



- Spatial Distribution Pattern of Representative Tree Species in a Foothill Rain Forest in West Sumatra. Takashi KOHYAMA, Eizi SUZUKI and Mitsuru HOTTA. 1-15
- Horizontal Variance of Stand Structure and Productivity in a Tropical Foothill Rain Forest, West Sumatra, Indonesia. Tsuyoshi YONEDA, Kazuhiko OGINO, Takashi KOHYAMA, Rusjdi TAMIN, SYAHBUDDIN and Marlis RAHMAN. 17-33
- Mangrove Litter Production in Phang-nga Bay, Southern Thailand. Saowapa ANGSUPANICH and Sanit AKSORNKOAE. 35-40
- Decomposition of Mangrove Leaf Litter in Phang-nga Bay, Southern Thailand. Saowapa ANGSUPANICH and Sanit AKSORNKOAE. 41-47
- Biometric Comparison of Body Size between Queens and Workers in New Guinean Swarm-founding Ropalidia. Jun-ichi KOJIMA and Kumiko KOJIMA. 49-55
- Growth, Recruitment and Reproduction of Sardines (*Stolothrissa tanganicae* and *Limnothrissa miodon*) in Northwestern Lake Tanganyika. N'sibula MULIMBWA and Kunio SHIRAKIHARA. 57-67
- Ethnobotany of People around the Dolok Sibual-Buali Nature Reserve Area, North Sumatra, Indonesia. Herwint SIMBOLON. 69-78
- The Exchange of Forest Products (Irvingia nuts) between the Aka Hunter-gatherers and the Cultivators in Northeastern Congo. Koichi KITANISHI. 79-92
- (Field Note) Regional Difference and Seasonality of Rainfall in Java, with Special Reference to Bogor. Koji NAKAMURA, Woro A. NOERDJITO and Ahsol HASYIM. 93-103

日本熱帯生態学会

目次

甲山隆司, 鈴木英治, 堀田満	西スマトラ州の熱帯山麓雨林における主要樹種の空間分布パターン.....	1-15
米田 健, 荻野和彦, 甲山隆司, Rusjdi TAMIN, SYAHBUDDIN, Marlis RAHMAN	インドネシア, 西スマトラ州における亜山地性熱帯多雨林の林分構造と生産力の水平変動.....	17-33
Saowapa ANGSUPANICH, Sanit AKSORNKOAE	南タイのマングローブのリター生産.....	35-40
Saowapa ANGSUPANICH, Sanit AKSORNKOAE	南タイのファンガ湾におけるマングローブ落葉の分解.....	41-47
小島純一, 小島久美子	ニューギニア産分巢種チビアシナガバチにおける女王とハタラキバチ間の体サイズの数量比較.....	49-55
N'sibula MULIMBWA, 白木原国雄	タンガニカ湖北西部におけるニシン科魚類の成長, 加入および繁殖.....	57-67
Herwint SIMBOLON	インドネシア北スマトラ, ドロクシブアルプアリ自然保護地域周辺の住民の植物利用.....	69-78
北西功一	コンゴ共和国北東部での狩猟採集民アカと農耕民との森林生産物の交換.....	79-92
中村浩二, Woro A. NOERDJITO, Ahsol HASYIM	ジャワ島における降雨の地域差と季節性, 特にボゴール周辺について.....	93-103

編集・発行 日本熱帯生態学会編集委員会 堀田満 (編集委員長)
鹿児島市郡元1丁目21-35 鹿児島大学理学部生物 (気付け)

Tel. 0992-85-8166 Fax 0992-85-8172

印刷 斯文堂株式会社 鹿児島市南栄3丁目1 Tel. 0992-68-8211

印刷・発行日 1994年9月10日印刷 1994年9月15日発行

TROPICS

熱帯研究

Published by
The Japan Society
of Tropical Ecology

The TROPICS is issued quarterly with one volume a year. It is open either to the results of original research, experimental or descriptive, or significant reviews of various aspects of tropical regions. The journal publishes papers in all aspects of ecology and/or other fields of science related to ecology. It aims not only to act as a valued means of communication between Japanese ecologists and other field scientists but also to stimulate the research activities of young ecologists/scientists of tropical nations especially in Southeast Asia. All the members of the society can contribute to TROPICS, and invited articles may be accepted at the request of editorial board. Special issues may be published on occasion by permission of editorial board, as monographs or reviews exceed approximately 100 pages in length.

Editor-in-Chief: Mitsuru HOTTA (Department of Biology, Faculty of Science, Kagoshima University)

Editorial Board

Takuya ABE (Kyoto University)
Akio FURUKAWA (National Institute
for Environmental Studies)
Takashi KOHYAMA (Kyoto University)
Narifumi MAEDA (Kyoto University)
David W. ROUBIK (Smithsonian
Tropical Research Institute)
Takuo YAMAKURA* (Osaka City University)
Tsuyoshi YONEDA* (Osaka Kyoiku University)

Yusho ARUGA (Tokyo University of Fisheries)
Tamiji INOUE (Kyoto University)
Toshitaka IWAMOTO (Miyazaki University)
Naoki KOYAMA (Kyoto University)
Moritaka NISHIHARA (Tohoku University)
Eizi SUZUKI* (Kagoshima University)
Isamu YAMADA (Kyoto University)
Seiki YAMANE (Kagoshima University)
* secretaries of editorial board

Instructions to authors Copy of manuscript, preferably in English (or Japanese), to be sent to the editors, typewritten on one side of paper, double-spaced, and with a wide margin. Underlinings to indicate letter types should be left to the editors. In addition to type-script copies, authors using word processing equipments are requested to submit a diskette or floppy disk with their text file. Preference is files in Microsoft Word for Macintosh, on double-sided 3.5 inch (DD, DS) diskettes. For texts processed on MS-DOS computers (preferably in Word Star or Word Perfect), please submit double-sided (DD, DS or HD) 5.25 inch or 3.5 inch floppy disks with the text saved as ASCII file.

The editors may ask the opinion of one or two reviewers before accepting or refusing the manuscript that has been submitted.

Summary. Each paper should be provided with a summary.

Citation of literature. In the text as follows: (Primack, 1991) or Ashton (1991). In the 'References' as follows:

Primack, R. B. & Hall P. 1991. Species diversity research in Bornean forests with implications for conservation biology and silviculture. *Tropics* 1: 91-111.

Jacobs, M. 1974. Botanical panorama of the Malesian archipelago. In UNESCO, *Natural Resources of Humid Tropical Asia*, 263-294. Paris.

Drawings in India ink, preferably not on transparent or tracing-paper, and photographs on glossy paper (white and black) or slides (color). Please indicate the place where figures should be inserted in the text. Magnification should be indicated by a scale line. In other cases the author should give the magnification as in the original.

Reprints. For articles with one author 50 copies free.

Manuscripts and correspondence concerning editorial matters should be addressed to **Editorial Office of the Japan Society of Tropical Ecology**, % Department of Biology, Faculty of Science, Kagoshima University, Korimoto 1-21-35, Kagoshima 890, Japan. Phone (0992) 85-8166 Fax 0992-85-8172

General Office of the Japan Society of Tropical Ecology addressed to c/o Dr. I. Yamada, the Center for Southeast Asian Studies of Kyoto University, 46 Shimoadachicyo, Yoshida, Sakyo-ku, Kyoto 606-01, Japan.

[Cover] A big Tengkwang tree (*Shorea gysbertsiana*) planted ca. 100 years ago by a king family of the Kingdom of Landak. Ngabang, West Kalimantan. (1991, M. Hotta)

CONTENTS

- Aroids and the Austronesians. Peter J. MATTHEWS. 105
- A ten-year succession of *Saccharum spontaneum* and *Casuarina equisetifolia* vegetations on Anak Krakatau, Indonesia. Eizi SUZUKI, Tukirin PARTOMIHARDJO & Edhi TURMUJI. 127
- Population Structure and Canopy Dominance of Two Emergent Dipterocarp Species in a Tropical Rain Forest of Sarawak, East Malaysia. Akira ITOH, Takuo YAMAKURA, Kazuhiko OGINO, Hua Seng LEE, Peter S. ASHTON. 133
- Comparison of Seasonal Diameter Growth Patterns between Some Exotic and Indigenous Trees in Northeast Thailand. Shuichi MIYAGAWA, Akira KOMIYAMA & Songsin PHOTCHANACHAI. 143
- Improvement of Biological Productivity in Degraded Lands in Thailand III. Soil hardness measurement in the field. Katsutoshi SAKURAI, Bunyarit PURIYAKORN, Pornchai PREECHAPANYA, Virat TANPIBAL, Kanit MUANGNIL & Buared PRACHAIYO. 151
- Effect of Burning on Soil Nutrient Status and Abundance of VA-mycorrhizal Fungi in a Savannah Type Grassland Ecosystem in South India. K. SENTHEILKUMAR, S. MANIAN, K. UDAIYAN & V. SUGAVANAM. 173
- Soil Water Movement of a Mangrove Forest in Halmahera Island, East Indonesia. Takeshi TOMA & Kazuhiko OGINO. 187
- Characteristics of Sulfur Uptake by Mangroves: an Isotopic Study. Naoki OKADA & Akira SASAKI. 201
- Trunk Trail Foraging of the Fungus-growing Termite *Macrotermes carbonarius* (Hagen) in Southeastern Thailand. Koji SUGIO. 211
- Survivorship and Fertility Schedules of Three Phytophagous Ladybird Beetle Species (Coleoptera: Coccinellidae) under Laboratory Conditions in Bogor, West Java. Koji NAKAMURA, Liliek E. PUDJIASTUTI & Haruo KATAKURA. 223
- Short Communication - How and Why Has African *Solanum* Chosen the Elephants Only as the Seed Disperser? Takakazu YUMOTO, Juichi YAMAGIWA, Kazuo ASAOKA, Tamaki MARUHASHI & Ndunda MWANZA. 233
- Short Communication - Tree Architecture in *Ocotea* (Lauraceae): do Ant Occupied Species Differ Structurally from Non-Ant-Occupied Species? Hiroaki ISHII & Kalan ICKES. 239
- Short Communication - Head Capsule Width of Larva and Duration of Developmental Stages of the Banana Skipper, *Erionota thrax* (L.) (Lepidoptera: Hesperiiidae) in Bogor, Indonesia. Kazuma MATSUMOTO, ERNIWATI, Rosichon UBADILLAH & Koji NAKAMURA. 247
- Short Communication - Methane Emissions from Different Castes of Termites in Narathiwat, Thailand. Atsuko SUGIMOTO, Tetsushi INOUE, Ichiro TAYASU, Eitaro WADA, Takuya ABE. 253
- (Field Note) A Long-Term and Large-Scale Research of the Lambir Rain Forest in Sarawak: Progress and Conceptual Background of Japanese Activities. Takuo YAMAKURA, Isamu YAMADA, Tamiji INOUE & Kazuhiko OGINO. 259
- Short Communication -The Vertical Distribution of Ants on Canopy Trees in a Bornean Lowland Rain Forest. Takao ITINO & Seiki YAMANE. 277

日本熱帯生態学会

目次

P. J. MATTHEWS	サトイモ類とオーストロネシア民族.....	105-126
鈴木英治, Tukirin PARTOMIHARDJO, Edhi TURMUDI	インドネシア, アナクラカタウ島におけるナンゴクワセオバナ-モクマオウ植生の10年間の遷移.....	127-131
伊東 明, 山倉拓夫, 荻野和彦, Hua Seng LEE, Peter S. ASHTON	東マレーシア, サラワク州の熱帯雨林におけるフタバガキ科リュウノウジュ属2種(<i>Dryobalanops aromatica</i> , <i>D. lanceolata</i>)の個体群構造と林冠優占度.....	133-141
宮川 修一, 小見山 章, Songsin PHOTCHANACHAI	東北タイにおける在来樹種と外来樹種の直径成長の季節性の比較.....	143-149
櫻井克年, B. PURIYAKORN, P. PREECHAPANYA, V. TANPIBAL, K. MUANGNIL, B. PRACHAIYO	タイの土壤劣化地における生物生産力の回復III. 野外での土壤硬度の測定.....	151-172
K. SENTHEILKUMAR, S. MANIAN, K. UDAIYAN & V. SUGAVANAM	南インドのサバンナ型草原生態系におけるVA菌根を形成する菌類の多様さと土壤肥沃性に与える火入れの効果....	173-186
藤間 剛, 荻野和彦	東インドネシア, ハルマヘラ島のマングローブ林の土壤水位変動.....	187-200
岡田直紀, 佐々木昭	マングローブの硫黄吸収特性: 同位体的研究.....	201-210
杉尾幸司	タイ国南東部に生息するキノコを栽培するシロアリ <i>Macrotermes carbonarius</i> (Hagen) の幹蟻道を使った採餌活動.....	211-222
中村浩二, L. E. Pudjiastuti, 片倉晴雄	インドネシア共和国西ジャワ州ボゴールにおける食葉性テントウムシ3種の生存-繁殖スケジュール.....	223-231
湯本貴和, 山極寿一, 浅岡一雄, 丸橋珠樹, N. MWANZA	なぜ, またいかにしてアフリカのナス属植物はゾウを唯一の種子散布者に選んでいるか?.....	233-238
石井弘明, Kalan Ickes	共生アリによる <i>Ocotea</i> 属 (クスノキ科) の樹形への影響.....	239-245
松本和馬, ERNIWATI, R. UBAIDILLAH, 中村浩二	インドネシア共和国西ジャワ州ボゴールにおけるバナナセセリ <i>Erionota thrax</i> (L.) (鱗翅目: セセリチョウ科) 幼虫の頭幅と発育日数.....	247-252
杉本敦子, 井上徹志, 陀安一郎, 和田英太郎, 安部琢哉	タイ国ナラチワにおいて測定したシロアリのカーストごとのメタン放出速度.....	253-257
山倉拓夫, 山田 勇, 井上民二, 荻野和彦	サラワク州ランビル熱帯雨林の大面积長期観察: 日本の研究活動の進展とその思想的背景.....	259-276
市野隆雄, 山根正気	ボルネオの低地降雨林における林冠木上でのアリの垂直分布....	277-281

編集・発行 日本熱帯生態学会編集委員会 堀田満 (編集委員長)
鹿児島市郡元1丁目21-35 鹿児島大学理学部生物 (気付け)
Tel. 0992-85-8166 Fax 0992-85-8172
e-maile hotta@sci.kagoshima-u.ac.jp

印刷 斯文堂株式会社 鹿児島市南栄3丁目1 Tel. 0992-68-8211

印刷・発行日 1995年2月24日印刷 1995年2月28日発行

TROPICS

熱帯研究

Published by
The Japan Society
of Tropical Ecology

The TROPICS is issued quarterly with one volume a year. It is open either to the results of original research, experimental or descriptive, or significant reviews of various aspects of tropical regions. The journal publishes papers in all aspects of ecology and/or other fields of science related to ecology. It aims not only to act as a valued means of communication between Japanese ecologists and other field scientists but also to stimulate the research activities of young ecologists/scientists of tropical nations especially in Southeast Asia. All the members of the society can contribute to TROPICS, and invited articles may be accepted at the request of editorial board. Special issues may be published on occasion by permission of editorial board, as monographs or reviews exceed approximately 100 pages in length.

Editor-in-Chief: Mitsuru HOTTA (Department of Biology, Faculty of Science, Kagoshima University)

Editorial Board

Takuya ABE (Kyoto University)	Yusho ARUGA (Tokyo University of Fisheries)
Akio FURUKAWA (National Institute for Environmental Studies)	Tamiji INOUE (Kyoto University)
Takashi KOHYAMA (Kyoto University)	Toshitaka IWAMOTO (Miyazaki University)
Narifumi MAEDA (Kyoto University)	Naoki KOYAMA (Kyoto University)
David W. ROUBIK (Smithsonian Tropical Research Institute)	Moritaka NISHIHARA (Tohoku University)
Takuo YAMAKURA* (Osaka City University)	Eizi SUZUKI* (Kagoshima University)
Tsuyoshi YONEDA* (Osaka Kyoiku University)	Isamu YAMADA (Kyoto University)
	Seiki YAMANE (Kagoshima University)
	* secretaries of editorial board

Instructions to authors Copy of manuscript, preferably in English (or Japanese), to be sent to the editors, typewritten on one side of paper, double-spaced, and with a wide margin. Underlinings to indicate letter types should be left to the editors. In addition to type-script copies, authors using word processing equipments are requested to submit a diskette or floppy disk with their text file. Preference is files in Microsoft Word for Macintosh, on double-sided 3.5 inch (DD, DS) diskettes. For texts processed on MS-DOS computers (preferably in Word Star or Word Perfect), please submit double-sided (DD, DS or HD) 5.25 inch or 3.5 inch floppy disks with the text saved as ASCII file.

The editors may ask the opinion of one or two reviewers before accepting or refusing the manuscript that has been submitted.

Summary. Each paper should be provided with a summary.

Citation of literature. In the text as follows: (Primack, 1991) or Ashton (1991). In the 'References' as follows:

Primack, R. B. & Hall P. 1991. Species diversity research in Bornean forests with implications for conservation biology and silviculture. *Tropics* 1: 91-111.

Jacobs, M. 1974. Botanical panorama of the Malesian archipelago. In UNESCO, *Natural Resources of Humid Tropical Asia*, 263-294. Paris.

Drawings in India ink, preferably not on transparent or tracing-paper, and photographs on glossy paper (white and black) or slides (color). Please indicate the place where figures should be inserted in the text. Magnification should be indicated by a scale line. In other cases the author should give the magnification as in the original.

Reprints. For articles with one author 50 copies free.

Manuscripts and correspondence concerning editorial matters should be addressed to **Editorial Office of the Japan Society of Tropical Ecology**, c/o Department of Biology, Faculty of Science, Kagoshima University, Korimoto 1-21-35, Kagoshima 890, Japan. Phone (0992) 85-8166 Fax 0992-85-8172

General Office of the Japan Society of Tropical Ecology addressed to c/o Dr. I. Yamada, the Center for Southeast Asian Studies of Kyoto University, 46 Shimoadachicyo, Yoshida, Sakyo-ku, Kyoto 606-01, Japan.

[Cover] A big Tengkwang tree (*Shorea gysbertsiana*) planted ca. 100 years ago by a king family of the Kingdom of Landak. Ngabang, West Kalimantan. (1991, M. Hotta)



目次

1994年 日本熱帯生態学会公開シンポジウムの記録 熱帯林の樹上で暮らす生物達

- 開会の言葉 荻野和彦.....283
- 藤間 剛, 古川昭雄 林冠構成葉の CO₂ 吸収速度は高いか?...287
- 二宮生夫 サラワク熱帯雨林における林冠構成樹種の光合成....297
- 湯本貴和 井上民二 サラワク林冠生物学計画 — 混合フタバガキ
林のフェノロジーと植物・動物相互作用の解明をめざして...
.....307
- 福山研二 いかにして熱帯林の林冠部での甲虫類の活動を探るか—
半島マレーシア・パソでの試み317
- 渡辺弘之 樹上節足動物の組成と樹上・地表の往復.....327
- 田村典子 マレーシア産樹上性リス類の空間利用と森林構造....337
- 米田政明 新世界ザルの森林利用.....345

第4卷 第4号
1995年5月

熱帯研究

日本熱帯生態学会

The Living Around Canopy of Tropical Forest
Document of Symposium Organized by the Japan Society of
Tropical Ecology, 1994 (Tsukuba, Ibaraki)

CONTENTS

Preface. Need for Canopy Biology in Tropical Study, a Review of Japanese Way to Forest Top. Kazuhiko OGINO..	283
CO ₂ assimilation rate of canopy leaves in rain forest trees: high or low? Takeshi TOMA & Akio FURUKAWA.....	287
Photosynthesis of canopy tree species in a Sarawak rain forest. Ikuo NINOMIYA	297
Canopy biological program in Sarawak — Long-term study of plant phenology and plant-animal interactions in a mixed dipterocarp forest. Takakazu YUMOTO & Tamiji INOUE.....	307
How to study the canopy beetles in a tropical rain forest. — Research trial in the Pasoh Forest Reserve, Peninsular Malaysia. Kenji FUKUYAMA.....	317
Structure of arboreal arthropod community and their round trips between soil surface and canopy. Hiroyuki WATANABE.....	327
Space use by sympatric tree squirrels in Malaysian tropical forests. Noriko TAMURA.....	337
Comparative study on forest utilization of Neotropical Primates Masaaki YONEDA.....	345

編集・発行 日本熱帯生態学会編集委員会 堀田満 (編集委員長)
鹿児島市郡元1丁目21-35 鹿児島大学理学部生物 (気付)
Tel. 0992-85-8166 Fax 0992-85-8172
e-mail: hotta@sci.kagoshima-u.ac.jp

印刷 斯文堂株式会社 鹿児島市南栄3丁目1 Tel. 0992-68-8211

印刷・発行日 1995年5月25日印刷 1995年5月30日発行

TROPICS

熱帯研究

Published by
The Japan Society
of Tropical Ecology

The TROPICS is issued quarterly with one volume a year. It is open either to the results of original research, experimental or descriptive, or significant reviews of various aspects of tropical regions. The journal publishes papers in all aspects of ecology and/or other fields of science related to ecology. It aims not only to act as a valued means of communication between Japanese ecologists and other field scientists but also to stimulate the research activities of young ecologists/scientists of tropical nations especially in Southeast Asia. All the members of the society can contribute to TROPICS, and invited articles may be accepted at the request of editorial board. Special issues may be published on occasion by permission of editorial board, as monographs or reviews exceed approximately 100 pages in length.

Editor-in-Chief: Mitsuru HOTTA (Department of Biology, Faculty of Science, Kagoshima University)

Editorial Board

Takuya ABE (Kyoto University)

Akio FURUKAWA (National Institute
for Environmental Studies)

Takashi KOHYAMA (Kyoto University)

Narifumi MAEDA (Kyoto University)

David W. ROUBIK (Smithsonian
Tropical Research Institute)

Takuo YAMAKURA* (Osaka City University)

Tsuyoshi YONEDA* (Osaka Kyoiku University)

Yusho ARUGA (Tokyo University of Fisheries)

Tamiji INOUE (Kyoto University)

Toshitaka IWAMOTO (Miyazaki University)

Naoki KOYAMA (Kyoto University)

Moritaka NISHIHARA (Tohoku University)

Eizi SUZUKI* (Kagoshima University)

Isamu YAMADA (Kyoto University)

Seiki YAMANE (Kagoshima University)

* secretaries of editorial board

Instructions to authors Copy of manuscript, preferably in English (or Japanese), to be sent to the editors, typewritten on one side of paper, double-spaced, and with a wide margin. Underlinings to indicate letter types should be left to the editors. In addition to type-script copies, authors using word processing equipments are requested to submit a diskette or floppy disk with their text file. Preference is files in Microsoft Word for Macintosh, on double-sided 3.5 inch (DD, DS) diskettes. For texts processed on MS-DOS computers (preferably in Word Star or Word Perfect), please submit double-sided (DD, DS or HD) 5.25 inch or 3.5 inch floppy disks with the text saved as ASCII file.

The editors may ask the opinion of one or two reviewers before accepting or refusing the manuscript that has been submitted.

Summary. Each paper should be provided with a summary.

Citation of literature. In the text as follows: (Primack, 1991) or Ashton (1991). In the 'References' as follows:

Primack, R. B. & Hall P. 1991. Species diversity research in Bornean forests with implications for conservation biology and silviculture. *Tropics* 1: 91-111.

Jacobs, M. 1974. Botanical panorama of the Malesian archipelago. In UNESCO, *Natural Resources of Humid Tropical Asia*, 263-294. Paris.

Drawings in India ink, preferably not on transparent or tracing-paper, and photographs on glossy paper (white and black) or slides (color). Please indicate the place where figures should be inserted in the text. Magnification should be indicated by a scale line. In other cases the author should give the magnification as in the original.

Reprints. For articles with one author 50 copies free.

Manuscripts and correspondence concerning editorial matters should be addressed to **Editorial Office of the Japan Society of Tropical Ecology**, c/o Department of Biology, Faculty of Science, Kagoshima University, Korimoto 1-21-35, Kagoshima 890, Japan. Phone (0992) 85-8166 Fax 0992-85-8172 e-mail hotta@sci.kagoshima-u.ac.jp

General Office of the Japan Society of Tropical Ecology addressed to c/o Dr. I. Yamada, the Center for Southeast Asian Studies of Kyoto University, 46 Shimoadachicyo, Yoshida, Sakyo-ku, Kyoto 606-01, Japan.

[Cover] Tree tower in the tropical rain forest viewed from walkway, Pasoh Forest Reserve, Peninsular Malaysia (drawn by M. Hotta based on a photograph taken by Dr. K. Furukawa).



The Living Around Canopy of Tropical Forest

Document of Symposium Organized by the Japan Society of Tropical Ecology, 1994 (Tsukuba, Ibaraki)

CONTENTS

- Preface. Need for Canopy Biology in Tropical Study, a Review of Japanese Way to Forest Top. Kazuhiko OGINO. 283
- CO₂ assimilation rate of canopy leaves in rain forest trees: high or low? Takeshi TOMA & Akio FURUKAWA. 287
- Photosynthesis of canopy tree species in a Sarawak rain forest. Ikuo NINOMIYA 297
- Canopy biological program in Sarawak — Long-term study of plant phenology and plant-animal interactions in a mixed dipterocarp forest. Takakazu YUMOTO & Tamiji INOUE. . 307
- How to study the canopy beetles in a tropical rain forest. — Research trial in the Pasoh Forest Reserve, Peninsular Malaysia. Kenji FUKUYAMA. 317
- Structure of arboreal arthropod community and their round trips between soil surface and canopy. Hiroyuki WATANABE 327
- Space use by sympatric tree squirrels in Malaysian tropical forests. Noriko TAMURA. 337
- Comparative study on forest utilization of Neotropical Primates Masaaki YONEDA. 345

The Japan Society of Tropical Ecology

日本熱帯生態学会

第4巻 第4号
1995年5月

熱帯研究

日本熱帯生態学会

目次

1994年 日本熱帯生態学会公開シンポジウムの記録
熱帯林の樹上で暮らす生物達

開会の言葉 荻野和彦.....	283
藤間 剛, 古川昭雄 林冠構成葉のCO ₂ 吸収速度は高いか?.....	287
二宮生夫 サラワク熱帯雨林における林冠構成樹種の光合成.....	297
湯本貴和 井上民二 サラワク林冠生物学計画 — 混合フタバガキ林のフェノロジーと植物・動物相互作用の解明をめざして.....	307
福山研二 いかにして熱帯林の林冠部での甲虫類の活動を探るか—半島マレーシア・パソーでの試み.....	317
渡辺弘之 樹上節足動物の組成と樹上・地表の往復.....	327
田村典子 マレーシア産樹上性リス類の空間利用と森林構造.....	337
米田政明 新世界ザルの森林利用.....	345

編集・発行 日本熱帯生態学会編集委員会 堀田満 (編集委員長)
鹿児島市郡元1丁目21-35 鹿児島大学理学部生物 (気付け)
Tel. 0992-85-8166 Fax 0992-85-8172
e-mail: hotta@sci.kagoshima-u.ac.jp

印刷 斯文堂株式会社 鹿児島市南栄3丁目1 Tel. 0992-68-8211

印刷・発行日 1995年5月25日印刷 1995年5月30日発行

TROPICS

熱帯研究

Published by
The Japan Society
of Tropical Ecology

The TROPICS is issued quarterly with one volume a year. It is open either to the results of original research, experimental or descriptive, or significant reviews of various aspects of tropical regions. The journal publishes papers in all aspects of ecology and/or other fields of science related to ecology. It aims not only to act as a valued means of communication between Japanese ecologists and other field scientists but also to stimulate the research activities of young ecologists/scientists of tropical nations especially in Southeast Asia. All the members of the society can contribute to TROPICS, and invited articles may be accepted at the request of editorial board. Special issues may be published on occasion by permission of editorial board, as monographs or reviews exceed approximately 100 pages in length.

Editor-in-Chief: Mitsuru Hotta (Department of Biology, Faculty of Science, Kagoshima University)

Editorial Board

Takuya ABE (Kyoto University)

Akio FURUKAWA (National Institute
for Environmental Studies)

Takashi KOHYAMA (Kyoto University)

Narifumi MAEDA (Kyoto University)

David W. ROUBIK (Smithsonian
Tropical Research Institute)

Takuo YAMAKURA* (Osaka City University)

Tsuyoshi YONEDA* (Osaka Kyoiku University)

Yusho ARUGA (Tokyo University of Fisheries)

Tamiji INOUE (Kyoto University)

Toshitaka IWAMOTO (Miyazaki University)

Naoki KOYAMA (Kyoto University)

Moritaka NISHIHARA (Tohoku University)

Eizi SUZUKI* (Kagoshima University)

Isamu YAMADA (Kyoto University)

Seiki YAMANE (Kagoshima University)

* secretaries of editorial board

Instructions to authors Copy of manuscript, preferably in English (or Japanese), to be sent to the editors, typewritten on one side of paper, double-spaced, and with a wide margin. Underlinings to indicate letter types should be left to the editors. In addition to type-script copies, authors using word processing equipments are requested to submit a diskette or floppy disk with their text file. Preference is files in Microsoft Word for Macintosh, on double-sided 3.5 inch (DD, DS) diskettes. For texts processed on MS-DOS computers (preferably in Word Star or Word Perfect), please submit double-sided (DD, DS or HD) 5.25 inch or 3.5 inch floppy disks with the text saved as ASCII file.

The editors may ask the opinion of one or two reviewers before accepting or refusing the manuscript that has been submitted.

Summary. Each paper should be provided with a summary.

Citation of literature. In the text as follows: (Primack, 1991) or Ashton (1991). In the 'References' as follows:

Primack, R. B. & Hall P. 1991. Species diversity research in Bornean forests with implications for conservation biology and silviculture. *Tropics* 1: 91-111.

Jacobs, M. 1974. Botanical panorama of the Malesian archipelago. In UNESCO, *Natural Resources of Humid Tropical Asia*, 263-294. Paris.

Drawings in India ink, preferably not on transparent or tracing-paper, and photographs on glossy paper (white and black) or slides (color). Please indicate the place where figures should be inserted in the text. Magnification should be indicated by a scale line. In other cases the author should give the magnification as in the original.

Reprints. For articles with one author 50 copies free.

Manuscripts and correspondence concerning editorial matters should be addressed to **Editorial Office of the Japan Society of Tropical Ecology**, c/o Department of Biology, Faculty of Science, Kagoshima University, Korimoto 1-21-35, Kagoshima 890, Japan. Phone (0992) 85-8166 Fax 0992-85-8172 e-mail hotta@sci.kagoshima-u.ac.jp

General Office of the Japan Society of Tropical Ecology addressed to c/o Dr. I. Yamada, the Center for Southeast Asian Studies of Kyoto University, 46 Shimoadachicyo, Yoshida, Sakyo-ku, Kyoto 606-01, Japan.

[Cover] Tree tower in the tropical rain forest viewed from walkway, Pasoh Forest Reserve, Peninsular Malaysia (drawn by M. Hotta based on a photograph taken by Dr. K. Furukawa).