English name] Looking-glass tree
[Distribution] In Taiwan, along coast areas below 300 m elevation, e.g. Kingpauli, Keelung, Yilan, Tainan, Henchuen, Taitung. Southern Asia and pacific islands, too.
[Morphology] Evergreen medium trees, trunk with distinct plate buttresses, bark grayish, shallow fissured and scaly barked when old. Leaf-blades leathery, oblong, acute or obtuse at apex, rounded at base, margins entire, densely covered with silver scales and scattered with brownish scales below, 16-26 cm long, 5-10 cm wide; petioled. Panicles terminal; flowers unisexual, without petals; calyx campanulate, 4-5-lobed, hairy on both sides; stamen-tube long and slender, anthers 6-7. Fruits oblong, 3-5 cm long, woody, keel-ridged, dispersal by tidies to remote sea shores.
[Efficacy] The tender branch can be used as a tooth brush because it contains a tannin which is beneficial to the gum. The seed has astringent effects; therefore it can treat diarrhea and dysentery.

510. Melochia corchorifolia Linn. (野路葵)

STERCULIACEAE

[Distribution] Taiwan, southern Mainland China and Ssuchuan, etc.
[Morphology] Erect, much-branched herbaceous undershrubs, less than 1 m high. Shoots yellowish-brown, slightly with short, stellate pubescences. Leaves alternate; blades membranous or thin-papery, oval, long ovate or lanceolate, rarely inconspicuous shallowly 3-lobed, 2.5-7 cm long, 1-1.3 cm wide, acute or obtuse at apex, rounded or cordate at base, serrate, almost glabrescent above, slightly with short, stellate pubescences below; 5-nerved at base; petioles 5-25 mm long, pubescent; stipules linear, 2-4 mm long, with trichomes. Cymes terminal or axillary; bracteoles linear, hairy along edges, scattered in inflorescences; calyx campanulate, slightly 5-lobed, ca. 2.5 mm long, tomentose and hirsute outside, glabrescent inside, lobes triangular; petals milky-white, becoming light reddish later, elliptic, ca. 6 mm long, tapered at base; stamens 5, opposite to petals, united into a tube at

lower part; ovary sessile, 5-celled, densely pubescent, styles 5, filiform. Capsules globose, 5-ridged, 5-6 mm in diameter, with long tomentums, 1-3-seeded in each cell. Seeds oval, slightly triangular, dark brownish, 2-3 mm long. Flowering in summer and fall.
[Content] The above-ground parts contain: adouetine, melofoline, frangufoline, franganine, melochicorine, 6-methoxy-3-propenyl-2-pyridine and carboxylic acid. It also contains friedelin, friedelinol, β-amyrin and β-sitosterol.
[Efficacy] The whole plant can clear heat, drain dampness and cease itching. It can treat acute jaundice hepatitis and itching rashes.

511. Sterculia foetida Linn. (掌葉蘋婆)

STERCULIACEAE

[English name] Hazel sterculia, Hazel bottle tree, Horse almond
[Distribution] Yunnan, Kuanghsi and Taiwan, etc.
[Morphology] Trees, shoots robust. Leaves palmately compound, alternate; leaflets 7-9; leaflets oboval lanceolate or oblong, 9-23 cm long, 4-6 cm wide, acuminate at apex, cuneate at base, almost glabrous above, densely with short, stellate pubescences below; lateral veins 22-40 pairs, parallel oriented; petioles usually 20-23 cm long; stipules triangular lanceolate, 5 mm long, pubescent. Racemes or panicles in cluster on shoot-apex, up to 20 cm long, bracteoles linear-lanceolate, ca. 1 cm long; calyx white, campanulate, 5-lobed, ca. 6 mm long, densely with short, stellate pubescences outside, lobes triangular, acuminate and coherent at tips, as long as the campanulate calyx-tube; androphores of staminate flowers filiform, colorless, anthers 10-20, united into a capitum; ovary of pistilate flowers globose, 5-celled, densely with short pubescences, styles short, stigma 5-lobed, anthers of staminodes surrounding the base of ovary. Follicles reddish brown, oblong-elliptic and slightly lanceolate, 4-9 cm long, 2-4 cm wide, obtuse at apex, densely with pubescences and hirsutus outside, with short, stellate pubescences inside, densely ciliate along edges, 3-seeded each fruit. Seeds elliptic, black, ca. 1.5 cm long. Flowering in October. Fruiting in December.
[Efficacy] The fruit can connect sinews and bone fractures, activate blood and cease pain. It can treat sinew injuries, bone fractures and traumatic swelling pain.

512. Sterculia nobilis Smith (蘋婆)

STERCULIACEAE

[English name] Noble bottle tree, Ping-pong
[Distribution] Taiwan, Fuchien, Kuangtung, Hainan, Kuanghsi, Yunnan, etc.
[Morphology] Trees, up to 10 m high. Bark dark brown, young shoots slightly with stellate trichomes. Leaves alternate; blades thin-leathery, oblong or elliptic, 8-25 cm long, 5-15 cm wide, apex acute or obtuse, base rounded or obtuse, glabrescent on both surfaces; petioles 2-3.5 cm long. Panicles terminal or axillary, spreading, up to 20 cm long, with short pubescences; flowers unisexual, without corolla; calyx light reddish, campanulate, with short pubescences outside, 5-lobed, lobes linear-lanceolate, apex acuminate, recurved inwards and coherent at tips, as long as the campanulate calyx-tube; staminate flowers more, gynandrophores bending, glabrescent, anthers yellowish; pistilate flowers less,

slightly bigger, ovary globose, 5-grooved, densely pubescent, style bending, stigma lightly 5-lobed. Follicles brilliant reddish, thick-leathery, elliptic oval, ca. 5 cm long, 2-3 cm wide, beaked at apex, 1-4-seeded each fruit. Seeds elliptic or elongated circular, dark brown, ca. 1.5 cm in diameter. Flowering from April to May, but few plants producing second blooming from October to November.
[Efficacy] The fruit soothes the stomach and clears food accumulation, detoxifies and kills worms. It can treat upset stomach and vomiting, parasitic disease induced abdominal pain, hernia and infantile head ulcers.

513. Theobroma cacao Linn. (可可樹)

STERCULIACEAE

[English name] Cacao, Cacao tree, Chocolate tree
[Distribution] Originally native to South and Central America, West India. Now cultivated widely in Pan-tropical and Taiwan.
[Morphology] Small, evergreen and shrub-like trees. 5-8 m high, trunk erect, branched from ground upwards. Leaves alternate; blades pendulous, long oboval or oblong, obtuse or broad cuneate at base, 10-40 cm long, 5-15 cm wide, entire; petioles 2-4.5 cm long, stipules 2, caduceus. Flowers in clusters from main trunk or old branches, often 3-6 in a cluster, pedicels 1.5-2 cm long. Sepals 5, pink, narrow oval or linear, petioles 2-4.5 cm long, stipules 2, caducous,. Flowers 1 cm in diameter, petals 5, light yellowish-pale with purple strips, cucullate at lower part, reversed and spatulate at upper part. Filaments of stamens united into a tube at base, staminodes 5, and fertile stamens 1-3 a bundle. Pistil 1, ovary light yellowish, carpels 5, stigma 5-lobed. Fruits elliptic or oblong, orange-yellow to orange-red when ripen, seeds 12-14 in each cell, totally 30-40, seeds long-oval. Flowering from May till February of the next year.
[Content] The seed mainly contains fatty oil, starch, proteins, theobromine, caffeic acid and cocoa butter. The fatty oil contains oleic acid, palmitic acid, stearic acid, linoleic acid, and small quantities of myristic acid and linolenic acid.
[Efficacy] The cocoa seed has nourishing, strengthening, inotropic and urine promoting effects. It can treat diabetes and edema.

514. Waltheria americana Linn. (草梧桐)

STERCULIACEAE

[English name] Florida waltheria
[Distribution] Taiwan, Fuchien, Kuangtung, Hainan, Kuanghsi, Yunnan, etc.
[Morphology] Slightly erect or prostrate undershrubs, up to 1 m long. Much branched, shoots densely with short pubescences. Leaves alternate; blades obtuse at apex, rounded or slightly cordate at base, serrulate, densely with short pubescences on both surfaces; petioles 0.5-1 cm long. Cymes axillary, head-like, peduncles short; bracteoles narrow lanceolate, ca. 4 mm long; calyx tube-like, 5-lobed, 3-4 mm long, lobes triangular, much longer than the calyx-tube; petals 5, light yellowish, spatulate, truncate at apex, slightly longer than the calyx; stamens 5, filaments united into a tube surrounding the pistil; ovary sessile, with short pubescences, style excentric, stigma penicillate. Capsules small, 2-valved after

dehiscence, obovate, pubescent, surrounded by persistent calyx, 1-seeded. Flowering in summer and fall.

[Content/Pharmacology] *The whole plant contains alkaloids, including adouetine. Low dosages of adouetine can lower the body temperature and induce suppression; high dosages on the other hand will induce activation.*

[Efficacy] The whole plant can expel wind and drain dampness, clear heat and resolve toxin. *It can treat wind-dampness obstructive pain, swelling pain of the larynx, heat-dampness leucorrhea, carbuncle and scrofula.*

515. *Bombax malabarica* DC. (木棉) Bombacaceae

[English name] Cotton tree, Malabar bombax

[Distribution] India to Malaya to the Philippines, also cultivated in Taiwan.

[Morphology] Deciduous large tree, up to 25 m high. Trunk usually with conic spines, branch horizontally spreading. Leaves palmate compound, 5~7- foliolate, leaflets oblong-lanceolate, 10~15 cm long, 3.5~5.5 cm broad; petioles 10~20 cm long. Flowers born in leaf axils near branch tip, opened before leaves, red or orange, about 10 cm across; calyx-tube tubular and thick, 3~5 shallowly lobed; petals fleshy, obovate-oblong, stellate pubescent on both surfaces; stamens numerous, connate to short tube at lower part, arranged in 3 whorls, inner ones 2-forked at apex, middle ones short and unforked, outer ones connate to 5 fascicles, anthers 1-celled, reniform, peltately attached; styles longer than stamens, ovaries 5-celled. Capsules long ellipsoid, woody, covered with gray villous hairs and stellate hairs, locucidally dehiscent, 5-valvated, including woolly hairs. Seeds numerous, obovate, black, hided in woolly hairs. Flowering in spring; fruiting in summer.

【*Content/Pharmacology*】 *The* calyx contains water, proteins, carbohydrates and ashes. The seed contains proteins, alanine, valine, isoleucine, leucine, arginine, glycine and aspartic acid. The seed contains myristic acid, palmitic acid, arachidic acid, lenoleic acid, etc. The seed also contains carotenoid, β-sitosterol, tocopherol, gallic acid, tannic acid, glucose and rhamnose. It has obvious protective effects on liver fat denaturalization and hepatocyte necrosis due to carbon tetrachloride intoxication.

【Content】 The seed and capsule can clear heat, drain dampness, detoxify and cease bleeding. It can treat dysentery, hemoptysis, hematemesis, flooding, incised wound bleeding, sore toxin and eczema.

516. *Ceiba pentandra* Gaertn. (吉貝) Bombacaceae

[English name] Silk cotton tree

[Distribution] Malaysia, India, Indonesia, and tropical America, also cultivated in Taiwan.

[Morphology] Tree, up to 30 m high. Bark green, spined when young, branches horizontally spreading. Leaves palmate compound, 5~7- foliolate, orbicular in outline, leaflets lanceolate, sessile, apex acute, base acute, 10~20 cm long. Flowers axillary, cream, 2~8 fasciculate; petals 5; stamens 5; ovary 5-celled. Capsules melon like, long ellipsoid, seeds with white villous hairs.

【Efficacy】 The balata is called ″hat yan gond”, which is an astringent medicine used to treat intestinal diseases. Unripe fruits are mild and purgative medicines. The roots of young trees are urine promoting medicines, which can treat ascites and subepithelial

edema. The paste made with the leaves can treat strangury disease. The root bark is a vomit inducing medicine.

517. *Pachira macrocarpa* (Cham. & Schlecht.) Walp. (馬拉巴栗)

Bombacaceae

[English name] Pachira nut, Malabar chestnut
[Distribution] Native to Mexico, also cultivated in Taiwan.
[Morphology] Evergreen small tree. Bark green, glabrous. Lateral branches usually 5~6 whorled. Leaves alternate, palmate compound, 4~7 foliolate, usually 6, oblong or obovate, 9~20 cm long, 4~7 cm broad, apex mucronate, base cuneate, margin entire, dark green and shined above, midvein convex on both surfaces, sparsely rusty stellate along nerves, stipes swollen at base, densely covered with stellate hairs; petioles long, prominently kneed at top ends. Flowers born in leaf axils near branch top, yellow-green, covered with brown stellate hairs, pedicels short; calyx cupular, shallowly 5-dentate; petals 5, linear-lanceolate, covered with greenish hairs outside; stamens numerous, purplish; styles slender, stigma shallowly 5-lobed. Capsules long ellipsoid, up to 20 cm long. Seeds numerous. Flowering and fruiting during summer and autumn.
【*Efficacy*】*Often planted in floral gardens. The seed can be eaten cooked or uncooked; it tastes like chestnut.*

518. **Abelmoschus esculentus** (Linn.) Moench. (秋葵)

MALVACEAE

[English name] Okra
[Distribution] Native to India, introduced and cultivated in Shantung, Kiangsu, Chekiang, Fukien, Hopeh, Hunan, Kwangtung, Hainan, Kwangsi and Yunnan provinces of China, and Taiwan.
[Morphology] Annual herb, 1-2 m high. Stems terete, sparsely hispid. Leaves alternate; petioles 7-15 cm long, hispid; stipules linear, 7-10 mm long, sparsely hispid; blades palmately 5-7-lobed, 10-30 cm across, lobes linear, sparsely hispid above and beneath, coarsely dentate and weakly lobed at margins. Flowers solitary, axillary, pedicels 1-2 cm long, sparsely hispid; calyx campanulate, longer than bractlets, densely stellate-tomentose, corolla yellow, purple at the inner base, 5-7 cm across, petals obovate, 4-5 cm long. Capsules cylindrical, acute-tipped, 10-25 cm long, 1.5-2 cm wide, sparsely hispid. Seeds orbicular, numberous, 4-5 mm across, striate, pubescent. Flowering during May and September. Fruiting during June and October.
[Efficacy] The fruit can soothe the throat, relieve strangury, promote lactation and regulate menstruation. It can treat throat pain, unsmooth urination, postpartum oligogalactia and menstrual irregularity.

519. **Abelmoschus moschatus** (Linn.) Medicus (黃葵)

MALVACEAE

[English name]
[Distribution] Cultivated in Kiangsi, Hunan, Kwangtung, Hainan, Kwangsi and Yunnan

provinces of China, and Taiwan.
[Morphology] Annual or biennial herb, 1-2 m high, hispid. Leaves alternate; petioles 7 cm long, sparsely hispid; stipules linear, 7 mm long; blades deeply palmately 5-7-lobed, 6-15 cm across, lobes lanceolate to deltoid, irregulary dentate, sometimes blades shallowly lobed, in simple-leaf appearance, all blades cordate at base, sparsely hispid on both surfaces. Flowers solitary, axillary, pedicels 2 cm long, retrosely hispid, bractlets 8-10, linear; calyx spathaceous, 2-3 cm long, 5-lobed, usually caducous, corolla yellow, dark purple at the inner base, 7-12 cm across, staminal tube 2.5 cm long, glabrous, styles branched, stigmas capitate. Capsules cylindrical, 5-6 cm long, acute-tipped, yellowish hispid. Seeds reniform, striate, fragrant. Flowering during June and October.
[Content/Pharmacology] The leaf contains β-sitosterol, β-sitosterol-β-D-glucoside. The flower contains myricetin and myricetinglucoside. The seed contains α-cephalin, phosphatidylserine, plasmalogen, campesterol, sitosterol, stigmasterol, cholesterol and ergosterol. The leaf has antiseptic effects; the branch, leaf and fruit have worm *killing effects. The seed can treat headache. The seed has adhesive effect, and can reduce the toxicity of snake venoms.*
[Efficacy] The flower and leaf can clear heat and resolve toxin, *promote lactation and excretion. It can treat persistent high fever, pulmonary fire coughing, dysentery, constipation, postpartum oligogalactia, bone fracture, ulcerative carbuncle,* inflammatory swelling of unknown origin*, water and fire burns.*

520. **Abutilon indicum** (Linn.) Sweet (磨盤草)

MALVACEAE

[English name] India abutilon
[Distribution] Distributed in Fukien, Kwangtung, Hainan, Kwangsi, Kweichow and Yunnan provinces of China, and Taiwan.
[Morphology] Annual or suffrutescent perennial herb, erect, much-branched, gray-tomentose. Leaves alternate; petioles gray-tomentose and pilose; stipules awl-shaped, recurved; blades ovate or suborbicular, acute or acuminate, cordate at base, stellate-pubescent above and beneath, margins irregularly toothed. Flowers solitary, axillary, peduncles gray-tomentose; calyx discoid, green, densely gray-pilose, 5-lobed, lobes broadly ovate, acute at apex, corolla yellow, petals 5, staminal tube stellate-hispid, styles 5, stigmas capitate. Fruit a black, compressed globose schizocarp, mericarps 15-20, apically truncate, awned, stellate-hispid. Seeds reniform, stellate-pilose. Flowering during July and October. Fruiting during October and December.
[Content] The whole plant contains alantolactone, isoalantolactone and gallic acid. The above-ground parts contain leucine, histidine, threonine, etc. The flower contains gossypin, gossypitrin, cyaniding-3-rutinoside. Abutilon indicum also contains caryophellen, β-pinene, cineole, etc.
[Efficacy] The whole plant can disperse wind and clear heat, resolve phlegm and stop coughing, disperse swelling and resolve toxin. *It can treat common cold, fever, coughing, diarrhea,* tympanitis, deafness, parotitis, urinary tract infection, carbuncle, pyogenic infection and traumatic injuries.

521. **Abutilon striatum** Dicks. (風鈴花)

MALVACEAE

[English name] Chinese bell-flower
[Distribution] Native to Guatemala, distributed in the southern and southwestern parts of China, Taiwan and tropical areas; cultivated as an ornamental.
[Morphology] Evergreen shrub, 1-2.5 m high. Branches green, slender. Leaves alternate, long-petioled, palmately 5-lobed, lobes ovate-lanceolate, acuminate at apex, margins crenate. Flowers windbell-like, solitary, bearing in the upper axils, with a long, pendulous peduncle; calyx campanulate, brown-tomentose, 5-lobed, lobes narrowly deltoid, corolla yellowish orange to red, petals 5, obovate, rounded at apex, with deep red, reticulate veins, stamens numerous, joined by their filaments into a tube, ovary elongated ovate, carpels 5 or more, styles long, stigmas capitate. Flowering and fruiting throughout the year, full blooms during summer and autumn.
[Efficacy] The whole plant can clear heat, resolve toxin, drain dampness and disperse swelling. The leaf can clear heat and resolve toxin. It can treat abdominal pain, and its external application can treat traumatic injuries. The flower can activate blood, clear heat and resolve toxin.

522. **Abutilon theophrasti** Medicus (苘麻)

MALVACEAE

[English name]
[Distribution] Occurs in China (except Tibetan Plateau) and Taiwan.
[Morphology] Annual, suffrutescent herb, 1-2 m high, pilose on stems and branches. Leaves alternate; petioles 3-12 cm long, stellate-pubescent; stipules caducous; blades cordate-orbicular, 5-10 cm across, acuminate at apex, cordate at base, stellate-pilose on both surfaces, margins crenulate. Flowers solitary, axillary, peduncles 1-3 cm long, pilose, articulated near the tips; calyx cup-shaped, densely tomentulose, 5-lobed, lobes ovate, 6 mm long, corolla yellow, petals obovate, staminal tube glabrous, carpels 15-20, 1-1.5 cm long, truncate at apex, with 2 long awns spreading and pubescent, arranged in a whorl, densely pilose. Capsules half-globose, 2 cm across, 1.2 cm long, mericarps 15-20, hispid, with 2 long awns. Seeds reniform, brown, stellate-pilose. Flowering and fruiting during July and August.
[Content] The leaf contains rutin.
[Efficacy] The seed can clear heat and drain dampness, resolve toxin and open up the orifices. It can treat dysentery, tympanitis, tinnitus, deafness, orchitis, suppurative tonsilliti, carbuncle and pyogenic infection.

523. **Althace rosea** Cav. (蜀葵)

MALVACEAE

[English name] Hollyhock
[Distribution] Occurs in Syria, China and Taiwan.
[Morphology] Biennial herb, erect, 1.5-3 m high, stellate. Leaves alternate, with a petiole

4-30 cm long; blades cordate-orbicular or ovate-orbicular, shallowly 5-7-lobed, 6-28 cm long, 5-30 cm wide, cordate at base, obtuse at apex, margins irregularly toothed or crenate, rough and wrinkled on surfaces. Flowers solitary, axillary, bractlets 7-8, connate at base, shorter than calyx; calyx round cup-shaped, 5-lobed, lobes deltoid, corolla purplish red, pale red or white, petals 5, obovate, apically toothed, stamens numerous, filaments joined to a cylindrical tube, ovary many-loculed, carpels in a whorl, stigma lobed. Capsules compressed globose. Seeds reniform. Flowering during spring and summer.
[Content/Pharmacology] The root contains mucilage, pentosans, methyl pentosans and uronic acid. It can be made into a medicinal lubricant to treat mucosal inflammations because it has protective and mild stimulating effects. The leaf contains dioxybenzoic acid and athaeno. The flower contains herbacin, berbacetin, etc. The seed contains fat, starch, proteins and allantoinase.
[Efficacy] The root can clear heat and cool blood, promote urination and expel pus. It can treat strangury, leucorrhea, hematuria, hematemesis, flooding, intestinal abscess and carbuncle. The sprout can treat heat toxin induced dysentery. The flower can soothe blood and moisten dryness, promote urination and excretion. The seed can drain dampness, relieve strangury and lubricant the intestines. It can treat edema, strangury, constipation and scabies. All the other parts have similar effects

524. **Gossypium indicum** Linn. (草棉)

MALVACEAE

[English name] Ceylon cotton, Asiatic cotton, Chinese cotton
[Distribution] Widely cultivated in Taiwan, China, Japan, Malaysia, Thailand, India, Iran, Central Asia, Arabia, Celebes Island, Madagascar and Africa.
[Morphology] Evergreen small tree, about 3-5 m high. Leaves alternate, palmately 3-5-lobed, lobes elongated ovate, acute at apex, narrow at base, with a long petiole. Flowers purplish red, bracts large, cordate, petals 5, free, convolute, stamens numerous, monadelphous. Capsules ovate, angular. Seeds large, densely brown-tomentose(cotton fibers are good, silky, whitish or reddish brown). Flowering during July and August. Fruiting during September and October.
[Efficacy] The seed hair is the raw material for degreased cotton, which in medical applications, can be used to stop minor bleedings. Pure cotton can be obtained from the raw seed, which also contains fat and gossypol. This plant is the raw materials for producing *Gossypium* seed oil, which is a lactation promoting medicine. The root bark contains a tannin, which is a meridian unblocking and pain suppressing medicine.

525. **Hibiscus mutabilis** Linn. (木芙蓉)

MALVACEAE

[English name] Cotton rose
[Distribution] Cultivated in China including the eastern, south-middle, southwestern parts and Hunan, Liaoning, Hopei, Shenhsi provinces, also in Taiwan.
[Morphology] Deciduous shrub or small tree, 2-5 m high. Leaves alternate; petioles 5-20 cm long; stipules lanceolate, 5-8 mm long, usually caducous; blades broadly ovate or

cordate, 10-15 cm across, usually 5-7-lobed, lobes deltoid, acuminate at apex, crenate at margins, sparsely stellate above and densely stellate-tomentose below, 7-11-veined. Flowers solitary, at the upper leaf-axils, bractlets 8, linear, connate at base, densely stellate-pubescent; calyx campanulate, 2.5-3 cm long, 5-lobed, lobes ovate, acuminate at apex, corolla white or light red fading to deep red, 8 cm across, petals suborbicular, 4-5 cm across, pubescent outside, barbellate at base, staminal tube 3 cm long, styles sparsely pubescent. Capsules compressed globose, covered with yellowish bristles and wooly hairs, mericarps 5. Seeds reniform, pilose on dorsal surfaces. Flowering during August and October.

[Content] *The flower contains anthocyanin, isoquercitrin, hyperoseide, quercetin-4'-glucoside, spiraeoside, quercimeritrin, cyaniding-3-rutinoside-5-glucoside and quercetin.*

*[Efficacy]*The flower can clear heat and resolve toxin, cool blood and cease bleeding, disperse swelling and expel pus. It can treat pulmonary fire induced coughing, hematemesis, swelling and painful eyes, flooding, leucorrhea, diarrhea, abdominal pain, carbuncle, ulcerative furuncle, venomous snake bites, hot water or fire burns, and traumatic injuries.

526. **Hibiscus rosa-sinensis** Linn. (扶桑)

MALVACEAE

[English name] Chinese hibiscus

[Distribution] Cultivated in Fukien, Kwangtung, Hunan, Kwangsi, Szechuan and Yunnan provinces of China, and Taiwan.

[Morphology] Evergreen shrub, 1-3 m high. Branchlets terete, sparsely stellate-pilose. Leaves alternate; petioles long, pilose; stipules linear, pubescent; blades broadly ovate or narrowly ovate, 4-9 cm long, 2-5 cm wide, acuminate at apex, rounded or cuneate at base, serrate or lobed at margines. Flowers solitary, at the upper axils, usually nodding, peduncles 5 cm long, sparsely stellate-pilose, articulated near the apex, bractlets 6-7, linear, connate at base, sparsely stellate-pilose; calyx campanulate, stellate-pilose, 5-lobed, lobes ovate to lanceolate, corolla funnelform, red, pale red or pale yellow, petals obovate, rounded at apex, pilose outside, staminal tube long, beaked at apex. Flowering throughout the year.

[Content/Pharmacology] The flower contains quercetin-3-diglucoside, quercetin, quercetin-3,7-diglucoside, cyaniding-3,5-diglucoside, cyaniding-3-sophoroside-5-glucoside, cyanin, cyaniding, kaempferol-3-xylosylglucoside. It has blood pressure lowering effect. For the smooth muscles, it can induce spasms, but such effect can be countered by atropine. The flower and stem extract can be taken as contraceptive medicines. The benzene extracted from the flower can lower the probability of pregnancy and reduce the progestogen level.

[Efficacy] The flower and stem can clear the lungs, cool blood, and resolve dampness. It can treat pulmonary fire induced coughing, hemoptysis, flooding, leucorrhea, dysentery, red and white turbidity, and carbuncles.

527. **Hibiscus rosa-sinensis** Linn. **var. rubroplens** Sweet (重瓣扶桑)

MALVACEAE

[English name]
[Distribution] Introduced and cultivated in Fukien, Kuangtung, Hainan, Kuanghsi and Yunnan provinces of China, and Taiwan.
[Morphology] Evergreen shrub, erect, up to 3 m high. Branchlets slender, usually pendent, glabrous. Leaves alternate; petioles 1-2 cm long, stellate-pilose; stipules awl-shaped, 2 mm long, usually caducous; blades elliptic or oblong, 4-7 cm long, 1.5-4 cm wide, acute to short-acuminate at apex, obtuse or broadly cuneate at base, margins toothed, glabrous on both surfaces. Flowers solitary, axillary at the tips of branches, peduncles slender, nodding, 8-14 cm long, glabrous or puberulent, articulated in the middle, bractlets 5, minute, lanceolate, 1-2 mm long, puberulent; calyx tubular, 1.5 cm long, sparsely pubescent, shallowly 5-lobed, usually opening along a single side, petals red, 5 cm long, finely lobed, lobes fringed, upward and reflexed, staminal tube long, exserted and nodding, 9-10 cm long, glabrous, styles 5, glabrous. Capsules, 4 cm long, 1 cm across. Flowering throughout the year.
【Efficacy】 The flower and leaf can clear food accumulation and move stasis. It is used to treat food accumulation.

528. **Hibiscus sabdariffa** Linn. (落神葵)

MALVACEAE

[English name] Roselle
[Distribution] Native to tropical areas in the Eastern Hemisphere, but is now widespread throughout the tropics; introduced and cultivated in Taiwan.
[Morphology] Annual herb, erect, up to 2 m high. Stems pale purple, glabrous. Leaves heteromorphic; petioles sparsely pilose; stipules linear, sparsely pilose; blades in the lower leaves ovate, not lobed, blades in the upper deeply palmately 3-lobed, lobes lanceolate, 2-8 cm long, 5-15 mm wide, margins serrate, apex obtuse to acuminate, base rounded or broadly cuneate, glabrous on both surfaces, 3-5-veined, midveins glandular beneath. Flowers solitary, axillary, bractlets 8-12, red, fleshy, lanceolate, sparsely hispid, with a spiny appendage at the tips, basally adnate to calyx; calyx cup-shaped, pale purple, sparsely spinous and hispid, connate one-third the length from the base, 5-lobed, lobes acuminate-deltoid, 1-2 cm long, corolla yellow, deep red at the inner base. Capsules globose, densely hispid, mericaps 5. Seeds reniform, glabrous. Flowering during summer and autumn.
[Pharmacology] When the decoction, alcoholic extract or effusion is intravenously injected, there will be a rapid decrease in blood pressure. Oral administration of the decoction can also lower blood pressure. Its pressure lowering effect can be partially inhibited by atropine. The extract shows protective effects on heart cell damage due to lack of glucose, anoxia and toxic. The aqueous extract can increase the blood phosphate.
[Efficacy] The flower can constringe the lungs to cease coughing, lower blood pressure, and help one to sober up. It can treat coughing due to lung deficiency, hypertension and drunkenness.

529. **Hibiscus syriacus** Linn. (木槿)

MALVACEAE

[English name] Rose-of-sharon
[Distribution] Cultivated in China including the eastern, south-middle, southwestern parts and Hopeh, Shansi provinces, and Taiwan.
[Morphology] Deciduous shrub, 3-4 m high. Branches densely yellow stellate-tomentose. Leaves alternate; petioles 5 mm long, stellate-pilose; stipules linear, 6 mm long, sparsely pilose; blades rhombic to deltoid-ovate, 3-10 cm long, 2-4 cm wide, unequally 3-lobed, obtuse at apex, cuneate at base, margins irregularly teethed, veins slightly pubescent beneath. Flowers solitary, axillary at branch tips, peduncles 6 mm long, stellate-tomentose, bractlets 6-8, linear, densely stellate-tomentose; calyx campanulate, 5-lobed, lobes deltoid, corolla campanulate, pale purple, petals obovate, sparsely pubescent and stellate-pilose outside, staminal tube long. Capsules ovoid, densely yellow stellate-tomentose. Seeds reniform, yellow pilose on dorsal surface. Flowering during July and October.
[Content] The flower contains lutein-5,6-epoxie, cryptoxanthin, chrysanthnmaxanthin, herbacetin-7-β-D-glucopyranoside, delphinidin-3-O-glucoside, cyaniding-3-O-glucoside, and antheraxanthin which contains taxifolin-3-O-β-D-glucopyranoside. The flower bud contains β-carotene, lutein and hibiscus-mucilage SF.
[Efficacy] The flower and leaf can clear heat and drain dampness, cool blood and resolve toxin. It can treat hematochezia, red and white dysentery, hernia bleeding, pulmonary fire induced coughing, hemoptysis, ulcerative furuncle, carbuncle, and scalds.

530. **Hibiscus taiwanensis** S.Y. Hu (山芙蓉)

MALVACEAE

[English name] Taiwan cotton-rose
[Distribution] Distributed in China and Taiwan.
[Morphology] Deciduous shrub or small tree, 3-8 m high, densely covered with bristle-like stiff hairs, not stellate. Leaves alternate; petioles 14-17 cm long; blades suborbicular, 3-5-lobed, lobes deltoid. Flowers solitary, axillary at the branch tips, pedicels 11-13 cm long, bractlets 8, linear, 8-12 mm long, 1.5-2 mm wide, pilose-hispid, not stellate; calyx campanulate, 5-lobed, lobes deltoid, 10 mm long, 8 mm wide, acute at apex, stellate-tomentose; corolla subcampanulate, 6-9 cm across, petals suborbicular, 4-5 cm across, pilose, base connate and barbellate. Capsules globose, 2 cm across, pubescent.
[Efficacy] The whole plant can clear the lungs and cease coughing, cool blood and resolve toxin. It can treat pulmonary fire induced coughing, ulcers and pyogenic infections.

531. **Hibiscus tiliaceus** Linn. (黃槿)

MALVACEAE

[English name] Linden hibiscus
[Distribution] Distributed in Fukien, Kwangtung, Hainan, Kwangsi provinces of China, and Taiwan.
[Morphology] Evergreen shrub or tree, 4-10 m high. Main stems up to 60 cm across, with a pale white bark, branchlets glabrous or subglabrous, rarely stellate-tomentose or

stellate-pilose. Leaves coriaceus; petioles 3-8 cm long; stipules caducous, leafy, oblong, 2 cm long, 12 mm wide, rounded at apex, stellate and sparsely pilose; blades suborbicular or broadly ovate, 8-15 cm across, acute at apex, sometimes short-acuminate, cordate at base, margins entire or unconspicuously crenulate, the upper surface green, minute-stellate when young, glabrous with age, the lower surface densely pale gray stellate-pilose, 7-9-veined. Inflorescence a several-flowered cyme, axillary or terminal, peduncles 4-5 cm long, pedicels 1-3 cm long, basally with a pair of leafy bract, bractlets 7-10, linear lanceolate, tomentose, the lower half connate into a cup; calyx 1.5-2.5 cm long, connate at base, 5-lobed, lobes lanceolate, tomentose, corolla campanulate, 6-7 cm across, petals yellow, dark purple at the inner base, obovate, 4.5 cm long, densely yellow stellate-pilose, staminal tube 3 cm long, glabrous, styles forked, minute-glandular. Capsules ovoid, 2 cm long, tomentose, mericarps 5, woody. Seeds reniform, glabrous. Flowering during June and August.

[Efficacy] The flower and leaf can clear the lungs and cease coughing, detoxify and disperse swelling. It can treat pulmonary fire induced coughing, swelling and painful ulcerative furuncles, and *Manihot esculent* poisoning.

532. **Malva sinensis** Cav. (華錦葵)

MALVACEAE

[English name]

[Distribution] Cultivated as an ornamental in many areas of China, and Taiwan.

[Morphology] Biennial or perennial herb, 50-100 cm high, stems and leaves slightly hispid. Leaves alternate, with a long petiole; stipules obliquely ovate, acute at apex, serrate-margined; blades cordate or reniform, shallowly 5-7-lobed, lobes rounded-toothed, base cordate or rounded, margins crenate. Flowers in 3-several clusters, pedicels 1-2 cm long, bractlets 3, oblong; calyx campanulate, 5-lobed, corolla purplish red or white, petals 5, obovate-spatulate, notched at apex, staminal tube 8-10 cm long, styles 9-11-forked. Capsules compressed globose. Flowering during summer.

[Content] The whole plant contains mucilage. The purple flower contains malvin.

[Efficacy] The whole plant, stem and leaf can clear heat and drain dampness, regulate qi and promote excretion. It can treat lymphatic TB, navel and abdominal pain, unsmooth urination and defecation, and leucorrhea. The leaf and flower can clear heat and cool blood, relieve throat ache. They can bring sweating due to qi deficiency to an end.

533. **Malva verticillata** Linn. (冬葵)

MALVACEAE

[English name]

[Distribution] Distributed in China and Taiwan.

[Morphology] Annual herb, not branched, with stems pilose. Leaves with a slender, pilose petiole; blades orbicular, 5-7-lobed, 5-8 cm across, base cordate, margins serrulate, wrinkled above. Flowers white. Capsules compressed globose, 8 mm across, mericarps 11, reticulate and pilosulose. Seeds about 1 mm across, black. Flowering during June and September. Fruiting during August and October.

[Content/Pharmacology] The seed contains neutral polysaccharideacidic acid,

polysaccharides and peptidoglycan. The extract of neutral polysaccharide through carbon granule clearance experiment has obvious phagocytosis promoting effects on the reticuloendothelial system.
[Efficacy] The seed can drain dampness and relieve strangury, lubricate the intestines, promote excretion and promote lactation. It can treat strangury disease, edema, difficult defecation and oligogalactia.

534. **Malvastrum coromandelianum** (Linn.) Garcke (苦麻賽葵)

MALVACEAE

[English name] Ulm-leaved false mallow
[Distribution] Native to Americas, distributed in Fukien, Kwangtung, Hainan, Kwangsi and Yunnan provinces of China, and Taiwan.
[Morphology] Subshrub, up to 1 m high. Stems erect, sparsely pubescent and stellate. Leaves alternate; petioles 1-3 cm long, densely pilose; stipules lanceolate, 5 mm long; blades ovate-lanceolate or ovate, 3-6 cm long, 1-3 cm wide, obtuse at apex, base broadly cuneate to rounded, margins serrate, sparsely pilose above, sparsely stellate-pilose below. Flowers solitary, axillary, pedicels 5 mm long, pilose; bractlets linear, 5 mm long, 1 mm wide, sparsely pilose; calyx crateriform, 5-lobed, lobes ovate, acuminate at apex, 8 mm long, connate at base, sparsely stellate-pilose, corolla yellow, 1.5 cm across, petals 5, obovate, 8 mm long, 4 mm wide, staminal tube 6 mm long, glabrous. Capsules 6 mm across, mericarps 8-12, reniform, sparsely stellate, 2.5 mm across, the dorsal surface 1 mm wide, with 2 spines. Flowering most of the year.
[Efficacy] The whole plant can clear heat and drain dampness, resolve toxin and disperse swelling. It can treat heat dampness diarrhea and dysentery, jaundice, pulmonary fire induced coughing, swelling pain of the throat, hernia, carbuncles, sore toxin, traumatic injuries and prostatitis.

535. **Malvaviscus arboreus** Cavaniccej (姬扶桑)

MALVACEAE

[English name] South American wax mallow
[Distribution] Native to South America including Mexico, Peru and Brazil, widely cultivated in the tropics and Taiwan.
[Morphology] Evergreen shrub, shade-tolerating. Branches slender, long and pendulous. Leaves alternate; petioles 3-6 cm long; stipules linear; blades chartaceous, ovate, cordate-obovate to broadly elliptic, 4-8 cm long, 3-6 cm wide, cordate or obtuse at base, obtuse to acuminate at apex, loosely serrate-margined, nearly glabrous on both surfaces. Flowers several, arising in the upper leaf-axils, pedicels long, pubescent, bractlets 6-8; calyx 5-lobed, lobes ovate-lanceolate, green, corolla bright red to deep red, slightly opening, 4-6 cm long, petals slightly left-convolute, stamens about 25, styles exserted, stigmas 10-forked. Flowering and fruiting throughout the year.
[Efficacy] The root can clear heat, promote urination and disperse swelling. It can treat common cold fever, parotitis, carbuncle, sores, and dermatosis. The stem and leaf can detoxify and disperse swelling. When applied externally, they can treat wound, gangrene

and carbuncles. The flower has heat clearing and swelling dispersing effects; and when it is applied externally, it can treat pyogenic infection.

536. **Sida acuta** Burm. f. (蛇總管)

MALVACEAE

[English name] Narrow-leaved sida
[Distribution] Native to India, widespread in Fukien, Kwangtung, Hainan, Kwangsi and Yunnan provinces of China, and Taiwan.
[Morphology] Subshrubby herb, erect, 1-2 m high, much branched, branches pilose. Leaves alternate; petioles 5 mm long, sparsely pilose; stipules linear, nearly as long as petioles, usually persistent; blades lanceolate, 2-5 cm long, 4-10 mm wide, acute to acuminate at apex, rounded or obtuse at base, serrate-margined, glabrous or sparsely stellate-pilose, sometimes pubescent above. Flowers solitary or in a pair, axillary, peduncles long, pilose, articulated in the middle; calyx crateriform, glabrous, 5-lobed, lobes lanceolate, acuminate at apex, connate in the lower half, corolla yellow, petals obovate, rounded at apex, base narrow and pubescent, staminal tube long, sparsely hispid. Capsules subglobose, mericarps 4-9, usually 5-6, 2-awned at apex, pericarp reticulate-wrinkled. Flowering during winter and spring the next year.
[Content/Pharmacology] The root mainly contains alkaloids, including crytolepine, ephedrine, β-phenethylamine, vasicinol, vasicinone, vasicine and hypaphorine. The above-ground parts contain alkaloids: dimethyltryptophane, methyl ester, choline, betaine, pristine, phytane, hentriacontane, nonacosane and cholesterol. The decoction has inhibitory effects on toad hearts in low concentration, and can decrease its blood pressure significantly. Intravenous injection of the decoction can increase the intestinal smooth muscle tension; rising its resting potential significantly, slowing down its motility and increasing the peristaltic waves.
[Efficacy] The whole plant can clear heat-dampness, resolve toxin, disperse swelling, activate blood and ease pain. It can treat diarrhea due to heat-dampness, acute mastitis, hernia, ulcerative wound and pyogenic infection, traumatic injury, bone fracture and wound bleeding.

537. **Sida cordifolia** Linn. (心葉黃花?)

MALVACEAE

[English name]
[Distribution] Distributed in Fukien, Kwangtung, Hainan, Kwanghsi, Szechuan and Yunnan provinces of China, and Taiwan.
[Morphology] Subshrub, erect, about 1 m high, densely stellate and with long soft hairs 3 mm long on branches and leaves. Leaves alternate; petioles 1-2.5 cm long; stipules linear; blades ovate, obtuse or rounded at apex, base subcordate or rounded, margins crenate, stellate on both surfaces. Flowers solitary or clustered in leaf-axils or at branch-tips, peduncles 5-15 mm long, articulated at apex; calyx cup-shaped, 5-lobed, lobes deltoid, corolla yellow, petals elongated, orbicular, staminal tube 6 mm long, hispid. Capsules 6-8 mm long, mericarps 10, 2-awned at tips, the awns exserted, 3-4 mm long, barbellate. Seeds

elongated-ovate, pubescent at tips. Flowering throughout the year.
[Content] The root contains ephedrine, β-phenethylamine, hypaphorine, vasicine, vasicinone, vasicinol, choline and betaine. The above-ground parts contain β-sitosterol, palmitic acid, stearic acid and hexacosanic acid. The main contents of the seed oil are linoleic acid, malvalic acid and sterculic acid.

[Efficacy] The whole plant can clear heat and drain dampness, cease coughing, resolve toxin and disperse carbuncle. It can treat heat-dampness jaundice, dysentery, strangury disease, fevers and coughing, asthma, carbuncle and sore toxin.

538. **Sida rhombifolia** Linn. (賜米草)

MALVACEAE

[English name]
[Distribution] Distributed in China including the southern, southwestern parts and Fukien, Hupeh provinces, and Taiwan.
[Morphology] Subshrub, erect, about 1 m high, much branched, branches and petioles stellate-pubescent. Leaves alternate; petioles 3-5 mm long, stipules slender, bristle-like, as long as petioles; blades rhombic or oblong-lanceolate, apex rounded to acute, base broadly cuneate, margins serrate, stellate-pubescent above and below. Flowers solitary, axillary, peduncles 1-2 cm long, densely stellate-pubescent, articulated in the middle; calyx cup-shaped, 5-lobed, lobes deltoid, corolla yellow, petals obovate, rounded at apex, base narrow, staminal tube glabrous, sparsely glandular-papillae, 5 mm long, styles 8-10-forked. Capsules hemispheric, mericarps 8-10, 2-awned at apex. Flowering during autumn and winter.
[Content/Pharmacology] The above-ground parts contain β-phenethylamine, N-methy-β-phenethylamine, ephedrine, vasicinol, vasicinone, vasicine, choline and betanine. The leaf contains lysine, histidine, phenylalanine, leucine, arginine, asparagine, glutamine, alanine, valine, aspartic acid and glutamic acid. The aqueous and alcoholic extracts of the whole plant can contract guinea pig intestinal smooth muscles; such effect can be countered by anti-histamine drugs. The leaf contains a large quantity of mucilage; it can be used as a phlegm resolving medicine and intestine lubricant.
[Efficacy] The whole plant can treat common cold high fever, thraot swelling pain, heat-dampness dysentery, jaundice, leucorrhea, strangury disease, wind-dampness paralysis and weakness, dizziness, tiredness and lack of energy, hernia bleeding, gangrene carbuncle and rooted furuncle.

539. **Thespesia populnea** (Linn.) Solad. ex Correa (黧楊)

MALVACEAE

[English name] Rose wood
[Distribution] Widespread in tropical Asia including Hainan, Kwangtung provinces of China, Taiwan, Southeast Asia, and on other tropical coasts.
[Morphology] Evergreen, medium-sized tree, barks with many fibers, branchlets densely covered with pubescence and peltate scales. Leaves alternate, with a long petiole; stipules narrowly lanceolate, caducous; blades coriaceous, cordate, base deeply notched, apex acute

to caudate, margins entire. Flowers solitary, axillary, pedicels 2-5 cm long, yellow fading to purplish red, with a red center, 6 cm across; calyx crateriform, truncate at apex, margins irregularly serrate, petals 5, ovate, stamens numerous, staminal tube 5-lobed at apex, ovary 10-loculed, style clavate. Capsules pyriform or compressed globose, 3 cm across, blackish brown when mature, with calyx persistent. Seeds compressed orbicular, 1 cm long. Flowering during July and August. Fruiting during December and January the next year.
[Content/Pharmacology] The bark and wood contain tannins, additionally the bark also contains resin. The seed contains fats, gossypol, (2,2-binaphthalene)-8,8-dicarboxaldehyde. It has anticancer, antiviral, antiseptic, anaesthetizing, antitrichomonal and anti-amoebic effects.
[Efficacy】] The root and leaf have inflammation dissipating, pain easing effects. They can treat meningitis, dysentery, hernia pain, hemorrhoid and scabies. The bark and wood have astringent effects. They can treat pleurisy, cholera, bloody dysentery and hemorrhoid. The bark and leaf can treat skin sores and arthritis.

540. **Urena lobata** Linn. (虱母)

MALVACEAE

[English name] Cadillo, Lobate wild cotton
[Distribution] Distributed in southern areas of Yangtze River in China, and Taiwan.
[Morphology] Subshrubby herb, erect, up to 1 m high, branchlets stellate-tomentose. Leaves alternate; petioles 1-4 cm long, pale-stellate; stipules linear, 2 mm long, caducous; blades of the lower leaves suborbicular, 4-5 cm long, 5-6 cm wide, shallowly 3-lobed at apex, base rounded or ovate, 5-7 cm long, 3-6.5 cm wide, blades of the upper leaves oblong to lanceolate, 4-7 cm long, 1.5-3 cm wide, all blades pilose above and pale stellate-tomentose below. Flowers solitary or slightly clustered, axillary, pale red, about 15 mm across, pedicels 3 mm long, pilose, bractlets 5, 6 mm long, connate at base; calyx cup-shaped, 5-lobed, slightly shorter than bractlets, both stellate-pilose, petals 5, obovate, 15 mm long, glabrous, styles 10-forked, slightly hispid. Capsules compressed globose, 1 cm across, mericarps stellate-pubescent and barbed. Flowering during July and October. Fruiting during August and November.
[Content] The above-ground parts contain mangiferin and quercetin.
[Efficacy] The whole plant and root can expel root and drain dampness, activate blood and disperse swelling, clear heat and resolve toxin. They can treat common cold and wind-dampness obstructive pain, dysentery, leucorrhea, menstrual irregularity, traumatic swelling pain, obstructive throat, acute mastitis, sore furuncle and venomous snake bites.

541. **Urena lobata** Linn. **var. albiflora** Kan. (白花虱母)

MALVACEAE

[English name]
[Distribution] Distributed in China including the southwestern part and Fukien, Kwangtung, Kwangsi provinces, and in Taiwan.
[Morphology] Subshrubby herb, erect, up to 1 m high, branches stellate-tomentose. Leaves alternate; petioles 1-4 cm long, gray-stellate; stipules linear, 2 mm long, caduceus; blades

tomentose-pilose, upper blades ovate or suborbicular, serrate-margined, lower blades broader, shallowly 3-lobed, subcordate at base, all blades pilose above and gray stellate-tomentose below. Flowers solitary or slightly clustered, axillary, pale red, 15 mm across, pedicels 3 mm long, villous, bractlets 5, linear, densely villous, 6 mm long, connate at base; calyx cup-shaped, 5-lobed, lobes shorter than bractlets, both stellate-pilose, petals 5, obovate, 10-13 mm long, stellate-pilose outside, staminal tube glabrous; styles 10-forked, slightly hispid. Capsules compressed globose, mericarps stellate and barbellate. Flowering during June and October.
[Content] The above ground parts contain mangiferin and quercetin.
[Efficacy] It can expel wind and drain dampness, activate blood and disperse swelling, dissipate heat and resolve toxin. It can treat common cold, wind-dampness obstructive pain, traumatic swelling pain, obstructive throat, acute mastitis, ulcerative furuncle and venomous snake bites.

542. **Urena procumbens** Linn. (梵天花)

MALVACEAE

[English name]
[Distribution] Distributed in China including Chekiang, Kiangsi, Fukien, Hunan, Kwangtung, Hainan, Kwangsi provinces, and in Taiwan.
[Morphology] Small shrub, about 80 cm high, with branches spreading, branchlets stellate-tomentose. Leaves alternate; blades deeply 3-5-lobed(the upper usually 3-lobed), cleft to the lower half, sinus narrow-orbicular, 1.5-6 cm long, 1-4 cm wide, lobes rhombic or obovate, apex obtuse, base rounded to slightly cordate, margins serrate, stellate-hispidulous. Flowers solitary or slightly clustered, pedicels 2-3 mm long, bractlets 7 mm long, connate at base, sparsely stellate; calyx as long as or shorter than bractlets, ovate, acute at apex, stellate, corolla pale red, petals 10-15 mm long, staminal tube glabrous, as long as petals. Capsules globose, 6 mm across, hispid and glochidiate. Seeds glabrous. Flowering during June and September. Fruiting during July and October.
[Efficacy] The whole plant can expel wind and drain dampness, clear heat and resolve toxin. It can treat wind-dampness obstructive pain, dysentery, common cold, esophageal and laryngeal swelling pain, pulmonary fire induced coughing, wind-toxin induced multiple abscess, ulcerative carbuncle, pyogenic infection, traumatic injury, and venomous snake bite.

543. **Geranium nepalense** Sweet **ssp. thunbergii** (Sieb. & Zucc.) Hara (牻牛兒苗)

GERANIACEAE

[English name]
[Distribution] Widely distributed in China including the northeastern, north, northwestern, middle parts, the western part of Yunnan provinces and Tibet, and in Taiwan.
[Morphology] Annual or biennial herb, 10-50 cm high. Roots terete. Stems decumbent or ascending, much branched, pilose. Leaves opposite; petioles 4-6 cm long; stipules lanceolate, membranous-margined; blades elongated ovate or elongated deltoid-orbicular, bipinnatifid, pinnae in 5-9 pairs, with a decurrent base, pinnule linear, entire or 1-3-toothed,

pilose on both surfaces. Inflorescence an axillary umbel, usually 2-5-flowers borne on a long peduncle. Sepals oblong, awned at apex, petals 5, pale purple or bluish purple, as long as sepals, obovate, apex rounded, base covered with white hairs, stamens 10, in two whorls, the outer 5 with reduced anthers, the inner 5 with fertile anthers, nectar glands 5, ovary densely white-pilose. Capsules long beaked, splitting into 5 separate segments at maturity, the splitted beaks contorted, brown-pubescent inside. Flowering during April and August. Fruiting during June and September.

[Content/Pharmacology] The whole plant contains geraniol, quercetin and other dyes. The branch and leaf contain hyperin; their decoctions and rough extracts have anti-influenza effects. The whole plant decoction has antiseptic effects against *Staphylococcus aureus*, Group B *streptococcus*, *Streptococcus pneumoniae* and *Neisseria catarrhal*. In addition, the decoction also has anti-inflammation, liver protecting, cough ceasing and anti-oxidative effects.

[Efficacy] The whole plant can expel wind and free the collateral channels, activate blood, clear heat and drain dampness. It can treat wind-dampness obstructive pain, skin numbness, sinew and bone soreness, traumatic injury, dysentery, sore toxin and abdominal pain.

544. **Geranium robertianum** Linn. (漢荭魚腥草)

GERANIACEAE

[English name] Herb-robert, Red robin

[Distribution] Distributed in Hupeh, Szechuan, Kweichow and Yunnan provinces of China, and Taiwan.

[Morphology] Annual herb, slender, 25-40 cm high. Roots numerous, wire-like, juicy. Stems erect, much branched, slightly white-pilose. Leaves opposite, pentagonal-orbicular, 4-7 cm long and wide, 3-5-lobed, the middle lobes long-petioluled, the lateral short-petioluled, all lobes pinnatifid, the loblets of 3 pairs, oblong, acute at apex; petioles 2-4 times as long as blades, shorter in the upper leaves. Inflorescence of 2 flowers, the peduncles longer than leaves, pedicels shorter than flowers, ascending when fruiting. Sepals lanceolate, white-pilose, 3-veined, the midvein raised, petals purplish red, 2 times as long as sepals. Capsules 1.8-2.5 cm long. Flowering during May and September. Fruiting during June and October.

[Efficacy] The whole plant can expel wind and remove dampness, resolve toxin and disperse swelling. It can treat wind-dampness obstructive pain, sprain injuries, ulcerative furuncles and carbuncles, measles and uterine prolapse.

545. **Pelargonium hortorum** Bailey (天竺葵)

GERANIACEAE

[English name]

[Distribution] Native to southern Africa, widely cultivated in China and Taiwan.

[Morphology] Perennial herb. Stems fleshy, woody at base, much branched, densely pubescent and glandular, with strong smell. Leaves alternate; blades orbicular-reniform, 5-10 cm across, cordate at base, irregularly crenate-margined, pubescent on both surfaces, with a dark red, horseshoe-shaped blotch on upper surface, palmately 5-7-veined.

Inflorescence a terminal umbel, subtended by an involucre. Flowers many, medium-sized, pedicels drooping before blooming, 2.5-4 cm long; petals 5, the lower 3 larger, 1.2-2.5 cm long, white, pink to red. Capsules splitting into 5 segments at maturity, the segments curled upward. Flowering during spring and summer.
[Content] The whole plant contains free cholesterol, campesterol, sitosterol, stigmasterol, α-amyrin, β-amyrin, isomultifluorenol, and small quantities of cycloeucalenol, obtusifoliol, cycloartenol, 24-methylene cycloartanol and citronellal.
[Efficacy] Clear heat and dissipate inflammation. Used for the treatment of tympanitis.

546. *Averrhoa carambola* Linn. (五斂)

Oxalidaceae

[English name] Carambola
[Distribution] Widely cultivated in Fuchien, Kuangtung, Kuanghsi, Hainan, Yunnan and Taiwan
[Morphology] Trees, 5-12m high, young branches with villous and small lenticels. Odd-pinnate, petioles and rachises pubescent, 5-11 leaflets; leaflets ovate to elliptic, 3-6cm long, 3cm wide, apex acuminate, base oblique. Inflorescence panicle, axillary or on the old branches; sepals 5, reddish purple, imbricate; corolla campanulate, white to pale-purple, petals obovate, spiral; stamens 10, 5 shorter and without anthers, filaments united at the base; ovary 5 rooms, with 5 ridges, numerous ovules each room. Berries ovoid or elliptic, 5-8cm long, pale yellowish-green, glabrous, with 3-5 wing-shape ridges. Flowering during July and August; fruiting during August and September.

547. *Oxalis corniculata* Linn. (酢漿草)

Oxalidaceae

[English name] Creeping oxalis
[Distribution] Most area in China and Taiwan
[Morphology] Perennial herbs. Rhizome thin and long, stem thin and weak, creeping or oblique, numerously branched, pubescent. Petioles 2-6.5cm, stipules obvious; leaflets 3, obcordate, 4-10mm long, apex emarginated, base broad cuneate, adaxial surface glabrous, abaxial surface with rough sericeous, no petiolule. Flowers single or axillary umbel, length of pedicels equal to petioles; flowers yellow; sepals long-ovate lanceolate, apex obtuse; petals obovate, 9mm long, apex round, base slightly united; staments united into tube; styles 5. Capsules near cylinder, 1-1.5cm long, slightly 5 ridged, with beaks, locucidally dehiscent. Seeds dark brown, flat and near ovate, vertically grooved. Flowering during May and August; fruiting during June and September.

548. *Oxalis corymbosa* Dc. (紫花酢漿草)

Oxalidaceae

[English name] Violet wood-sorrel oxalis
[Distribution] Native of South America, widely naturalized in the world and Taiwan.
[Morphology] Perennial herbs, 20-35cm high, with numerous bulbils underground, scales brownish black, abaxial surface with 3 vertical ridges, pubescent. Leaves radical and

tufted, delicate, pubescent, palmate; leaflets 3, broad obovate or obcordate, 2-3.5cm long, 1.5-3.5cm wide, apex emarginated, margin entire, pubescent, both sides with brown tuber-shape glands; petioles 15-20cm long. Inflorescence corymb, pedicels axillary, each with 3-10 flowers; sepals 5, green, apex with pair of red glands; corolla short trumpet-shape, about 1.7cm cross, petals 5, pale purplish red or pale red; stamens 10, 5 longer; ovary 5 rooms, stigmas 5. Capsules short linear, 1.7-2cm long, pubescent, dehiscent when ripen. Seeds tiny, elliptic, brown. Flowering during spring and summer.

549. *Impatiens balsamina* Linn. (鳳仙)

BALSAMINACEAE

[English name] Garden balsam
[Distribution] Widely cultivate in China and Taiwan.
[Morphology] Annual herbs, 40-100cm high. Stem fleshy, erect, thick and strong. Leaves alternate, lanceolate, 12cm long, 2cm wide, apex long acuminate, base narrower, margin sharp serrate, lateral veins 5-9 pairs; petioles long, both sides with several glands. Pedicels short, flowers big, single or several tufted axillary, usually pink or white, normal or double flowers, densely covered with puberulous; sepals 2, broad ovate, with rough puberulous; flag round, apex emarginated with small tip, abaxial surface with keel ridges; wings broad with shot pedicels, 2 lobes, basal lobe near round, upper lobe broad ax-shape, apex 2 shallowly lobed; labels boat-shape, with rough puberulous, basal part elongate as spur; anthers obtuse. Capsules spindle-shape, immediately dehiscent with touching when ripen, densely covered with hairs. Seeds numerous, globose, black.

550. *Tropaeolum majus* Linn. (金蓮花)

TROPAEOLACEAE

[English name] Garden nasturtium
[Distribution] Often cultivated in South and North areas of China, Kuanghsi, Yunnan and Taiwan.
[Morphology] Annual or perennial climbing fleshy herbs, glabrous. Roots sometimes tuberous. Leaves alternate, paltate, near orbiculate, 5-10cm wide, midribs 9 from the center to margin, margin repand obtuse anglular, abaxial surface usually pubescent or papillate; petioles 10-20cm long, attach to the center of leaves. Flowers single, axillary, yellow or reddish orange, 2.5-5cm wide, pedicels long; sepals 5, united at the base, one elongate to a long calcar; petals 5, upper 2 often bigger and lower 3 smaller, base parts narrow to claw shape, hairy lobes near the margin of claw; stamens 8, filaments free, unequal length; ovary 3 rooms, style 1, stigmas 3, linear. Dehiscent drupes dehisce to 3 when ripen. Flowering during spring and summer.

551. *Linum usitatissimum* Linn. (亞麻)

LINACEAE

[English name] Flax
[Distribution] North-East of China, Mongolia, Shanhsi, Shenhsi, Shantung, Hunan, Hupei, Kuangtung, Kuanghsi, Ssuchuan, Kueichou, Yunnan.

[Morphology] Annual erect herbs, 30-100cm high or more, glabrous, stem cylindrical, surface with vertical stripes, base part slightly lignify, upper part fork numerously, alternate. Petioles absent or near absent; leaves lanceolate or linear lanceolate, apex acuminate, base cuneate, margin entire, usually 3 main veins. Flowers numerous, terminal or 1 axillary on upper part, pedicels thin and weak; sepals 5, green, free, ovate, half the length of petal; petals 5, blue or white, free, broad obovate, margin undulate; stamens 5, anthers linear; superior ovary, 5 rooms, styles 5, linear, free. Capsules near globose or slightly flat. Seeds ovate, one apex slightly acute and bend, surface yellowish brown and luster. Flowering during June and July; fruiting during July and September.

552. *Tribulus terrestris* Linn. (蒺藜)

ZYGOPYLLACEAE

[Distribution] China and Taiwan.
[Morphology] Annual herbs, stems usually fork from the base, creeping, ridged, about 1m long, entire plants sericeous. Stipules lanceolate, small and acute; leaves even-pinnate, opposite, one long and one short, 3-5cm long, 1.5-2cm wide, usually 6-8 pairs of leaflets; leaflets oblong. Flowers pale-yellow, small, regular, single, axillary; sepals 5, ovate lanceolate, persistent; petals obovate, alternate to sepals; stamens 10, attach on base of flower plate, base part with scale-shape glands; ovary composed with 5 carpels. Fruits schizocarp, pentagon or globose, composed with 5 star-like arranged mericarps, each mericarp with one pair of long thorns and one pair of short ones, abaxial surface scabrous and tuberculate. Flowering during May and August; fruiting during June and September.

553. *Erythroxylum coca* Lam. (古柯) **Erythroxylaceae**

[English name] Coca
[Distribution] Cultivated in Chechiang, Chianghsi, Fuchien, Kuantung, Hainan, Kuanhsi, Kueichou, Yunnan, and Taiwan.
[Morphology] Shrub to small tree, 1~6 m high. Branchlets dark brown, glabrous. Leaves alternate, oblong-elliptic or lanceolate, 4~10 cm long, 1.5~3 cm broad, apex mucronate or shortly acuminate, base broadly cuneate, appearing glaucous and brown after drying, lateral veins not prominent; petioles 2~8 mm long; stipules 1~2 mm long. Flowers 1~3 fasciculate, axillary, pedicels 5~9 mm long; calyx deeply lobed up to 3/4, lobes lanceolate or ovate, 1~1.5 mm long; petals ovate-oblong, 3~4 mm long, with 2 ligulate appendages; staminal tube about equal to calyx or slightly shorter than calyx in long-styly flowers, longer than calyx in short-styly flowers; ovary oblong, about 2 times of staminal tube length in long-styly flowers, styles connate. Drupes long ellipsoid, sharply 3-ridged, slightly curved, 10~14 mm long, 3.5~5 mm long, apex obtuse. Flowering during May and June; fruiting during May and November.

554. *Hiptage benghalensis* Kurz (猿尾藤) **Malpighiaceae**

[English name] Bengal hiptage
[Distribution] Hainan, Kuanhsi, Yunnan, and Taiwan.
[Morphology] Scandant woody liana, up to 30 m long. Stem cylindrical, with small

yellowish-white lenticels; young branchlets and inflorescence covered with T-shaped pubescence. Leaves opposite, coriaceous, elliptic-oblong to ovate-lanceolate, 7~15 cm long, 3~7.5 cm broad, apex acuminate, base broadly cuneate or rounded, shined above, covered with apressed T-shaped pubescence. Racemes axillary or terminal, 5~10 cm long, nodal above middle part; flowers white to pink, fragrant; sepals 5 lobes, lobes obtuse, with one prominent gland at base, pubescent; petals 5, broadly oblong, base narrowed to claw, margin fimbriate, sericeous outside; stamens 10, downward, the anterior one longest; ovary shallowly 3-lobed, lobes with appendages 3~5 dorsally. Fruits with 3 unequal winges, the middle one largest, 2.5~7 cm long, oblong or nearly rounded, slightly reddish when mature. Flowering during March and April; fruiting during May and July.

555. *Acronychia pedunculata* (Linn.) Miq. (降真香) **Rutaceae**

[English name] Acronychia

[Distribution] Kuantung, Hainan, Kuanhsi, Yunnan, and Taiwan.

[Morphology] Evergreen tree, 10~20 m high. Young branch and inflorescences pubescent. Leaves simple, opposite, oblong, 6~15 cm long, 2.5~6 cm broad, apex acute, sometimes rounded or retuse, base broadly cuneate, densely punctate; petioles 1~2 cm long, swollen at apex. Cymes with long peduncles, axillary or terminal; flowers bisexual; sepals 4, 0.6~0.8 mm long; petals 4, pale green, narrowly lanceolate or linear, 5~6 mm long, margin inrolled, densely tomentose inside; stamens 8, pubescent on lower part; ovary superior, densely pubescent, 4-celled, styles slender. Drupes yellow, glabrous, semi-transparent, 8~10 mm across. Seeds black, with fleshy endosperm. Flowering during April and August; fruiting during August and December.

556. *Boenninghausenia albiflora* Reichenb. (臭節草) **Rutaceae**

[English name]

[Distribution] Southwestern China, Anhui, Chechiang, Chianghsi, Fuchien, Hupei, Hunan, Kuantung, Kuanhsi, and Taiwan.

[Morphology] Perennial herb, 50~80 cm high, with strong odor. Young branchlets gray-green, usually hollow. Taproot indistinct, with numerous brown fibrous roots. Leaves alternate, ternately 2- to 3- pinnate compound, leaflets obovate or elliptic, unequal in size, apex obtuse or retuse, base cuneate, dark green above, gray green beneath, punctate; terminal leaflets with shorter stipes. Cymes terminal, with smaller leaves at base, flowers bisexual; sepals deeply 4-lobed; petals 4, white, distinct, obovate-oblong, apex obtuse; stamens 8, filiments filiform, unequal in length, anthers yellow, oblong; ovary superior, carpels 4, distinct at base, stipe of ovary elongated when fruiting, styles 4, connate at apex, distinct at base. Capsules ovoid, 4-valved, glandular. Seeds several, reniform, dark-black, rugose. Flowering during April and October; fruiting during June and November.

557. *Citrus grandis* (Linn.) Osbeck (柚) **Rutaceae**

[English name] Buntan shaddock, pomelo

[Distribution] Cultivated in Chechiang, Chianghsi, Fuchien, Hupei, Hunan, Kuantung, Kuanhsi, Ssuchuang, Kueichou, Yunnan, and Taiwan.

[Morphology] Evergreen tree, 5~10 m high. Branchlets compressed, young branches and leaves shortly pubescent, with or without thorns. Leaves simple, alternate, oblong or broadly ovate, 6.5~16.5 cm long, 4.5~8 cm long, apex obtuse or retuse, base obtuse, margin shallowly waved or obtusely serrate, sparsely pubescent or glabrous, with numerous semi-transparent glandular dots; petioles with broadly triangular obovate wings. Flowers solitary or in racemes, axillary, white; calyx cupular, shallowly 4~5 lobed; petals 4~5, oblong, fleshy; stamens 25~45, connate to 4~10 fascicles at base; pistil 1, ovary oblong, stigma compressed capitates. Hesperidium pear like, globose or compressed globose, 10~15 cm across, lemon yellow. Seeds compressed globose or cuneate, white or yellowish. Flowering during April and May, fruiting during September and November.

559. *Citrus limon* Burm. (檸檬) **Rutaceae**

[English name] Lemon

[Distribution] Native to Asia, widely cultivated in Southern China and Taiwan.

[Morphology] Evergreen shrub, with hard thorns. Leaves alternate, oblong to elliptic-oblong, apex shortly acute or obtuse, margin obtusely serrate; petioles short, with narrow wings, nodal at apex. Flowers solitary or fasciculate, axillary; calyx 5-lobed, cupular; petals 5, linear-oblong, base decurrent, pale purple outside, white inside; stamens more than 20; styles large, deciduous, ovary narrowed upward, 8~10 cells, ovules several in each cell. Hesperidium nearly globose, with undeveloped, nipple-like protuberance at apex, yellow to red, pericarp thin and easily peeled, segments 8~10, juice very sour. Seeds 3~4, ovate. Flowering in spring.

561. *Citrus medica* Linn. var. *sarcodactyllis* Hort. (佛手柑) **Rutaceae**

[English name] Fingered citron

[Distribution] Cultivated in Chechiang, Chianghsi, Fuchien, Kuantung, Kuanhsi, Ssuchuang, Yunnan, and Taiwan.

[Morphology] Evergreen small tree or shrub. Branches with short and hard thorns, purplish-red when young, gray-green when old. Leaves simple, alternate, coriaceous, oblong or obovate-oblong, 5~16 cm long, 2.5~7 cm broad, apex obtuse, sometimes retuse, base nearly rounded or cuneate, margin shallowly and obtusely serrate; petioles short, without wings and nodes. Flowers solitary, fasciculate, or raceme; calyx cupular, shallowly 5-lobed, lobes triangular; petals purple outside, white inside; stamens numerous; ovary ellipsoid, narrowed upward. Hesperidium ovoid or long ellipsoid, apex split like a fist or fingers, the numbers of lobes equal to carpels, orange at mature, rough, flesh pale yellow. Seeds several, ovoid, sometimes imperfectly developed. Flowering during April and May; fruiting in October and December.

562. *Citrus reticulata* Blanco (橘) **Rutaceae**

[English name] Chinese honey, tangerine, orange

[Distribution] Chiangsu, Anhui, Chechiang, Chianghsi, Fuchien, Hupei, Hunan, Kuantung, Kuanhsi, Ssuchuang, Kueichou, Yunnan, and Taiwan.

[Morphology] Evergreen small tree or shrub, 3~4 m high. Branchlets slender and thorny.

Leaves alternate, lanceolate or elliptic, 4~11 cm long, 1.5~4 cm broad, apex acuminate and retuse, base cuneate, entire or waved, with indistinct teeth and semi-transparent glandular dots; petioles 0.5~1.5 cm long, narrowly winged, nodular apically. Flowers solitary or fasciculate, axillary or terminal; calyx cupular, 5-lobed; petals 5, white or reddish, recurved when opened; stamens 15~30, unequal, filaments usually 3~5 in fascicles; pistil 1, ovary globose, stigmas capitate. Hesperidium nearly globose or compressed globose, 4~7 cm across, pericarp thin and easily peeled, segments 7~12, soft and juicy. Seeds ovoid, white, acute at one side, several. Flowering in March and April; fruiting during October and December.

563. *Clausena excavata* Burme f. (過山香) **Rutaceae**

[English name] Taiwan wampee, curved leaf wampee

[Distribution] Chechiang, Chianghsi, Fuchien, Hupei, Hunan, Kuantung, Kuanhsi, Ssuchuang, Kueichou, Yunnan, and Taiwan.

[Morphology] Shrub or small tree, 1~6 m high. Branches, petioles and pedicels usually pubescent, with strong odors. Leaves imparipinnate, alternate, chartaceous, 15~31-foliolate, leaflets ovate, lanceolate to oblong-lanceolate, 2~8 cm long, 1~2.5 cm, apex acute, base obliquely obtuse or nearly rounded, margin finely crenate or teeth indistinct, pubescent on both surfaces or only along nerves. Inflorescences cymose panicles, terminal, bracts usually tiny and paired; Sepals 4, less than 4 mm long; petals 4, white, obovate or ovate, 2~3 mm long, 1.5~3 mm broad, glabrous, ovary superior, 3~4 cells, ovules 2-ranked in each cell. Berry ovoid to ellipsoid, 15~18 mm long, orange-red. Seeds 1~2. Flowering during March and April; fruiting during July and September.

564. *Clausena lansium* (Lour.) Skeels (黃皮果) **Rutaceae**

[English name] Short-style wampee

[Distribution] Southwestern China, Kuantung, Hainan, Kuanhsi, and Taiwan.

[Morphology] Evergreen shrub or tree, up to 12 m high. Young branches, peduncles, petioles, rachis, and nerves abaxially covered with short and long tuft-hairs, fragrant. Leaves alternate, imparipinate, leaflets ovate or elliptic-lanceolate, 6~13 cm long, 2.5~6 cm broad, apex acute or shortly acuminate, base broadly cuneate, unequal, margin shallowly waved or obtusely serrate, terminal one largest, gradually small downward, stipes 4~8 mm long. Inflorescences cymose panicles, terminal or axillary, branches spreading, many flowered; sepals 5, broadly ovate; petals 5, white, spatulate, up to 5 mm long, recurved when opened; stamens 10, 5 longer ones interspaced with 5 shorter ones; ovary superior, 5-celled, densely pubescent. Berry globose or compressed globose, 1.2~3 cm long, pale to dark yellow, densely pubescent. Seeds green. Flowering during April and May; fruiting during July and September.

565. *Fortunella crassifolia* Swingle forma *japonica* (Thunb.) Swingle (金柑)
Rutaceae

[English name] Meiwa kumquat

[Distribution] Anhui, Chechiang, Fuchien, Kuantung and Kueichou, also cultivated in

Taiwan.
[Morphology] Shrub or small tree, multi-branched. Leaves simple, alternate, oblong-lanceolate, apex cuneate to broadly cuneate, margin entire or with finely serrate along lower part, dark green and shined above, gray green beneath, midvein convex abaxially. Flowers solitary or fasciculate, axillary, pedicels 1.5~3 mm long; sepals 5, broadly ovate, tiny, persistent; petals 5, oblong, 5~7 mm long; stamens 20 or less, unequal, connate at lower part, shorter than petals; ovary superior, ovoid or globose, 5~6 cells, or rarely 4~7 cells; disc thick and fleshy. Hesperidium globose to ovoid, pericarp thick, orange, segments 5~6. Flowering in June; fruiting in September.

566. *Murraya paniculata* (Linn.) Jack. (月橘) **Rutaceae**
[English name] Common jasmine orange
[Distribution] Fuchien, Hunan, Kuantung, Hainan, Kuanhsi, Kueichou, Yunnan, and Taiwan.
[Morphology] Evergreen shrub or small tree, 3~8 m high. Bark gray. Leaves alternate, imparipinnate, chartaceous or thickly chartaceous, 3~9- foliolate, leaflets ovate or obovate, apex retuse, base broadly cuneate or nearly rounded, margin entire, dark green and shined above, pale green beneath, densely covered with glandular dots, dots turned dark brown after drying. Inflorescences cymes, with 3~several flowers, terminal or axillary; flowers large, up to 4 cm across, strongly fragrant, pedicels slender; sepals 5, triangular; petals 5, white, oblanceolate or narrowly oblong, with transparent glandular dots; stamens 8~10, unequal; ovary superior, 2-celled, ovules 2 in each cell, stigmas discal, broader than ovary. Berry red, globose or ovoid, apex acute. Seeds 1~2, testa with wooly hairs. Flowering during April and June; fruiting during September and November.

567. *Murraya paniculata* (Linn.) Jack. var. *omphalocarpa* (Hayata) Swingle (長果月橘) **Rutaceae**
[English name]
[Distribution] Fuchien, Hunan, Kuantung, Hainan, Kuanhsi, Kueichou, Yunnan, and Taiwan.
[Morphology] Evergreen shrub or small tree, 3~8 m high. Bark gray, glabrous, multi-branched. Leaves alternate, imparipinnate, 3~9- foliolate, leaflets ovate, obovate, or rhombic, apex obtuse or shortly acuminate, sometimes retuse, base broadly cuneate or nearly rounded, margin entire, dark green and shined above, pale green beneath, densely covered with glandular dots, dots turned dark brown after drying. Inflorescences cymes, with 3~several flowers, terminal or axillary, peduncles nearly glabrous; flowers large, strongly fragrant, pedicels slender; sepals 5, triangular, persistent; petals 5, white, oblanceolate or narrowly oblong, with transparent glandular dots; stamens 8~10, unequal; ovary superior, 2-celled, ovules 2 in each cell, stigmas discal, broader than ovary. Berry red, globose or ovoid, apex acute. Seeds 1~2, testa with wooly hairs. Flowering during April and June; fruiting during September and November.

568. *Phellodendron wilsonii* Hayata & Kaneh. (台灣黃蘗) **Rutaceae**

[English name] Taiwan cork-tree

[Distribution] Northeastern, Northern China, and Taiwan.

[Morphology] Deciduous dioecious tree, 10~25 m high. Bark gray brown, with thick suber, longitudinally cracked in irregular holes, bright yellow inside. Branchlets gray brown or pale brown, rarely red brown, with small lenticels. Leaves opposite, imparipinnate, 5~15-foliolate, leaflets lanceolate to ovate-oblong, 3~11 cm long, 1.5~4 cm broad, apex long acuminate, base broadly cuneate, margin finely serrate, with glands between teeth, dark green above, pale green beneath, densely pubescent on both surfaces, with short stipes. Inflorescences cymose panicles, flowers small, yellow green; stamens 5 in male flowers, exerted; pistil 1in female flowers, ovary 5 cells, with short stipe, styles short, stigmas shallowly 5-lobed. Drupes berry-like, globose, compact, purplish black when mature. Seeds 2~5. Flowering during May and June; fruiting during September and October.

569. *Ponicirus trifoliata* (Linn.) Raf. (枸橘) **Rutaceae**

[English name] Trifoliate orange

[Distribution] Widely cultivated in Mainland China and Taiwan.

[Morphology] Deciduous shrub or small tree. Stems multi-branched, with axillary stout thorns, branchlets compressed. Leaves alternate, palmately 3- foliolated, terminal leaflets obovate or elliptic, 1.5~6 cm long, 0.7~3 cm broad, apex retuse or rounded, base cuneate, margin shallowly and finely serrate; petioles long. Flowers white, solitary or paired born in axils of 2-years old branch, usually opened before leaves, fragrant; sepals 5, ovate-triangular; petals 5, obovate-spatulate; stamens 8~20; pistil 1, ovary nearly globose, densely pubescent, 6~8 cells, ovules several in each cell, styles stout, stigma capitate. Hesperidium globose, orange when mature, with numerous oil-glands, fragrant. Seeds numerous. Flowering during April and May, fruiting during July and October.

570. *Ruta graceolens* Linn. (芸香) **Rutaceae**

[English name] Common rue

[Distribution] Native to Europe, widely cultivated in Mainland China and Taiwan.

[Morphology] Perennial herb, 30~100 cm high, with strong odor, glabrous, glandular. Leaves alternate, 2- to 3- pinnate compound, 5~15 cm long, leaflets deeply lobed to pinnate, lobes long ovate, obovate, to spatulate, 1~2 cm long, margin entire or obtusely serrate. Inflorescences cymes, terminal or axillary; flowers golden yellow, 1~3 cm across; sepals 4~5, small; petals 4~5; stamens 8~10; ovary 4~5 cells. Capsules 4~ 5 cells, dehiscent when mature. Seeds reniform, black. Flowering in spring; fruiting during summer and autumn.

571. *Severinia buxifolia* (Poir.) Tenore (烏柑仔) **Rutaceae**

[English name] Chinese box orange

[Distribution] Hainan, Hong Kong, Indo-China peninsula, and Taiwan.

[Morphology] Evergreen shrub or small tree. Stems with axillary thorns. Leaves alternate, thickly coriaceous, obovate-oblong or broadly elliptic, 2~4.5 cm long, 1.5~2.4 cm broad,

apex obtuse and usually emarginate, margin entire, lateral veins convex and prominent on both surfaces. Flowers 2~3 axillary, white; calyx-tube saucer-like, 5-lobed; petals 5, oblong; stamens 10, 5 longer and 5 shorter, filaments laterally compressed; ovary 4-celled, stigmas elongated. Berry globose, black when mature. Flowering during April and May; fruiting during June and July.

572. *Skimmia reevesiana* Fortune (茵芋) **Rutaceae**

[English name] Reeves skimmia

[Distribution] Eastern, Southwestern China, Hupei, Hunan, Kuantung, Kuanhsi, and Taiwan.

[Morphology] Evergreen shrub, 0.5~1 m high, fragrant. Leaves alternate, usually aggregate at top of branches, coriaceous, oblong-lanceolate or lanceolate, rarely oblanceolate, 7~11 cm long, 2~3 cm broad, apex acuminate, base cuneate, margin entire or with remotely teeth on upper part, dark green above, pale green beneath, with glandular dots, midvein convex and densely pubescent adaxially, lateral veins indistinct and glabrous; petioles 4~10 mm long, green or reddish. Flowers usually bisexual, white, fragrant; bracts small, ovate; sepals 5, broadly ovate; petals 5, oblong to ovate-oblong, 3~5 mm long, slightly unequal in size when in floral buds; stamens 5, equal to petals or longer; ovary superior, nearly globose, 4~5 cells, styles short, stigmas capitate. Drupes berry-like, long-ellipsoid to ovoid-ellipsoid, 10~15 mm long, red, with persistent calyx. Flowering during April and May; fruiting during October and December.

573. *Toddalia asiatica* (Linn.) Lamarck (飛龍掌血) **Rutaceae**

[English name] Asian toddalia

[Distribution] Southwestern China, Shenhsi, Chechiang, Fuchien, Hupei , Hunan, Kuantung, Hainan, Kuanhsi, and Taiwan.

[Morphology] Scandant woody liana. Banchlets pale green or yellow green, often with rusty pubescence and white, circle lenticels when young, turned brown when old, armed with curved prickles. Leaves alternate, trifoliate, leaflets coriaceous, obovate, obovate-oblong or oblong, 3.5~9 cm long, margin finely and obtusely serrate, glandular between teeth, pellucid glandular and glabrous on both surfaces, without stipes. Flowers unisexual, male flowers usually axillary in cymose panicles, white to pale yellow; sepals 4~5; petals 4~5; stamens 4~5; female flowers slightly larger than male ones, rudimentary stamens 4~5, less than half length of pistil, ovary superior, nearly globose, 3~5 cells, ovules 2 in each cell. Drupes nearly globose, orange to red, with dark glands, pericarp fleshy. Seeds reniform, black and shined. Flowering during October and December; fruiting during December and next February.

574. *Zanthoxylum ailanthoides* Sieb. & Zucc. (食茱萸) **Rutaceae**

[English name] Ailanthus prickly ash

[Distribution] Anhui, Chechiang, Fuchien, Kuantung, Kuanhsi, Kueichou, and Taiwan.

[Morphology] Deciduous tree, up to 15 m high. Bark gray brown, longitudinal cracked, often with sharply spines. Leaves alternate, imparipinnate, 25~60 cm long, rachis

cylindrical, 11~27- foliolate, leaflets ovate-oblong or oblong, 8~13 cm long, 2.5~4 cm broad, apex acuminate or caudate, base rounded, margin shallowly crenate, with pellucid dots between teeth, dark green above, gray green beneath, midvein and lateral veins slightly impressed. Flowers unisexual, in corymbose panicles, terminal; bracts small, ovate, pedicels short; sepals 5, small, broadly ovate; petals 5, oblong; stamens 5 in male flowers, filaments linear, anthers broadly ellipsoid, connectives with pellucid dots; styles short in female flowers, stigmas capitate, ovary slightly globose, composed of 5 carpels. Fruits of 2~3 follicles, pericarp red. Seeds broadly ellipsoid and crescend like, brown black, shined. Flowering during July and August; fruiting during October and November.

575. *Zanthoxylum nitidum* (Roxb.) DC. (崖椒) **Rutaceae**

[English name] Glittering prickly ash

[Distribution] Chechiang, Fuchien, Hunan, Kuantung, Hainan, Kuanhsi, Ssuchuang, Yunnan, and Taiwan.

[Morphology] Evergreen scandant liana, 1~2 m high. Branchlets, rachis abaxially, and midveins on both surfaces of leaves armed with prickles. Leaves alternate, imparipinnate, coriaceous, 3~11- foliolate, ovate to ovate-oblong, 4~11 cm long, 2.5~6 cm broad, apex obtuse or shortly caudate, base rounded or broadly cuneate, margin nearly entire or remotely crenate, glabrous and shined on both surfaces. Inflorescences corymbose panicles, axillary, pedicels 1~2 mm long; sepals 4, broadly ovate; petals 4, ovate-oblong; stamens 4 in male flowers, connectives with exerted extrusions; rudimentary stamens tiny in female flowers, carpels 4. Fruits of 1~4 follicles, purplish red, wrinkled when dry. Seeds ovoid, black and shined. Flowering during March and April; fruiting during September and October.

577. *Brucea javanica* (Linn.) Merr. (鴉膽子) **Simaroubaceae**

[English name] Indian quassia wood

[Distribution] Fuchien, Kuantung, Hainan, Kueichou, Yunnan, and Taiwan.

[Morphology] Evergreen shrub or small tree, 1.5~8 m high, yellow pubescent. Leaves alternate, imparipinnate, leaflets opposite, ovate-lanceolate. Flowers in cymose panicles, axillary; male inflorescences longer than leaves; sepals 4, ovate, sparsely yellowish hirsute outside, margin sparsely glandular; petals 4, oblong-lanceolate; stamens 4; disc semi-globose; female inflorescences shorter than leaves, sepals and petals as male flowers but slightly larger, stamens with undeveloped anthers; disc cupular and slightly 4-lobed; carpels usually 4, ovoid, glabrous, styles recurved and attached to ovaries. Drupes ellipsoid, purplish red then turned black. Flowering during April and June; fruiting during August and October.

579. *Aglaia odorata* Lour. (樹蘭) **Meliaceae**

[English name] Orchid tree

[Distribution] Fuchien, Kuantung, Kuanhsi, Ssuchuang, and Yunnan, also cultivated in Taiwan.

[Morphology] Evergreen shrub or small tree, 4~7 m high. Stems multi-branched, young

branchlets covered with rusty stellate scales. Leaves alternate, imparipinnate, 5~12 cm high, rachis narrowly winged, leaflets 3~5 pairs, opposite, obovate to oblong, 2~7 cm long, 1~3.5 cm broad, apex obtuse, base cuneate, margin entire, glabrous. Inflorescences paniculate, axillary; flowers polygamous, monoecious; calyx 5-lobed, lobes orbicular; petals 5, yellow, oblong to nearly orbicular, strongly fragrant; stamens 5, filaments connate and forming a tube, the tube slightly shorter than petals, apex entire; ovary ovoid, densely yellow hirsute, styles very short, stigmas with scattered stellate scales. Berry ovoid or nearly globose, about 1 cm across, sparsely covered with stellate hairs when young, then glabrate. Seeds with fleshy arils. Flowering and fruiting during June and November.

580. *Melia azedarach* Linn. (楝) **Meliaceae**

[English name] China berry

[Distribution] Hopei, Kuanhsi, Ssuchuang, Yunnan, and Taiwan.

[Morphology] Deciduous tree, 15~20 m high. Bark dark brown, longitudinal cracked. Leaves alternate, 2~3- imparipinnate, leaflets ovate to elliptic, 3~7 cm long, 2~3 cm broad, apex acuminate, base broadly cuneate or rounded, margin obtusely serrate. Inflorescences panicles, axillary or terminal; flowers pale purple, about 1 cm long; calyx 5-lobed; petals 5, oblanceolate, glabrous and recurved; stamen-tube usually dark purple. Drupes ovoid or nearly globose. Flowering during April and May; fruiting during October and November.

581. *Swietenia mahagani* Jacq. (桃花心木) **Meliaceae**

[English name] Mahogany, west indies mahogany

[Distribution] Native to Central, Southern America, and West Indies, also cultivated in Taiwan.

[Morphology] Evergreen tree, up to 30 high. Trunk tall and straight, bark gray brown. Leaves alternate, even pinnate compound, leaflets 3~6 pairs, obliquely ovate or ovate-lanceolate, 3~3.5 cm long, 1.5~3.3 cm broad, base oblique, obtuse, apex acuminate or acute, with short stipes; petioles long. Inflorescences panicles, axillary or terminal; flowers small, yellow green; sepals 5; petals 5, spreading; stamen-tube urceolate, with 10 teeth, anthers 10; disc annular; ovary ovoid or globose, ovary discal. Capsules ellipsoid, about 15 cm long, 5 cm across, longitudinally 5-valved when mature. Seeds 10~12 in each cell, compressed, pale yellow, thinly winged.

582. *Toona sinensis* Roemer (椿) **Meliaceae**

[English name] Chinese mahogany

[Distribution] Eastern, Central, Southwestern China, and Tibet, also cultivated in Taiwan.

[Morphology] Deciduous tree, up to 16 m high. Bark dark brown, peeled in pieces; branchlets sometimes pubescent. Leaves alternate, even pinnate compound, 25~ 50 cm long, leaflets 8~10 pairs, oblong to lanceolate-oblong, 8~15 cm long, 2~4 cm broad, apex acute, base oblique, rounded or broadly cuneate, margin entire or remotely serrate, dark green and glabrous above, pale beneath, with villous hairs along nerves abaxially, with strong odor; petioles red, swollen at base. Inflorescences panicles, terminal; flowers small, bisexual, fragrant; sepals 5, tiny; petals 5, white, ovate-elliptic; stamens 5, alternate with

5 staminodes; ovary superior, 5-celled, disc far shorter than ovary. Capsules ellipsoid or ovoid, 2.5 cm long, dehiscent in 5 valves apically. Seeds elliptic, winged at one apex. Flowering during May and June; fruiting in September.

599. Polygala japonica Houtt. (瓜子金)

POLYGALACEAE

[English name]

[Distribution] Distributed in China including the northern, northeastern, northwestern, eastern, south-middle and southwestern parts, and in Taiwan.

[Morphology] Perennial herb, 15-20 cm tall. Stems erect or ascending, green to brownish green, with branches terete. Leaves simple, alternate; petioles yellowish brown, pubescent; blades chartaceous to subcoriaceous, ovate to ovate-lanceolate, green. Inflorescence a raceme, opposite to leaves. Flowers bisexual; sepals 5, lanceolate, 4 mm long, petals 3, white to purple, connate at base, lateral ones oblong, bearing a cockscomb-like appendage on dorsal tips, stamens 8, anthers ovate, ovary obovoid, winged, style thick. Capsules orbicular, green, with a broad wing, glabrous. Seeds ovate, 3 mm long, black, densely white-pubescent. Flowering during April and May. Fruiting May and July.

600. **Polygala tatarinowii** Regel (?草)

POLYGALACEAE

[English name]

[Distribution] Distributed in China including the northwestern and southwestern parts, and Kirin, Liaoning, Hopeh, Shensi, Shantung, Kiangsi, Honan, Hupeh, Kwangsi provinces, and in Taiwan.

[Morphology] Annual herb, erect, 5-14 cm high. Stems much-branched, ridged, glabrous. Leaves simple, alternate; stipules slightly winged; blades chartaceous, ovate, elliptic to broadly elliptic, 0.8-2.5 cm long, 0.6-1.5 cm wide, acute at apex, cuneate at base, green, sparsely pilosulus, pinnately veined. Inflorescence a terminal raceme. Flowers bisexual, 1.5-2.5 mm long, red or purplish red, bracts 2, lanceolate; sepals 6, falling off after flowering, green, ovate to elliptic, petals 3, lateral ones longer than the middle, the middle one orbicular, papillae, without a cockscomb-like appendage on dorsal tips, stamens 8, anthers ovate, basifixed, ovary compressed globose, 0.5 mm across, style curved, 2 mm long, trumpet-like in the upper, with a sterile oblique lobe. Capsules compressed globose, winged, sparsely pubescent, acute at apex. Seeds elongated, suborbicular, white-pubescent, with a small caruncle. Flowering during August and September. Fruiting during September and November.

620. *Ampelopsis brevipedunculata* (MAXIM.) TRAUT. var. hancei (PLANCH.) REHDER. (漢氏山葡萄**)**

VITACEAE

[Distribution] Central-South and South-West of China, Chiangsu, Chechiang, Anhui, Chianghsi, Fuchien and Taiwan..

[Morphology] Vine. Stems with lenticels, young branches covered with rust-color

puberulous, tendrils opposite to leaves, bi-forked. Simple leaves alternate, cordate or cordate-ovate, 5-12cm long, 5-8cm wide, apex unlobed or unapparent 3 shallowly lobed;, lateral lobes small, apex obtuse, base cordate, adaxial surface green, abaxial surface pale-green, both sides covered with rust-color puberulous, margin shallow crenate-dentate, main veins 5, lateral veins 4, webbed veinlets slightly obvious on abaxial surface; petioles 1-4.5cm long, rust-color puberulous. Flowers bisexual, croymbiform, opposite to leaves, 2-6cm long, rust-color puberulous, main pedicels 1-3cm long; flowers whitish green, pedicels about 2mm, small bracts on the base; sepals disc-shape, 5 shallowly lobed, lobes pubescent; petals 5, free, pubescent; stamens 5, opposite to petals; ovary flat globose, surround with cup-shape flower disc. Berry globose, green when young and bluish-purple when ripen, 8mm cross. Flowering during June and August; fruiting during July and October.

1621. *Ampelopsis cantoniensis* (Hook. et Arn.) Planch. (廣東山葡萄)

VITACEAE

[Distribution]. Anhui, Chechiang, Chianghsi, Fuchien, Hunan, Kuangtung, Kuanghsi, Kueichou, Hainan, Yunnan and Taiwan.

[Morphology] Woody vines, glabrous throughout. Stem weak, covered with white powder, stem delicate, striped, tendril thick. Leaves pinnate with 3-5 pairs of leaflets or near bipinnate; leaflets near coriaceous, ovate to ovate-oblong, largest leaflet 5-8cm long and smallest one less than 2.5cm, apex mucronate or acuminate, base obtuse or round, broad-cuneate margin usually with unobvious obruse teeth, abaxial surface often covered with white powder. Inflorescence dichasial cyme, opposite to leaves or terminal on the top of branchlets; flowers bisexual, numerous, 2mm long; main pedicels 4-6cm long; sepals shallow-cup shape, margin unlobed; petals 5; stamens short, equal number to petal; flower disc obvious; styles short, cylindrical. Berries obovoid globose, 5-6mm cross, dark purple or purplish black when ripen. Flowering during April and July; fruiting during May and August.

622. *Ampelopsis japonica* (Thunb.) Makino. (白斂)

VITACEAE

[Distribution]. North-East, North and South area of China, Shenhsi, Ninghsia, Ssuchuan and Taiwan..

[Morphology] Deciduous woody climbers, 1m long. Tuber thick and strong, fleshy, ovate, oblong or long-spindle shape, dark brown. Stems numerously branched, young branches pale purple, glabrous, surface with thin stripes; tendrils opposite to leaves. Leaves palmate, alternate, 6-10cm long, 7-12cm wide; leaflets 3-5 pairs, pinniform lobed or pinniform sinuses, lobes ovate to elliptic ovate or ovate lanceolate, apex acuminate, base cuneate, margin deep serrate or incisional, the middle lobe longest and lateral ones smaller, midribs with broad wings, the base of lobe with joint, both sides glabrous; petioles 3-5cm long, pale purple, glabrous or slightly pubescent. Inflorescence cyme, small, opposite to leaves; flowers small, yellowish green; sepals 5 shallowly lobed; petals 5; stamens 5; margin of the flower disc slightly lobed. Berry globose, white or blue when ripen. Flowering during May

and June; fruiting during September and October.

623. *Cayratia japonica* (Thunb.) Gagnep. (烏蘞莓)

Vitaceae

[English name] Tree bine
[Distribution].Central and South area of China, Shenhsi, Kansu, Ssuchuan and Taiwan..
[Morphology] Perennial vines. Stem purplish red with vertical ridges, tendrils biforked, opposite to leaves. Stipules triangular, caducous. Leaves pedate, alternate; leaflets 5 pairs, membranaceous, elliptic, elliptic ovate to narrow ovate, 2.5-8cm long, 2-3.5cm wide, apex mucronate to short acuminate, base cuneate to broad cuneate, margin roughly serrate, veins of both sides puberulous or near glabrous, the middle leaflet bigger with longer petiole, lateral leaflets smaller; petiole longer than 4cm. Inflorescence corymbose cyme, usually axillary, pedicels long, glabrous or pubescent; flowers small, yellowish green; sepals unobvious; petals 4, apex obtuse or slightly mucronate; stamens 4, opposite to petals; flower disc fleshy, shallow-cup shape; ovary sink into 4-lobed flower disc. Berries round-ovoid, 6-8mm cross, black when ripen. Flowering during May and June; fruiting during August and October.

624. *Cissus repens* Lam. (獨角烏桕)

Vitaceae

[Distribution]. South area of China, Yunnan, Kueichou and Taiwan..
[Morphology] Vine, several meters long. Branches slightly fleshy, green, cross section obtuse quadrangle, surface with vertical stripes, easily depart from nodes when dry; branchlets usually covered with white powder; tendrils biforked, opposite to leaves. Leaves single, alternate, membranaceous, cordate ovate or narrow ovate, 5-10cm long, apex acuminate, base cordate or truncate, margin roughly fine serrate or sometimes merely 3 shallowly lobed, adaxial surface green and grayish green when dehydrated, abaxial surface pale green, glabrous; stipules oblique rhombus, base cuneate; petioles 4-5cm long, glabrous. Inflorescence cyme, opposite to leaves, 3cm long, roughly villous; flowers few, bisexual, first branch umbel-like, pedicels about 3mm, usually with bracts at the base; sepals disc-like, margin entire, pubescent; petals 4, free; stamens 4, opposite to petals; flower disc cup-shape, ovary slightly shorter than stamens, styles extremely short. Berry fleshy, obovoid or globose, about 6mm long, purple when ripen. Seed 1. Flowering during summer and autumn.

625. *Parthenocissus tricuspidata* (Sieb. & Zucc.) Planch. (地錦)

Vitaceae

[English name] Boston ivy
[Distribution]. China and Taiwan.
[Morphology] Large deciduous woody climbing vines, branches thick and strong; tendrils short, numerously branched, disciferous. Leaves simple, alternate, broad ovate, 10-20cm long, 8-17cm wide, apex often 3 shallowly lobed, base cordate, margin coarsely serrate, adaxial surface glabrous, veins of abaxial surface pubescent; leaves of seedling or lower

branches smaller, often 3 leaflets or 3 fully lobed, middle leaflet obovate, lateral leaflets oblique ovate, margin coarsely serate; petioles 8-20cm long. Inflorescence cyme, usually between two leaves on the top of short branches; flowers bisexual, green; sepals small, margin entire; apex of petals reflexed; stamens opposite to petals; flower discs attach to ovary, unapparent; ovary 2 rooms. Berry, bluish black when ripen, 6-8mm cross. Flowering during June and July; fruiting during September.

626. *Tetrastigma dentatum* Hayata (三葉葡萄)

VITACEAE

[Distribution]. Endemic in Taiwan.
[Morphology] Perennial vines. Thicker stems flat, vertical grooves on surface, blackish brown or grayish brown; branches cylidrial, covered with pale red hairs. Leaves ternate, expand as triangular shape, leaflets with short petiolule, terminal leaflet oblong lanceolate, apex acute, base round, lateral leaflets ovate long elliptic, apex acute, base oblique round, margin entire or unobvious coarsely serrate, 7-9cm long, 2-4.5cm wide; petioles long. Inflorescence cyme, axillary; flowers white with milky yellow or pink. Fruits globose, 1cm cross, orange when ripen. Flowering during spring and summer.

627. *Vitis thunbergii* Sieb. & Zucc. var. *adstricta* (Hance) Gagnep. (細本山葡萄)

VITACEAE

[Distribution]. East of China, Hupei, Ssuchuan and Taiwan.
[Morphology] Woody vines, young branches covered with rust-color or gray tomentose; tendrils branched once or unbranched. Leaves simple, alternate, broad ovate, 4-8cm long, 2.5-5cm wide, 3 deeply lobed, the middle lobe rhombus-shape, 3 more lobed or unlobed, few coarse teeth, lateral lobes unequally 2 lobed or unlobed, adaxial surface roughly covered with short hairs, abaxial surface covered with rust-color or gray tomentose; petioles 1-3cm long. Polygamo-dioecious, inflorescence panicle, 5-8cm long, axis and branches rusty color puberulous; flowers 2mm cross, glabrous; calyx disc shape, margin entire; petals 5, caducous; stamens 5. Berry globose, purple when ripen, 8-10mm cross. Flowering during April and May; fruiting during May and August.

628. *Vitis vinifera* Linn (葡萄)

VITACEAE

[English name] Grape
[Distribution]. Originally distribute in West Asia. Currently widely cultivate in China and Taiwan..
[Morphology] Large twining vines. Young stems glabrous or slightly woolly; tendrils biforked, opposite to leaves. Leaves alternate, chartaceaous, ovate orbiculate or orbiculate, 10-20cm wide, often 3-5 lobed, base cordate, margin coarsely and slightly acute dentate, abaxial surface often densely woolly; petioles 4-8cm long. Polygamo-dioecious, inflorescences panicle, large and long, opposite to leaves, roughly villous, receptacles without tendrils; sepals extremely small, cupular, margin entire or unapparently 5 dentate; petals 5, yellowish-green, united on the apex, basal parts free, entire hat-shape corolla

depart when blooming; stamens 5, flower discs bulge, composed with 5 glands, basal part accrete with ovary; ovary 2 rooms, styles short, cone-shape. Berry round-ovoid to oblong-ovoid, juicy, purplish black or cyannish red, covered with wax powder. Flowering during June; fruiting during September and October.

632. *Viola arcuata* Blume (如意草)

VIOLACEAE

[Distribution]. North and North-East area of China, Taiwan, Korea and Japan..
[Morphology] Perennial herbs, green, glabrous, slightly soft, rhizomes short, 5-30cm high. Stipules membranaceous, green, lanceolate or linear oblong, 7-20mm long, margin entire or unapparent serrate. Radical leaves reniform cordate or triangular-reniform cordate, margin undulate obtuse dentate, apex acute or triangular round, base cordate or deep cordate, 1.5-2.5cm long, 2-3.5cm wide; length of petioles twice to quadruple length of leaves; stem leaves flat cordate or triangular cordate, apex slightly sharp or obtuse, base broad deep cordate; petioles near the top shorter. Flowers white, zygomorphic; sepals 5, green, broad lanceolate, apex slightly acute, appendages short, apex round, margin entire; petals 5, lateral petals pubescent, basal shortest, several purple veins; stamens 5; carpel 1, ovary 5 rooms. Capsule septicidal, 3 valved, dehiscent when ripen and seed ejected. Flowering and fruiting during spring and summer.

633. *Viola confusa* Champ. ex Benth (短毛堇菜)

VIOLACEAE

[Distribution] North and North-East area of China, Shenhsi, Kansu, Shantung and Taiwan.
[Morphology] Perennial herbs, 6-18cm high, acaulescent, rhizomes short, erect, nodes closely, often generate several stout brown roots from one part. Roots usually glabrous, oblique extend downward or sometimes slightly horizontal. Stipules membranaceous, lower ones scale-like, brown, upper ones pale-brown, pale-purple or pale-white, linear lanceolate, margin roughly fine serrate or near entire, more than two-thirds part of stipules unite with petioles; radical leaves few to numerous, long-round, liqule or ovate lanceolate, 2-6cm long, 0.5-1.5cm wide, leaves expanding to long triangular or elliptic lanceolate during later flowering period, 10cm long, 5cm wide, apex obtuse or round, base truncate or broad cuneate, decurrent, margin roughly undulate shallow round dentate, sometimes lower part near entire; petioles longer, 2.5-8cm, upper part with narrow wings, wings obviously expand during later flowering period. Flowers bigger, violet or pale-purple, pedicels long and thin, often longer than leaves; sepals 5, ovate-lanceolate or lanceolate, broad and short appendages at base; petals 5, calcars tubular, bend upward or straight; apex of anther with appendages; ovary ovate-globose, styles clavate, with prominent marginal lobes at apex and anterior stigmatic beak. Capsules long ellipsoid, 1-1.5cm long, glabrous, apex acute. Seeds ovoid, pale reddish brown. Flowering and fruiting during April and September.

634. *Viola diffusa* Ging. (茶匙癀)

VIOLACEAE

[Distribution] Anhui, Fuchien, Chechiang, Hunan, Ssuchuan, Yunnan, Tibet and Taiwan.

[Morphology] Annual herbs, scabrous, white villous or near glabrous, bearing creeping branches during flowering period. Apex of creeping branches with rosette leaves, usually with adventitious roots; rhizomes short, with several white thin roots and fibriform roots. Stipules linear-lanceolate, two-thirds length free, margin long dentate; radical leaves numerous, tufted as rosette or alternate on stolons, ovate or ovate long-elliptic, 1.5-3.5cm long, 1-2cm wide, apex obtuse or slightly acute, base cuneate or truncate, both sides white hirsute, margin crenate and fimbriate; petioles 2-4.5cm long, with obvious wings. Flowers smaller, pale-purple or pale-yellow, pedicels long and thin, axillary, middle part with one pair of linear bracts; sepals 5, lanceolate, margin with white hairs, basal appendages short; petals 5, oblong-obovate; calcars extremely short, 1.5mm long. Capsules long and round, 3mm cross, glabrous. Flowering during March and May; fruiting during May and August.

635. *Viola formosana* Hayata. (台灣堇菜)

VIOLACEAE

[Distribution] Endemic in Taiwan.
[Morphology] Perennial herbs, acaulescent, rhizome erect. Stolons elongate, apex with rosette leaves, sometimes with flowers. Only base parts of stipules unite to petioles, margins of free parts with tassels or lobes; leaves radical, broad-cordate or near round, 1-3cm long and wide, apex acuminate or obtuse-round, base deep-cordate, margin crenate, both sides glabrous or slightly pilous, abaxial surface usually pale-purple; petioles thin, 1-10cm long, glabrous or slightly puberulous. Corolla 1.5-2cm cross, pedicels longer, sometimes 15cm long, upper middle part with 2 diamond-shape bracts; sepals narrow lanceolate, basal appendages shorter, glabrous; lengths of upper petals and lateral ones near equal, apex emarginated, base cuneate, glabrous, lower petals bigger, 1.5cm long, apex deeper emarginated or 2 shallow lobes; spurs slender; styles near erect, apex slightly lobes on both sides with inconspicuously anterior stigmatic beak. Capsules globose or ellipsoid. Flowering and fruiting during April and August.

636. *Viola odorata* Linn. (香堇菜)

VIOLACEAE

[English name] Sweet, Garden or Florists violet
[Distribution] Original distribute in Europe and West Asia. Common in Peking, Tienchin, Sian, Shanghai, Kuangtung and Taiwan.
[Morphology] Perennial herbs, 3-15cm high, acaulescent, with stolons, rhizomes thicker, erect or oblique, pale-brown, with nodes bearing closely, generate numerous thin roots downwards. Leaves radical, round or reniform to broad-ovate cordate, smaller during flowering period, apex round or lanceolate, base deep cordate, margin round crenate, both sides scabrous. Flowers bigger, dark-purple, fragrant, pedicels thin and long, middle part with thin and long bracts; sepals oblong or oblong-ovate, apex obtuse-round, basal appendages extremely short; the margin of petal undulate, base of adaxial surface of lateral petals with short hairs, calcars stirght with slightly bend; spurs of the lower two stamens shorter; ovary sericeous, apex slightly bended with inconspicuously anterior stigmatic beak, beak apex with narrower pores. Capsules globose, densely puberulous.

640. **Passiflora edulis** Sims. (西番蓮)

PASSIFLORACEAE

[English name] Passion fruit, Purple granadilla
[Distribution] Native to Brazil; cultivated in Kiangsu, Fukien, Hunan, Kwangtung, Kwangsi, Hainan, Yunnan and Kweichow provinces of China, and Taiwan.
[Morphology] Perennial herbaceous vine, about 6 m long, glabrous. Stems terete, sometimes subquadrate when young. Leaves alternate; petioles long, with 2 cup-like glands at tips; blades chartaceous, yellowish green, deeply palmately 3-lobed, subacuminate at apex, broady cuneate or cordate at base, margins serrate, with a small gland at lobe-bases. Inflorescence an axillary reduced cyme, 1-flowered. Flowers white, fragrant, 4-5 cm across, bracts green, broadly ovate or rhombic, irregularly serrate at margins; sepals slightly spongy, oblong, 2-3 cm long, with a horn-like appendage on dorsal tips, petals lanceolate, as long as sepals, coronal threads 4-5-seriate, pale green at base, whitish purple in middle, white at apex, stamens 5, filaments connate at base, ovary obovate, styles 3, compressed-clavate. Fruit a berry, ovate, pericarps hard, purplish at maturity. Seeds numerous, surrounded with a pale yellow, sticky aril. Flowering during June and July. Fruiting during September and October.

641. **Passiflora foetida** Linn. **var. hispida** (DC. ex Triana & Planch.) Killip (毛西番蓮)

PASSIFLORACEAE

[English name] Weed passion flower
[Distribution] Distributed in Fukien, Kwangtung, Hainan, Kwangsi and Yunnan provinces of China, and Taiwan.
[Morphology] Herbaceous vine, up to 6 m long. Stems soft, terete, usually pilose, with an axillary tendril. Leaves alternate; petioles 2-6 cm long, with glands at tips; stipules hairy, deeply clefted; blades membranous, broadly ovate to oblong-ovate, 4.5-13 cm long, 4-12 cm wide, shallowly 3-lobed, cordate at base, margins irregularly undulate, ciliate and glandular, glandular-pilose on both surfaces. Inflorescence a reduced axillary cyme, 1-flowered. Flowers white or pale purple, 2-3 cm across, bracts 1-3-pinnatisect, the segments linear, glandular at apex; sepals oblong, with a horn-like appendage on dorsal tips, petals as long as sepals, coronal threads 3-5-seriate, filaments connate at base, ovary elliptic, styles 3. Fruit a berry, ovoid, 2-3 cm across. Flowering during July and August. Fruiting during April and May the next year.

637. Hydnocarpus anthelmintica Pierre. (大風子)

FLACOURTIACEAE

[English name] Ta-phong-tze
[Distribution] Yunnan, Hainan and Taiwan, etc.
[Morphology] Evergreen trees. Trunk straight, branches long-spreading. Leaves leathery, alternate; blades oblong or elliptic-lanceolate, 10-30 cm long, 3-7 cm wide, acute at apex, obtuse rounded at base, entire, glabrescent on both surfaces; lateral veins 8-10 pairs, reticulate conspicuous; petioles 0.6-3 cm long. Flowers polygamous or unisexual, solitary to several in clusters, ca. 2 cm in diameter, pedicels 1-4 cm long; in staminate flowers:

sepals 5, oval; petals 5, oval, yellowish-green, fertile stamens 5, filaments short and thick, stamens of the outer whorl usually degenerated into scales on base of petals; pistillode at center; pistilate flowers: staminodes united into clavate body, ovary oval, with long hirsutus, style short and thick, pubescent, stigma with 5, usually recurving lobes, crown-like. Berries globose, 6-12 cm in diameter, exocarps hard. Seeds 30-50, oval, slightly polygonal, testa cuticular, endosperm rich. Flowering from January to March.

638. Homalium cochinchinensis (Lour.) Druce (天料木)

FLACOURTIACEAE

[Distribution] Taiwan, Fuchien, Kuangtung, Hainan and southeast Asia
[Morphology] Deciduous trees. Leaves alternate; blades membranous, glabrescent, oboval, oval or elliptic, acute at apex, cuneate at base, margins undulate or sparsely serrate, 8-12 cm long, 4-5 cm wide, lateral veins 7-8 pairs; short-petioled. Spikes axillary, mostly terminal in panicles, pubescent, flowers small, white; calyx 6-7-lobed, lobes ob-lanceolate, ca. 4 mm long, margins hairy, each with circular gland at base inside; calyx tube ob-conical, adnate to ovary base, petals similar to calyx-lobes in form, also 6-7, on throat of calyx-tube inside, stamens 6-7, on base of petals, upper part of ovary broad conical, 1-celled, ovules many, anatropous on parietal placenta, styles 4, hairy. Fruits capsules. Flowering and fruiting from May to September.

655. Barringtonia asiatica (Linn.) Kurz. (碁盤腳樹)

LECYTHIDACEAE

[English name] Indian barringtonia
[Distribution] Distributed in Taiwan, Malaya, Australia and Pacific islands, also cultivated.
[Morphology] Evergreen trees. Leaves alternate in clusters on shoot apex; blades leathery, long oboval, nearly rounded at apex, acute at base, entire, 24-42 cm long, 15-20 cm wide, glabrous on both surfaces, midrib distinct; almost without petioles. Racemes terminal; buds globose; flowers large, pedicels long and robust; sepals 2; petals 4, milky-white, 6 cm long; stamens numerous, filaments long and filiform, on base of petals, upper part reddish-purple; ovary inferior, 4-celled, 6-8 pendulous ovules each cell; drupes 4-angular, pyramidal, ca. 10 cm long, like foot-bases of Go-plate; exocarp smooth glabrous, mesocarp rich in fibers, endocarp hard, 1-seeded inside. Fruits dispersed by floating on tidies. Flowering from June to August. Fruiting from September to November.

656. Barringtonia racemosa (Linn.) Blume ex DC. (水茄苳)

LECYTHIDACEAE

[English name] Small-leaved barringtonia
[Distribution] Along sea shores both of northern and southern part of Taiwan: Yilan, Keelung, Kingpauli and Henchuen peninsula, Mudan bay. In tropical Africa, Asia, Australia, Polynesian and Pacific islands.
[Morphology] Evergreen, medium trees, up to 17 m high. Shoots pendulous, leaf-scars distinct. Leaves alternate, in cluster on shoot-apex; blades ob-lanceolate or long oval, acuminate at apex, obtuse at base, crenate or undulate; with short, thick petioles. Racemes

pendulous, terminal or axillary; peduncles long, robust, slightly pubescent; flowers almost sessile or with short pedicels, light yellowish; calyx ob-conical, 2-3-lobed, persistent; petals 4, milky-white, 3-4 cm in diameter, oval, caducous; stamens numerous, filaments connate at base, ca. 3 cm long, reddish, styles also reddish, 3.5 cm long. Drupes oblong, slightly 4-angular, 4.5 cm long, exocarp light purple, mesocarp rich in fibers.

657. Kandelia candel (Linn.) Druce (水筆)

RHIZOPHORACEAE

[English name] Kandelia
[Distribution] Along sea shores of India, Borneo, Mainland China, Taiwan, Ryukyu and southern part of Japan.
[Morphology] Small, evergreen trees or shrubs, up to 3 m high. Bark reddish brown, shoots rigid. Leaves opposite; blades leathery, oblong, obtuse or retuse or nearly rounded at apex, acute at base, entire; petioled. Flowers in axillary, regular dichotomous cymes, white, peduncles surrounded by bract at base; bracts cup-shaped, 2-lobed at apex; calyx deep 5-lobed, lobes linear; petals 5, bifid, each lobe filiform-laciniate; stamens many, filaments long, filiform; ovary 1-celled, ovules 6. Fruits conical, with recurved and persistent calyx, seedlings vivipary: seed 1, germinating on plant, hypocotyl clavate, up to 15 cm long.

658. Quisqualis indica Linn. (使君子)

COMBRETACEAE

[English name] Rangoon creeper
[Distribution] Cultivated in gardens in south-west Mainland China, Kuangsi, Kuangtung, Hunan, Chianghsi, Fuchien and Taiwan, etc.
[Morphology] Deciduous, climbing shrubs, 2-8 m high. Young shoots with short, yellowish-brown pubescences. Leaves opposite or sub-opposite; blades membranous, oval or elliptic, 5-11 cm long, 2.5-5.5 cm wide, acute-acuminate at apex, obtuse-rounded at base, glabrescent above, more or less sparsely with brown pubescences below; petioles without abscission joint, persistent after leaf-falling. Compounded terminal spikes in corymbs, flowers bisexual; bracts oval to linear-lanceolate, pubescent; calyx-tubes 5-9 cm long, with yellowish pubescences, apex with 5, small, spreading and curved outwards teeth; petals 5, obtuse-rounded at apex, white at beginning, turning to light reddish later; stamens 10, 2-whorled, extending within the corolla; ovary inferior. Fruits oval, acute at apex, glabrous, with 5, distinct sharp ridges, exocarp thin and brittle at ripen, dark green or chestnut-colored. Seed 1, white, cylindrical-clavate. Flowering from May to September. Fruiting in late autumn. Less fruited in Taiwan.

659. Terminalia catappa Linn. (欖仁樹)

COMBRETACEAE

[English name] Indian almond, Tropical almond terminalia
[Distribution] Widely cultivated in gardens or along roadsides in Yunnan and Taiwan.
[Morphology] Large trees, 15 m high. Bark dark brown, longitudinally fissured in way of barking; shoots spreading horizontally, densely with yellowish-brown pubescences at

apical parts, leaf-scars distinct and distributed densely. Leaves large, alternate, usually clustered at shoot-apex; blades oboval, 12-22 cm long, 8-15 cm wide, obtuse-rounded or acute at apex, becoming narrow from middle downwards, truncate or narrow-cordate at base, glabrous on both surfaces, or sparsely pubescent below when young, entire, rarely slightly undulate, midrib thick, sinking into furrow above, convex below, pubescent at base close to petiole, lateral veins 10-12 pairs, reticulate densely; petioles short and robust, 10-15 mm long, pubescent. Spikes long and slender, axillary, 15-20 cm long, staminate flowers at distal part, hermaphrodite flowers at basal part; bracts small, caducous; flowers mostly green or white, ca. 10 mm long; without petals, calyx-tube cup-shaped, 8 mm long, glabrescent outside, with white pubescences inside, teeth 5, triangular, equal to the calyx-tube in length; stamens 10, ca. 2.5 cm long, exserting over the calyx; disc composed of 5 glands, covered with white hirsutus; ovary conical, hairy when young, almost glabrescent at maturity; style solitary, thick; ovules 2, hanged at cell-top. Fruits elliptic, usually slightly compressed side wards, with 2 wing-like ridges, 3-4.5 cm long, 2.5-3.1 cm wide, 2 cm thick, slightly acuminate at both ends, woody, hard, glabrous, greenish-black when ripen; seed 1, elliptic, oily. Flowering from March to June, fruiting from July to September.

660. Terminalia chebula Retz. (**訶黎勒**)

COMBRETACEAE

[English name] Chebulic myrobalan, Gall nut, Ink nut
[Distribution] In west and southwest Yunnan, Kuangsi, Kuangtung and Taiwan, etc.
[Morphology] Trees, up to 30 m high. Shoots almost glabrous; lenticels narrow but long, white or light yellowish, young shoots yellowish-brown, pubescent. Leaves alternate or sub-opposite; blades oval or elliptic, 7-14 cm long, 4.5-8.5 cm wide, acute at apex, obtuse-rounded or cuneate at base, oblique, entire or slightly undulate, glabrescent on both surfaces, densely with fine spots; petioles robust, 18-23 mm long, with 2-4 glands at 1-5 mm from the distal end. Spikes terminal or axillary, sometimes compounded in panicles; flowers hermaphrodite; calyx tube-cup-shaped, light green-yellowish, ca. 3.5 mm long, teeth 5, ca. 1 mm long, triangular, glabrescent outside, with yellowish-brown pubescences inside; without petals; stamens 10, exserting over the calyx, anthers small, elliptic; ovary inferior, 1-celled, cylindrical-formed, ca. 1 mm long, pubescent, dark brown when drying, style long and thick, subulate. Drupes oval or elliptic, 2.4-4.5 cm long, 1.9-2.3 cm in diameter, greenish, rough and glabrous, dark brown when ripen, usually with 5 dull ridges. Flowering in May, fruiting from July to September.

661. Eucalyptus citriodora Hook. (檸檬桉)

MYRTACEAE

[English name] Lemon-scented spotted gum.
[Distribution] Cultivated in Fuchien, Kuangtung, Kuanghsi, Hainan of China, and Taiwan.
[Morphology] Tree to 28 m tall; bark grayish, smooth, exfoliating. Young leaves peltate, blades lanceolate, with glandular trichomes, base rounded; intermediate leaves broadly lanceolate, 15-18 long, 3-4 cm wide, petioles 0.5-2 cm; mature leaves strongly smelling of lemon, narrowly lanceolate, 10-15cm long, ca. 1 cm wide, slightly curved, both surfaces

with black glands, base cuneate. Inflorescences axillary, paniculate, peduncles 3-4 mm, 2-ridged. Flower buds narrowly obovate; calyx tube ca.5 mm long, 4 mm wide; hood or calyptra ca. 1.5 mm, slightly wider than calyx tube, apex rounded, apiculate; stamens numerous, in 2 whorls; anthers elliptic, dorsifixed, anther sacs parallel; ovary adnate to calyx-tube. Capsules urceolate, valves included in calyx-tube. Flowering from April through September.

662. **Eucalyptus globulus** Labill. (藍桉)

MYRTACEAE

[English name] Tasmanian blue gum.
[Distribution] Native to Australia. Cultivated as shade trees in Kuanghsi, Ssuchuan, Yunnan of China, and Taiwan.
[Morphology] Large evergeen tree; bark grayish blue, exfoliating; twigs slightly ridged. Young leaves opposite, sessile, blades ovate, glaucescent, base cordate; mature leaves long-petiolate, petioles slightly flattened, blades lanceolate, falcate, 15-30 long, 1-2 cm wide, leathery, both surfaces glandular. Inflorescences axillary, solitary or 2-3-flowered, sessile or with short peduncle. Flowers white, 4 cm in diameter; calyx tube obconic, surface with 4 ridges and rugose protuberances, glaucescent; hood or calyptra slightly flattened, with a conic tubercle in middle, shorter than calyx tube, in 2 layers with smooth outer layer and caducous; stamens numerous; filaments slender; anthers versatile, elliptic, longitudinal dehiscence; style very long, stout. Capsules semiglobose, 4-ridged; disk broad; valves equaling calyx tube rim. Fruiting during summer and winter.

663. **Eucalyptus robusta** Sm. (大葉桉)

MYRTACEAE

[English name] Beakpod eucalyptus, Brown gum, Swamp mahogany.
[Distribution] Native to Australia. Cultivated in Taiwan etc.
[Morphology] Evergeen tree; bark rough, gradually decayed and exfoliating; branches reddish. Leaves altenate, petiolate, blades ovate-lanceolate to oblong-lanceolate, base slightly oblique, marge entire or undulate, apex attenuate, leathery. Inflorescences axillary umbels, 4-8-flowered; peduncles thick, compressed, ridged. Calyx-tube obconic, forming a pyxis-like apparatus when connected with connate petals, apex mucronate, slightly curved, constricted into a beak; stamens numerous, anthers ovate-oblong. Capsule a pyxis, obovate-oblong, lid shed when dehisced at mature. Flowering during spring and autumn.

664. **Melaleuca leucadendra** (L.) L. (白千層)

MYRTACEAE

[English name] Cajeput tree, Punk tree.
[Distribution] Native to Australia. Cultivated in Fuchien, Kuangtung, Kuanghsi, Hainan of China, and Taiwan.
[Morphology] Tree to 18 m tall; bark grayish white, thick and soft, exofoliating; twigs grayish. Leaves alternate, fragrant; petioles very short; blades lanceolate to narrowly oblong, 4-10 long, 1-2 cm wide, leathery, with numerous oil glands, both ends acute,

margin entire, 3-7-nerved. Inflorescences terminal spikes, rachis usually with short trichomes. Flowers white; calyx-tube ovate, 3 mm long, pubescent or glabrous; sepals 5, rounded, ca. 1 mm; petals 5, ovate, 2-3 mm long, 3 mm wide; stamens numerous, greenish white, ca. 1 cm long, usually 5-8 per bundle; anthers dorsifixed, anther sacs parallel, longitudinal dehiscent; ovary inferior, adnate to calyx-tube, 3-loculed; style linear, slightly longer than stamens, stigma more or less capitate. Capsules subglobose, 5-7 mm in diameter. Seeds triangular or near so. Flowering several times per year.

665. **Psidium guajava** L. (番石榴)

MYRTACEAE

[English name] Guava.
[Distribution] Native to South America. Cultivated in Fuchien, Kuangtung, Kuanghsi, Hainan, Ssuchun, Yunnan of China, and Taiwan.
[Morphology] Tree to 13 m tall; bark gray, smooth, peeling in strips; twigs angular, pubescent. Leaves opposite; petioles 5 mm long; blades oblong to elliptic, 6-12 cm long, 3.5-6 cm wide, leathery, pubescent above, slightly rough beneath, base rounded, margin entire, apex acute to obtuse; veins pinnate, secondary veins 12-15. Flowers solitary or 2 or 3 in cymes; calyx tube campanulate, 5 mm long, pubescent; calyx cap nearly rounded, 7-8 mm, irregularly opening; petals white, 4-5, 1-1.4 cm long; stamens numerous, 6-9 mm long; anthers ellipsoid, sub-basifixed, anther sacs parallel, longitudinal dehiscent; ovary, inferior, adnate to calyx-tube; style as long as stamens. Berries globose, ovoid, or pyriform, 3-8 cm, with persistent calyx lobes at apex; flesh white or yellow; placenta pale reddish, well developed, fleshy. Seeds numerous. Flowering from May through August. Fruiting from August through November.

666. **Rhodomyrtus tomentosa** (Aiton) Hassk. (桃金孃)

MYRTACEAE

[English name] Downy-myrtle, Hill gooseberry, Rose myrtle.
[Distribution] Fuchien, Kuangtung, Kuanghsi, Hainan, Hunan, Kueichou, Yunnan of China, and Taiwan.
[Morphology] Shrub 1-2 m tall; twigs grayish tomentose. Leaves opposite; petioles 4-7 mm; blades elliptic to obovate, 3-8 cm long, 1-4 cm wide, leathery, pubescent when young, glabrescent and shiny with age, abaxially gray tomentose, base broadly cuneate, margin entire, apex rounded to obtuse and often slightly emarginate or sometimes slightly apiculate; 3-nerved, originating near leaf blade base, and meeting at apex. Flowers purplish red, solitary, with a long pedicel, 2-4 cm in diameter; calyx-tube obovoid, ca. 6 mm, gray tomentose; calyx lobes 5, rounded, 4-5 mm, persistent; petals 5, obovate, 1.3-2 cm; stamens red, numerous, 7-8 mm, anthers longitudinal dehiscent; ovary inferious 3-loculed; style 1 cm long, stigma capitate. Berries purplish black at mature, ovoid-urceolate, 1.5-2 cm long, 1-1.5 cm wide. Seeds numerous, 2 rows in each locule. Flowering during April and May. Fruiting from July through September.

667. **Syzygium jambos** (L.) Alston (蒲桃)

MYRTACEAE

[English name] Rose-apple.
[Distribution] Fuchien, Kuangtung, Kuanghsi, Hainan, Kueichou, Yunnan of China, and Taiwan.
[Morphology] Tree to 10 m tall; stem very short, broadly branched. Leaves opposite; petioles 6-8 mm; blades lanceolate to oblong, 12-25 long, 3-4.5 cm wide, leathery, both surfaces with numerous small transparent glands, base broadly cuneate, apex acuminate; veins pinnate, secondary veins 12-16 on each side of midvein. Inflorescences terminal cymes, peduncles 1-2 cm. Flowers white, 3-4 cm in diameter; calyx tube obconic, 8-10 mm; calyx lobes 4, rounded, 6 mm long, 8-9 mm wide; petals 4, distinct, broadly ovate, ca. 14 mm; stamens numerous, 2-2.8 cm; anthers versatile, ca. 1.5 mm, longitudinal dehiscent; ovary inferior, style as long as stamens. Fruits yellow when ripe, globose, 3-5 cm in diameter, with oil glands, 1- or 2-seeded, pericarp fleshy. Flowering during March and April. Fruiting during May and June.

668. **Syzygium samarangense** (Blume) Merr. & L. M. Perry (蓮霧)

MYRTACEAE

[English name] Wax jambos, Wax apple.
[Distribution] Native to Indonesia, Malaysia, Papua New Guinea, and Thailand. Cultivated in southeastern China and Taiwan.
[Morphology] Tree to 12 m tall; twigs compressed. Leaves opposite; petioles less than 4 mm; blades elliptic to oblong, 10-22 cm long, 6-8 cm wide, thinly leathery, turning yellowish brown when dry above, with numerous small glands beneath, base narrow, rounded, or slightly cordate, apex obtuse to slightly acute; secondary veins 14-19 on each side of midvein, connected at the ends forming intramarginal veins 5 mm from margin, reticule veins conspicuous, and an additional intramarginal vein ca. 1.5 mm from margin. Inflorescences terminal or axillary cymes, 5-6 cm in diameter, several-flowered. Flowers white; calyx-tube obconic; calyx lobes 4, rounded; stamens numerous, ca. 1.5 cm; style 2.5-3 cm. Fruits red, pyriform to conic, 4-5 cm, fleshy, glossy, apex sunken; persistent sepals fleshy. Seed 1. Flowering during March and April. Fruiting during May and June.

669. **Blastus cochinchinensis** Lour. (柏拉木)

MELASTOMACEAE

[English name] Cochichina blastus.
[Distribution] Distributed in Eastern India, Indochina, Southern China, Ryukyus and Taiwan.
[Morphology] Evergreen shrub 2-3 m tall; stem terete, branched, glabrous or near so. Leaves simple, opposite; petioles 1-2 cm, glandular; blades lanceolate to elliptic-lanceolate, 7-15 cm long, 3-6 cm wide, papery to stiffly papery, base obtuse to cuneate, margin entire, apex caudate-acuminate, 3-5-nerved. Inflorescences axillary, umbellate. Flowers reddish white, small; calyx-tube campanulate-funnelform, obtusely 4-sided; calyx lobes 4, broadly ovate, ca. 0.2 cm long, pubescent; petals and stamens adnate on the throat of calyx tube;

petals 4, ca. 0.4 cm long; stamens 4; ovary inferior, 4-loculed; Fruit a capsule, nearly globose, ca. 0.3 cm in diameter, loculicidal dehiscent. Flowering from April through June. Fruiting from July through August.

670. **Bredia oldhamii** J. D. Hooker (金石榴)

MELASTOMACEAE

[English name] Oldham bredia.
[Distribution] China and Taiwan.
[Morphology] Shrub much-branched; stem terete, grayish white; twigs blackish brown, obtusely 4-sided. Leaves opposite; petioles 5-15 mm; blades oblong-elliptic, or elliptic-ovate, 5-11 cm long, 1.5--3.5 cm wide, stiffly papery, glabrous above, puberulous beneath, base cuneate to obtuse, margin nearly entire to densely serrulate, apex acuminate; 3-nerved, prominent, intercostal veins inconpicuous. Inflorescences cymose panicles, 7 cm long, 11 cm wide, peduncles glabrous. Calyx-tube funnel-shaped, obtusely 4-sided; calyx lobes broadly triangular, less than 1 cm; petals ovate-oblong, 7 mm, apex acute; stamens 4 longer and 4 shorter; longer stamens 14-16 mm, with anthers linear-lanceolate, 6-7 mm, slightly curved, connective decurrent, forming a short spur ca. 2mm long; shorter stamens 6-7 mm, tuberculate at the base, with anthers 3-3.5 mm; connective decurrent, forming a short spur; ovary half inferior, ovoid, with a membranous crown at apex. Capsules cup-shaped, in persistent cup-shaped calyx-tube, obtusely 4-sided, nearly glabrous, apex truncate. Flowering during May. Fruiting during July and August.

671. **Melastoma candidum** D. Don, (野牡丹)

MELASTOMACEAE

[English name] Common melastoma.
[Distribution] Southeastern China, including Fuchien and Yunan, and Taiwan.
[Morphology] Shrub 0.5-1.5 tall; stem angular or terete, dense appressed strigose. Leaves opposite; petioles 2-4 mm, strigose; blades ovate to broadly ovate, 4-10 cm long, 2-6 cm wide, stiffly papery, strigose and villose, base cordate to rounded, margin entire, apex acute, 7-nerved. Inflorescences terminal, subcapitate cymes, flowers 3-5, peduncles 3-20 mm long, strigose, with 2 foliate bracts at the base. Flowers 5-merous, calyx ca. 2.2cm long, calyx lobe ovate, strigose; petals pink, obovate, apex rounded, margin minutely ciliate; stamens 5 longer and 5 shorter, longer stamens bent, having connective decurrent at base and terminating in two lobes; shorter stamens having a pair of tubercles at base; ovary half inferior, densely strigose, 5-loculed, apically hispidulous. Fruits urceolate-globose, 1-1.5 cm long, 8-12 mm in diameter, strigose. Seeds insert into flesh placenta. Flowering from May through July. Fruiting from July through October.

672. **Otanthera scaberrima** (Hayata) Ohwi (糙葉耳藥花)

MELASTOMACEAE

[English name] Rough-leaf otanthera.
[Distribution] In Central Mountain Range of Taiwan above middle altitude, especially abundant in the eastern part.

[Morphology] Shrublet, densely setose. Leaf opposite; petioles short; blade oblong to lanceolate-ovate, 2-4 cm long, 1-1.5 cm wide, leathery, base rounded, margin entire, apex acute, 5-nerved. Inflorescences terminal cymes, flowers 3-5, calyx tube nearly globose, 5-lobes; petals 5, obovate, margin ciliate; stamens 10, filaments curved, connective decurrent at base, 2 tubercules at base; ovary 5-loculed. Fruit globose.

673. **Ammannia baccifera** Linn. (水莧菜)

LYTHRACEAE

[English name]
[Distribution] Distributed in China including the northwestern, middle and southern parts, and in Taiwan.
[Morphology] Annual herb, glabrous, 10-50 cm high. Stems erect, much-branched, flushed with purple, subquadrate, narrowly winged. Leaves subsessile, opposite on the lower stem, alternate on the upper stem or branches; blades oblong, lanceolate or oblanceolate, the upper ones up to 7 cm long, smaller on the branches, acute or obtuse at apex, narrow at base, lateral veins unconspicuous. Inflorescence a compact, axillary cyme. Flowers small, green or pale purple, long-petiolate; calyx campanulate, 4-lobed, lobes deltoid, hemispheric and surrounding the lower capsule when fruiting, petals usually absent, stamens usually 4, adnate to the middle calyx-tube, equal to or shorter than calyx-lobes, ovary globose, styles very short or absent. Capsules globose, purplish red, irregularly cirsumscissile on the upper half. Seeds numerous, minute, subdeltoid and black. Flowering during August and October. Fruiting during September and December.

674. **Lagerstroemia indica** Linn. (紫薇)

LYTHRACEAE

[English name] Crape myrtle
[Distribution] Widely cultivated in China and Taiwan.
[Morphology] Deciduous shrub or small tree, up to 7 m high, with a glabrous, gray or brownish gray bark. Trunks and branches often curved, branchlets slender, with 4 wing-like ridges. Leaves alternate or sometimes nearly opposite, subsessile; blades chartaceous, elliptic, obovate or oblong, 2.5-7 cm long, 1.5-4 cm wide, acute or obtuse at apex, sometimes emarginate, broadly cuneate or nearly rounded, glabrous or slightly pilose on lower midvein, lateral veins in 3-7 pairs. Inflorescence of long-petiolate, pale red to purple flowers usually in terminal panicles. Calyx long, shallowly 6-lobed, lobes ovate, calyx-tube without longitudinal grooves outside, petals 6, wrinkled, with a long claw, stamens 36-42, the outer 6 adnate to calyx, longer than the remains, anthers large, green, pistil 1, styles slender, stigmas capitate. Capsules ellipsoid-globose, purplish black at maturity. Seeds winged, 8 mm long. Flowering during June and September. Fruiting during September and December.

675. **Lagerstroemia subcostata** Koehne (拘那花)

LYTHRACEAE

[English name] Subcostate crape myrtle

[Distribution] Distributed in Tsinghai, Kiangsu, Anhwei, Chekiang, Kiangsi, Fukien, Hupeh, Hunan, Kwangtung, Kwangsi and Szechuan provinces of China, and in Taiwan.
[Morphology] Deciduous tree or shrub, up to 14 m high. Stem with a thin bark, whitish gray or dark brown, glabrous or slightly hispid, branchlets subterete or conspicuously 4-ribbed. Leaves short-petiolate; blades membranous, oblong or oblong-lanceolate, rarely ovate, acuminate at apex, broadly cuneate at base, upper surface glabrous or sometimes sparsely pilosulous, lower surface glabrous or pubescent along midveins, pilose between veins, the midvein raised below, lateral veins in 3-10 pairs, united at tips. Inflorescence a terminal panicle, grayish brown-pilose. Flowers small, compact, white or rose-colored; calyx 10-12-ribbed, calyx-lobes erect, deltoid, glabrous inside, petals 6, wrinkled, with a claw, stamens 10-30, 5 or 6 longer than the remains, adnate to calyx or petals, filaments slender, ovary glabrous, 5-6-loculed. Capsules ellipsoid, splitting into 5-6 segments. Seeds winged. Flowering during June and August. Fruiting during July and October.

676. **Lawsonia inermis** Linn. (指甲花)

LYTHRACEAE

[English name] Henna, Mignonette tree
[Distribution] Cultivated in Kiangsu, Chekiang, Fukien, Kwangtung, Hainan and Kwangsi provinces of China, and in Taiwan.
[Morphology] Large shrub, up to 6 m high. Stems terete, branchlets subquadrate, glabrous. Leaves decussate, thinly coriaceous, with a short petiole; blades elliptic or elliptic-lanceolate, 1.5-5 cm long, 1-2 cm wide, acute at apex, the base cuneate or attenuate, lateral veins slender, raised above and below. Inflorescence a terminal panicle 7-15 cm or longer. Flowers fragrant, white, rose-colored to red, 6 mm across, up to 8-10 mm when fully opening; calyx 2-5 mm long, deeply 4-lobed, lobes broadly triangular-ovate, petals 4, slightly longer than calyx-lobes, margins recurved, toothed, stamens usually 8, filaments thread-like, 2 times the length of calyx-lobes, ovary subglobose, style thread-like, slightly longer than stamens, stigma awl-shaped. Capsules compressed globose, 6-7 mm across. Seeds numerous, fleshy, pyramid-shaped. Flowering during June and October. Fruiting in December.

677. **Pemphis acidula** J. R. & G. Forst. (水莞花)

LYTHRACEAE

[English name] Reef pemphis
[Distribution] Widespread in coastal areas of the Eastern Hemisphere; along beaches of Lanyu Island in Taiwan.
[Morphology] Evergreen small shrub, 20-100 cm high. Stems densely much-branched, young shoots and inflorescence grayish white-pubescent. Leaves opposite, subsessile; blades elliptic, obovate or obovate-lanceolate, fleshy, 1-1.5 cm long, 3-5 mm wide, the base obtuse or attenuate, obtuse or acute at apex, entire at margins, glabrous on both surfaces, unconspicuously veined. Flowers solitary, axillary; corolla white or pink, calyx campanulate or crateriform, shallowly 6-toothed, petals 6, adnate to upper calyx-tube, ovate, broadly elliptic to lanceolate, wrinkled or clefted along the margin, stamens

12, 2-seriate, ovary small, superior, incompletely 3-loculed, style long, stigma capitate. Capsules crateriform, circumscissile at maturity. Seeds compressed obovoid, 6 mm long, winged. Flowering and fruiting nearly throughout the year.

678. **Rotala rotundifolia** (Wallich ex Roxb.) Koehne (水豬母乳)

LYTHRACEAE

[English name]
[Distribution] Distributed in margins of paddy fields and wetlands in southern regions of Yangtze River, and in Taiwan.
[Morphology] Annual herb, 5-30 cm high, glabrous. Stems erect, slender, usually flushed with purple. Leaves opposite, sessile or short-petiolate; blades suborbicular, broadly obovate or broadly elliptic, 5-12 mm long, sometimes up to 20 mm, 3.5-10 mm wide, rounded at apex, rounded or sometimes subcordate at base, glabrous on both surfaces, lateral veins usually in 4 pairs, distinct beneath. Inflorescence of small, subsessile flowers 2 mm long subtended by a bract, arranged in a compact spike 1-4 cm long, 1-3 or sometimes 5-7 in a plant, the bract leafy, ovate or oblong-ovate, as long as flowers; bractlets 2, lanceolate or awl-shaped, as long as calyx-tube, calyx broadly campanulate, membranous, almost transparent, 1-1.5 mm long, 4-lobed, lobes deltoid, without appendages between, petals 4, obovate, pale purplish red, 2 times the length of calyx-lobes, stamens 4, ovary nearly pyriform, 2 mm long, style half the length of ovary, stigma discoid. Flowering and fruiting during December and June the next year.

679. **Epilobium hohuanense** Ying ex Chen (合歡山柳葉菜)

ONAGRACEAE

[English name]
[Distribution] Widespread in the tropics and in the southern and southwestern parts of China.
[Morphology] Annual or biennial herb, 30-60 cm high, much-branched. Stems slightly ridged, flushed with red, young shoots pubescent or glabrous. Leaves alternate, subsessile or short-petiolate; blades lanceolate or oblong-lanceolate, 3-12 cm long, 1-3 cm wide, base attenuate, apex acuminate to acute, entire-margined. Flowers solitary, axillary, short-pediceled or subsessile; calyx 4-lobed, lobes ovate, petals 4, yellow, obovate, stamens 4, ovary inferior, style short. Capsules slender, cylindric, 2-6 cm long, striated, red or dark red. Seeds numerous, enclosed by a layer of spongy pericarp. Flowering and fruiting throughout the year, mostly concentrated in summer and autumn.

680. **Ludwigia octovalvis** (Jacq.) Raven (水丁香)

ONAGRACEAE

[English name] Lantern seedbox
[Distribution] Distributed in China including the eastern, south-middle and westsouthern parts, and in Taiwan.
[Morphology] Subshrubby herb, 0.3-1 m high. Stems erect, slighltly ridged, green turning to red with age, hollowed in the upper part, pilose. Leaves alternate, subsessile; blades

lanceolate, or linear lanceolate, 3-15 cm long, 1-2.5 cm wide, apex acuminate, base gradually narrow, margins entire, both surfaces densely pilose. Flowers bisexual, solitary, axillary, subsessile; calyx-tube cylindrical, sepals 4, elongated-ovate, 6-15 mm long, 3-veined, persistent when fruiting, petals 4, yellow, obovate, emarginate at apex, distinctly with 4 pairs of lateral veins, 8-10 mm long, stamens 8, ovary inferior, stigma capitate. Capsules cylindrical, green or pale purple, 2-5 cm long, 5 mm across, pubescent, ridged, splitting between ridges at maturity. Seeds numerous, nearly hemispheric, with a distinct hilum. Flowering during July and October.

681. **Ludwigia taiwanensis** Peng (水江龍)

ONAGRACEAE

[English name]
[Distribution] Distributed in Fukien, Kwangtung, Hainan, Kwangsi and Yunnan provinces of China, and Taiwan.
[Morphology] Annual herb, 10-30 cm high. Stems erect, usually glabrous. Leaves alternate; petioles 3-13 mm long; blades narrowly lanceolate, 2-5 cm long, 5-12 mm wide, glabrous on both surfaces. Flowers yellow, bisexual, solitary and axillary; calyx-tube adnate to ovary, calyx-lobes persistent, lanceolate, 2 cm long, more or less pubescent outside, petals 4, nearly quadrate-orbicular, 2-2.5 cm long, caducous, stamens 4, ovary inferior, style 1 cm long, stigma capitate. Capsules cylindrical, green slightly flushed with purple, 5-9 mm long, 3-4 mm across, subglabrous, with numerous seeds.

682. **Oenothera biennis** Linn. (月見草)

ONAGRACEAE

[English name]
[Distribution] Native to temperate Americas; distributed in China including the northern, northeastern parts and Kweichow province, and in Taiwan.
[Morphology] Biennial herb, up to 1 m high. Vegetative growth in the first year with robust, fleshy roots, leaves in a rosette, long-petioled, blades oblanceolate, densely white-tomentose; a peduncle arising from the basal rosette in the second year, terete, robust, simple or indistinctly branched in the upper, sparsely white-hispid, lower cauline leaves with a petiole 0.5-2 cm long, upper cauline leaves subsessile, blades lanceolate or oblanceolate, 5-10 cm long, 1-2.5 cm wide, acuminate at apex, cuneate at base, margins loosely shallowly toothed, both surfaces puberulent. Flowers solitary, at the upper leaf-axils, calyx-tube 2.5-3 cm long, calyx-lobes 4, reflexed when flowering, with a spine-like appendage at tips, sparsely white-pubescent and glandular, petals 4, yellow, obovate-deltoid, 2 cm long, emarginate at apex, stamens 8, included, ovary inferior, 4-loculed, stigma 4-lobed. Capsules cylindrical, subquadrate, 4-lobed at maturity. Seeds angular, purplish, arranged in horizontal ranks. Flowering during June and July. Fruiting during July and August.

683. **Trapa bispinosa** Roxb. (菱角)

TRAPACEAE

[English name]
[Distribution] Distributed in the southern regions of Yantze River and Taiwan, in ponds.
[Morphology] Aquatic annual herb. Leaves dimorphic; floating leaves in a rosette at stem tips, petioles 5-10 cm long, the middle inflated to a spongy bulb 1 cm across, pilose, blades deltoid, 2-4 cm long and wide, margins coarsely toothed above the middle, entire near the base, upper surfaces green, glabrous, lower surfaces with pubescent veins; submerged leaves pinnately cleft. Flowers bisexual, white, axillary; calyx deeply 4-lobed, petals 4, stamens 4, ovary half-inferior, 2-loculed, style awl-shaped, stigma capitate, disk cockscomb-like. Fruit a obdeltoid nut, with two angles elongated into a horn, the horns 3-4 cm wide in the distance. Flowering during June and July. Fruiting during September and October.

684. **Trapa natans** Linn. **var. japonica** Nakai (野菱)

TRAPACEAE

[English name]
[Distribution] Disributed in the reaches of Yangtze River and Taiwan, growing wild in ponds or cultivated as an ornamental.
[Morphology] Annual herb. Leaves dimorphic; floating leaves with a petiole 5-10 cm long, the petiole-bulb spongy, fusiform or ovoid, blades usually obliquely quadrate or deltoid-rhombic, 2-4 cm long and wide, margins sharply toothed above, entire below, upper surfaces dark green, shiny, lower surfaces pale green, glabrous; submerged leaves pinnately cleft. Flowers white, axillary. Fruit a small deltoid nut, with two or four angles elongated into a green horn, the upper horns upward, the lower downward, fruit-stalks short and slender. Flowering during July and August. Fruit ripeness in October.

685. **Haloragis micrantha** (Thunb.) R. Br. (小二仙草)

HALORAGACEAE

[English name]
[Distribution] Distributed in China including the southwestern part, Kiangsu, Anhwei, Chekiang, Kiangsi, Fukien, Hunan, Kwangsi, Kwangtung and Hainan provinces, and in Taiwan.
[Morphology] Perennial herb, slender, tufted, 20-40 cm high. Stems quadrate, flushed with reddish brown, erect, bases decumbent and branched. Leaves small, short-petiolate, opposite, sometimes alternate in the upper; blades usually ovate or orbicular, 6-10 mm long, 4-8 mm wide, acute or obtuse at apex, margins small-toothed, rotunded at base, both surfaces glabrous, pale green or purplish brown. Inflorescence a terminal, slender racemose panicle. Flowers small, bisexual; calyx-tube ridged, calyx-lobes 4, deltoid, persistent, petals 4, reddish, stamens 8, anthers purplish red, pistil 1, ovary inferior, ridged, styles 4, stigmas densely pale reddish-pubescent. Drupes subglobose, 1 mm long, glabrous, shiny, with 8 longitudinal ridges. Flowering during June and July. Fruiting during September and October.

739. **Anagalis arvensis** Linn. (海綠)

PRIMULACEAE

[English name] Poorman's weatherglass, Pimpernel
[Distribution] Distributed in China including Chekiang, Fukien and Kwangtung provinces, and in Taiwan.
[Morphology] Annual or biennial herb, glabrous. Stems tufted, branched, quadrate, 10-30 cm high, whitish green. Leaves opposite, sessile, clasping the stem; blades orbicular-ovate to narrowly ovate, 1-2.5 cm long, 5-15 mm wide, acute or obtuse at apex, rotunded at base, entire at margins, chartaceous. Flowers solitary, axillary, pedicels 2-3 cm long, bractless; calyx of 4 lobes, lobes linear lanceolate, 4-6 mm long, acute at apex, corolla rotate, pale reddish, petals obovate, margins entire or irregulary toothed at apex, ciliate, stamens 5, filaments pubescent, ovary superior, glabrous, styles thread-like. Capsules globose. Seeds dark brown, densely tuberculate. Flowering during March and May.

740. **Lysimachia ardisioides** Masamune (排香草)

PRIMULACEAE

[English name]
[Distribution] Distributed in southern China, the Philippines and Taiwan.
[Morphology] Annual herb, glabrous, 30-80 cm high, fragrant. Stems slender, the lower decumbent, nodes with adventitious roots and branches, the upper erect, quadrate or pentagonal, with ridges narrowly winged. Leaves alternate; petiole 2-6 mm long; blades ovate or ovate-lanceolate, 2-6 cm long, 7-20 cm wide, smaller toward the stem apex, cuneate at base, acuminate at apex, entire or undulate at margins, glabrous. Flowers solitary, axillary, yellow, 1-1.5 cm across, pedicels slender, drooping, 2-3 cm long; calyx 3 mm long, 5-lobed, lobes ovate, the inside densely with reddish glandular dots; corolla 6 mm long, deeply 5-lobed, lobes lanceolate, reflexed, stamens 5, opposite to corolla-lobes, adnate to corolla base, filaments 1 mm, anthers 5 mm long, ovary subglobose, 1-loculed, 1 mm across, styles 5 mm long, with stigmas indistinct. Capsules globose, 2 mm across, with persistent calyx. Seeds numerous, minute, angular. Flowering during June and September. Fruiting during September and December.

741. **Lysimachia fortunei** Maxim. (星宿草)

PRIMULACEAE

[English name]
[Distribution] Distributed in the eastern, south-middle and westsouthern parts of China, and Taiwan in the wild.
[Morphology] Perennial herb, glabrous, with purplish red horizontal rgizomes. Stems erect, 30-70 cm high, terete, with blackish glandular dots, purplish red at base, not branched, brown-dotted on young stems and rachis. Leaves alternate; blades oblong-lanceolate to narrowly elliptic, acuminate at apex, attenuate at base, both surfaces with blackish glandular dots, the dots becoming granule-like protuberances when drying. Inflorescence a terminal slender raceme, bracts lanceolate, pedicels as long as or shorter than bracts; calyx long, deeply 5-lobed, lobes ovate-elliptic, obtuse at apex, margins membranous, ciliate,

blackish glandular-dotted below, corolla white, corolla-lobes elliptic or ovate-elliptic, rounded at apex, with blackish glandular dots, stamens 5, shorter than corolla, filaments adnate to the lower corolla-lobes, anthers ovoid, ovary superior, ovoid, 1-loculed, styles thick and short. Capsules globose, brown. Flowering during June and August. Fruiting during August and November.

742. **Lysimachia mauritiana** Lam. (茅毛珍珠菜)

PRIMULACEAE

[English name]
[Distribution] Distributed in India, Southeast Asia, southern China, Korea, Japan, Taiwan and the Pacific Islands; in coastal areas.
[Morphology] Biennial herb, tufted, much-branched, 15-40 cm high. Stems flushed with purplish red, branches and leaves slightly fleshy. Leaves alternate, short-petiolate or subsessile; blades elongated-obovate or oblong, 2-5 cm long, 1-2.5 cm wide, attenuate to cuneate at base, obtuse or acute at apex, margins recurved, lower surface blackish glandular-dotted. Flowers solitary at the upper axils, pedicels 1-2.5 cm long; calyx deeply 5-lobed, lobes broadly lanceolate, with glandular dots, corolla white to pink, 1-1.2 cm across, deeply 5-lobed, lobes elliptic or elongated ovate, stamens 5, ovary globose, style needle-shaped. Capsules globose, 4-6 mm across. Seeds numerous, brown or purplish brown at maturity. Flowering during March and June. Fruiting during May and August.

759. **Buddleia asiatica** Lour. (白蒲姜)

LOGANIACEAE

[English name] Asiatic butterfly bush
[Distribution] Distributed in China including Chekiang, Fukien, Hupeh, Hunan, Kwangtung, Hainan, Kwangsi provinces and Tibet, and in Taiwan.
[Morphology] Shrub erect, 1-1.5 m high. Stems subquadrate when young, branched in the upper part, grayish white-tomentose. Leaves opposite, short-petiolate; blades ovate-lanceolate, 5-12 cm long, 1.2- 4 cm wide, acuminate at apex, cuneate at base, margins entire or loosely serrulate, upper surface green, lower surface grayish white and densely tomentose. Inflorescence of terminal, white or pale purplish blue, small-flowered spikes or panicles. Calyx campanulate, 4-lobed, corolla tubular, 4-lobed at apex, stamens 4, styles 2-lobed, ovary 2-loculed. Capsules ellipsoid, 6 mm long, with persistent calyx. Seeds small. Flowering during January and October. Fruiting during March and December.

760. **Strychnos nux-vomica** Linn. (馬錢)

LOGANIACEAE

[English name] Snakewood, Strychnine
[Distribution] Distributed in China including Fukien, Kwangtung, Hainan, Kwangsi and Yunnan provinces, and snakewood, in Taiwan.
[Morphology] Tree, 10-13 m high, bark gray, with distinct lenticels, branches glabrous. Leaves opposite; petioles 5-12 mm long; blades coriaceous, broadly ovate or slightly orbicular, 6-15 cm long, 3-9 cm wide, acute or slightly emarginate at apex, broadly

cuneate or rounded at base, margins entire, glabrous, midveins 3-5, raised below, veinlets irregularly reticulate, with short tendrils at the axils. Inflorescence of axillary, paniculate cymes, 3-5 cm long, 2.5-5 cm across, tomentose, involucres and bractlets small, deltoid, acute at apex, tomentose. Flowers white, subsessile; calyx green, 5-lobed at apex, densely tomentose, corolla tubular, 5-lobed at apex, lobes ovate, densely pubescent inside, stamens 5, adnate to corolla-throat, filaments short, anthers yellow, elliptic, pistils 9.5-12 mm long, styles cylindrical, 11 mm long, stigma capitate, ovary ovoid. Berry globose, 2-4 cm across, green to orange at maturity, glabrous. Seeds 1-4, discoid, 1-3 cm across, grayish yellow, densely with silver wooly hairs. Flowering during spring and summer. Fruiting during August and January the next year.