
Plant Families: Visual Guide

Alexey Shipunov



March 26, 2022

Draft

Shipunov, Alexey. *Visual aid to Plant Families*. This book helps to learn plant families.
March 26, 2022 version (draft). 229 pp.

On the cover: Haptanthus hazlettii (Buxaceae, boxwood family) from Atlantida province, Honduras.

*This work is dedicated to the public domain.
Some photographs belong to their copyright holders*

Contents

1	Three which conquered the Earth	6
1.1	Compositae	6
1.2	Leguminosae	12
1.3	Gramineae and other graminoids	18
1.3.1	Gramineae	18
1.3.2	Cyperaceae	24
1.3.3	Juncaceae	30
1.3.4	Typhaceae	36
1.4	Mixtures	39
1.4.1	Compositae, Leguminosae, Gramineae	39
1.4.2	Gramineae, Cyperaceae, Juncaceae, Typhaceae	41
2	Magnificent Seven	43
2.1	Orchidaceae	43
2.2	Labiatae, in a really broad sense	49
2.3	Rubiaceae	55
2.4	Malvaceae	61
2.5	Rosaceae	67
2.6	Umbelliferae	73
2.7	Cruciferae	79
2.8	Mixtures	85
2.8.1	Orchidaceae, Labiatae, Rubiaceae	85
2.8.2	Malvaceae, Rosaceae, Umbelliferae, Cruciferae	87
2.8.3	Orchidaceae, Labiatae, Rubiaceae, Malvaceae, Rosaceae, Umbelliferae, Cruciferae	89
2.8.4	Compositae, Leguminosae, Gramineae, Cyperaceae, Juncaceae, Typhaceae, Orchidaceae, Labiatae, Rubiaceae, Malvaceae, Rosaceae, Umbelliferae, Cruciferae	91
3	Twelve Good	93
3.1	Euphorbiaceae and allies	93
3.2	Solanaceae	99
3.3	Amaranthaceae	105
3.4	Araceae	111
3.5	Boraginaceae	117
3.6	Cucurbitaceae	123
3.7	Ericaceae	125
3.8	Melastomataceae	131
3.9	Moraceae	137

3.10 Piperaceae	143
3.11 Polygonaceae	149
3.12 Ranunculaceae	155
4 And some more, great and small	161
4.1 Apocynaceae	161
4.2 Begoniaceae	167
4.3 Bromeliaceae	170
4.4 Campanulaceae	175
4.5 Caryophyllaceae	180
4.6 Gesneriaceae	186
4.7 Iridaceae	189
4.8 “Lilies”	192
4.8.1 Liliaceae	192
4.8.2 Melanthiaceae	194
4.8.3 Asparagaceae	196
4.9 Myrtaceae	202
4.10 Onagraceae	208
4.11 Oxalidaceae	214
4.12 Palms and tree ferns	219
4.12.1 Palmae	219
4.12.2 Cyatheaceae	225
4.13 Polemoniaceae	228

Foreword

How to know plant families? Famous American botanist Amos Eaton (Manual of Botany for North America, 1833) wrote about plant families: “The Natural Method should engage the attention of the student, after he has become acquainted with about 400 species of plants...”. Learning 400 species is not easy. This is exactly what this book wants to help with.

Why to learn plant families? If the goal is to know plants, plant families are extremely important. There are roughly 300,000 species of plants but only several hundred families. Consequently, the knowledge of families will greatly simplify the plant identification. Families are also *natural units* of plant diversity. This means that if the family is known, it is possible to guess correctly the unknown features of any plant.

Which families are here? Only those families which are important worldwide. Most frequent families come first.

What is not covered? Many small families of flowering plants, and (at the moment) most of spore plants and gymnosperms.

How to learn with this book? The best way is just go through photographs of one family and try to understand what all of them have in common. Then check the description to compare. Next, compare with neighbor families and understand how they are actually different. Then open the “mixture” page and guess the family—answer is provided on the next page.

There are actually **three books**, not one. Each of them have the same structure but different set and arrangement of photographs. You can use all three to make learning even more effective!

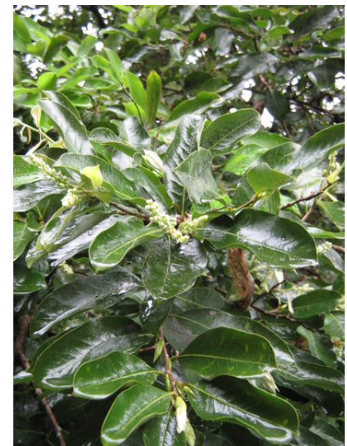
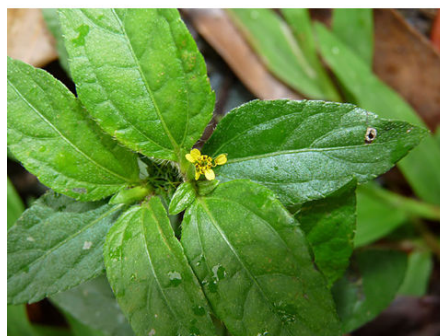
There are also “hidden exercises”: sometimes, I place 1–2 alien photographs among the proper ones; you may want to find them.

This work is under development, therefore please check for the updates. Version date is located on the on most pages.

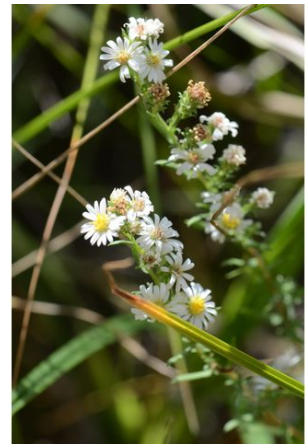
Chapter 1

Three which conquered the Earth

1.1 Compositae







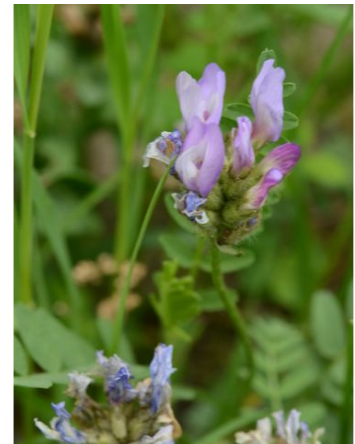


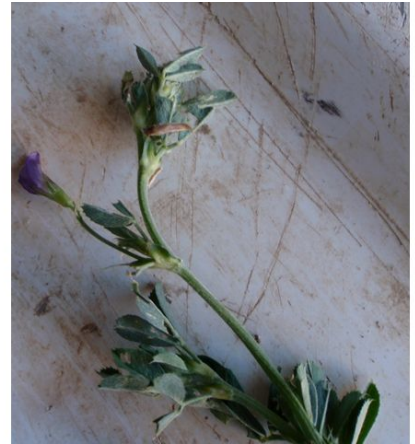


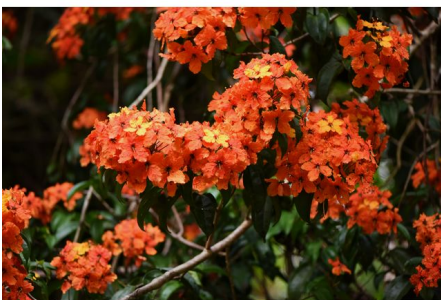


1.2 Leguminosae











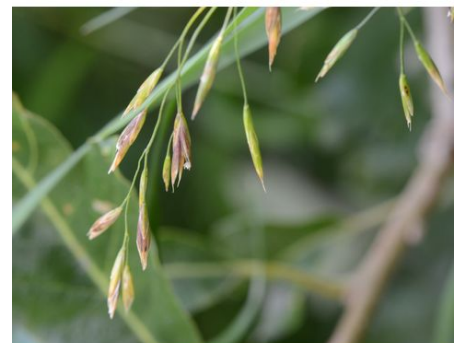


1.3 Gramineae and other graminoids

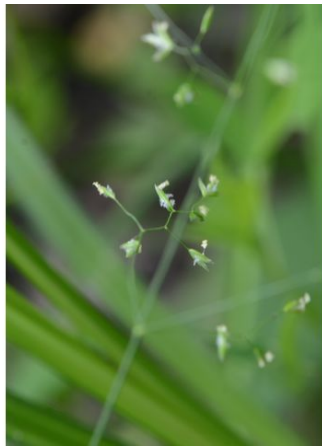
1.3.1 Gramineae







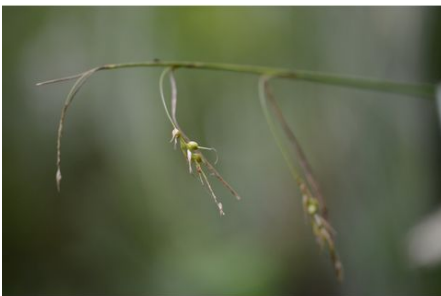




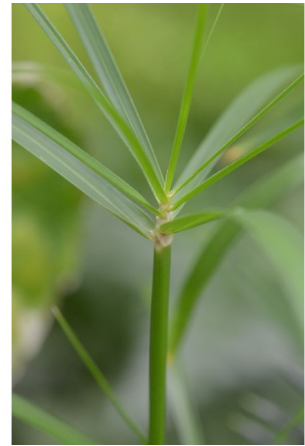


1.3.2 Cyperaceae











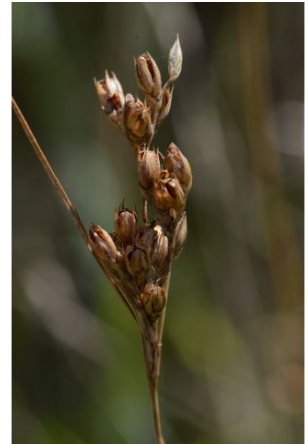
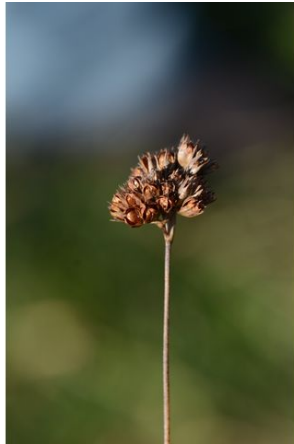


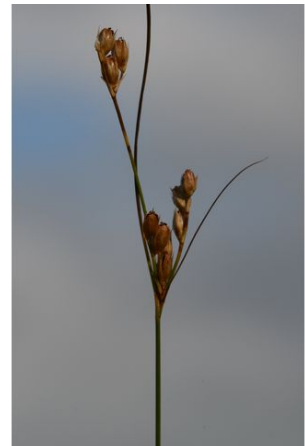
1.3.3 Juncaceae





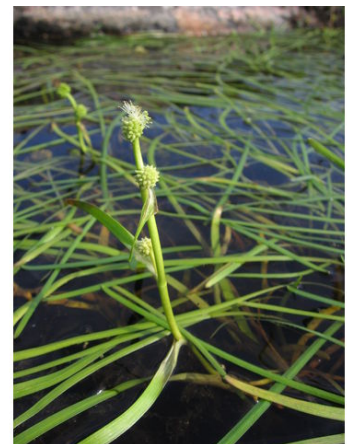
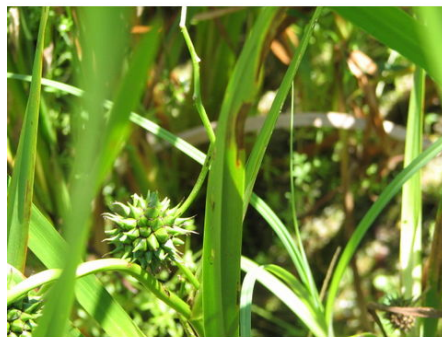








1.3.4 Typhaceae







1.4 Mixtures

1.4.1 Compositae, Leguminosae, Gramineae



Compositae	Compositae	Leguminosae
Compositae	Compositae	Gramineae
Leguminosae	Compositae	Compositae

1.4.2 Gramineae, Cyperaceae, Juncaceae, Typhaceae



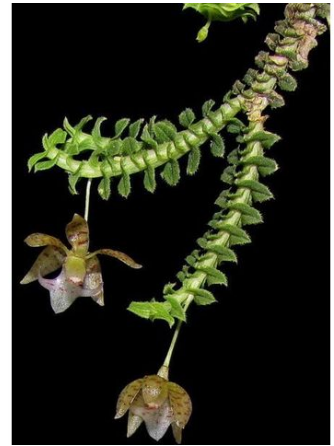
Gramineae	Cyperaceae	Gramineae
Gramineae	Cyperaceae	Cyperaceae
Cyperaceae	Gramineae	Gramineae

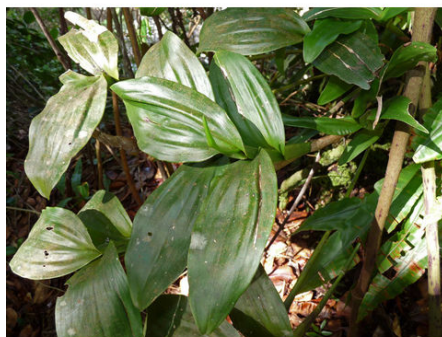
Chapter 2

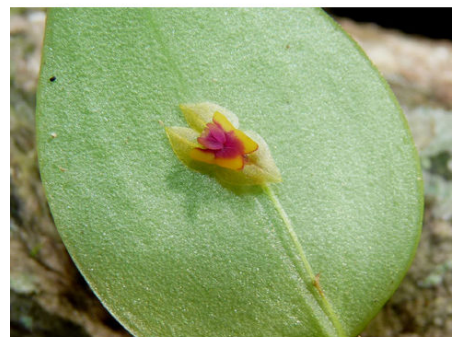
Magnificent Seven

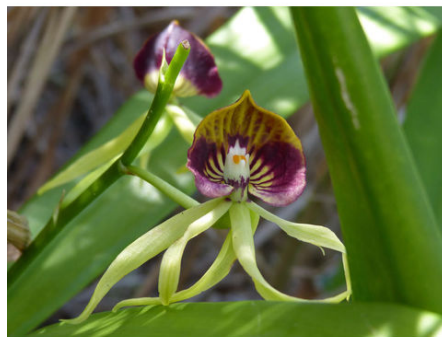
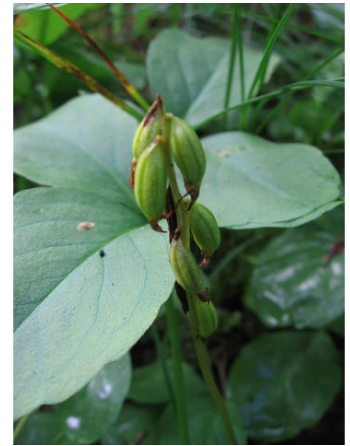
2.1 Orchidaceae







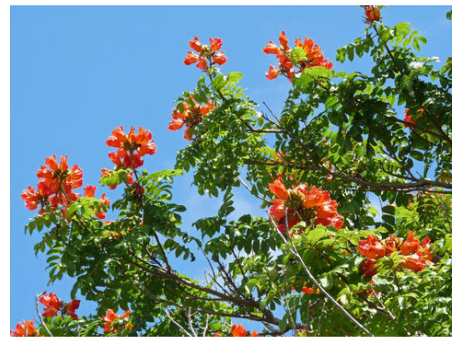
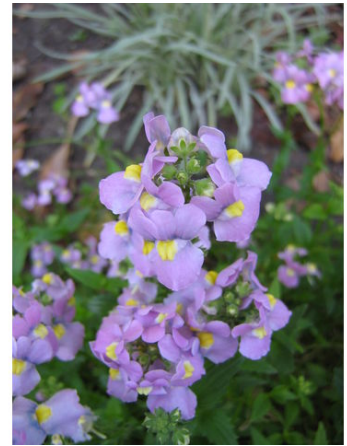






2.2 Labiatae, in a really broad sense







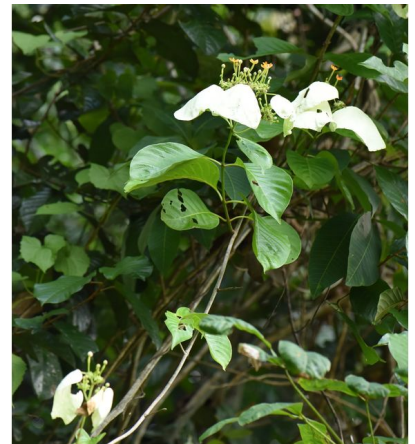


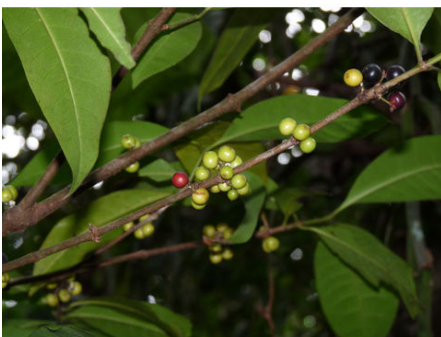
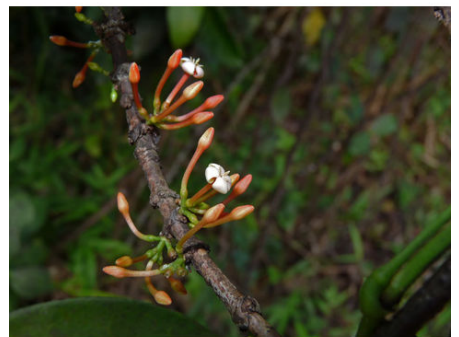




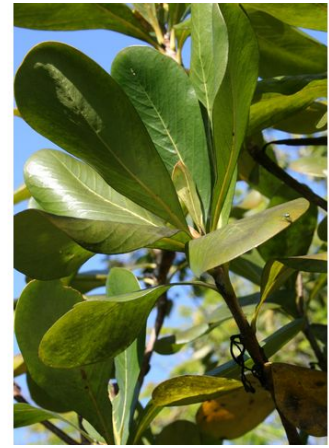
2.3 Rubiaceae





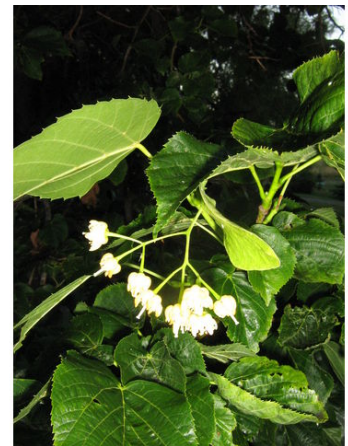


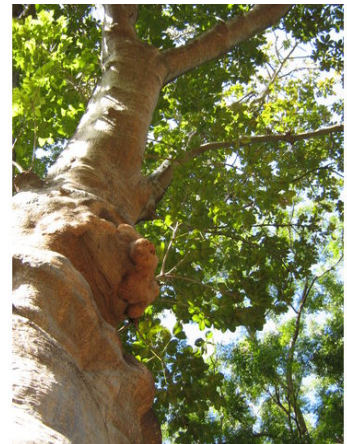


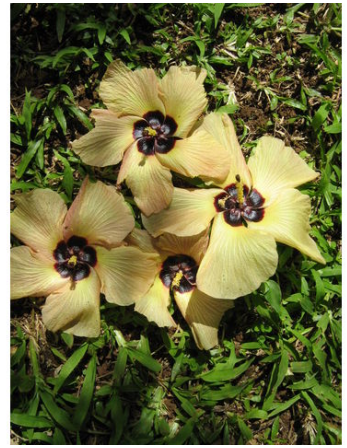


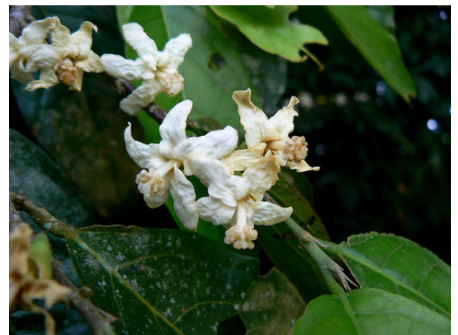
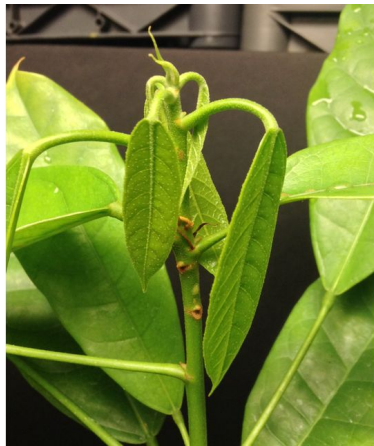
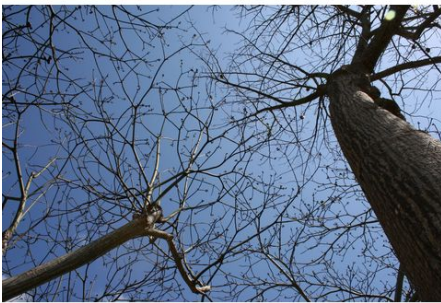


2.4 Malvaceae











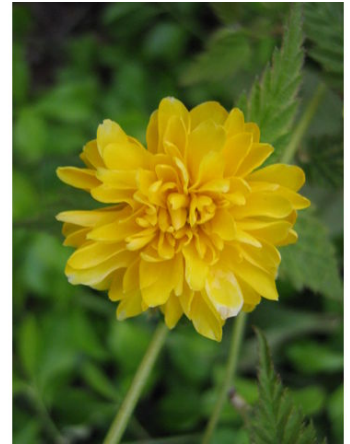
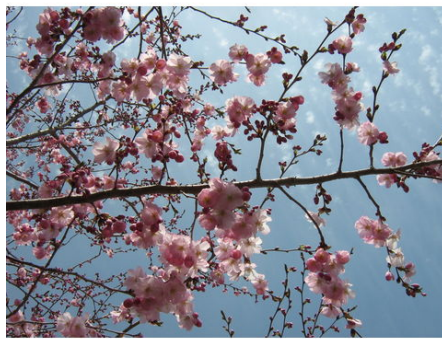


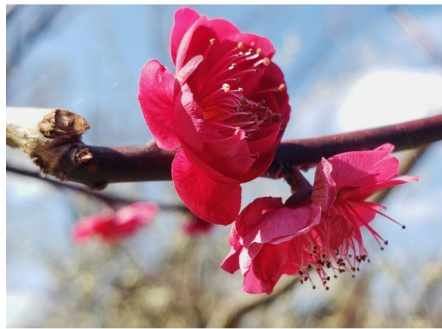
2.5 Rosaceae













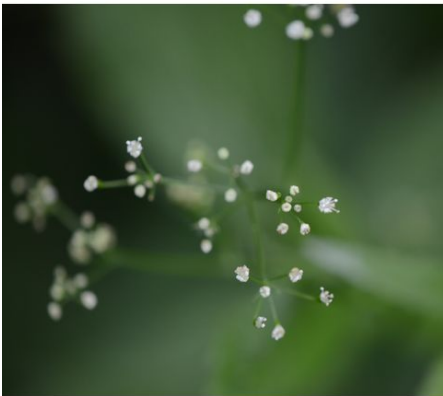
2.6 Umbelliferae













2.7 Cruciferae













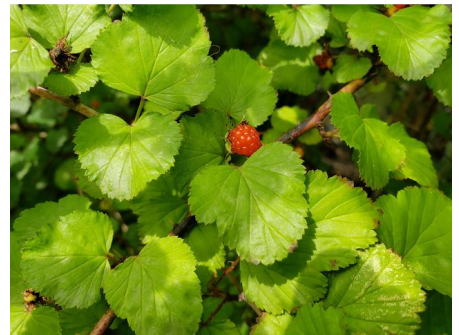
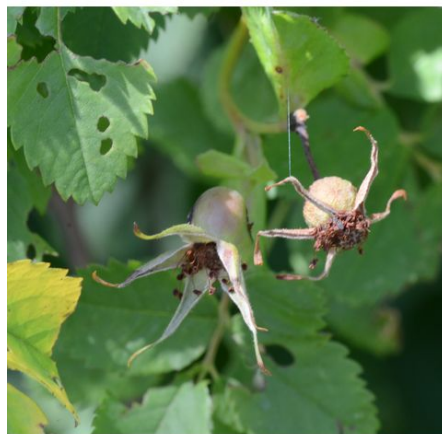
2.8 Mixtures

2.8.1 Orchidaceae, Labiatae, Rubiaceae



Labiatae	Rubiaceae	Labiatae
Labiatae	Rubiaceae	Labiatae
Orchidaceae	Rubiaceae	Labiatae

2.8.2 Malvaceae, Rosaceae, Umbelliferae, Cruciferae



Rosaceae	Cruciferae	Rosaceae
Rosaceae	Malvaceae	Rosaceae
Rosaceae	Rosaceae	Rosaceae

2.8.3 Orchidaceae, Labiatae, Rubiaceae, Malvaceae, Rosaceae, Umbelliferae, Cruciferae



Rubiaceae	Rubiaceae	Umbelliferae
Labiatae	Orchidaceae	Cruciferae
Orchidaceae	Labiatae	Labiatae

2.8.4 Compositae, Leguminosae, Gramineae, Cyperaceae, Juncaceae, Typhaceae, Orchidaceae, Labiatae, Rubiaceae, Malvaceae, Rosaceae, Umbelliferae, Cruciferae



Gramineae	Juncaceae	Compositae
Rosaceae	Leguminosae	Labiatae
Compositae	Gramineae	Compositae

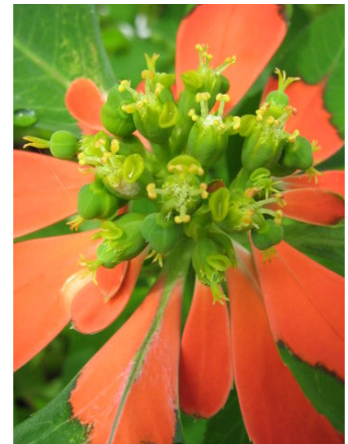
Chapter 3

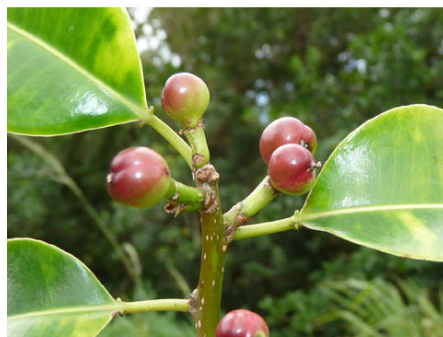
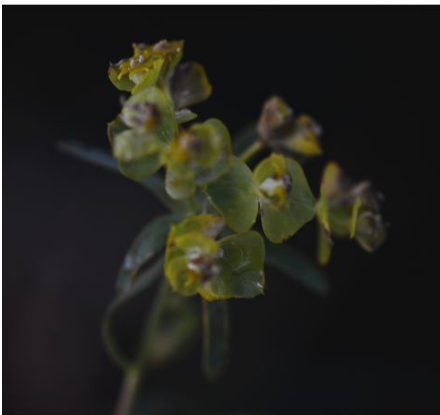
Twelve Good

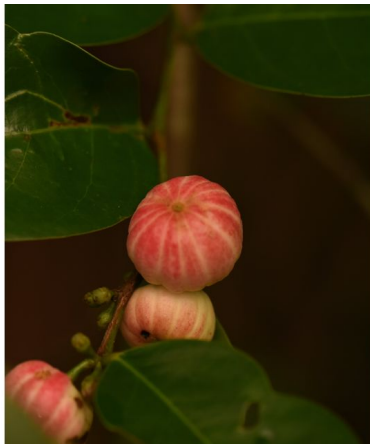
3.1 Euphorbiaceae and allies







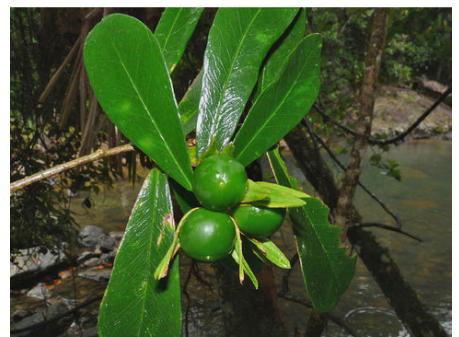




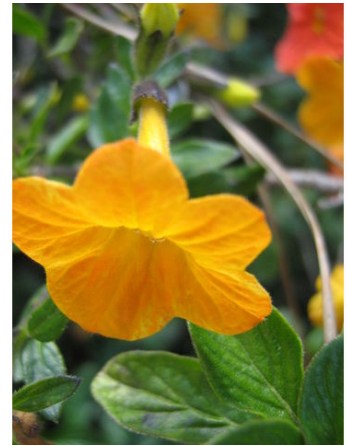


3.2 Solanaceae













3.3 Amaranthaceae









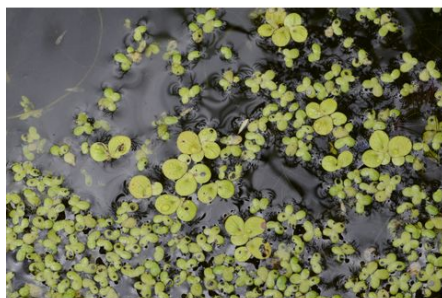
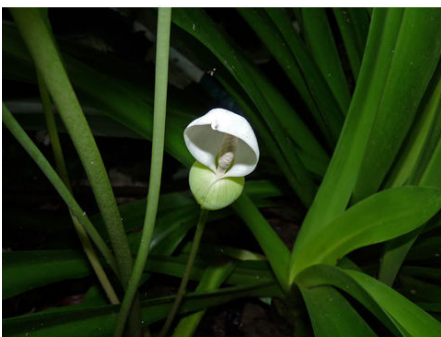
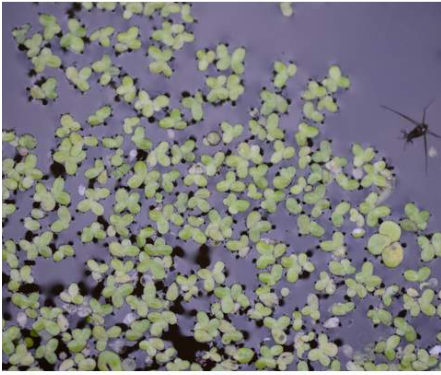


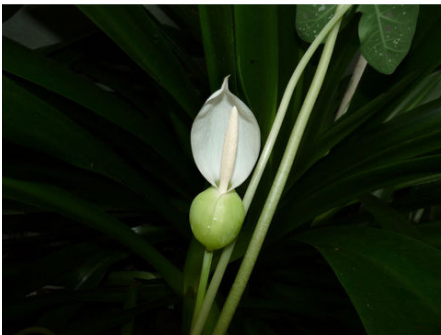


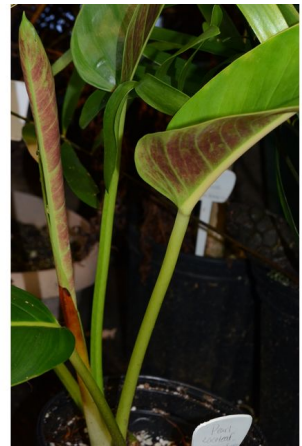
3.4 Araceae







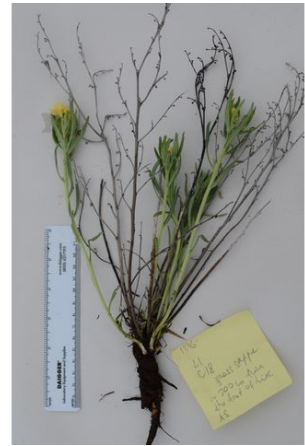


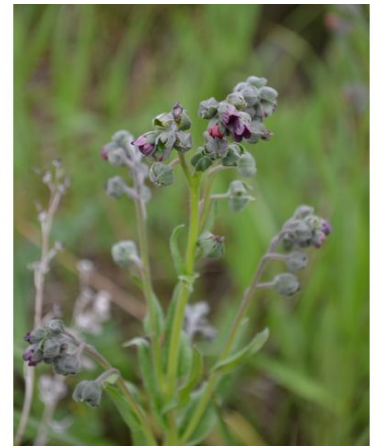




3.5 Boraginaceae













3.6 Cucurbitaceae





3.7 Ericaceae









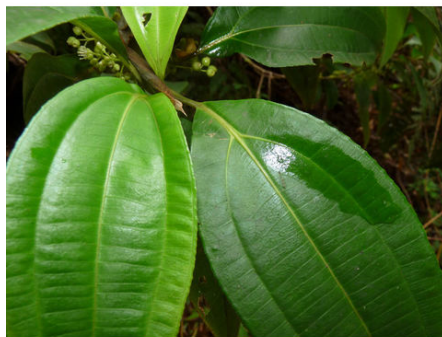


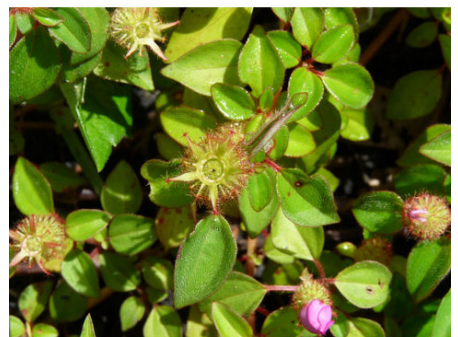
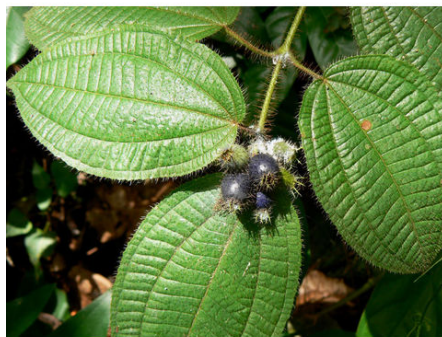
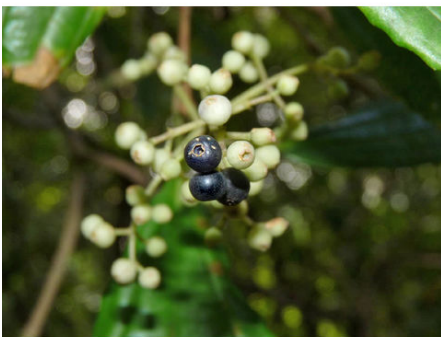


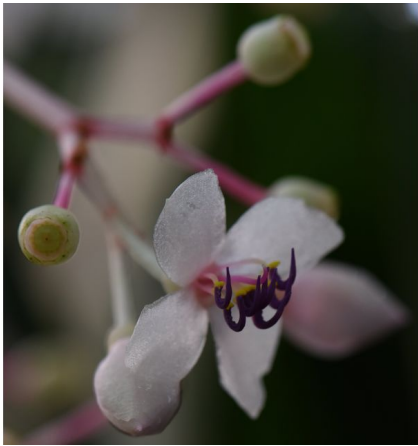
3.8 Melastomataceae





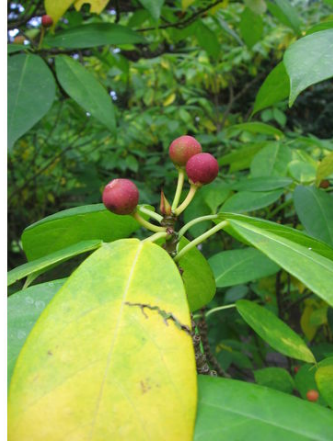








3.9 Moraceae







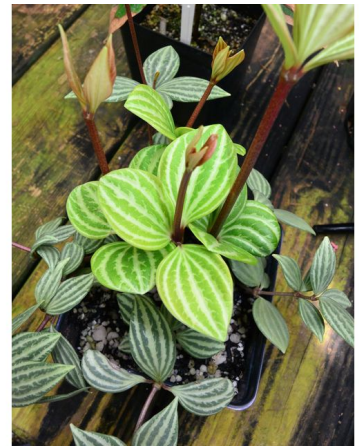




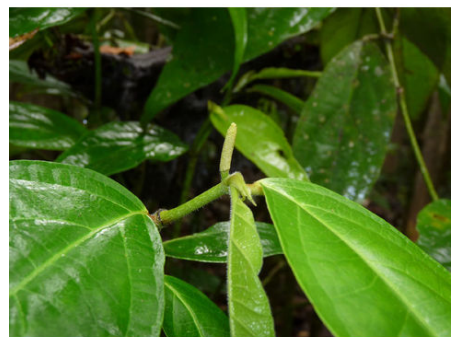


3.10 Piperaceae









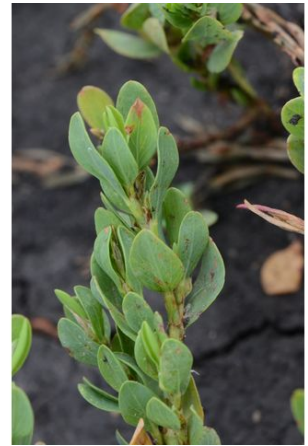


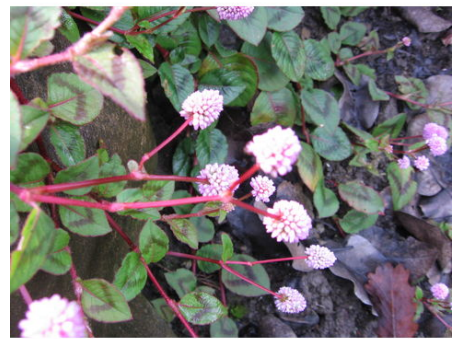


3.11 Polygonaceae









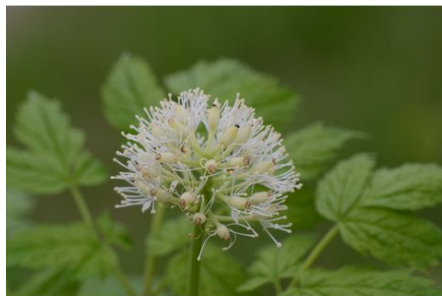




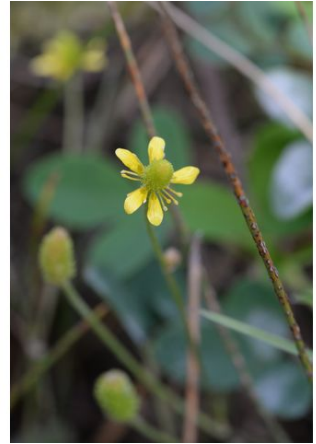
3.12 Ranunculaceae











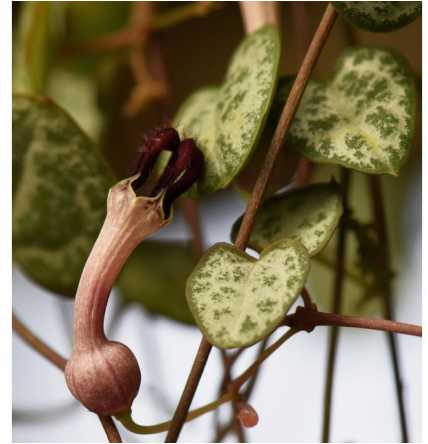


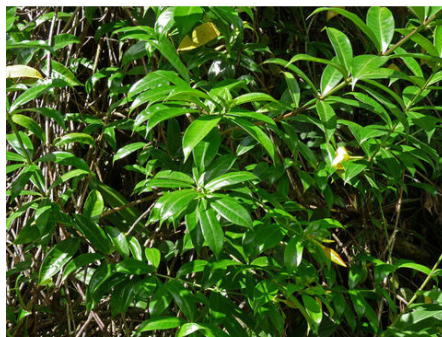
Chapter 4

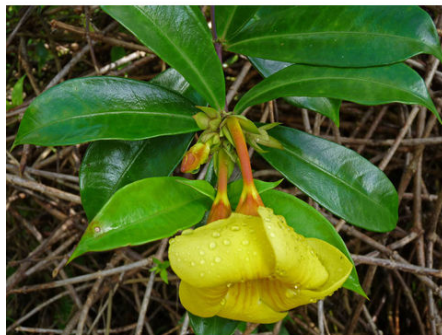
And some more, great and small

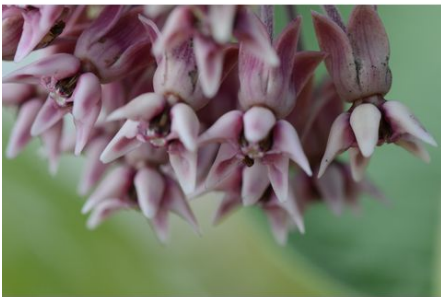
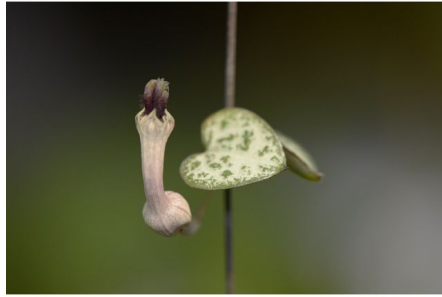
4.1 Apocynaceae

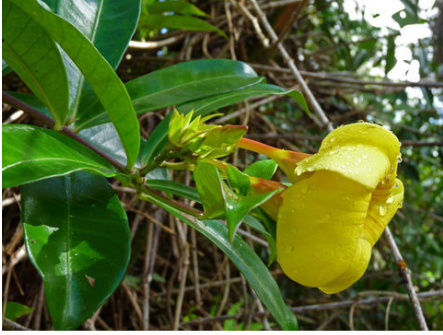








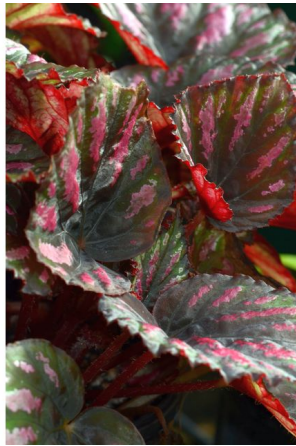




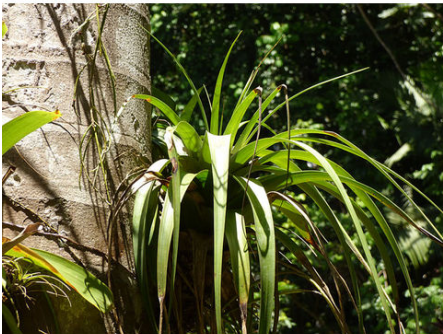
4.2 Begoniaceae



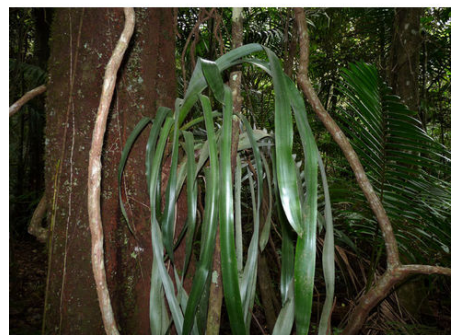
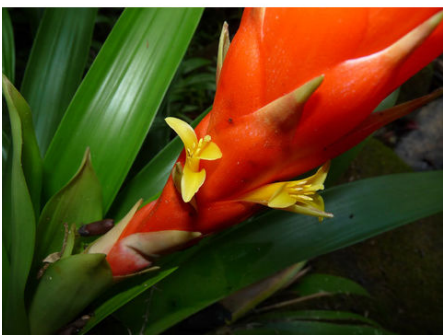


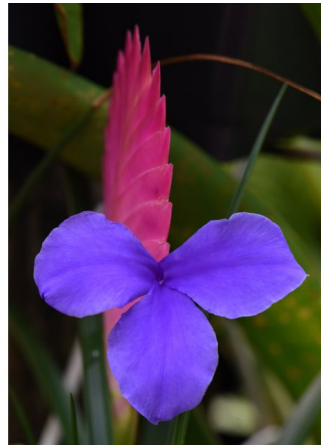
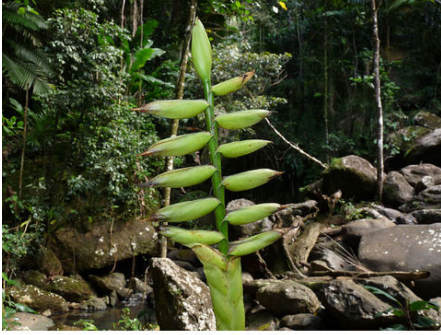


4.3 Bromeliaceae











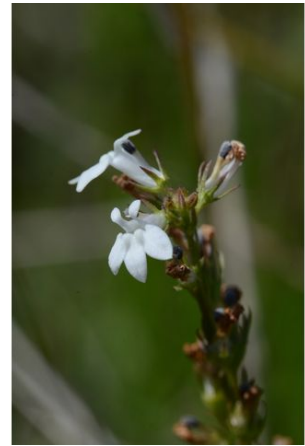
4.4 Campanulaceae











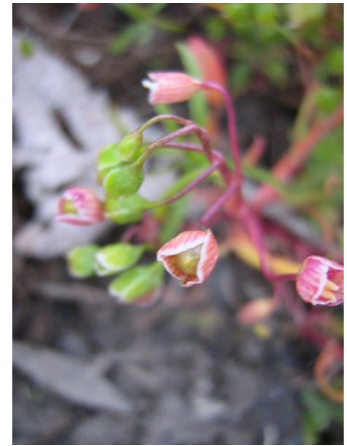
4.5 Caryophyllaceae





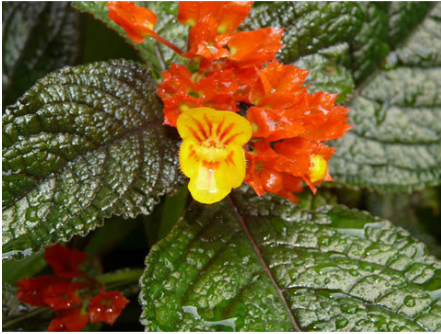


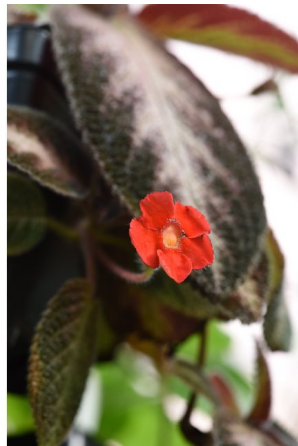






4.6 Gesneriaceae







4.7 Iridaceae







4.8 “Lilies”

4.8.1 Liliaceae



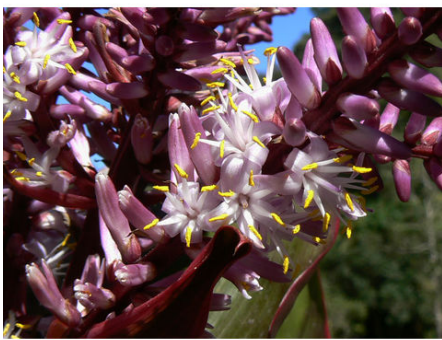
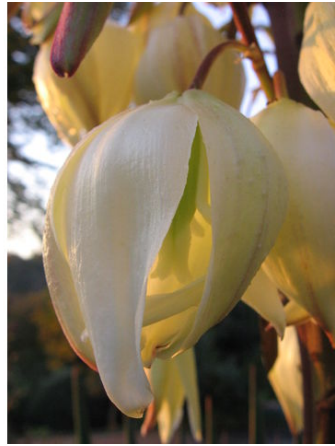


4.8.2 Melanthiaceae

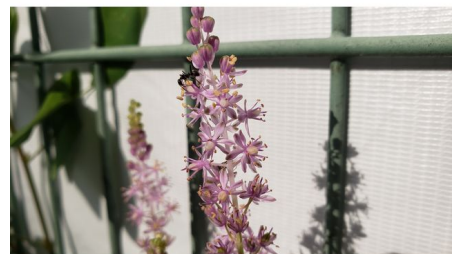
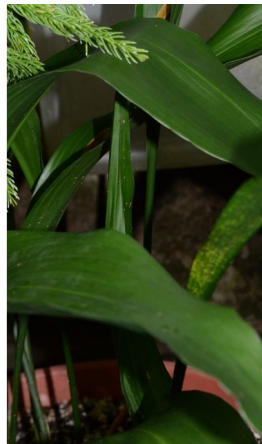


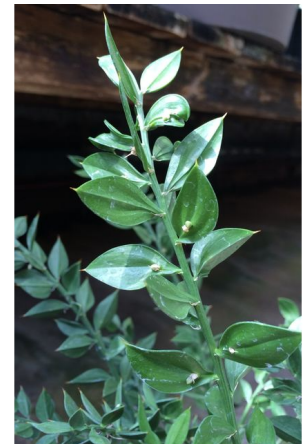
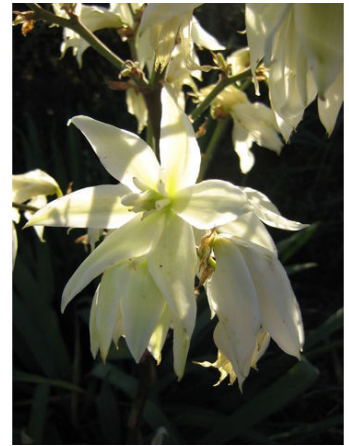


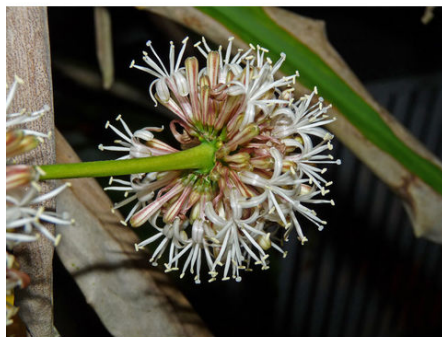
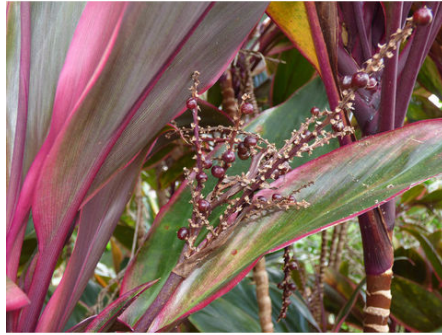
4.8.3 Asparagaceae







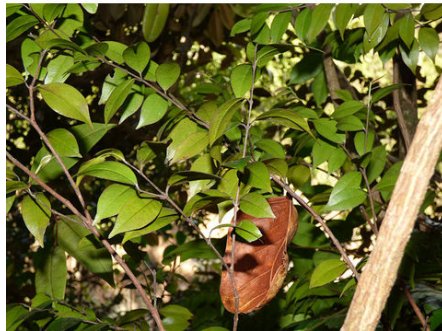


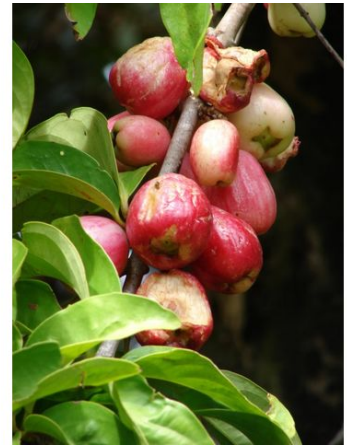




4.9 Myrtaceae













4.10 Onagraceae









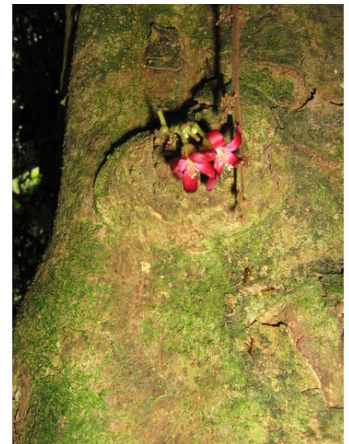
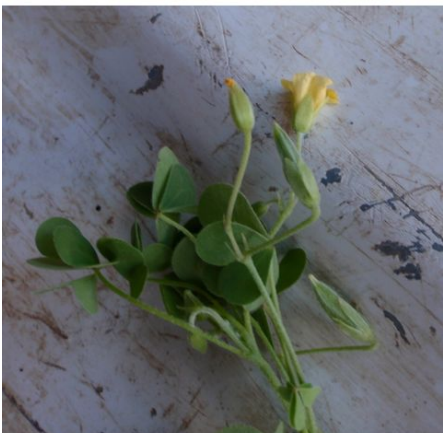




4.11 Oxalidaceae







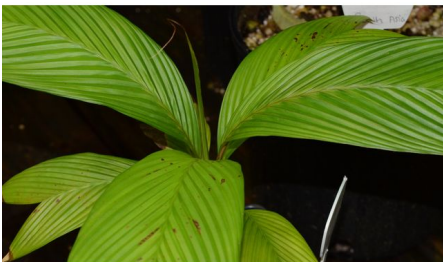
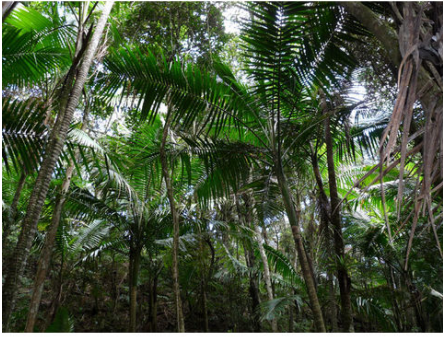


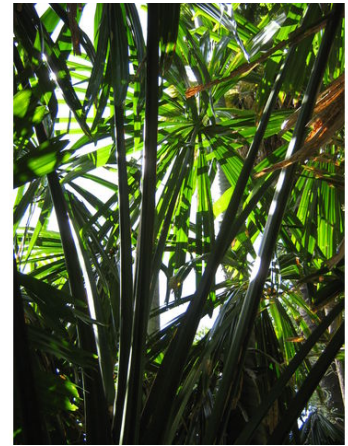


4.12 Palms and tree ferns

4.12.1 Palmae

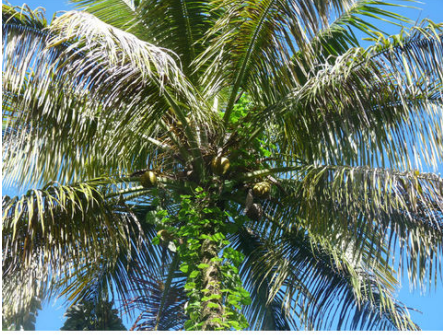






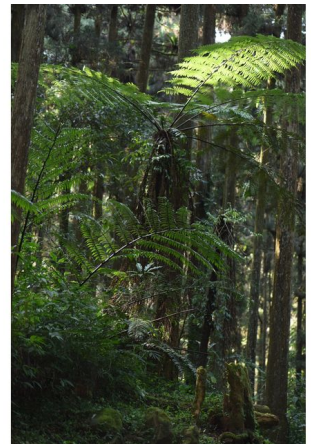
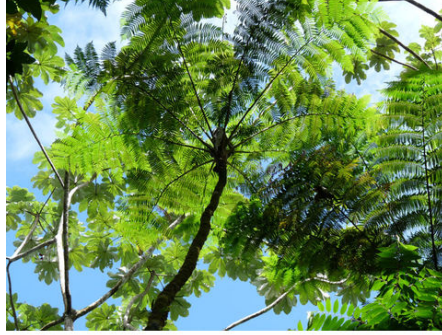


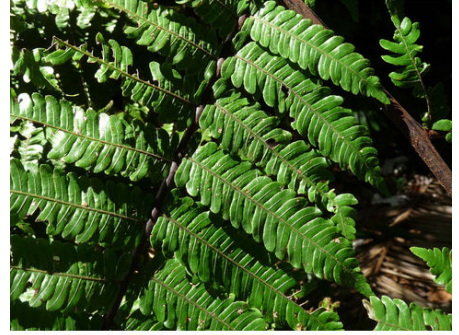




4.12.2 Cyatheaceae







4.13 Polemoniaceae



