

Phytosociological Studies on the Mangrove Vegetation in Thailand

2nd Report: Mangrove Vegetation of Chanthaburi and Ranong*

タイ国マングローブ林の植物社会学的研究

第2報：チャントブリおよびラノンのマングローブ植生*

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Synopsis

The mangrove vegetation of Indo-Pacific region, extending from the Tropical Asia toward the north as far as southern part of the Japanese Islands, has not been the subject of major international research study. But preservation and utilization of the mangrove vegetation are important environmental problems in the world. During the periods from October to November 1981, the phytosociological study on the mangrove vegetation, supported by overseas scientific research project of the Japanese Ministry of Education, Science and Culture and the National Research Council of Thailand, was carried out in Thailand. The field survey was made thoroughly in Ranong (base of the Malay Peninsula) and Chanthaburi (southeastern part of Thailand).

Introduction

Mangrove vegetation symbolizes the rich, natural asset of the Tropical Asia, and is, in itself, valuable forest resources. It extends from the Tropical Asia, e.g. Thailand, toward north as far as the southern part of the Japanese Islands, and thus has certain bearing on the natural environment of Japan.

Many natural or semi-natural stands of the mangrove vegetation remain around estuaries and coastlines of Thai-Bay and Andaman Sea in Thailand.

The mangrove vegetation, growing widely, had not been the subject of major international phytosociological study. Although the mangrove vegetation yields charcoal, firewood, tannin, pile materials, construction materials and marine products, and contributes to human life, prac-

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tically no full-scale and basic ecological survey, which could be useful for its preservation and utilization, had not been attempted.

The explication of phytosociological system of the mangrove forest and complication of its vegetation maps through phytosociological field survey are prerequisite, along with studies in silvics and applied ecology, to the comprehensive understanding of the mangrove vegetation, which is urgently in need.

These efforts would realize the effective utilization of biological resources of the tropical zone in harmony with the preservation of its environment.

Early Historical References

A detailed account of the references to mangrove in European literature is given by Bowman (1917). Additional information is given in the reports of Walter and Steiner (1936) on East Africa, Davis (1940) on Florida, and MacNae (1968) on Indo-West Pacific mangrove. Richards (1952, *The tropical rain forest an ecological study*), Kira *et al.* (1970), Aksornkoae (1975, 76) and many ecologists have studied and reported on tropical vegetation; such as the rain forest and mangrove swamps; but comparatively little has been done in the way of phytosociological analysis of these regions.

Outline of Survey Sites

The field survey was carried out in Ranong in the southwestern part, and Chanthaburi in the southeastern area of Thailand. Located at the base of Malay Peninsula, Ranong is at latitude 10°N ., and about 590 km southwest of the capital city of Bangkok.

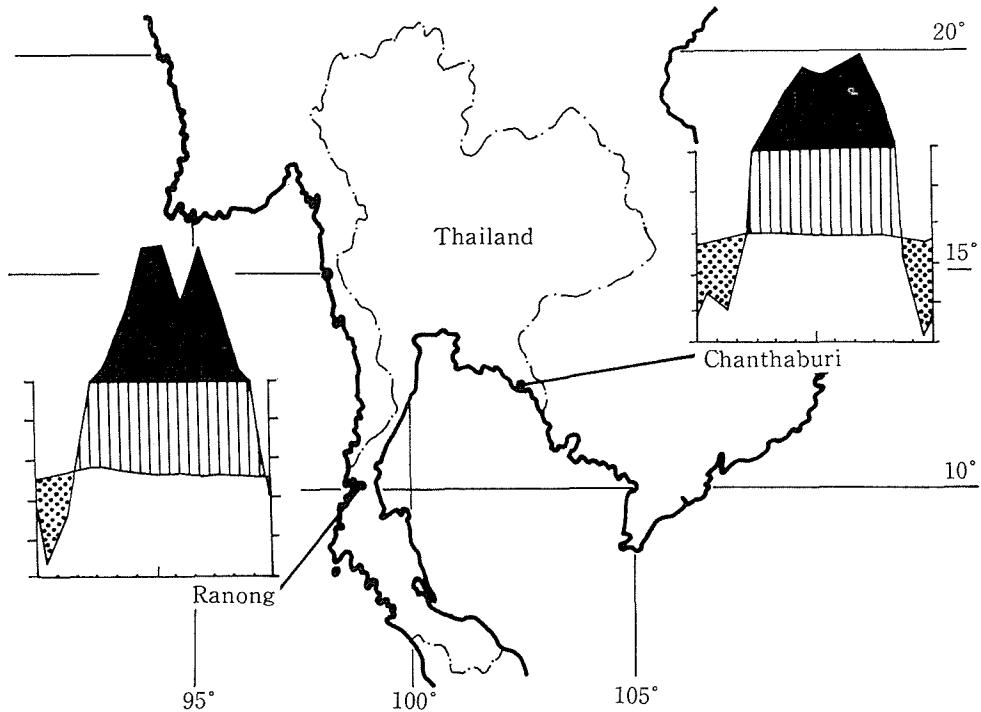


Fig. 1. Map showing the area investigated (Chanthaburi and Ranong).

The annual mean temperature of Ranong is 26.7°C , the annual precipitation is 4325 mm with an extremely dry season in 2 months of January and February.

On the other hand, being on the Gulf of Thailand, Chanthaburi is at latitude 12.6°N . and about 330 km southeast of Bangkok. 5 months from November through March is the dry season when the monthly mean precipitation remains less than 60 mm. Both in Ranong and Chanthaburi, the mangrove vegetation develops in embayments around the downstream of rivers where water

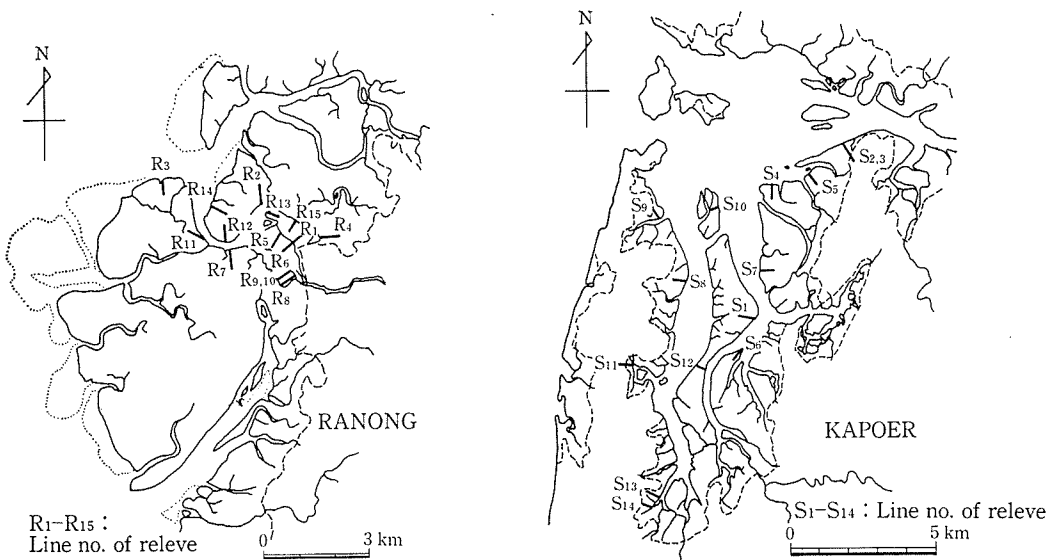


Fig. 2. Map showing the survey lines at Ranong.

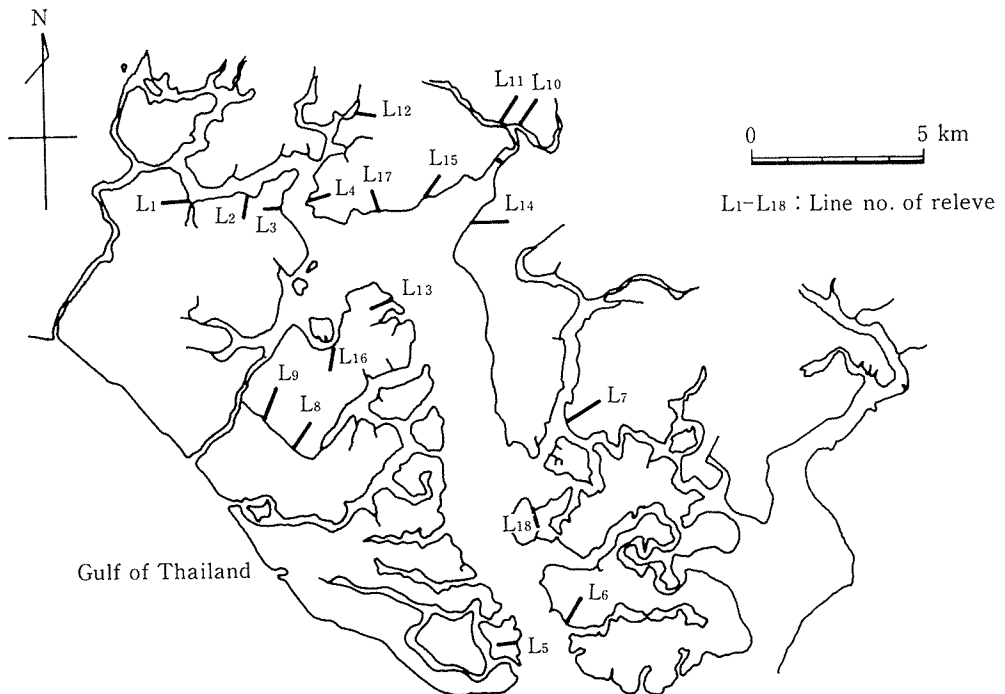


Fig. 3. Map showing the survey lines at Chanthaburi.

flow is ample. Part of the mangrove forest is completely destroyed and bare, and most of the mangrove vegetation has long been selectively harvested to supply wood for charcoal production. It was noticed, in the present exploration, too, that few stands grow up to the height of natural or semi-natural mangrove vegetation in limited districts of Ranong.

Subject and Method

All vegetation, from natural to substitutional, and from herbaceous to forest vegetation, within the mangrove forest in Thailand, were covered by the present field survey. Namely, from the natural tree forest of *Rhizophora* or *Avicennia* to communities of *Acanthus ilicifolius* and *Finlaysonia maritima* in deforested land were investigated at about 500 spots.

It was made sure that each and every stand selected for the survey has the areal extension over the minimum survey space in the habitat which shows homogeneous physiognomy, and therefore, may be judged even.

All the species within the stand were checked to make a complete species list by layer. Multistracutal communities such as 30 m high *Rhizophora* forest were divided into tree layer-1 (T1), Tree layer-2 (T2), Shrub layer (S) and Herb layer (H), according to the height of the stands. Braun-Blanquet Method (1964) was employed to determine comprehensively the cover class and sociability of species in each layer. Simultaneously, habitat conditions, that can be judged or measured in the field, were recovered as many as possible, e.g. neighbouring communities, human impact, micro-topography, soil conditions, angle of slope, gradient and so on.

Formulation of Community Tables

The data collected during the field survey were classified into communities or associations and entered in the community composition tables. They were then reorganized into rough table, summarized table, partially table, differential table, synthetic table and association table (character species table). The comprehension and classification of vegetation units have so far been attempted from various angles. Currently, comprehension with association as a fundamental unit (Tüxen 1937, Miyawaki 1972) is most prevalently adopted in the international academic world. Thus the present survey has employed this method.

Results (Plant communities)

1. *Sonneratia alba*-community

Location: Chanthaburi

Differential Species: *Sonneratia alba*

The *Sonneratia alba*-community is from 6 m to 7 m high, and total number of species is from 2 to 3, that is *Sonneratia alba*, *Avicennia alba*, *Rhizophora apiculata* and *Rhizophora mucronata*. The community is distributed on the lower riches of the Chanthaburi mangrove area.

The *Sonneratia alba*-community is divided into the two under communities, e.g. typical under community and under community of *Avicennia alba*.

2. *Avicennia alba*-community

Location: Chanthaburi

Differential Species: *Avicennia alba*

The *Avicennia alba*-community is found at Chanthaburi. Dominant species of the community

is *Avicennia alba* or *Rhizophora apiculata*. The community is from 5 to 20 m high, and the total number of species is from 2 to 9.

3. *Aegiceras corniculatum*-*Sonneratia alba*-community

Location: Ranong

Differential Species: *Aegiceras corniculatum*, *Sonneratia alba*

The river side of the Ranong mangrove are widely covered with the *Aegiceras corniculatum*-*Sonneratia alba*-community. The community was investigated from 65 survey points. The species of high presence value are *Aegiceras corniculatum*, *Sonneratia alba*, *Rhizophora apiculata*, *Rhizophora mucronata*, and *Avicennia alba*. The community is divided into the following undercommunities: (1) Under community of *Avicennia alba* and (2) typical under community.

4. *Rhizophora mucronata*-community

(*Rhizophora mucronata*-*Rh. apiculata*-community)

Location: Chanthaburi and Ranong

Differential Species: *Rhizophora mucronata*

The community is widely covered at the mangrove area in Thailand. And the total number of species is from 1 to 6. The community is included not only natural tall tree forest but also semi-natural forest. Then, the *Rhizophora mucronata*-community are divided into many under communities.

5. *Rhizophora apiculata*-community

Location: Chanthaburi

Differential Species: *Rhizophora apiculata*

The *Rhizophora apiculata*-community is characterized by *Rhizophora apiculata*. The species of high presence value is one species e.g. *Rhizophora apiculata*. But the substitutional under community is differentiated by *Bruguiera parviflora*, *Acanthus ilicifolius* and *Finlaysonia maritima*.

6. *Bruguiera sexangula*-*Xylocarpus moluccensis*-community

Location: Chanthaburi

Differential Species: *Xylocarpus moluccensis* and *Bruguiera sexangula*

On the front of the *Ceriops tagal*-*Xylocarpus granatum*-community, the *Bruguiera sexangula*-*Xylocarpus moluccensis*-community is found. The distribution of the community is limited.

7. *Ceriops tagal*-*Xylocarpus granatum*-community

Location: Chanthaburi and Ranong

Differential Species: *Xylocarpus granatum*, *Ceriops tagal*

The community is collected at East Kalimantan, Indonesia (Suzuki and Mochida 1982) and at Chanthaburi and Ranong in Thailand. The community is distributed on the inland side of the mangrove area. The total number of species is from 1 to 9. The species of high presence value are *Xylocarpus granatum*, *Ceriops tagal*, *Acrostichum aureum* (Under community of *Acrostichum aureum*), *Bruguiera gymnorrhiza* (Under community of *Bruguiera gymnorrhiza*), *Finlaysonia maritima* and *Rhizophora apiculata*.

8. *Lumnitzera racemosa*-community

Location: Chanthaburi

Differential Species: *Lumnitzera racemosa*

The community is from 1.5 to 12 m high and is dominated by *Lumnitzera racemosa*. The habitat of the community is on the most inland side of mangrove.

9. *Lumnitzera coccinea*-community

Location: Chanthaburi

Differential Species: *Lumnitzera coccinea*

The community is not distributed at Ranong. The habitat of the community is as same as the *Lumnitzera racemosa*-community.

10. *Excoecaria agallocha*-community

Location: Chanthaburi

Differential Species: *Excoecaria agallocha*

The *Excoecaria agallocha*-community is distributed not only at Chanthaburi but also at most tropical Asia. And the community is the one of the most typical mangrove or back mangrove forest.

11. *Heritieretum littoralis*

Location: Chanthaburi and Ranong

Character Species: *Heritiera littoralis*

The community is from 8 m to 12 m high and the total number of species is from 4 to 11.

12. *Flagellaria indica-Phoenix paludosa*-community

Location: Chanthaburi

Differential Species: *Phoenix paludosa*, *Flagellaria indica*, *Hibiscus tiliaceus*

The community is a pioneer phase of secondary mangrove vegetation on the river side of the mangrove area.

13. *Clerodendron inerme*-community

Location: Chanthaburi

Differential Species: *Clerodendron inerme*

14. *Wedelietum boflorae*

Location: Chanthaburi

Character Species: *Wedelia boflora*

15. *Acanthus ilicifolius-Finlaysonia maritima*-community

Location: Chanthaburi and Ranong

Differential Species: *Finlaysonia maritima*

Dominant species of the community is not always the same. Sometimes *Finlaysonia maritima* is dominant, but at other time is may be *Acanthus ilicifolius*.

At Chanthaburi and Ranong, Thailand, the phytosociological survey of mangrove vegetation was carried out and about 500 relevés were examined. Through the phytosociological tables, it was possible to establish 15 plant communities among which were the following alliance-level groups.

A. *Sonneratia-Avicennia*-community-group

1. *Sonneratia alba*-community

2. *Avicennia alba*-community

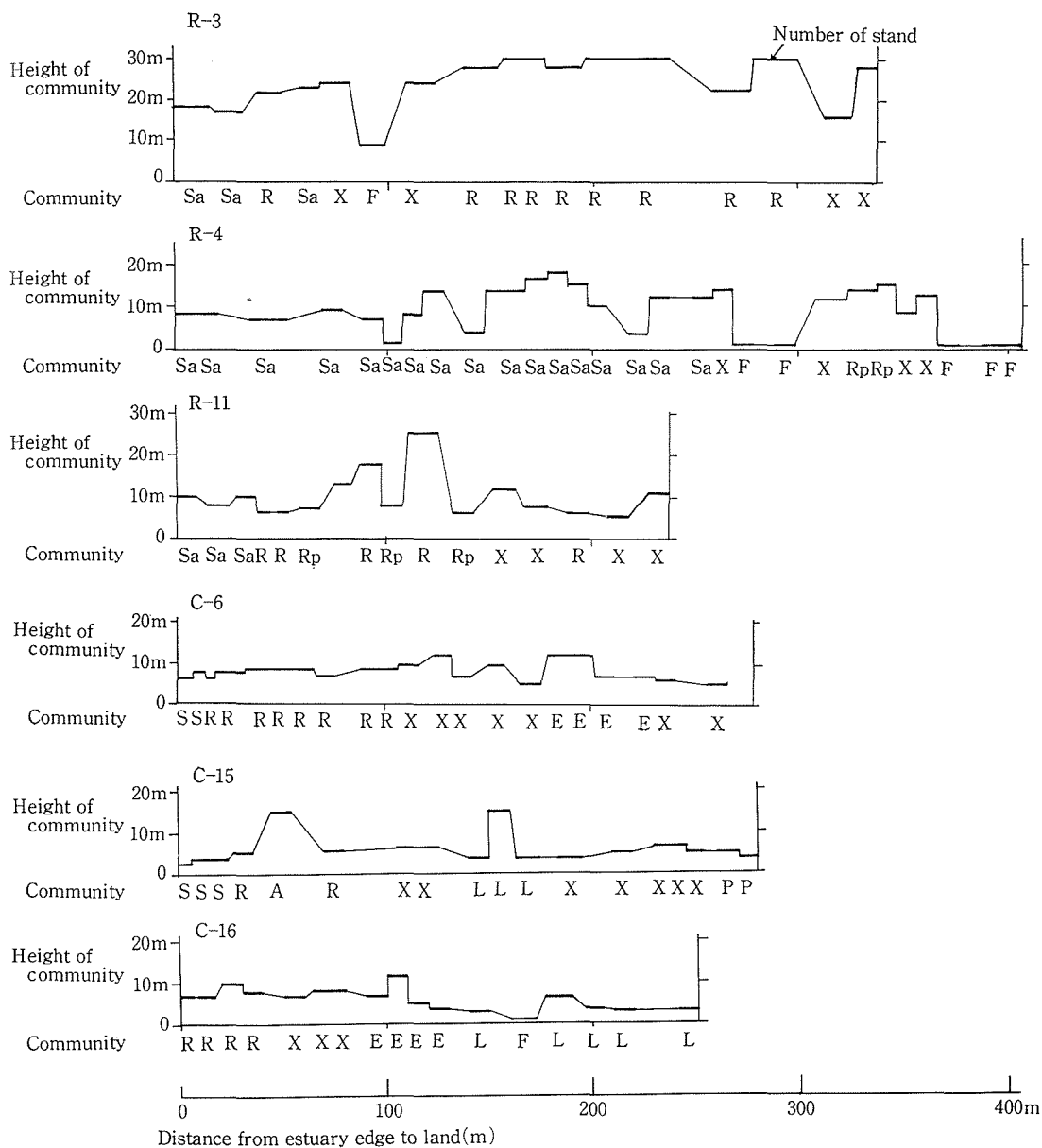


Fig. 4. Profile diagram for the distribution of mangrove (R-3, 4, 11: Ranong. C-6, 15, 16: Chanthaburi).
 Community type. R-3, 4, 11: Sa: *Aegiceras corniculatum-Sonneratia alba*-comm., R: *Rhizophora mucronata-Rh. apiculata*-comm. (Rp: *Rhizophora mucronata-Rh. apiculata*-comm. under comm. of *Bruguiera parviflora*), X: *Ceriops tagal-Xylocarpus granatum*-comm., F: *Acanthus ilicifolius-Finlaysonia maritima*-comm.
 Community type. C-6, 15, 16: S: *Sonneratia alba*-comm., F: *Avicennia alba*-comm., R: *Rhizophora apiculata*-comm., X: *Ceriops tagal-Xylocarpus granatum*-comm., L: *Lumnitzera racemosa*-comm., E: *Excoecaria agallocha*-comm., A: *Acanthus ilicifolius-Finlaysonia maritima*-comm., P: *Flagellaria indica-Phoenix paludosa*-comm.

- 3. *Aegiceras corniculatum*-*Sonneratia alba*-community
- B. *Rhizophora*-community-group
 - 4. *Rhizophora mucronata*-community
 - 5. *Rhizophora apiculata*-community
- C. *Ceriops*-*Xylocarpus*-community-group
 - 6. *Bruguiera sexangula*-*Xylocarpus moluccensis*-community
 - 7. *Ceriops tagal*-*Xylocarpus granatum*-community
- D. *Lumnitzera*-community-group
 - 8. *Lumnitzera racemosa*-community
 - 9. *Lumnitzera coccinea*-community
- E. *Heritiera*-*Excoecaria*-community-group
 - 10. *Heritieretum littoralis*
 - 11. *Excoecaria agallocha*-community
- F. *Derris*-*Clerodendron*-community-group
 - 12. *Flagellaria indica*-*Phoenix paludosa*-community
 - 13. *Clerodendron inerme*-community
 - 14. *Wedelietum biflorae*
 - 15. *Acanthus ilicifolius*-*Finlaysonia maritima*-community

Figure 4 shows the distribution and height of mangrove community. R-3, 4 and 11 are the data from the Ranong area, and C-6, 15 and 16 from the Chanthaburi area. In each of the typical mangrove stands which develop in strips from the estuary edge to inland, quadrats of 10 x 10 ~ 20 x 20 sq.m were set up to examine the vegetation therein. The R-3 stands covered by the present survey.

Acknowledgments

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Summary

For many years it has been recognized that the mangrove vegetation of the Old World or Indo-Pacific region has been bequeathed to us as a natural or semi-natural forest. This vegetation, which remains the richest biological resource in the world, has not yet investigated phytosociologically, except very sparsely.

The purpose of this study is to determine the phytosociological system of the mangrove vegetation in the world. This paper is the preliminary one of a series reporting the results of such a study in Thailand. The first field survey of mangrove vegetation in the southern and south-eastern parts of Thailand was carried out jointly by Thai and Japanese scientists in October-November, 1981.

As a preliminary result of the investigation there and in other southeast Asian regions, it was possible to establish 15 plant communities among which were the following alliance-level groups:

1. *Sonneratia-Avicennia*-community-group, 2. *Rhizophora*-community-group, 3. *Ceriops-Xylocarpus*-community-group, 4. *Lumnitzera*-community-group, 5. *Heritiera-Excoecaria*-community-group, 6. *Derris-Clerodendron*-community-group.

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Table 1 Synthetic table on the Mangrove Vegetation-1 (Ranong)1-6: *Aegiceras corniculatum*-*Sonneratia alba*-community7-12: *Rhizophora mucronata*-*Rhizophora apiculata*-community13-24: *Ceriops tagal*-*Xylocarpus granatum*-community

Community type:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Total number of stand:	5	27	5	9	10	6	6	27	3	4	4	5	3	13	3	3	5	4	3	11	7	9	3	4
Height of vegetation (m):	9	35	6	9	8	6	7	9	8	7	22	6	28	10	8	15	5	6	18	7	8	10	16	7
	16	20	16	18	20	35	20	30	28	17	30	25	33	33	16	30	24	28	20	32	28	32	32	28
Number of species:	5-8	2-6	3-6	5-9	2-5	2-5	3-6	1-3	2-3	5-6	2-4	3-5	3-4	2-4	4	4-7	4-9	4-8	10-12	3-4	3-7	4-5	5-8	4-6
Differential species of community:																								
<i>Sonneratia alba</i>	V ₊₄	V ₊₅	.	V ₂₋₅	V ₃₋₅	V ₃₋₄	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I ₂
<i>Aegiceras corniculatum</i>	V ₁₋₄	IV ₊₄	III ₁₋₃	V ₁₋₃	III ₁₋₃	V ₊₃	III ₁₋₃	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Differential species of community:																								
<i>Xylocarpus granatum</i>	.	.	.	.	.	.	.	.	.	.	I ₁	3 ₊₂	V ₊₃	3 ₊₃	3 ₊₁	V ₁₋₂	2 ₊₂	3 ₃₋₄	.	.	.	.	.	.
<i>Ceriops tagal</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3 ₁₋₃	V ₊₃	4 ₊₂	3 ₁₋₂	V ₊₃	V ₊₂	V ₊₂	3 ₁₋₂	4 ₂₋₄	.
Differential species of community:																								
<i>Rhizophora apiculata</i>	IV ₁₋₂	III ₊₃	IV ₊₃	IV ₊₂	II ₊	IV ₊₂	V ₂₋₅	V ₁₋₅	3 ₄₋₅	4 ₁₋₃	4 ₂₋₅	IV ₂₋₄	3 ₄₋₅	V ₃₋₄	3 ₊₃	3 ₂₋₄	V ₁₋₄	3 ₁₋₄	.	V ₂₋₅	V ₁₋₅	V ₋₅	3 ₃₋₅	4 ₁₋₄
<i>Rhizophora mucronata</i>	V ₁₋₃	II ₊₄	III ₂	IV ₊₄	V ₊₄	V ₁₋₃	IV ₊₁	V ₁₋₅	3 ₊₂	2 ₁	.	I ₁	2 ₁₋₂	IV ₊₃	3 ₂₋₄	2 ₁₋₂	I ₁	1 ₂	2 ₁₋₂	V ₁₋₄	II ₁₋₄	V ₁₋₃	3 ₊₄	.
Differential species of under units:																								
<i>Avicennia alba</i>	IV ₊₃	V ₊₅	V ₂₋₄	V ₊₂	.	.	.	.	.	.	.	.	.	.	.	3 ₁₋₂	.	.	.	.	.	.	.	.
<i>Bruguiera cylindrica</i>	V ₊₁	.	.	.	.	.	V ₊₄	.	.	.	.	.	.	.	.	.	V ₊₃	4 ₊₂	.	.	.	.	3 ₊₂	.
<i>Bruguiera gymnorrhiza</i>	.	+	.	.	.	.	.	.	.	.	.	4 ₂₋₃	V ₁₋₃	3 ₁₋₂	.	.	.	.	.	.	.	.	.	4 ₁₋₂
<i>Ceriops decandra</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3 ₁₋₃	.	.	.	.
<i>Xylocarpus moluccensis</i>	.	.	.	.	.	.	.	.	.	1 ₁	.	I ₁	.	.	.	.	.	.	.	2 ₂	.	.	.	.
<i>Bruguiera parviflora</i>	.	+	.	V ₊₂	.	.	V ₊₄	.	.	4 ₁₋₄	.	IV ₂₋₅	.	.	3 ₁₋₃	.	.	4 ₂₋₅	.	.	V ₂₋₃	V ₊₄	3 ₊₃	4 ₊₃
<i>Acanthus ilicifolius</i>	.	+	I ₊	III ₊	.	.	I ₊	.	.	4 ₊₁	1 ₊	I ₊	III ₊₂	4 ₊₅	.	.	.	.	.
<i>Finlaysonia maritima</i>	.	.	I ₁	I ₊	.	.	III ₁₋₂	.	.	.	.	.	.	.	.	.	.	III ₊₂	.	.	.	.	.	.
Companions:																								
<i>Derris trifoliata</i>	.	.	I ₊	I ₊	1 ₊	1 ₁	1 ₊	II ₊	IV ₊₁	2 ₊	3 ₂	.	II ₊	.	.	2 ₊
<i>Acrostichum speciosum</i>	.	.	.	.	.	.	.	.	.	.	2 ₊	1 ₊	3 ₂	.	.	.	.	.

Table 2 Synthetic table on the Mangrove Vegetation-2 (Chanthaburi)

1-2: *Sonneratia alba* community

3-6: *Avicennia alba* community

7: *Rhizophora mucronata* community

8-11: *Rhizophora apiculata* community

12: *Bruguiera sexangula*-*Xylocarpus moluccensis* community

13-19: *Ceriops tagal*-*Xylocarpus granatum* community

Community type :	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Total number of stand :	2	2	3	4	5	5	9	11	2	17	2	6	4	3	4	2	11	3	8
Height of vegetation (m) :	6		5	5	6	12	6	5		6	10	5	7	4	3	5	4	5	2
	|	4	|	|	|	|	|	|	7	|	|	|	|	|	|	|	|	|	|
	7		8	7	18	20	8	8		11	13	12	18	7	10	7	12	6	7
Number of species :	2	3	3-4	2-3	3-6	6-9	2-3	1-3	3-4	2-5	3	3-4	4-9	5-9	4-7	3	2-5	2-5	1-6
Differential species of community :																			
<i>Sonneratia alba</i>	2 ₄₋₅	2 ₃	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Differential species of community :																			
<i>Avicennia alba</i>	.	2 ₊₁	3 ₊₁	4 ₊	IV ₊₃	V ₂₋₄	.	.	.	.	.	II ₊	4 ₊₃	.	.	.	.	.	.
Differential species of community :																			
<i>Rhizophora mucronata</i>	1 ₂	.	3 ₁	.	I ₂	I ₂	V ₊₂	.	.	.	.	.	.	.	.	.	.	.	.
Differential species of community :																			
<i>Rhizophora apiculata</i>	1 ₁	2 ₊	3 ₄₋₅	4 ₃₋₅	V ₃₋₄	V ₁₋₄	V ₄₋₅	V ₄₋₅	2 ₃₋₅	V ₂₋₅	2 ₄₋₅	V ₁₋₄	4 ₂₋₄	3 ₃₋₄	4 ₁₋₄	2 ₅₋₄	V ₂₋₅	.	.
Differential species of community :																			
<i>Xylocarpus moluccensis</i>	.	.	.	.	.	.	.	.	.	.	.	V ₂₋₅	.	.	.	.	.	.	.
<i>Bruguiera sexangula</i>	.	.	.	.	.	.	.	.	.	.	2 ₊₁	II ₁₋₃	.	.	.	.	.	.	.
Differential species of community :																			
<i>Xylocarpus granatum</i>	.	.	.	.	I ₊	V ₊₂	.	.	1 ₊	+	.	.	3 ₂₋₄	3 ₁₋₃	4 ₁₋₅	.	.	.	.
<i>Ceriops tagal</i>	.	.	.	.	.	I ₁	I ₊	3 ₊₃	4 ₁₋₃	2 ₁₋₄	V ₁₋₅	3 ₂₋₃	V ₂₋₅
Differential species of under units :																			
<i>Bruguiera gymnorrhiza</i>	.	.	.	.	V ₁₋₃	.	.	.	2 ₊	V ₁₋₃	2 ₁₋₃	I ₂	3 ₁	2 ₂	.	.	.	3 ₂₋₃	.
<i>Finlaysonia maritima</i>	.	.	1 ₊	.	III ₊	IV ₊	.	.	.	I ₊₁	.	.	4 ₁₋₂	3 ₊
<i>Acrostichum aureum</i>	.	.	.	.	.	III ₁₋₂	.	+	.	+	.	.	.	.	4 ₁₋₃	2 ₁₋₂	.	.	.
Companions :																			
<i>Derris trifoliata</i>	.	.	.	.	.	.	.	.	.	.	+	.	.	.	2 ₊₁	1 ₊	.	.	1 ₊
<i>Nypa fruticans</i>	.	.	1 ₊	.	.	IV ₊₁	.	.	.	.	.	.	.	.	.	.	.	.	.

Table 3 Synthetic table of the Mangrove Vegetation-2

1-3: *Lumnitzera racemosa*-community
 4-5: *Lumnitzera coccinea*-community
 6-8: *Excoecaria agallocha*-community
 9: *Heritieretum littoralis*

Community type:	1	2	3	4	5	6	7	8	9
Location :	C	C	C	C	C	C	C	C	C/R
Number of stand :	15	13	2	6	3	5	2	4	4
Height of vegetation (m) :	4	1,5		4	4	7	5	3	8
	|	|	6	|	|	|	|	|	|
	12	6		12	6	12	7	20	12
Number of species :	2-8	1-9	5-6	5-9	4-8	4-7	5	4-10	5-11
<u>Differential species of community :</u>									
<i>Lumnitzera racemosa</i>	V ₂₋₄ V ₃₋₅ 2 ₄₋₅			·	1 ₁	·	1 ₊	2 ₁	·
<u>Differential species of under unit :</u>									
<i>Acrostichum speciosum</i>	V ₊₋₃	·	·	·	·	·	1 ₂	1 ₁	1 ₂
<i>Acanthus ilicifolius</i>	·	·	2 ₂	·	·	·	·	·	·
<i>Finlaysonia maritima</i>	·	·	2 ₊	·	1 ₊	·	·	1 ₁	·
<u>Differential species of community :</u>									
<i>Lumnitzera coccinea</i>	I ₊	++	·	V ₂₋₄ 4 ₃₋₄		·	·	4 ₁₋₄	4 ₁₋₃
<u>Differential species of under unit :</u>									
<i>Acrostichum aureum</i>	·	·	·	·	3 ₁₋₃	·	·	1 ₊	·
<i>Fimbristylis</i> sp.	·	·	·	·	3 ₊	·	·	·	·
<u>Differential species of community :</u>									
<i>Excoecaria agallocha</i>	·	·	·	·	·	V ₂₋₅ 2 ₂₋₃ 4 ₃₋₅			·
<u>Differential species of under units :</u>									
<i>Ceriops tagal</i>	·	·	·	V ₂₋₅	2 ₊₋₂	V ₊₋₃	·	·	1 ₁
<u>Character species of association :</u>									
<i>Heritiera littoralis</i>	·	·	·	·	·	·	·	·	4 ₄₋₅
<u>Companions :</u>									
<i>Derris trifoliata</i>	I ₊	·	·	II ₊	2 ₊	·	2 ₊₋₁	1 ₁	1 ₊
<i>Clerodendron inerme</i>	·	·	·	III ₊₋₂	1 ₊	I ₄	1 ₂	1 ₁	2 ₊
<i>Sonneratia ovata</i>	I ₊₋₂	++	1 ₂	·	·	·	·	·	·
<i>Rhizophora apiculata</i>	·	·	·	·	·	IV ₊₋₃	1 ₃	2 ₂₋₃	·

C: Chanthaburi, R: Ranong

Table 4 Forest margin vegetation and secondary vegetation

1. *Flagellaria indica*-*Phoenix paludosa*-community
2. *Clerodendron Inerme*-community
3. *Wedelietum biflorae*
4. *Acanthus ilicifolius*-*Finlaysonia maritima*-community

Community type:	1	2	3	4	5	6	7
Location:	C	C	C	R	R	C	R
Total number of stand:	5	2	3	3	7	2	5
Height of vegetation (m):	4	2	1.5	1	0.8		0.9
	6	3	3	1.6	1.3	1.5	1.2
Number of species:	5-6	3	3-9	3-4	4-5	2-3	1-7
<u>Differential species of community:</u>							
<i>Phoenix paludosa</i>	V ₄₋₅	.	.	.	.	.	.
<i>Flagellaria indica</i>	V ₊₂	.	.	.	.	.	.
<i>Hibiscus tiliaceus</i>	II ₁₋₃	.	1 ₊
<u>Differential species of community:</u>							
<i>Clerodendron inerme</i>	III ₊₂	2 ₃₋₅	.	.	.	.	.
<u>Character species of association:</u>							
<i>Wedelia biflora</i>	II ₊	.	3 ₃₋₄	.	.	.	.
<u>Differential species of community:</u>							
<i>Finlaysonia maritima</i>	.	.	1 ₁	3 ₅	V ₄₋₅	2 ₄	IV ₊₂
<u>Differential species of under units:</u>							
<i>Derris trifoliata</i>	I ₊	1 ₁	1 ₁	3 ₊₂	V ₊₂	.	.
<i>Acanthus ilicifolius</i>	.	.	.	.	V ₊₂	2 ₃	V ₃₋₅
<u>Companions:</u>							
<i>Ceriops tagal</i>	I ₊	1 ₊	1 ₃	1 ₊	II ₊₁	.	.
<i>Rhizophora apiculata</i>	.	.	.	1 ₂	III ₊₃	.	I ₁
<i>Xylocarpus granatum</i>	.	.	.	1 ₊	II ₊	.	I ₁
<i>Avicennia alba</i>	.	.	.	.	I ₊	.	I ₊

C: Chanthaburi, R: Ranong

Table 8

Transect no. R-6		Location: Ranong I		Date 24. Oct., 1981			
Relevé no.:	YM	YM	YM	YM	YM	YM	YM
	394	395	396	397	398	399	399
Distance from standard point (m):	0-	8-	19-	40-	56-	70-	70-
	5	15	29	50	66	90	90
Area of relevé (m ²):	50	70	100	100	100	400	400
Height of tree layer-1 (m):	—	20	—	—	14	15	15
Cover of tree layer-1 (%):	—	80	—	—	80	90	90
Height of tree layer-2 (m):	—	7	8	8	8	—	—
Cover of tree layer-2 (%):	—	60	30	30	30	—	—
Height of shrub layer (m):	5	2	5	4	2	3	3
Cover of shrub layer (%):	40	10	80	30	5	40	40
Height of herb layer (m):	1	0.3	1	0.5	1	0.8	0.8
Cover of herb layer (%):	30	20	10	20	30	5	5
No. of species:	4	6	7	6	8	6	6
Species name	(Phytosociological rating symbol)						
<i>Sonneratia alba</i>	T-1, S	4.4	4.3	.	.	.	.
	H	2.3	.	.	.	1.2	.
<i>Avicennia alba</i>	T-1, T-2	.	.	3.1	.	2.1	2.1
	S, H	1.1	(+)	±	.	.	±
<i>Aegiceras corniculatum</i>	T-2	.	3.3	.	1.1	.	.
	S	.	1.2	2.2	.	.	.
	H	2.2	1.2	.	.	.	.
<i>Rhizophora apiculata</i>	T-1	.	2.2	.	.	.	.
	T-2	.	1.1	1.1	1.1	.	.
	S, H	±	1.1	1.2	1.1	.	.
<i>Bruguiera parviflora</i>	T-1, T-2	.	.	2.1	2.2	.	2.2
	S	.	+	3.3	1.2	.	.
	H	.	.	1.2	2.2	.	1.2
<i>Bruguiera cylindrica</i>	T-2, S	.	+	.	+	1.1	2.2
	H	.	+	1.2	+	.	.
<i>Xylocarpus granatum</i>	S	.	.	+	.	.	.
<i>Rhizophora apiculata</i>	T-1	.	.	.	.	3.2	3.2
	T-2	.	.	.	2.1	2.2	.
	S	.	.	1.2	2.2	1.2	2.2
	H	.	.	.	.	1.2	.
<i>Viscum ovalifolium</i>	T-2	.	.	.	+	.	.
<i>Cerriops tagal</i>	T-1	.	.	.	.	2.2	.
	S	.	.	.	.	1.2	2.2
	H	.	.	.	.	1.1	+
<i>Derris trifoliata</i>	S	.	.	.	.	+	.
<i>Acanthus ilicifolius</i>	H	.	.	.	.	1.2	.
<i>Imperata cylindrica</i>	H	.	.	.	.	+	.
<i>Finlaysonia maritima</i>	H	.	.	.	.	.	+ .2

Table 11

Transect no. R-9 Location: Ranong I Date 25. Oct., 1981

Relevé no. :	YM	YM	YM	YM	YM	YM	YM
	422	423	424	425	426	427	428
Distance from standard point (m) :	0-	10-	20-	40-	50-	80-	90-
	10	20	30	50	60	90	100
Area of relevé (m ²) :	100	100	100	100	100	100	100
Height of tree layer-1 (m) :	—	—	14	16	16	10	16
Cover of tree layer-1 (%) :	—	—	70	80	70	30	40
Height of tree layer-2 (m) :	—	8	—	7	—	—	—
Cover of tree layer-2 (%) :	—	10	—	30	—	—	—
Height of shrub layer (m) :	5	6	2.5	4	2.5	3	2
Cover of shrub layer (%) :	40	40	40	30	15	20	20
Height of herb layer (m) :	1.2	0.8	0.8	1	0.8	0.8	1
Cover of herb layer (%) :	40	20	15	30	5	5	10
No. of species :	6	5	5	6	8	7	7

Species name	(Phytosociological rating symbol)							
<i>Rhizophora apiculata</i>	T-1, T-2	.	.	3-2	.	2-2	.	.
	S	3-3	3-2	2-2	1-1	1-1	1-2	1-1
	H	1-1	1-1	2-2	1-2	1-2	.	.
<i>Rhizophora mucronata</i>	T-1, T-2	.	.	1-1	4-3	.	.	1-1
	S	2-2	.	3-3	3-2	+	.	.
	H	.	.	+	2-2	.	.	.
<i>Avicennia alba</i>	T-2, S	1-2	3-3	2-1	+	1-1	2-2	2-2
	H	.	.	.	+	+	1-2	+
<i>Sonneratia alba</i>	T-1	.	.	2-2	2-2	4-3	3-3	3-3
	T-2	.	.	1-1	.	2-1	.	.
	S	1-1	.	.	1-1	.	.	.
<i>Imperata cylindrica</i>	H	2-2	2-2	+	+	1-2	.	.
<i>Cynodon dactylon</i>	H	+2	1-2	.	.	.	.	.
<i>Aegiceras corniculatum</i>	S	.	1-1	.	+	1-2	1-2	2-2
	H	.	.	.	.	.	.	+
<i>Bruguiera parviflora</i>	S	.	.	.	.	+	2-2	1-1
	H	.	.	.	.	.	.	+
<i>Acanthus ilicifolius</i>	H	.	.	.	.	+	+	+
<i>Finlaysonia maritima</i>	H	.	.	.	.	.	+	.

Table 13

Transect no. R-11	Location: Ranong I			Date 26. Oct., 1981												
Relevé no.:	YM	YM	YM	YM	YM	YM	YM	YM	YM	YM	YM	YM	YM	YM	YM	YM
	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	
Distance from standard point (m):			0-	9-	25-	38-	50-	62-	72-	95-	116-	132-	150-	170-	185-	
			3	14	30	43	60	72	86	105	124	142	160	180	200	
Area of relevé(m ²):	24	100	15	25	50	25	100	100	196	100	64	100	100	100	300	
Height of tree layer-1(m):	--	10	--	--	--	--	18	--	25	--	12	--	--	10	12	
Cover of tree layer-1(%):	--	80	--	--	--	--	40	--	70	--	70	--	--	30	80	
Height of tree layer-2(m):	7	--	6	6	7	--	9	8	13	6	--	8	--	--	--	
Cover of tree layer-2(%):	70	--	80	40	80	--	70	40	50	90	--	20	--	--	--	
Height of shrub layer(m):	2	2	2	2	2	--	2.5	2.8	4	2	4	5	6	5	3	
Cover of shrub layer(%):	50	20	20	20	20	--	20	50	10	20	60	80	90	80	30	
Height of herb layer(m):	--	--	1	0.5	0.5	1.2	0.5	0.5	1	0.5	1.2	1	1	1	0.5	
Cover of herb layer(%):	--	--	5	5	1	80	5	1	5	10	15	5	5	20	20	
No. of species:	2	3	7	5	3	1	4	3	5	4	7	2	4	6	4	
Species name	(Phytosociological rating symbol)															
<i>Sonneratia alba</i>	T-1, T-2	3.3	2.2	.	.	.	.	.	.	.	.	.	.	.	.
	S	1.2	1.2	.	.	.	.	.	.	.	.	.	.	.	.
<i>Avicennia alba</i>	T-1, T-2	3.4	3.2	.	.	.	.	.	.	.	.	.	.	.	.
	S	2.3	1.2	.	.	.	.	.	.	.	.	.	.	.	.
<i>Aegiceras corniculatum</i>	S	.	1.2	.	.	.	.	.	.	.	.	.	.	.	.
<i>Rhizophora mucronata</i>	T-2	.	.	4.4	1.1	.	.	.	.	.	.	.	.	.	.
	S, H	.	.	2.2	+	.	.	.	.	.	.	.	.	.	.
<i>Rhizophora apiculata</i>	T-1	.	.	.	.	.	.	.	4.2	.	2.1	.	.	.	4.3
	T-2	.	.	1.1	2.1	2.2	.	4.4	2.1	2.2	2.1	.	1.1	.	.	
	S	.	.	1.2	2.1	.	.	2.2	.	2.2	.	2.2	1.1	.	2.3	
	H	.	.	+	.	.	.	+	2	1.1	.	.	.	.	1.1
<i>Bruguera parviflora</i>	T-1, T-2	.	.	1.1	2.2	4.4	.	.	2.2	2.2	5.4	1.2	.	.	1.1 2.2	
	S	.	.	.	.	2.3	.	.	2.2	.	2.2	.	2.2	5.5	4.4 1.1
	H	.	.	.	.	.	.	.	2.2	.	.	1.1	.	1.1	1.2 1.2
<i>Cerriops tagal</i>	S	.	.	+	.	.	.	.	.	.	.	2.1	4.4	.	+
	H	.	.	.	+	.	.	.	.	.	.	.	+	.	+
<i>Xylocarpus granatum</i>	T-1	.	.	.	.	.	.	.	.	.	.	.	.	.	2.1
	S	.	.	+	.	.	.	.	.	.	.	.	.	.	+
<i>Finlaysonia maritima</i>	H	.	.	+	2	.	.	.	.	.	.	.	.	.	.
<i>Acanthus ilicifolius</i>	H	.	.	1.2	1.2	+	2	5.5	+	.	+	2	1.2	+	+	
<i>Bruguiera gymnorrhiza</i>	T-1, T-2	.	.	.	.	.	.	3.1	.	2.2	1.1	2.2	1.1	.	.
	S, H	.	.	.	.	.	.	.	1.1	+	.	+	1.1	.	.
<i>Derris trifoliata</i>	T-1, S	.	.	.	.	.	.	.	.	.	.	+	+	.	.
	H	.	.	.	.	.	.	1.2	.	+	.	1.2	.	.	.
<i>Xylocarpus moluccensis</i>	S	.	.	.	.	.	.	.	.	1.1	.	.	.	.	.

Table 14

Transect no. : S-1 Location : Ranong II Date : 30. Nov. 1981	
Relevé no. :	YM YM YM YM YM YM YM YM YM YM YM YM YM YM
	524 512 513 514 515 516 517 518 519 520 521 522 523
Distance from standard point (m) :	-2- 0- 7- 15- 32- 50- 65- 85- 105- 130- 150- 170- 180-
	0 7 15 27 42 65 85 105 120 140 170 180 200
Area of relevé (m ²) :	200 84 96 144 100 225 400 400 225 225 400 200 400
Height of tree layer-1 (m) :	— 10 10 25 18 26 30 30 30 30 32 26 30
Cover of tree layer-1 (%) :	— 80 90 80 80 80 80 75 70 60 80 80 80
Height of tree layer-2 (m) :	8 8 8 13 12 12 15 12 10 12 12 16 15
Cover of tree layer-2 (%) :	80 40 30 50 70 40 30 30 40 80 60 70 40
Height of shrub layer (m) :	1.2 2 — 3 3 2.5 4 3 3 3 3 3 4
Cover of shrub layer (%) :	1 5 — 10 20 5 20 10 70 30 20 10 40
Height of herb layer (m) :	— 1 1 1.3 0.5 1 1 1 1 1 0.5 1 1
Cover of herb layer (%) :	— 1 10 15 20 60 5 3 10 5 1 1 5
No. of species :	2 1 2 2 5 4 5 2 2 2 1 2 3

Species name	(Phytosociological rating symbol)												
<i>Sonneratia alba</i>	T-2	4.1	.	.	.	.	.	.	.	.	.	.	.
<i>Rhizophora mucronata</i>	T-1	.	5.4	5.4	.	.	.	.	.	3.1	.	.	2.1
	T-2	.	2.1	2.2	3.3	1.1	1.2	.	.	2.2	2.2	.	.
	S	+	3.3	.	2.2	.	1.2	+	.	3.3	3.3	.	+
	H	.	+	1.1	2.2	+	.	.	.	+	+	.	1.2
<i>Rhizophora apiculata</i>	T-1	.	.	.	5.3	4.3	2.1	5.4	4.3	2.1	4.2	5.4	5.4
	T-2	.	.	.	.	2.2	2.2	2.2	2.2	1.1	3.3	4.4	4.4
	S	.	.	.	1.2	1.2	1.2	1.2	1.2	1.2	2.2	2.2	3.3
	H	.	.	+	+	.	1.2	1.2	1.1	1.2	+	1.1	+
<i>Bruguiera parviflora</i>	T-1	.	.	.	.	2.2	4.3	1.1	.	.	.	.	.
	T-2	.	.	.	.	.	1.1	.	.	.	.	.	.
	S	.	.	.	.	1.2	.	1.1	.	.	.	.	.
	H	.	.	.	.	2.2	3.3	.	.	.	.	.	.
<i>Bruguiera cylindrica</i>	T-1	.	.	.	.	1.1	.	.	.	.	.	.	.
	T-2, S	.	.	.	.	1.2	.	±	.	.	.	.	.
<i>Bruguiera gymnorrhiza</i>	T-1	.	.	.	.	+	.	.	.	.	.	.	.
<i>Ceriops tagal</i>	T-2	.	.	.	.	.	1.1	.	.	.	.	.	1.1
	S	.	.	.	.	.	.	.	.	.	.	.	+
<i>Xylocarpus granatum</i>	S	.	.	.	.	.	.	1.1	+	.	.	.	.

Table 15

Transect no.: S-2 Location: Ranong II Date: 31. Oct. 1981

Relevé no.:	YM	YM	YM	YM	YM	YM	YM	YM	YM
	525	526	527	528	529	530	531	532	533
Distance from standard point(m) :	0-	10-	20-	30-	45-	65-	100-	120-	148-
	6	20	30	45	60	75	120	148	154
Area of relevé(m ²) :	60	100	100	225	225	150	400	625	60
Height of tree layer-1(m) :	14	20	14	32	30	22	27	28	—
Cover of tree layer-1(%) :	70	30	80	70	75	80	80	40	—
Height of tree layer-2(m) :	8	12	8	18	20	10	12	18	10
Cover of tree layer-2(%) :	30	80	40	80	80	40	40	70	60
Height of shrub layer(m) :	3	3	2.5	3	3	2	3	3	2
Cover of shrub layer(%) :	20	30	50	30	30	10	30	30	20
Height of herb layer(m) :	1	1	0.8	0.5	0.8	0.8	1	1	0.8
Cover of herb layer(%) :	1	20	1	5	5	1	10	5	5
No. of species :	2	2	4	8	7	7	6	5	4

Species name	(Phytosociological rating symbol)									
<i>Rhizophora mucronata</i>	T-1	4.4	.	3.3	.	.	.	.	.	.
	T-2	2.2	3.3	2.2	2.2	.	.	1.1	2.1	3.3
	S	2.2	3.3	1.2	.	.	.	.	.	2.2
	H	+	1.1	1.2	.	.	.	.	+	.
<i>Rhizophora apiculata</i>	T-1	.	3.1	2.2	4.3	4.3	4.4	5.4	3.1	.
	T-2	2.2	1.2	2.2	3.3	4.4	2.2	3.3	3.3	2.2
	S	.	1.1	1.2	1.2	2.2	1.2	2.1	2.2	.
	H	+	+	+	1.2	1.2	1.2	1.2	1.1	+
<i>Bruguiera parviflora</i>	T-1	.	.	3.3	.	.	+	.	.	.
	T-2	.	.	1.1	1.1	.	.	2.1	1.1	.
	S, H	.	.	±	1.1	1.2	.	.	.	.
<i>Ceriops tagal</i>	T-2	.	.	.	2.2	.	1.1	1.1	.	.
	S	.	.	1.1	1.2	.	1.1	2.2	.	1.1
	H	.	.	1.1	.	+	.	.	+	.
<i>Bruguiera cylindrica</i>	T-2	.	.	.	.	2.2	1.1	.	.	.
	S	.	.	.	+	1.1	.	.	.	.
<i>Xylocarpus granatum</i>	T-2	.	.	.	1.1	.	1.1	.	.	.
	S	.	.	.	.	+	+	+	+	+
	H	.	.	.	.	.	.	.	+	+
<i>Hoya parasitica</i>	S	.	.	.	+	+	.	.	.	.
<i>Derris trifoliata</i>	H	.	.	.	+	.	.	.	.	.
<i>Bruguiera gymnorrhiza</i>	T-1	.	.	.	.	2.1	.	.	.	.
<i>Xylocarpus moluccensis</i>	T-1	.	.	.	.	.	2.2	.	.	.
	T-2	.	.	.	.	.	2.2	1.1	.	.
<i>Cerbera manghas</i>	S	.	.	.	.	.	+	.	.	.

Table 16

Transect no.: S-3		Location: Ranong II		Date: 31. Oct. 1981		
Relevé no.:		YM	YM	YM	YM	YM
		538	534	535	536	537
Distance from standard point(m):		-10-	0-	4-	14-	30-
		0	4	14	30	40
Area of relevé(m ²):		100	20	100	240	100
Height of tree layer-1(m):		—	—	18	22	18
Cover of tree layer-1(%):		—	—	30	50	70
Height of tree layer-2(m):		12	7	10	14	10
Cover of tree layer-2(%):		80	40	70	40	30
Height of shrub layer(m):		2	2.5	3	3	3
Cover of shrub layer(%):		5	70	30	60	60
Height of herb layer(m):		0.5	0.5	1	1	1
Cover of herb layer(%):		1	5	20	15	20
No. of species:		3	3	5	6	9
Species name		(Phytosociological rating symbol)				
<i>Sonneratia alba</i>	T-2	5.4	.	.	.	.
	S	1.2	.	.	.	.
	H	1.1	.	.	.	.
<i>Aegiceras corniculatum</i>	S	1.2	.	.	.	.
	H	+	.	.	.	.
<i>Rhizophora mucronata</i>	T-1, T-2	.	2.2	3.3	<u>3.1</u>	.
	S	.	3.3	.	2.3	.
	H	+	.	.	1.2	.
<i>Rhizophora apiculata</i>	T-1	.	.	3.1	.	3.1
	T-2	.	2.1	2.2	2.1	2.2
	S	.	3.3	2.3	3.3	.
	H	.	1.2	1.1	1.2	.
<i>Ceriops tagal</i>	T-2	.	1.2	2.2	2.2	2.2
	S	.	1.2	1.2	2.2	3.3
	H	.	.	1.2	+ .2	.
<i>Hoya parasitica</i>	S	.	.	+	1.2	+
<i>Bruguiera parviflora</i>	T-2	.	.	1.1	.	.
<i>Xylocarpus granatum</i>	T-2	.	.	.	1.1	.
<i>Bruguiera gymnorrhiza</i>	T-2	.	.	.	2.1	.
<i>Xylocarpus moluccensis</i>	T-2	.	.	.	.	2.2
<i>Hippocratea</i> sp.	S	.	.	.	.	2.2
<i>Derris candenatensis</i>	S	.	.	.	.	+ .2
<i>Diospyros malabarica</i>	S	.	.	.	.	+
<i>Heritiera fomes</i>	S	.	.	.	.	+
<i>Acrostichum speciosum</i>	H	.	.	.	.	1.2

Table 17

Transect no.: S-4 Location: Ranong II Date: 31. Oct. 1981

Relevé no.:	YM	YM	YM	YM	YM	YM	YM	YM	YM	YM
	548	539	540	541	542	543	544	545	546	547
Distance from standard point(m):	-30-	0-	11-	21-	50-	70-	80-	100-	124-	135-
	-11	10	21	41	70	80	100	115	134	150
Area of relevé(m ²):	361	100	100	200	400	400	400	225	100	225
Height of tree layer-1(m):	—	—	—	—	30	25	25	—	20	14
Cover of tree layer-1(%):	—	—	—	—	80	80	40	—	30	30
Height of tree layer-2(m):	20	12	8	10	14	16	12	12	12	9
Cover of tree layer-2(%):	70	30	90	70	80	60	60	40	20	50
Height of shrub layer(m):	4	5	3	3	3	4	4	5	3	2
Cover of shrub layer(%):	10	70	10	70	30	60	70	80	60	30
Height of herb layer(m):	1.2	1	1	1	1	1	1	0.5	0.5	1
Cover of herb layer(%):	10	10	1	20	20	20	15	20	5	5
No. of species:	3	3	3	3	5	4	5	3	2	2

Species name	(Phytosociological rating symbol)										
<i>Sonneratia alba</i>	T-2	4.4	.	.	.	.	.	.	.	.
	S	+	.	.	.	.	.	.	.	.
	H	+	.	.	.	.	.	.	.	.
<i>Aegiceras corniculatum</i>	S	2.2	.	.	.	.	.	.	.	.
<i>Rhizophora mucronata</i>	T-1	.	.	.	.	2.1	3.2	.	.	1.1	3.3
	T-2	1.1	.	3.3	2.2	+	1.1	.	.	1.1	3.3
	S	1.1	4.4	1.2	1.2	1.2	+	1.2	3.3	3.3	2.2
	H	1.2	1.1	.	.	1.2	1.2	.	1.2	+2	1.1
<i>Rhizophora apiculata</i>	T-1	.	.	.	.	2.1	2.1	3.2	.	3.2	1.1
	T-2	.	3.2	3.3	4.3	2.2	1.1	3.3	2.2	2.1	3.3
	S	.	1.2	1.2	2.3	1.2	2.2	3.3	3.3	3.3	1.2
	H	.	1.2	+	1.1	1.2	1.2	1.2	1.2	+	+
<i>Cerriops tagal</i>	T-2	.	.	.	.	.	.	.	3.2	.	.
	S	.	.	1.1	1.2	.	.	.	2.2	.	.
	H	.	+	+	+	.	.	.	1.2	.	.
<i>Cerriops decandora</i>	T-2	.	.	.	.	3.3	2.2	2.2	.	.	.
	S	.	.	.	.	2.2	2.2	2.3	.	.	.
	H	.	.	.	.	1.2	1.2	+2	.	.	.
<i>Bruguiera parviflora</i>	T-2	.	.	.	.	2.2	2.1	.	.	.	.
	S	.	.	.	.	1.2	1.2	1.2	.	.	.
<i>Bruguiera gymnorrhiza</i>	T-1	.	.	.	.	3.1	.	.	.	.	.
<i>Xylocarpus granatum</i>	S	.	.	.	.	.	.	+	.	.	.

Table 18

Transect no. : S-5	Location Ranong II	Date: 31. Oct. 1981						
Relevé no. :		YM	YM	YM	YM	YM	YM	YM
		549	550	551	552	553	554	555
Distance from standard point(m) :		0-	6-	16-	33-	45-	65-	85-
		6	16	30	45	60	85	100
Area of relevé(m ²) :		30	100	210	144	225	100	225
Height of tree layer-1(m) :		—	—	—	27	22	25	22
Cover of tree layer-1(%) :		—	—	—	30	40	30	40
Height of tree layer-2(m) :		18	12	9	10	12	10	12
Cover of tree layer-2(%) :		30	70	80	70	80	80	90
Height of shrub layer(m) :		3	4	3	3	2.5	3	2
Cover of shrub layer(%) :		10	30	20	60	30	20	5
Height of herb layer(m) :		—	0.5	1	1	0.5	—	1
Cover of herb layer(%) :		—	5	1	1	1	—	1
No. of species :		3	2	2	3	2	3	2
Species name		(Phytosociological rating symbol)						
<i>Avicennia alba</i>	T-2	5.4	.	.	.	.	.	.
	S	1.1	.	.	.	.	.	.
<i>Sonneratia alba</i>	T-2	2.2	.	.	.	.	.	.
<i>Rhizophora mucronata</i>	T-1	.	.	.	2.1	.	2.1	.
	T-2	.	4.4	3.3	2.2	3.3	+	.
	S	1.1	3.3	1.2	3.3	1.2	+	.
	H	.	1.2	+	.	.	.	.
<i>Rhizophora apiculata</i>	T-1	.	.	.	2.1	3.3	2.1	.
	T-2	.	.	.	3.3	4.4	5.5	5.5
	S	.	.	1.2	2.2	2.2	2.2	1.1
	H	.	1.2	+	1.1	1.1	.	+
<i>Ceriops tagal</i>	T-2	.	.	.	1.1	.	.	.
	S	.	.	.	1.1	.	+	.
<i>Bruguiera gymnorrhiza</i>	T-1	.	.	.	.	.	.	3.2

Table 19

Transect no.:	S-6		Location		Ranong II		Date: 1. Nov. 1981				
Relevé no.:	YM	YM	YM	YM	YM	YM	YM	YM	YM	YM	YM
Distance from standard point (m):	-45-	-20-	0-	20-	35-	70-	100-	130-	150-	170-	
	-20	-5	10	30	50	90	120	150	170	190	
Area of relevé (m ²):	625	225	150	100	225	300	400	400	400	400	
Height of tree layer-1 (m):	—	20	20	18	17	30	32	30	32	28	
Cover of tree layer-1 (%):	—	70	90	20	60	70	90	80	75	50	
Height of tree layer-2 (m):	13	8	14	12	12	15	18	12	15	16	
Cover of tree layer-2 (%):	40	30	30	90	60	40	20	30	40	40	
Height of shrub layer (m):	4	4	4	3	3	2	4	4	4	3	
Cover of shrub layer (%):	70	60	20	10	15	80	20	30	30	40	
Height of herb layer (m):	0.8	0.8	1.2	1	0.8	0.5	1	1.3	1	1	
Cover of herb layer (%):	1	1	25	1	1	5	20	60	30	30	
No. of species:	4	5	3	4	5	4	4	4	3	3	

Species name	(Phytosociological rating symbol)										
<i>Sonneratia alba</i>	T-1, T-2	3.3	4.4	.	.	.	.	.	.	.	.
<i>Bulbophyllum</i> sp.	T-2	+ .2	+ .2	.	.	.	.	.	.	.	.
<i>Aegiceras corniculatum</i>	T-2	.	2.2	.	.	.	.	.	.	.	.
	S	4.4	3.3	+	.	.	.	.	.	.	.
	H	+	+	.	.	.	.	.	.	.	.
<i>Rhizophora mucronata</i>	T-1	.	.	5.5	2.1	.	.	2.2	.	.	.
	T-2	.	.	3.3	5.5	3.3	.	.	.	.	.
	S	+	2.2	2.3	1.1	+	3.3	.	1.2	1.2	3.3
	H	.	+	2.2	+	.	.	2.3	2.3	2.2	1.2
<i>Rhizophora apiculata</i>	T-1	.	.	.	.	4.3	4.3	4.3	4.3	4.3	4.3
	T-2	.	.	.	1.1	2.3	2.2	2.1	1.2	1.2	2.2
	S	.	+	1.1	+	2.2	3.3	1.2	1.2	2.2	1.2
	H	.	+	+	.	+	+	1.2	2.2	+	+
<i>Cerriops tagal</i>	T-1	.	.	.	.	.	.	.	2.2	.	.
	T-2	.	.	.	.	2.1	2.1	2.2	2.2	2.2	2.3
	S	.	.	.	1.1	.	1.2	1.2	1.1	1.2	+
	H	.	.	.	.	.	1.2	1.2	2.3	1.2	1.2
<i>Bruguiera parviflora</i>	S, H	.	.	.	1.1	.	1.1	±	1.1	.	.
<i>Bruguiera cylindrica</i>	S	.	.	.	.	+	.	.	.	.	.
<i>Xylocarpus granatum</i>	S	.	.	.	.	+	.	.	.	.	.

Table 20

Transect no.: S-7 Location: Ranong II Date: 1. Nov. 1981		YM	YM	YM	YM	YM	YM	YM	YM	YM
Relevé no.:		575	567	568	569	570	571	572	573	574
Distance from standard point (m):		15-0	0-10	15-30	30-50	50-65	65-80	80-100	100-120	120-140
Area of relevé (m):		225	100	225	400	225	225	400	400	400
Height of tree layer-1 (m):		—	—	30	35	—	30	25	30	30
Cover of tree layer-1 (%):		—	—	80	80	—	75	70	70	60
Height of tree layer-2 (m):		15	13	12	14	16	12	14	16	12
Cover of tree layer-2 (%):		75	40	70	50	80	60	60	40	30
Height of shrub layer (m):		2.2	3	3	3.5	3	3.5	4	2.5	3
Cover of shrub layer (%):		5	40	50	40	30	40	30	40	30
Height of herb layer (m):		—	1	1	1	0.5	0.8	1	1	1
Cover of herb layer (%):		—	5	10	30	1	2	1	5	20
No. of species:		2	2	4	6	5	4	2	2	2
Species name	(Phytosociological rating symbol)									
<i>Sonneratia alba</i>	T-2	4.3	.	.	.	.	.	.	.	.
	S	1.1	.	.	.	.	.	.	.	.
<i>Rhizophora mucronata</i>	T-1, T-2	.	3.2	2.2	3.2	+	+	.	1.1	3.2
	S	+	3.3	2.3	1.2	+	1.1	.	2.2	1.2
	H	.	1.2	1.2	1.2	+	+	.	1.2	2.2
<i>Rhizophora apiculata</i>	T-1	.	.	5.4	3.3	.	5.4	4.3	4.3	2.2
	T-2	.	.	2.2	2.2	5.4	4.4	4.4	3.2	2.2
	S	.	1.1	2.2	3.3	2.2	3.3	2.3	2.3	2.3
	H	.	.	+	1.1	1.2	+2	+	1.2	2.2
<i>Bruguiera parviflora</i>	T-1	.	.	.	1.1	.	.	.	.	.
	T-2	.	.	3.3	2.3	.	.	.	.	.
	S	.	.	.	1.2	+	.	.	.	.
	H	.	.	.	1.2	.	.	.	.	.
<i>Ceriops tagal</i>	T-1, T-2	.	.	.	2.1	1.1	1.1	.	.	.
	S	.	.	2.3	2.2	.	+	.	.	.
	H	.	.	1.2	1.2	+	+	.	.	.
<i>Bruguiera cylindrica</i>	T-2	.	.	.	2.2	1.1	.	.	.	.
	S	.	.	.	1.1	1.2	.	.	.	.
<i>Xylocarpus granatum</i>	S	.	.	.	+	.	+	+	+	.

Table 21

Transect no.: S-8 Location: Ranong II Date: 2. Nov. 1981

Releve no.:	YM 576	YM 577	YM 578	YM 579	YM 580	YM 581	YM 582	YM 583	YM 584	YM 585	YM 586	YM 587
Distance fom standard point (m):	0- 12	15- 30	30- 50	50- 70	70- 90	90- 110	120- 140	145- 155	160- 170	180- 190	195- 215	220- 240
Area of relevé (m ²):	180	225	400	400	400	400	400	100	200	200	400	400
Height of tree of tree layer-1 (m):	—	33	28	30	30	30	—	—	16	22	34	33
Cover of tree layer-1 (%):	—	90	90	75	70	80	—	—	50	80	80	70
Height of tree layer-2 (m):	16	18	16	18	18	20	15	15	8	10	22	16
Cover of tree layer-2 (%):	70	40	50	80	80	80	30	30	20	40	80	50
Height of shrub layer (m):	4	3	3	—	3	3	4	4	4	3	3.5	3
Cover of shrub layer (%):	40	40	30	—	5	3	50	70	40	30	30	40
Height of herb layer (m):	1	1	1	1	1	1	1	1	1	0.5	1	1
Cover of herb layer (%):	5	5	5	1	1	2	2	30	30	60	10	5
No. of species:	2	3	3	3	4	4	2	4	4	7	5	4

Specise name	(Phytosociological rating symbol)												
<i>Rhizophora mucronata</i>	T-1	.	.	.	.	.	2.1	.	.	3.3	1.2	3.2	.
	T-2	2.1	2.2	.	.	.	.	2.2	.	.	2.2	2.1	.
	S	3.3	2.2	.	.	.	.	3.3	4.4	1.1	.	1.2	1.1
	H	1.2	1.2	.	+	.	+	1.2	1.2	3.3	2.2	+	.
<i>Rhizophora apiculata</i>	T-1	.	5.4	5.4	4.3	4.3	3.3	.	.	1.1	.	2.2	4.3
	T-2	3.2	2.2	3.3	5.5	4.4	4.4	1.1	3.3	1.1	.	2.2	2.2
	S	2.2	2.3	2.3	.	1.1	1.2	+	+	.	1.1	2.2	2.3
	H	+	1.2	1.1	1.1	1.1	1.1	.	1.1	1.2	1.1	2.2	1.2
<i>Xylocarpus granatum</i>	T-1, T-2	.	.	.	.	.	.	.	1.1	.	1.1	.	2.1
	S, H	.	+	+	±	+	+	.	.	3.3	+	1.1	+
<i>Bruguiera gymnorrhiza</i>	T-1	.	.	2.2	.	.	.	.	.	.	.	3.1	2.1
	T-2	.	.	.	.	1.1	1.1	.	.	.	1.1	1.1	.
	S	.	.	.	.	.	+	.	.	.	.	.	.
<i>Ceriops tagal</i>	S, H	.	.	.	.	1.1	.	.	.	.	±	.	.
<i>Bruguiera parviflora</i>	T-1	.	.	.	.	.	.	.	.	.	4.4	.	.
	T-2	.	.	.	.	.	.	.	1.1	2.2	1.2	2.2	.
	S	.	.	.	.	.	.	.	1.1	1.1	2.3	.	.
	K	.	.	.	.	.	.	.	1.2	1.2	3.3	.	.
<i>Xylocarpus moluccensis</i>	T-2	.	.	.	.	.	.	.	.	.	1.2	.	.

Table 23

Transect no.: S-10		Location: Ranong II		Date: 3. Nov. 1981		
Relevé no.:		YM 597	YM 598	YM 599	YM 600	YM 601
Distance from standard point (m):		0-6	6-15	15-25	50-70	70-90
Area of relevé (m ²):		60	90	150	400	400
Height of tree layer-1 (m):		—	—	—	25	27
Cover of tree layer-1 (%):		—	—	—	80	90
Height of tree layer-2 (m):		—	8	12	10	15
Cover of tree layer-2 (%):		—	70	90	30	30
Height of shrub layer (m):		8	2.5	3.5	—	3
Cover of shrub layer (%):		70	40	60	—	10
Height of herb layer (m):		0.3	0.5	0.8	1	1
Cover of herb layer (%):		1	5	30	80	30
No. of species:		3	3	11	11	5
Species name		(Phytosociological rating symbol)				
<i>Sonneratia alba</i>	S	4·2	.	.	.	.
<i>Rhizophora mucronata</i>	T-1	.	.	.	3·3	5·4
	T-2	.	3·3	.	.	1·1
	S, H	1·1	.	.	4·4	3·3
<i>Rhizophora apiculata</i>	T-1	.	.	.	2·1	2·1
	T-2	.	1·2	2·1	1·1	1·1
	S, H	+	±	.	2·2	1·2
<i>Aegiceras corniculatum</i>	S	.	3·3	.	.	.
	H	.	1·2	.	.	.
<i>Heritiera littoralis</i>	T-2	.	.	4·3	.	.
	S	.	.	2·2	.	.
<i>Guettarda speciosa</i>	T-2	.	.	3·2	.	.
	S	.	.	1·2	.	.
<i>Derris indica</i>	T-2	.	.	1·1	.	.
	S	.	.	2·2	.	.
<i>Caesalpinia major</i>	T-2	.	.	+·2	.	.
<i>Allophylus cobbe</i>	S	.	.	1·2	.	.
	H	.	.	1·2	.	.
<i>Colubrina asiatica</i>	S	.	.	+	+	.
<i>Hibiscus tiliaceus</i>	S	.	.	+	.	.
<i>Tacca leontopeloides</i>	H	.	.	2·3	.	.
<i>Derris trifoliata</i>	H	.	.	+·2	2·2	+
<i>Cissus</i> sp.	H	.	.	+	.	.
<i>Bruguiera cylindrica</i>	T-2	.	.	.	3·3	3·3
	S	.	.	.	.	1·2
	H	.	.	.	+	2·2
<i>Ceriops tagal</i>	T-2	.	.	.	1·1	.
	H	.	.	.	+	+
<i>Bulbophyllum</i> sp.	T-2	.	.	.	±·2	.
<i>Finlaysonia maritima</i>	H	.	.	.	2·2	.
<i>Acanthus volubilis</i>	H	.	.	.	+	.
<i>Acanthus ilicifolius</i>	H	.	.	.	+	.
<i>Ventilago harmandiana</i>	H	.	.	.	+	.

Table 24

Transect no. S-11 Location: Ranong II Date: 3. Nov. 1981

Relevé no.:	YM	YM	YM	YM	YM
	602	603	604	605	606
Distance from standard point (m):	0-	4-	20-	50-	70-
	4	19	35	65	90
Area of relevé (m ²):	—	225	225	225	400
Height of tree layer (m):	10	15	20	20	18
Cover of tree layer (%):	80	40	75	80	80
Height of shrub layer (m):	1	5	4	3	4
Cover of shrub layer (%):	1	30	40	20	60
Height of herb layer (m):	—	1	2	1	1
Cover of herb layer (%):	—	20	20	30	10
No. of species:	3	7	12	10	12

Species name	(Phytosociological rating symbol)					
<i>Rhizophora apiculata</i>	T	3·2	2·1	2·1	2·1	1·1
	S, H	1·2	.	.	±	.
<i>Rhizophora mucronata</i>	T, H	2·2	1·2	.	.	.
<i>Xylocarpus granatum</i>	T	1·1	3·3	3·3	4·3	4·4
	H	.	.	1·2	.	1·1
<i>Ceriops tagal</i>	T	.	3·3	2·2	.	1·1
	S	.	2·2	1·1	.	.
	H	.	1·2	1·2	1·1	1·2
<i>Heritiera fomes</i>	S	.	1·2	1·2	1·2	.
<i>Bruguiera gymnorrhiza</i>	S	.	1·1	.	.	.
<i>Acrostichum speciosum</i>	H	.	1·2	2·2	2·2	2·2
<i>Cynometra iripa</i>	S	.	.	2·2	1·1	1·2
<i>Ceriops decandra</i>	S	.	.	2·1	1·1	3·3
	H	.	.	.	.	+
<i>Phoenix paludosa</i>	S	.	.	1·2	2·2	2·2
<i>Acanthus volubilis</i>	S	.	.	+	.	.
<i>Finlaysonia maritima</i>	H	.	.	+·2	.	.
<i>Derris candenatensis</i>	S, H	.	.	±	.	+·2
<i>Bulbophyllum</i> sp.	H	.	.	+	.	.
<i>Xylocarpus moluccensis</i>	T	.	.	.	2·1	2·1
<i>Derris trifoliata</i>	S	.	.	.	1·2	.
<i>Diospyros malabarica</i>	S	.	.	.	.	1·1
<i>Drynaria quercifolia</i>	S	.	.	.	.	+·2
<i>Caesalpinia major</i>	S	.	.	.	.	+

Table 25

Transect no. : S-12	Location : Ranong II	Date : 3. Nov. 1981									
Relevé no. :	YM	YM	YM	YM	YM	YM	YM	YM	YM	YM	YM
Distance from standard point (m) :	0-	12-	24-	40-	85-	105-	128-	160-	180-	200-	
	8	24	40	60	105	120	146	180	190	214	
Area of relevé (m ²) :	96	144	240	400	400	225	400	400	100	210	
Height of tree layer-1 (m) :	—	28	27	28	28	20	23	—	—	20	
Cover of tree layer-1 (%) :	—	60	70	70	60	75	80	—	—	30	
Height of tree layer-2 (m) :	8	13	13	14	12	10	12	—	12	8	
Cover of tree layer-2 (%) :	80	80	60	60	50	40	50	—	20	20	
Height of shrub layer (m) :	3	3.5	3	2	3	2	4	4	4.5	2	
Cover of shrub layer (%) :	50	20	30	30	20	10	50	80	70	20	
Height of herb layer (m) :	0.8	0.5	0.5	0.5	1	0.5	0.5	0.5	1	1	
Cover of herb layer (%) :	10	1	5	1	5	1	15	40	40	10	
No. of species :	4	6	5	2	2	3	6	3	6	6	

Species name	(Phytosociological rating symbol)										
<i>Bruguiera parviflora</i>	T-2	3-3	.	.	.	.	.	3-3	.	1-1	+
	S	3-3	1-1	+	.	.	.	1-1	4-4	4-4	.
	H	1-2	+2	.	.	.	.	1-2	3-3	3-3	.
<i>Rhizophora mucronata</i>	T-1	.	3-1	.	4-3	3-3	3-3	4-3	.	.	2-1
	T-2	3-3	3-3	2-2	2-2	2-2	1-1	.	.	1-1	2-2
	S	2-3	1-1	1-1	1-2	3-3	+	2-3	.	.	.
<i>Rhizophora apiculata</i>	H	.	.	1-1	1-1	1-2	+2	2-2	.	.	2-2
	T-1	.	3-2	4-3	2-1	.	2-2	2-2	.	.	2-1
	T-2	.	4-4	3-3	4-4	2-2	3-3	3-3	.	.	1-1
<i>Xylocarpus granatum</i>	S	+	+	+	.	.	+	.	.	±	+
	T-2	.	.	.	.	.	.	2-2	.	1-1	.
	S	.	+2	.	.	.	.	.	1-1	1-2	+
<i>Ceriops tagal</i>	H	.	.	.	.	.	.	.	1-2	1-1	.
	S, H	.	+	±	.	.	.	2-2	.	±	±
	S	.	.	.	.	.	.	+	.	.	.
<i>Finlaysonia maritima</i>	H	.	.	.	.	.	.	.	2-3	.	.

Table 26

Transect no.: S-13 Location Ranong II Date: 4. Nov. 1981

Relevé no.:	YM	YM	YM	YM	YM
	618	619	620	621	622
Distanc from standard point (m):	0-	3-	15-	25-	60-
	3	15	25	45	80
Area of relevé (m ²):	30	144	100	400	400
Height of tree layer-1 (m):	—	20	22	20	15
Cover of tree layer-1 (%):	—	50	30	50	17
Height of tree layer-2 (m):	12	10	10	8	7
Cover of tree layer-2 (%):	80	30	40	30	30
Height of shrub layer (m):	1	3	2	3	2.5
Cover of shrub layer (%):	1	10	20	10	10
Height of herb layer (m):	—	1	1	1.2	0.8
Cover of herb layer (%):	—	40	5	20	1
No. of species:	3	6	4	3	3

Species name	(Phytosociological rating symbol)					
<i>Rhizophora mucronata</i>	T-1	.	3.2	1.1	.	.
	T-2	3.2	+	.	.	.
	S	+	1.2	1.2	1.1	1.2
	H	.	1.2	+	1.2	.
<i>Rhizophora apiculata</i>	T-1	.	2.1	3.3	3.3	4.4
	T-2	3.2	1.2	2.2	2.2	3.3
	S	+ .2	1.2	2.2	1.1	.
	H	.	1.2	.	1.2	1.1
<i>Xylocarpus granatum</i>	T-1, T-2	.	3.2	1.1	1.1	1.1
	S, H	1.1	1.2	1.1	.	±
<i>Bruguiera cylindrica</i>	T-2	.	1.1	.	.	.
	S	.	1.2	.	.	.
<i>Finlaysonia maritima</i>	S	.	+ .2	.	.	.
	H	.	1.2	.	.	.
<i>Ceriops tagel</i>	H	.	+	.	.	.
<i>Xylocarpus moluccensis</i>	T-1	.	.	2.1	.	.

Table 27

Transect no.: S-14 Location: Ranong II Date: 4. Nov. 1981

Relevé no.:	YM	YM	YM	YM	YM
	623	624	625	626	627
Distance from standard point (m):	0-	20-	40-	65-	80-
	8	40	54	78	90
Area of relevé (m ²):	96	400	400	195	100
Height of tree layer-1 (m):	20	24	17	16	—
Cover of tree layer-1 (%):	60	80	90	90	—
Height of tree layer-2 (m):	8	14	7	8	15
Cover of tree layer-2 (%):	40	20	30	20	90
Height of shrub layer (m):	3	4	3	2	2
Cover of shrub layer (%):	5	30	20	3	4
Height of herb layer (m):	1	1	—	0.5	0.5
Cover of herb layer (%):	1	5	—	1	1
No. of species:	4	5	2	2	3

Species name	(Phytosociological rating symbol)					
<i>Rhizophora apiculata</i>	T-1	2·1	.	3·3	5·4	.
	T-2	.	2·2	2·2	2·2	2·2
	S	3·2	+	1·2	.	.
	H	.	+	.	+	+
<i>Xylocarpus granatum</i>	T-1	3·3	4·3	4·4	1·1	.
	T-2	2·1	2·2	1·1	.	3·2
	S	+	1·2	1·1	1·2	1·1
<i>Rhizophora mucronata</i>	T-1	3·2	3·2	.	.	.
	T-2	.	+	.	.	.
	S	1·1	2·2	.	.	.
	H	1·1	1·2	.	.	.
<i>Bulbophyllum</i> sp.	S	+	.	.	.	.
<i>Acrostichum speciosum</i>	H	.	+·2	.	.	+·2
<i>Xylocarpus moluccensis</i>	T-1	.	2·1	.	.	.

Table 28

Transect no. L-6 Location: Chanthaburi Date: 16. Oct. 1981

Relevé no.:	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Distance from standard point (m):	-5-	0-	6-	10-	25-	37-	47-	60-	80-	90-	102-	117-	128-	144-	160-	174-	185-	196-	216-	224-	250-	—
	0	5	10	15	35	45	57	70	90	100	108	124	138	150	168	184	193	206	223	234	260	—
Area of relevé (m ²):	50	50	40	40	100	80	80	100	80	100	42	105	100	72	80	120	80	120	70	100	100	—
Height of tree layer (m):	—	—	—	7	7	8	8	7	8	8	9	12	—	9	—	12	12	7	7	—	—	8
Cover of tree layer (%):	—	—	—	60	70	80	80	70	40	60	60	70	—	90	—	40	60	70	60	—	—	60
Height of shrub layer (m):	6	7	6	3	3	3	3	3	4	4	3	3	6	3	5	8	5	—	3	6	5	3
Cover of shrub layer (%):	80	80	80	30	20	20	30	30	80	7	20	30	90	15	90	70	40	—	30	80	60	30
Height of herb layer (m):	—	—	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cover of herb layer (%):	—	—	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	2	5	10	20	10
No. of species:	2	2	3	4	2	4	2	2	1	3	3	4	3	3	3	4	3	4	4	2	3	6

Species name	(Phytosociological rating symbol)																						
<i>Sonneratia alba</i>	S	4.4	5.4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	H	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Rhizophora mucronata</i>	T	.	.	.	.	2.2	1.1	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	S	2.2	.	2.2	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	H	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Rhizophora apiculata</i>	T	.	.	.	3.3	4.4	4.4	5.5	4.4	3.3	2.2	3.3	2.2	.	2.1	.	.	.	.	3.3	.	.
	S	.	1.2	4.4	2.2	2.2	1.2	3.3	3.3	5.4	4.4	1.2	+2	1.2	+2	1.1	3.3	1.2	.	.	.	.
	H	.	.	+	+	+	+	+	+2	+	+	+	+	+2	.	.	.	.	.	+	.	.
<i>Bruguiera gymnorrhiza</i>	T	.	.	.	3.3	1.1	1.1	1.2	.	.	3.3	3.3	3.3	.	.	.	.	.	.	.	.	.
	S	.	.	+	2.2	.	.	+2	.	.	2.3	.	1.2	.	.	2.1	1.2	.	.	.	3.3	3.2	
<i>Avicennia alba</i>	T	.	.	.	1.1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Ceriops tagal</i>	T	.	.	.	.	.	.	.	.	.	.	.	3.3	.	4.4	.	.	.	.	.	3.3	.
	S	.	.	.	.	.	.	.	.	.	.	+	2.2	5.4	1.2	4.4	3.3	3.3	.	+2	3.3	3.3
	H	+2	1.2	+2	+2	+2	+2	+2	2.3	+	1.2	2.3
<i>Xylocarpus granatum</i>	T	.	.	.	.	.	.	.	.	.	.	.	2.1	.	.	.	.	.	.	3.1	.	.
<i>Bruguiera sexangura</i>	T	.	.	.	.	.	.	.	.	.	.	.	.	.	3.3	.	.	.	.	.	.	.
	S	.	.	.	.	.	.	.	.	.	.	.	.	.	1.2	.	.	.	.	.	.	.
	H	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.
<i>Excoecaria agallocha</i>	T	3.1	4.3	2.2	3.3
	S	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2.2
	H	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+2	+
<i>Xylocarpus moluccensis</i>	T	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3.2
<i>Acrostichum aureum</i>	H	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+2
<i>Flagellaria indica</i>	H	+
<i>Heritiera littoralis</i>	T	4.3
<i>Planchonella obovata</i>	S	3.3
<i>Derris candanensis</i>	S	+
<i>Tristellateia australasiae</i>	S	+2

Table 29

Transect no. L-7 Location: Chanthaburi Date: 15. Oct. 1981

Relevé no. :	73	74	75	76	77	78	79	80	81	82	83
Distance from standard point (m) :	-5- 2	3- 10	11- 23	33- 38	70- 77	100- 110	135- 145	148- 157	160- 170	175- 181	191- 200
Area of relevé (m ²) :	70	35	60	50	70	150	100	135	100	60	90
Height of tree layer (m) :	—	—	—	10	8	15	—	—	—	—	—
Cover of tree layer (%) :	—	—	—	30	60	30	—	—	—	—	—
Height of shrub layer (m) :	6	6	8	7	3	9	7	11	8	8	7
Cover of shrub layer (%) :	70	70	80	50	40	70	80	80	80	80	85
Height of herb layer (m) :	1	1.2	1.2	1.5	1	1.2	1.2	1.2	1.2	1	1
Cover of herb layer (%) :	5	10	20	30	20	10	20	10	5	5	5
No. of species :	1	3	5	5	4	4	4	2	2	1	2

Species name	(Phytosociological rating symbol)											
<i>Rhizophora apiculata</i>	T	.	.	.	.	3.2	.	.	.	.	.	.
	S	4.4	3.3	4.4	2.3	1.2	2.2	4.4	5.4	5.5	5.4	5.4
	H	+	+	2.3	1.2	+2	+	+2	1.2	+2	+	+
<i>Bruguiera gymnorhiza</i>	T	.	.	.	.	3.3	.	.	.	.	.	.
	S	.	3.3	2.2	4.4	3.3	4.4	3.3	1.1	2.2	.	.
	H	.	.	.	3.3	2.2	1.2	1.2	+	.	.	.
<i>Avicennia alba</i>	H	.	+	+	+	+	.	.	.	.	.	.
<i>Ceriops tagal</i>	S	.	.	1.1	.	.	.	+	.	.	.	.
<i>Finlaysonia maritima</i>	S	.	.	+	.	+	.	.	.	.	.	.
	H	.	.	.	.	+	.	.	.	.	.	.
<i>Xylocarpus moluccensis</i>	T	.	.	.	3.2	.	2.1	.	.	.	.	.
	S	.	.	.	.	+	.	.	.	.	.	.
	H	.	.	.	+	.	.	.	.	.	.	.
<i>Xylocarpus granatum</i>	T	.	.	.	.	.	2.1	.	.	.	.	.
	S	.	.	.	.	.	1.1	1.1	.	.	.	.

Table 31

Transect no. L-14		Location: Chanthaburi		Date: 17. Oct. 1981					
Relevé no.:		192	193	194	195	196	197	198	199
Distance from standard point (m):		8-10	7-15	40-50	69-79	100-107	110-115	132-140	152-157
Area of relevé (m ²):		160	80	200	200	70	50	80	50
Height of tree layer-1 (m):		14	15	20	20	12	—	10	—
Cover of tree layer-1 (%):		40	60	60	60	20	—	60	—
Height of shrub layer (m):		6	6	7	7	8	4	4	6
Cover of shrub layer (m):		60	70	60	60	80	90	20	90
Height of herb layer (m):		1.2	1.2	1	1.5	1	1	1.5	1.5
Cover of herb layer (%):		60	60	5	10	10	5	20	10
No. of species:		7	9	7	8	6	4	6	5
Species name		(Phytosociological rating symbol)							
<i>Avicennia alba</i>	T	3·2	4·3	4·3	4·4	2·1	.	.	.
	H	+	1·2	.	+	.	.	.	.
<i>Bruguiera gymnorrhiza</i>	S	1·1	4·4	1·2	3·3	3·2	.	.	.
	H	.	1·2	.	1·2	1·2	.	.	.
<i>Xylocarpus granatum</i>	S, H	±	2·2	+	1·2	1·1	.	.	.
<i>Derris trifoliata</i>	S	.	+·2	.	+	.	.	.	.
	H	.	+·2	.	+	.	.	.	.
<i>Nypa fruticans</i>	S, H	1·2	±	.	+·2	2·2	5·5	.	.
<i>Acrostichum aureum</i>	H	.	1·1	.	2·2	2·2	+·2	1·2	1·2
<i>Rhizophora apiculata</i>	S	4·4	2·3	3·3	1·2	4·4	.	.	.
	H	2·2	.	+	+	.	.	.	.
<i>Finlaysonia maritima</i>	S	+	+·2	+	+·2	.	.	.	.
	H	.	+·2	.	.	.	.	.	.
<i>Heritier alittoralis</i>	T	.	.	.	.	.	.	4·4	.
	S	.	.	.	.	.	.	2·3	.
	H	.	.	.	.	.	+	.	.
<i>Clerodendron inerme</i>	H	.	.	.	.	.	.	+	+
<i>Flagellaria indica</i>	S	.	.	.	.	.	.	+	.
<i>Acrostichum speciosum</i>	H	.	.	.	.	.	.	2·3	.
<i>Ceriops tagal</i>	S, H	.	.	+·2	.	.	+	1·2	.
<i>Bruguiera cylindrica</i>	S	.	.	+·2	.	.	.	.	.
<i>Phoenix paludosa</i>	S	.	.	.	.	.	.	.	5·5
	H	.	.	.	.	.	.	.	+
<i>Hibiscus tiliaceus</i>	S	.	.	.	.	.	.	.	1·2
	H	.	.	.	.	.	.	.	1·1
<i>Intsia bijuga</i>	S	.	.	.	.	.	.	.	2·2
<i>Rhizophora mucronata</i>	S	1·2	.	.	.	.	.	.	.
	H	1·2	.	.	.	.	.	.	.
<i>Acanthus ilicifolius</i>	S	.	+	.	.	.	.	.	.

