

# Shuichiro Tagane

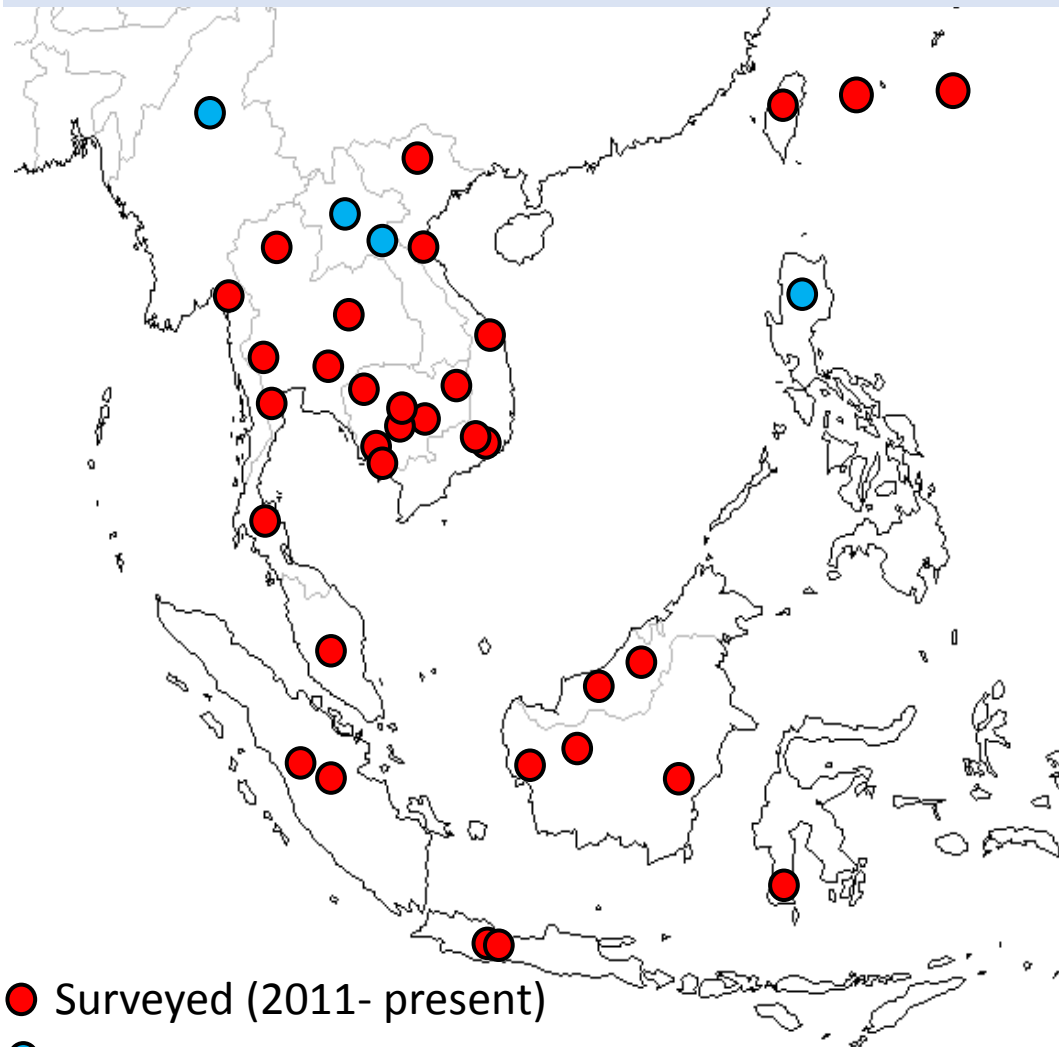
(Kyushu University, Japan)

- **2008:** Ph.D. in Faculty of Agriculture, Kyushu University
  - Natural Hybridization of *Rhododendron* species
- **2008-2010:** Research Fellow, JIRCAS
  - Breeding of sugarcane in Thailand
- **2011-present:** Research Fellow, Kyushu University
  - Plant diversity assessment in SE Asia
  - Integrative observations and assessments of Asian biodiversity (sponsored by MoEJ; 2011-2015)
- Botany, Taxonomy, Ecology

# Surveyed sites in 2011-2016

## A standardized belt-transect method

126 sites in 28 areas



### Cambodia (FA)

Koh Kong, Bokor NP, Seima Protected Forest  
Siem Reap, Kampong Thom, Kampong Chhnang

### Vietnam (TBI)

Hon Ba NR, Bach Ma NP, Vu Quang NP,  
Hoan Lien NP, Bidoup Nui Ba NP

### Thailand (BKF, KU)

Doi Inthanon NP, Kaeng Krachan NP, Phu  
Kradueng NP, Maeklong, Khao Soi Dao Wildlife  
Sanctuary, Khao Luang NP

### Myanmar (FRI)

Tanintharyi NR

### Malaysia (FRIM, FDS)

Lambir Hills NP, Fraser's Hill, Bintulu

### Indonesia (LIPI, Andalas Univ., Hasanudin Univ.)

Gn. Gede Pangrango NP (Java), Gn. Halimun NP  
(Java), Bantimulung Bulusarung NP (Sulawesi)  
Gn. Gadut (Sumatra), Pekanbaru (Sumatra)  
Mandor, Serimbu (W. Kalimantan),  
Bukit Bangkirai (E. Kalimantan)

### Taiwan (Taiwan Forest Research Institute)

Lienhuachi

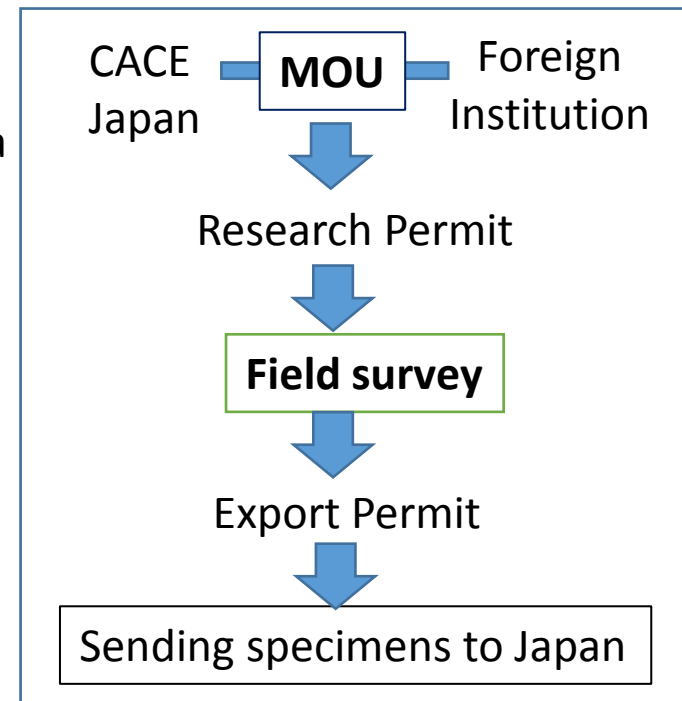
### Japan (Ryukyu Univ.)

Okinawajima Island, Iriomotejima Island

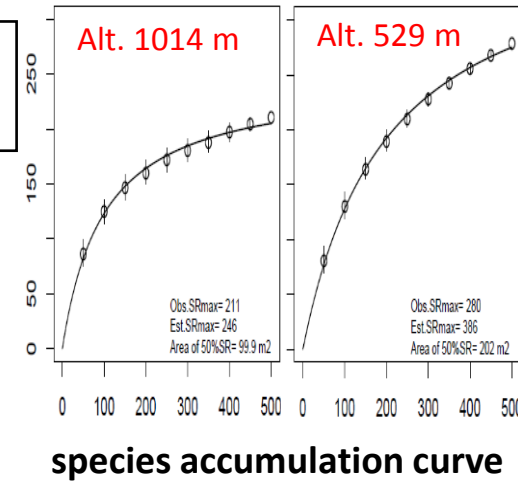
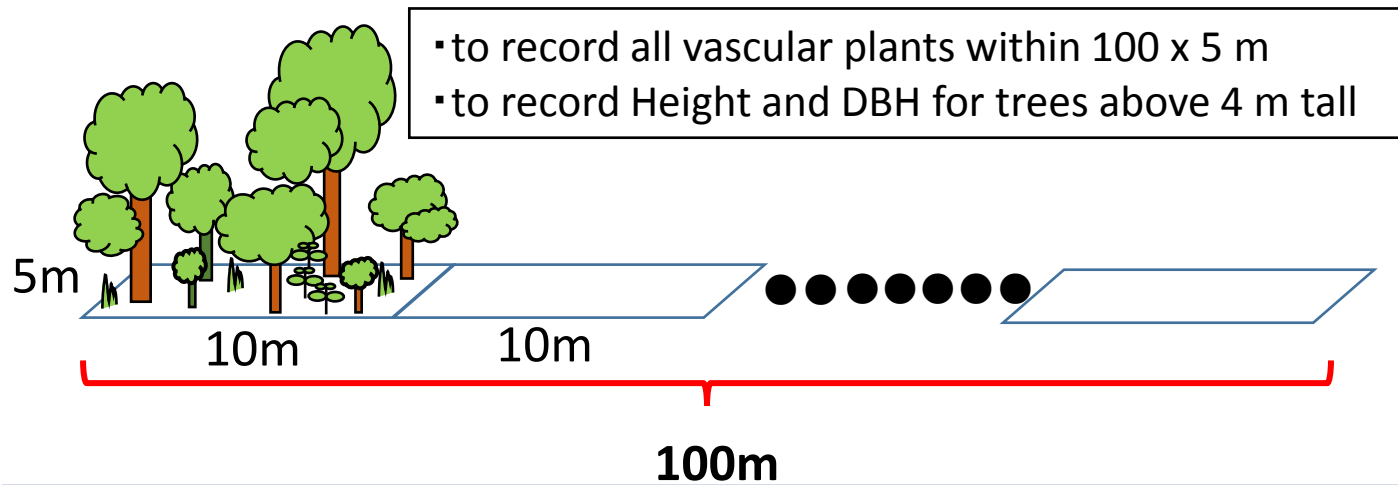
# Members

**Tetsukazu Yahara, Shuichiro Tagane,**  
**Hironori Toyama** (Kyushu University)  
**Hidetoshi Nagamasu** (Kyoto University)  
**Akiyo Naiki** (Ryukyu Univ.)

**Phourin Chhang**, Forest Administration of Cambodia  
**Somran Suddee**, Forest Herbarium, Thailand  
**Sukid Rueangruea**, Forest Herbarium, Thailand  
**Son Van Dang**, Institution of Tropical Biology, Vietnam  
**Hop Tran**, University of Ho Chi Minh, Vietnam  
**Dokrak Marod**, Kasesart Univ., Thailand  
**Dedy Darnaedi**, Research Center for Biology-LIPI, Indonesia  
**Marlina Ardiyani**, Research Center for Biology-LIPI, Indonesia  
**Arief Hidayat**, Research Center for Biology-LIPI, Indonesia  
**Anes Syamsuardi**, Andalas Univ., Indonesia  
**Ngakan Putu Oka**, Hasanudin Univ., Indonesia  
**Saw Leng Guan**, Forest Research Institute Malaysia  
**Lim Chung Lu**, Forest Research Institute Malaysia  
**Mu Mu Aung**, Forest Research Institution, Myanmar



# A standardized belt-transect method



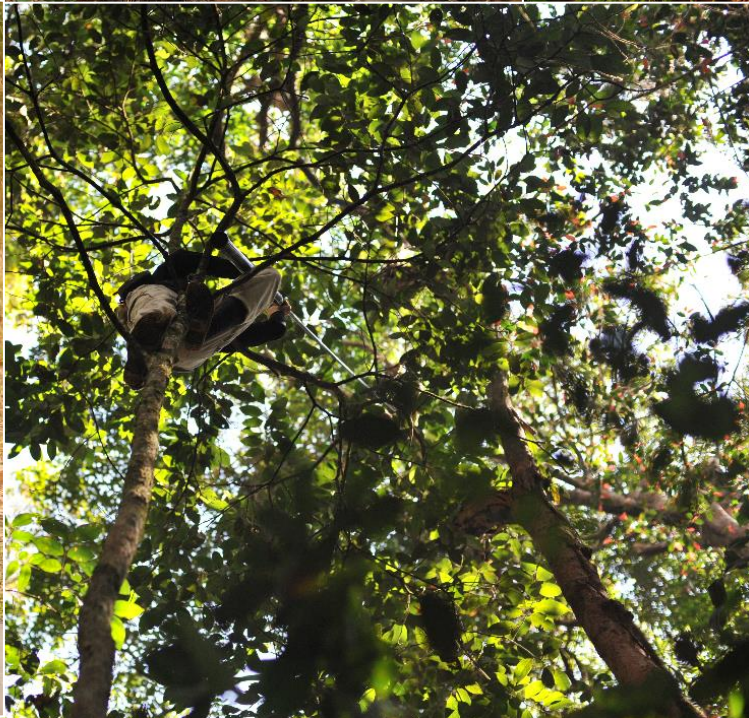
(1) Collect plants and record data, (2) Taking photos, (3) Collect leaf pieces for DNA analysis and (4) Make voucher specimens.



(5) Identify the plant species based on herbarium specimens, literature and DNA barcoding

(6) Study on taxonomy, ecology, phylogeny and biogeography; Picture guide, Database, etc.

# Field photos



# Field photos



# Drying specimens

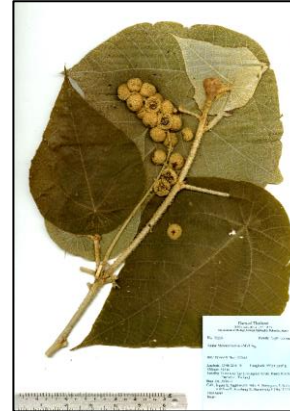


# Specimens collected in 2011-2016

- 27,000 specimens (> estimated number of species ca. 21,000 spp.)
- Three sets: one for foreign institution, two for Japan (FU)
- Digitized specimen images (600dpi)
- Photos taken in the field >>> **PPTs**
- Silica gel-dried leaf pieces for DNA analysis

No. of specimens and estimated species

Countries	Region	specimens	species
Myanmar		764	740
Cambodia		6968	3500
Thailand		5314	4000
Vietnam		6030	5800
Malaysia	Peninsula	411	400
	Borneo	2657	2300
Indonesia	Sumatra	1548	1450
	Java	1181	900
	Sulawesi	433	400
	Kalimantan	1614	1600
Taiwan		111	110
Japan		448	440
<b>合計</b>		<b>27479</b>	<b>21640</b>





Scientific name: Menyanthaceae *Nymphoides hydrophylla* (Lour.) Kuntze

Local name: Kya

No. MY1

#

Myanmar\_Bago

Letpankon Forest Station

(alt. 70 m)



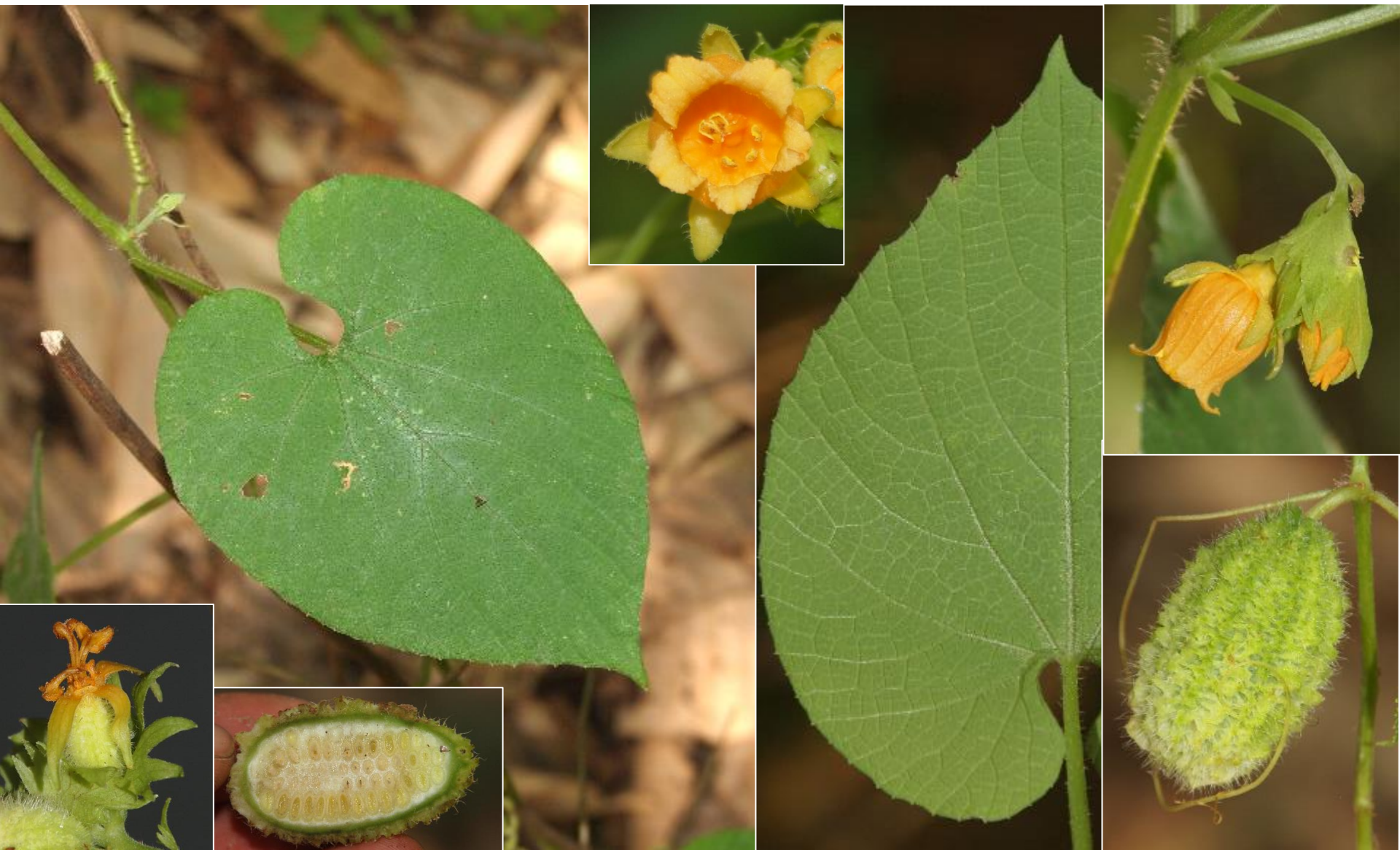
Scientific name: Cucurbitaceae *Thladiantha*

Local name:

No. MY126

#

Myanmar\_southern Shan State  
Pin Laung Twonship  
near hot spring (alt. ca. 719 m)



Scientific name: Elaeocarpaceae *Elaeocarpus gagnepainii* Merr.

Local name:

No. V9

#

Vietnam

Hon Ba\_1



# Vascular plant species richness/transect line 500 m<sup>2</sup>

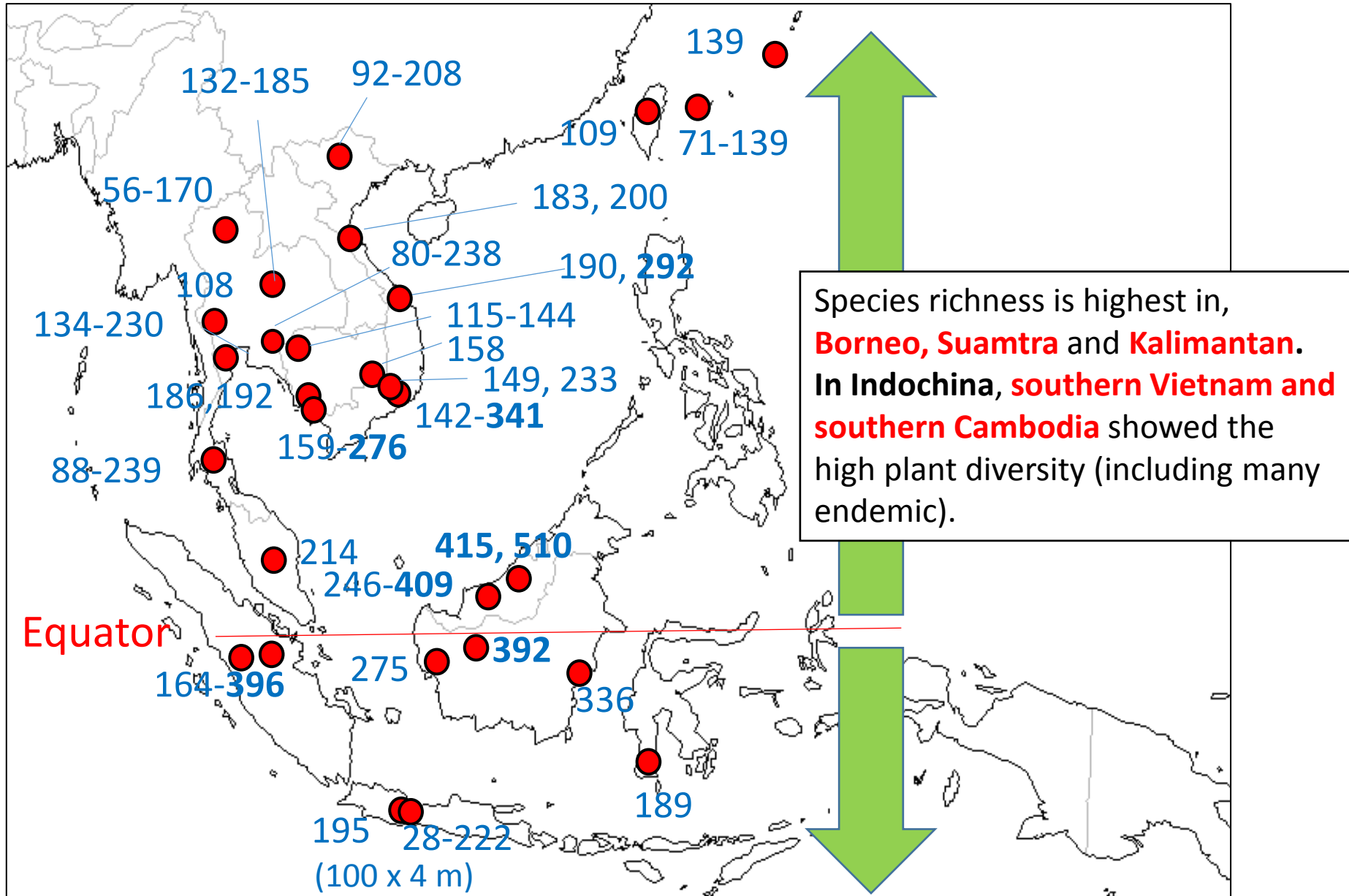
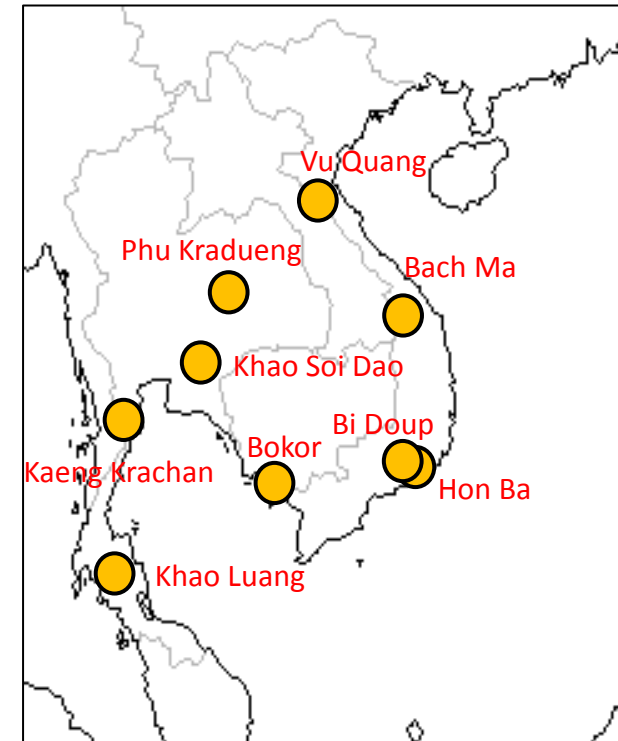


Fig. species richness observed in one transect line (500m<sup>2</sup>)

# New species found in 2015-2016

In 2015-2016,  
**35 new species (published)**  
**7 species (in reviewing)**  
**9 species (in prep.)**

Country	Family	Species
Cambodia	Primulaceae	<i>Ardisia smaragdinooides</i> Yahara & Tagane
	Euphorbiaceae	<i>Croton phourinii</i> H. Toyama & Tagane
		<i>Euphorbia bokorensis</i> H. Toyama & Tagane
	Clusiaceae	<i>Garcinia bokorensis</i> H. Toyama & Yahara
	Zingiberaceae	<i>Globba bokorensis</i> Nob. Tanaka & Tagane
	Elaeagnaceae	<i>Elaeagnus elongatus</i> Tagane & V. S. Dang
	Araliaceae	<i>Heteropanax bokorensis</i> Tagane & Nagam.
		<i>Schefflera cambodiana</i> Yahara & Tagane
	Dichapetalaceae	<i>Dichapetalum cambodianum</i> Tagane & Nagam.
	Elaeocarpaceae	<i>Elaeocarpus bokorensis</i> Tagane
	Fagaceae	<i>Lithocarpus eriobotryifolius</i> Yahara
	Lauraceae	<i>Cinnamomum bokorense</i> Tagane & Yahara
		<i>Cinnamomum dimorphandrum</i> Yahara & Tagane
		<i>Lindera bokorensis</i> Tagane & Yahara
		<i>Machilus bokorensis</i> Yahara & Tagane
		<i>Machilus brevipaniculata</i> Yahara & Tagane
	Melastomataceae	<i>Memecylon bokorense</i> Tagane
	Myrtaceae	<i>Syzygium elephantinum</i> Tagane
	Phyllanthaceae	<i>Phyllanthus bokorensis</i> Tagane
	Rubiaceae	<i>Lasianthus bokorensis</i> Naiki
<i>Lasianthus giganteus</i> Naiki		
<i>Lasianthus oblanceolatus</i> Naiki, Tagane & Yahara		
<i>Lasianthus stephanocalycinus</i> Naiki, Tagane & Yahara		
<i>Lasianthus viridiramulis</i> Tagane		
Vietnam	Phyllanthaceae	<i>Aporosa tetragona</i> Tagane & V. S. Dang
	Euphorbiaceae	<i>Trigonostemon honbaensis</i> Tagane & Yahara
	Lamiaceae	<i>Callicarpa bachmaensis</i> Soejima & Tagane
	Salicaceae	<i>Homalium glandulosum</i> Tagane & V. H. Nguyen
	Rubiaceae	<i>Lasianthus yaharae</i> V. S. Dang, Tagane & H. Tran
		<i>Lasianthus honbaensis</i> V. S. Dang, Tagane & H. Toyama
		<i>Goniothalamus flagellistylus</i> Tagane & V. S. Dang
Annonaceae	<i>Popowia bachmaensis</i> Ngoc, Tagane & Yahara	
Thailand	Fagaceae	<i>Lithocarpus dahuoaiensis</i> Ngoc & L.V. Dung
	Rosaceae	<i>Prunus kaengkrachanensis</i> Nagam., Tagane & Suddee
	Meliaceae	<i>Toona calcicola</i> Rueangr., Tagane & Suddee

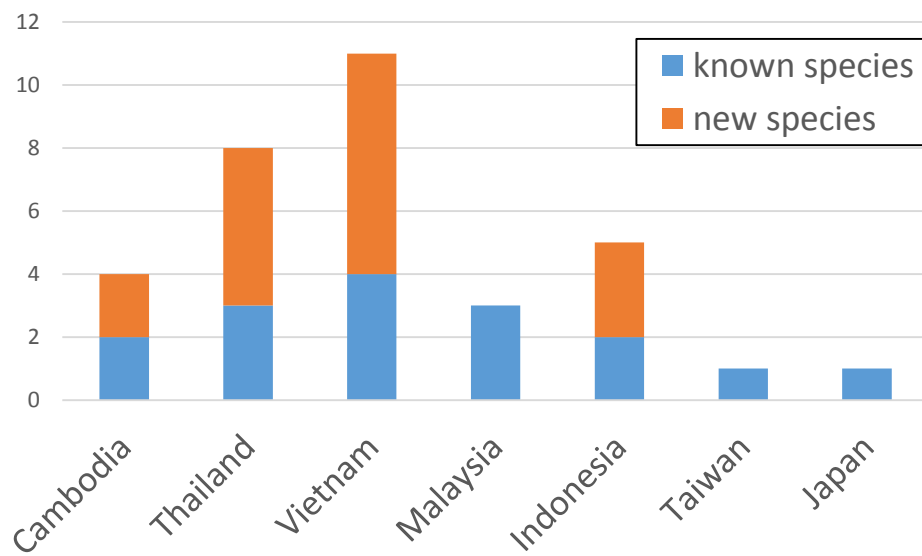


**We need more efforts  
for assessing Plant  
diversity in SE Asia**

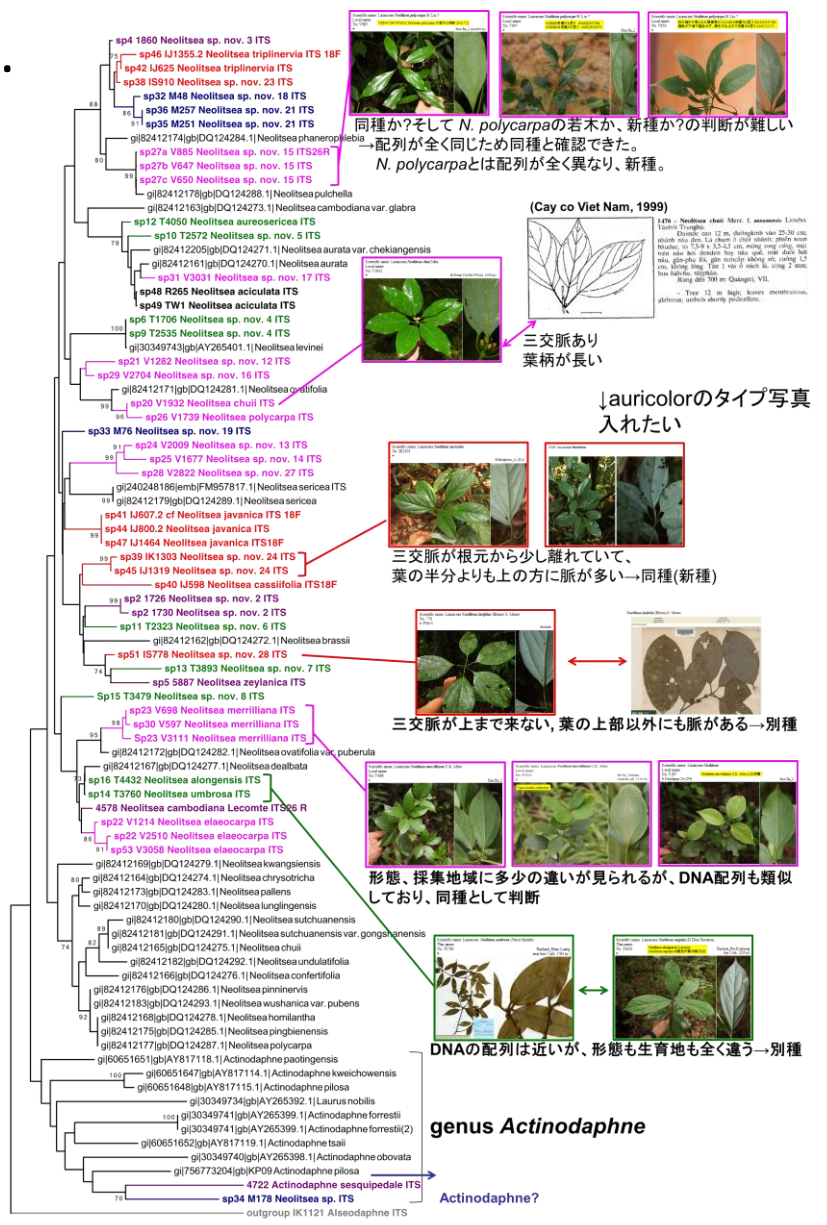
# Case study: *Neolitsea* (Lauraceae) (Mitsuyuki & Yahara, in prep.)

- We collected 53 species of *Neolitsea*.
- 33 species were carefully examined based on morphology and phylogeny (ITS), and we concluded:
  - Known species --- 11 spp.
  - Undescribed species --- 22 spp.

Many new species in Lauraceae!!



Number of described/undescribed species of *Neolitsea* spp.



Phylogeny of Asian *Neolitsea* spp. based on ITS

To contribute biodiversity observation network,

- Inventory & Taxonomy
- Publishing 'Picture guide' for identification
- Database >>(data papers)>> GBIF
- DNA Barcoding

To accurately know the plant diversity,  
and further research