

CHAPTER 4

MATERIALS AND METHODS

1. Materials

1.1 Specimen collecting equipments

- a plant press, 30 x 45 cm
- sheets of newspapers
- corrugated cardboard
- hand pruner
- spade
- plastic bags
- hand lens
- field note
- camera
- films (color print and transparency slide)
- altimeter
- tags
- 75 % ethyl alcohol + glycerine
- bottles

1.2 Herbarium specimen preparing equipments

- deep freezer (-40 °C)
- hot air oven
- mounting paper, 30 x 42 cm
- species covers, 30 x 42 cm
- genus covers, 30 x 42 cm
- latex mixed with synthetic glue in ratio 1:1
- label pad, about 10.5 x 13.5 cm
- needle and thread
- sand bags

1.3 Identification equipments

- dissecting microscope
- dissecting needles
- razor blades
- petri dishes
- related taxonomic literatures
- voucher specimen in herbaria: Bangkok Herbarium (BK), Forest Herbarium (BKF) and Prof. Kasin Suvatabhandhu Herbarium (BCU).

2. Methods

2.1 Literature review

- The related literature was searched from the libraries at the Prof. Kasin Suvathabhandhu Herbarium, Department of Botany, Chulalongkorn University (BCU) and the Forest Herbarium, Royal Forest Department (BKF).
- The general data of this studied site such as location, area, boundary, topography, climate, vegetation, and transportation were studied from the park's folders, prior field trip was made.

2.2 Exploration and collection

- Field collection of flowering plants was conducted monthly from April 2001 to August 2002 at Pha Taem National Park.
- A plotless method was employed, specimens were gathered along the existing forest trails, from Pha Taem Painting Cliff to the Soi Sawan Waterfall. There is a total distance of about 13 kilometers, extending about 5 m. from both sides.
- Three duplicates of flowering plant specimens were collected and photographs were taken for each species.
- Ecological data, habit and some diagnostic characters of each species were noted.

3. Laboratory study

- Dried herbarium specimens were prepared as described in Boonkerd et al. (ทวีศักดิ์ บุญเกิด และคณะ. 2526) and deposited at BCU and BKF.
- Both internal and external morphological characters were studied.
- Plant specimens were identified using both keys and descriptions from taxonomic literatures, such as Flora, Manual, Monograph, Research papers, etc.
- Specimens of each species were proved for identity by comparison to the voucher herbarium specimens that were deposited at BCU and BKF.
- Author of scientific names and abbreviations used in this thesis are according to the author of plant names (Brummitt and Powell, 1992).
- Description and drawing illustration of each species were prepared and base on specimens collected from the Pha Taem National Park.