

CHAPTER 4

MATERIAL AND METHODS

4.1 Materials

4.1.1 Specimen collecting equipments

- a plant press, 30 cm x 45 cm
- sheets of newspapers
- corrugated cardboard
- hand pruner
- spade
- plastic bags
- hand lens
- field note
- camera
- films (colour print and transparency slide)
- altimeter
- tags

4.1.2 Herbarium specimen preparing equipments

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

4.1.3 Identification equipments

- dissecting microscope
- dissecting needles
- razor blades
- Petri dishes

-Flora of Thailand, Vol. 3 and related taxonomic literatures (Tagawa and Iwatsuki, 1979, 1985, 1988, 1989).

4.2 Methods

4.2.1. Literature review

The related taxonomic literatures were assembled from the libraries at the Professor Kasin Suvathabhandu Herbarium, Department of Botany, Chulalongkorn University (BCU) and the Forest Herbarium, Royal Forest Department (BKF). The general information of the studied site such as location, area, boundary, topography, climate, vegetation, and transportation was studied from the park's brochure; prior field trip will be made.

4.2.2. Exploration and collection

Field collections of ferns and fern allies were conducted monthly from March 2001 to July 2002 at Phu Hin Rong Kla National Park. Three duplicates of specimens were collected and photographs were taken for each species. Specimens were gathered along the existing forest trails, extending about 5 m from both sides. Some specific moist areas were selected for repeating visits, such as Man Daeng Waterfall, Rom Klao-Paradorn Waterfall and nearby sites. Field note viz. ecological data, habit, habitat and some diagnostic characters of each species were recorded.

4.2.3. Laboratory study

Laboratory study was conducted at Plant of Thailand Research Unit, Department of Botany, Faculty of Science, Chulalongkorn University. Dry herbarium specimens were prepared as described in Boonkerd et al. (ทวีศักดิ์ บุญเกิด และคณะ, 2530) and deposited at BCU and BKF. Internal and external morphological characters of each specimen were studied. Pteridophyte specimens were identified using keys and descriptions from taxonomic literatures, such as Flora, manual, monograph, as well as research paper, etc. Botanical names of each specimen were verified by comparison to the voucher herbarium specimens deposited at BCU and BKF. Author of scientific names and abbreviations used in this thesis are in accordance with the author of plant names (Brummitt and Powell, 1992). Classification system of pteridophytes in this thesis was followed that of Boonkerd and Pollawatn (2000). Dichotomous keys to genera and species were constructed for determining each taxon in the studied area.

Description of each species was prepared and base solely on specimens collected from Phu Hin Rong Kla National Park.

In addition, ecological data, geographical distribution, vernacular name and uses of each species were prepared.