

水辺の幸

Mizube no Sachi

Gift of Waterfront

Illustrated Handbook of

Edible Plants and Animals Indigenous to the Mekong River Basin



Nagao Natural Environment Foundation

Authors

Masahide Kubota

Shusei Saito

San'ei Ichikawa

Minemitsu Kaneko

Satoko Fuchigami

Akinobu Imamura

Koji Ishibashi*

Japan Wildlife Research Center (JWRC)

3-3-7 Koto-bashi, Sumida-ku Tokyo Japan, 130-8606

*Present address

Tokyo Colledge of Environment (TCE)

3-3-7 Koto-bashi, Sumida-ku Tokyo Japan, 130-0022

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Mizube no Sachi

Nature's blessing of food for the living things around riparian areas

Since 2007, our team has done research and technical transfers on conservation of local natural environment in Mekong river basin. Research area is the basin in Laos, Thailand, Cambodia and Vietnam. To this day, people in this region depends largely their food source on the riparian lives in paddy fields, rivers, and lakes. In local markets, one sees abundance of small aquatic creatures such as freshwater fish and crabs, and both riparian and land insects and plants. They are also served on daily meals of local people. Such living resource is differentiated from commercially harvested sources since they do not require large amount of time, labor, and monetary investment in order to harvest them. Therefore they may not be categorized as a means of earning a living; however, they are essential part of people's daily lives in terms of providing food.

The staple of people along Mekong River is rice, and field of rice paddy is a common landscape in this area. Many of the non-professionally harvested living sources depend their habitat on paddy field around villages and nearby water sources. This landscape and concept of coexistence of lives are familiar with the study team, which is from Japan. Japan is known in ancient time, as "country of abundant rice crop". Through the study, we have reconfirmed the uniqueness of rice paddy from natural the resources point of view. We decided to call the resources "*Mizube no Sachi*." *Mizube no* means riparian origin, and *Sachi* means blessings in Japanese. In this context, the blessing is food. We wanted to express appreciation for the lives of organisms which exist as food, so we called them not just food but "blessing" from Mother Nature. This appreciation for the nature represents a feeling that something Japanese have ever since our ancestors' time.

Mizube no Sachi includes not only wild life but also alien species which were brought in by people and have been utilized in many ways. It also includes plants that are casually cultivated in short period while the river banks are dry during seasonal water level change. As a result, the list of *Mizube no Sachi* included large variety of products. This is not a scientifically defined term..

At the end of research, the list contained more than 500 species. From the length of the list, it is clear that people of Mekong River basin utilize 1)many fish, 2)process insect as food, and 3)use various plants including trees as food. Some kinds of species differ in some areas and countries, but those three points are common among culture in Mekong River basin in terms of utilizing living things.

Mizube no Sachi should play a central role when thinking of conserving local biodiversity in Mekong River basin. Because in order to sustain biodiversity, it is important to know individual organism; of its appearance, name and characteristic. This field guide book is a photo album that recorded riparian lives as clearly and comprehensively as possible. It made it possible to understand an ambiguous concept of biodiversity by showing evidences of just how diverse the lives are in the area.

It is our hope that this would help people to understand the importance of biodiversity, and that would lead to thought and activities to conserve local natural resources. It is our heartfelt wish that rich natural resource and people's lives along Mekong would be conserved in the future.



Acknowledgement

This guidebook is a summary based on six years of research titled “Research on *Mizube no Sachi* in Indo-China Peninsula (2007-2013)”, funded and administered by Nagao Natural Environment Foundation. This research started as a project to transfer knowledge to local college students, government officials and teachers in Laos and Cambodia, about methods of conducting study on environmental conservation and aquatic creatures. As the project progressed, it became foremost important to think about what kind of activities would contribute to conservation of natural environment in Mekong river basin, since most of natural resource in the area was secondary.

First, we recognized that lives of people in Mekong river basin largely depended on utilizing resource from waterfront. And we came to think that determining the object to be conserved should be the priority. This thinking lead to an idea to make an illustrated handbook of all the things of *Mizube no Sachi*. In each country of the research area there are products unique to some areas and those found commonly throughout the region, but they are often called in different names in each region. So the primary purpose of this guide is to share common knowledge of all the collection of resources in Mekong river basin.

Secondary purpose is to bring awareness of people that *Mizube no Sachi* tend to be looked as things granted or too trivial to be noted; however, it cannot exist without healthy natural environment. Therefore, in order to continue to utilize *Mizube no Sachi*, we must realize it is very important to conserve one’s surrounding natural environment. These are the goals our mission and the purposes of this guide book.

We acknowledge that this guide needs more work to achieve the intended purposes. It is our sincere hope that this guide will be a springboard for further advancement of environmental conservation.

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Dr. Bounthob Praxaysombath	(National University of Laos, Lao PDR)
Ms. Khamfa Chantavongsa	(National University of Laos, Lao PDR)
Ms. Peou Youleang	(Loyal University of Phnom Penh, Cambodia)
Ms. Seang Hun	(Loyal University of Phnom Penh, Cambodia)
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Ms. Kim Sopheap	(Inland Fisheries Research and Development Institute, Cambodia)
Ms. Manichit Lathichak	(Namxouang Aquaculture Development Center, Lao PDR)
Mr. Mengthao	(Village Aquaculture Prom. Comm. of Phonekeo Village, Lao PDR)
Ms. Nouhak Liepvisay	(Namxouang Aquaculture Development Center, Lao PDR)
Mr. Phoukam	(Namxouang Aquaculture Development Center, Lao PDR)

Ms. Salavong Thammasedy(Namxouang Aquaculture Development Center, Lao PDR)

Mr. Sengvi Layvanh Singthavikhoun (National University of Laos, Lao PDR)

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***Translation**

Ms. Noliko Utsuzawa (Natural environment advocate based in USA)

***English proofreading**

Mrs. Jo Ann Davis

Ms. Barbara Trebino

Japan Wildlife Research Center

A wide-angle photograph of a lush green rice paddy field in a valley. The field is divided into several rectangular plots, some of which are filled with water, reflecting the sky. In the background, there are rolling green hills and mountains, some with patches of white, possibly snow or mist. The foreground is framed by dark green trees and foliage on the left and right sides. The overall scene is peaceful and scenic, typical of a rural landscape in a tropical or subtropical region.

Study Region

Mekong River runs through Indo-China peninsula. It originates Tibetan Highlands and goes through China, Myanmar, Laos, Thailand, Cambodia and Vietnam before reaching South China Sea. In this study, the focused areas are the river banks in Laos, Thailand, Cambodia and Vietnam, and we studied from Northern areas where Laos, Thailand and Myanmar meet their borders, to Southern areas like Tonle Sap in Cambodia and river mouth in Soc Trang province in Vietnam (see Table 1 and Figure 1).

Laos has large areas of its land in the riverbank of Mekong with the exception of northern most area. The river makes borders between Thailand and Myanmar. In Thailand, the river basin includes northern Chiang Rai and areas north up to border in addition to northeast regions. Most of the land in Cambodia is in Mekong River basin. The main stream runs through the country north to south, and it meets Tonle Sap River at Phnom Penh. After Phnom Penh, the river diverges into main Mekong stream and Basak River towards Vietnam. They form great delta centering on South Vietnam city of Can Tho flowing into South China Sea.

Table 1 List of major cities which *Mizube no Sachi* study was conducted (No. corresponds numbers in Figure 1).

No.	Country	Province	Citiy, village
1	Laos	Bokeo	Houayxay
2		Bokeo	Na Luang vill.
3		Louang Phrabang	Louang Phrabang
4		Sainyabuli	Sainyabuli
5		Vientiane province	Vang Vieng
6		Vientiane capital, Vientiane province	Vientiane
7		Bolikhamxai	Paksan
8		Bolikhamxai	Lak Sao
9		Khammouane	Thakhek
10		Savannakhet	Savannakhet
11		Salavan	Salavan
12		Champasak	Pakse
13		Sekong	Sekong
14		Attapeu	Attapeu
15	Thailand	Chiang Rai	Chiang Rai
16		Khon Kaen	Khon Kaen
17		Ubon Ratchathani	Ubon Ratchathani
18	Cambodia	Ratanakiri	Banlung
19		Stung Treng	Stung Treng
20		Kratie	Kratie
21		Kampong Cham	Kampong Cham
22		Siem Reap	Siem Reap
23		Kampong Chhnang	Kampong Chhnang
24		Phnom Penh	Phnom Penh
25		Prey Veng	Prey Veng
26		Takeo	Takeo
27		Battambang	Battambang
28		Pursat	Pursat
29	Vietnam	Can Tho government-ruled municipality	Can Tho
30		An Giang	Chau Doc
31		Soc Trang	Soc Trang
32		Soc Trang	Cu Lao Dung



Figure 1. Map of major cities the study was conducted

Seasons

Majority of areas in Mekong river basin belong to tropics. Southwest wind in summer and northeast wind in winter take over the region. Because of this monsoon effect, the peninsula has distinct dry and wet seasons. Onset of each seasons vary from region to region, but in most areas, wet season starts from late April to mid-May, and lasts until late October to early November. Depending on precipitation, water level of Mekong River changes between the two seasons. In Tonle Sap Lake in Cambodia, the water flows out to Tonle Sap River then into Mekong River during dry season, but as the water level rises in Mekong during wet season, water flows backwards into Tonle Sap Lake. During the heaviest precipitation period, area of the lake expands more than five times than that of dry season. Water depth also increases to four to ten times more than any season. In Laos, the study team was told the seasonal difference of Mekong's water level becomes 15m in Louang Phrabang, 10m in Vientiane, and 12m in Pakse.

Distinctive seasonal changes have large impact on the ecosystem of organisms in the region. Termites start to fly and *Lethocerus* begin to lay eggs as soon as the first rain of wet season falls. As the water rises, wet areas expand and enable some fish to swim into paddies and wetlands to lay eggs. During dry season, when the paddies are dry, aquatic lives migrate to wetter condition. In paddies when it's dry, one can see some fish which could not escape in time in paddles or see pond snail burying itself in mud in order for them to keep remaining moisture. There might be a few tens of diving beetle, huddling in the last oasis of paddles. People along Mekong are well adapted to the seasonal changes and pay close attention to it. People in farmland are especially aware of which *Mizube no Sachi* is in season. Rain sometimes brings flood damages, but at the same time, it is a blessing from nature so that organisms and people can sustain lives and culture in the area. Seasonal change nourishes *Mizube no Sachi*. At one time, the study team came across an area where roads and houses had been flooded by water rise during wet season. There seemed to be no residents who were disturbed by the fact and they simply went to get their fishing poles and nets and began fishing in flooded road. It seemed that average yearly overflow of river is more or less expected event as a part of life and people try to take advantage of it. This cultural value of "going with the flow" gave us basic insight when researching *Mizube no Sachi*.



People fishing in flooded road side 10 Sep. 2007 Vientiane Capital, Laos

Local Markets

Due to intense sun shine and high temperature, Market sellers in Mekong river basin develop various methods to keep their produce fresh. It is essential to start markets early in the morning when the sun and temperature are still low. Some markets have both or either morning and evening market depending on the locations, but most of fresh caught fish and plant produce are being sold in the morning. As the sun gradually increases its intensity, the sellers put over shade and splash water on the produce and ground to keep them from wilting. It is best to sell them all as early as possible for the benefit of both sellers and customers who are looking for fresh produce. Some stores are open into afternoon, but there are hardly any fresh produce and if any, most plants have been wilted so one would hardly see a customer.

[Preserving food]

Generally, local markets in inland Mekong river basin are not equipped with ample refrigeration facility. Therefore, small aquatic lives such as fish, frogs, and crabs are brought alive and sold. Although it is not *Mizube no Sachi*, live saltwater Bloody clam *Tegillarca granosa*, can be seen in inland markets, because people know it can sustain life longer because of hemoglobin presence in it.

Dead animals should be sold immediately, or if they are harvested regularly, they are dried or smoked. The team observed dried fish related to snakehead and drum, and they tasted very salty. Some frogs are dried on skewers. One other method to preserve fresh produce is fermentation. Traditionally there are many fermented food, using fish, small shrimps, legumes, and grains in Mekong river basin, but we were not able to do detailed research in this study. Given the importance status as *Mizube no Sachi*, we believe the fermented food can be another category itself when studying about *Mizube no Sachi*. We leave it as a future project. Following section describes general fermented and dried food.

[Seasonal, Local, Taste preferences]

Items found in market have seasonal variety. Because there is distinct dry and wet periods, animals or plant buds, fruits and flowers differ according to the seasons. For example, honey from giant honeybee (*Apis dorsata*) and sugar from sugar palm (*Borassus flabellifer*) can only be found in dry season.

There are also geographic variety. Yanan (*Tiliacora triandra*) is a popular plant used in Thailand and Laos when boiling bamboo shoots. But it is not seen as soon as you cross the border to Cambodia, and instead, Cambodians use a plant called Ngop (*Sauropus androgynus*) for the same purpose. In Laos, insects are popular food source and one sees large variety and amount of insects being sold. But in Cambodia, majority of people say they do not eat insects. It is true that cicada and stinkbug are not sold in Cambodian market, but cricket, giant water bug, predaceous diving beetle are still popular, and even winged termites are eaten as annual seasonal prized food. Weaver ant is an essential part of making Cambodian soup. Overall, there are country and regional difference in terms of levels of assimilation, but we can say that using insect as food is a shared culture along Mekong river shed.

Furthermore, not all people eat all the food you see on the market. We heard different opinions on taste preference of larva of horned dung beetle, and large snails, or stalk of very bitter yam plant. When a large live jewel beetle was on a market, some people purchase it as food while others do so as a toy for children.

[Mammals and Birds]

Wild bird and mammals are commonly seen in many markets in mountain areas. Trading some animals is illegal. Therefore, sellers tend to hide them from the sight of foreigners like us, or they don't allow any pictures to be taken. We wanted to maintain friendly relationship with locals, so we have excluded those animals from research target. Moreover, it was not clear if they can be included within category of *Mizube no Sachi*, the only applicable definition of which, can be "caught easily with minimum time spent."



27 May 2009 Tha Heua Market, Louang Phrabang, Laos



24 Nov. 2009 Vang Vieng Market, Vientiane Province, Laos

Traditional Cooking

<Fish sauce>

Fish sauce is a fermented food which is made by salting fish and other shellfish, then leaving them for a while to let the enzyme work on the process of fermentation. It is used in daily life in Mekong river basin and so it is one of most essential seasoning when talking about food culture in this area. In inland Mekong river shed, freshwater fish is abundant and it is used for making fish sauce. They are called *Nam pa* in Laos and NE Thailand, or *Nam pla* in other parts of Thailand, *Tuk Trey* in Cambodia. Many of them are in a glass jar and manufactured in factories. Fish sauce is used to season soups, noodles and other dishes. It is usually set on tables of eateries.

While fish sauce is widely available commercially, there is homemade seasoning called *Pa daek* (NE Thai and Laos), *Pla ra* (Central Thai), *Pa ha* (Northern Thai), *Pra hoc* (Cambodia). These are paste fish sauce, and are very versatile. Not only is it used as seasoning, it can be served as a side either as it is or mixed with herbs or used in main ingredients of main dishes. This homemade fish sauce is usually made from freshwater fish, and quite often the entire process of making the sauce (catching fish to final sauce) takes place at home. The broth, byproduct of making the paste is called *Nam pa daek* (in Laos, NE Thai), *Nam pla ra* (central Thai), *Nam pa ha* (Northern Thai), *Tuk Trey* (Cambodia), and is also used as seasoning.

People who make homemade fish sauce are not very many in urban areas of Thailand, but it is still commonly made in NE Thai, Laos and Cambodia as an essential seasoning. There are many other kinds of fish sauce using saltwater fish, shrimps, and crabs.



Fish paste (Pa daek)



Making home made fish sauce

<Fermented Sushi>

Fermented Sushi is a fermented food either commercially or homemade. Most of the time, it is made by lactic fermentation of salted freshwater fish and steamed sweet rice. Often times, it is made by whole or cut fish which is scaled and cleaned while others use minced fish, fish mixed with organs, or fish eggs. Family Cyprinidae of and order of Catfish are often used as main ingredients and other kinds like Family Osphronemidae or Channidae are used. There is another type of fermented food commonly known as *Som pa* (Laso, NE Thai), *Pa som* (NETHai), *Pla som* (Thailand), *Pa mam* (Thailand), *Pa chao* (NE Thai, Northern Thai), *Phaak* (Cambodia). *Som* means sour in Lao and Thai, and *Pa* or *Pla* means fish. It literally tastes like what it says. It can be eaten raw but as a sanitary precaution, people often heat it up to serve.



Many kinds of fermented Sushi sold in markets



Fermented Sushi of fish eggs

<Dried, Smoked food>

Large catch of fish and frogs are often dried and smoked to enable longer storage. The fishes of family Cyprinidae and order Siluriformes are commonly used as well as other large and small fish. As for frogs, *Hoplobatrachus rugulosus* and *Fejervarya limnocharis* are most commonly used. Smoked and dried goods are served after heating, stir-frying, or frying.



variety of smoked fish



Smoked frogs

<Cheo (*Nam prik*)>

A type of paste made by sautéing and mixing main ingredients, chili, green onion, shallots, and herbs, seasoned with fish sauce, salt, or MSG. It is called *cheo* in NE Thai and Laos, *Nam prik* in other parts of Thailand with variety of ingredients. Main ingredients can be giant water bug, stink bug, cricket, mole cricket, frogs, fish, and mushrooms. The simpler form of *cheo* which can be made by fish sauce and chili. This is more liquid and since it is easier to make, it is widely incorporated into home cooking. *Cheo* is often eaten by dipping steamed sweet rice as well as raw vegetables cooked fish and meat, or put in soup and noodles. It is essential in home cooking in Laos and Thailand.



Cheo of stink bug



Cheo is often eaten as a dip for sweet rice

<Lap, Koi>

These are local favorites in Laos, NE Thai, and Northern Thai. It is a kind of salad with minced meat or fish mixed with herbs, rice flour, chili, dried onion, and seasoning. Seasoned with fish sauce, salt or lime. Knifefish's lap is the most famous among freshwater fish lap. Lap and Koi are very similar.



Koi of weaver ant



Koi of Nile tilapia

<Mok>

Lao cuisine of aquatic animals, steamed in banana leaf. Main ingredient is seasoned with herbs, chili, salt and fish sauce. Small aquatic animals such as small fish, aquatic insects, tadpoles are often cooked this way.



ingredients are wrapped in banana leaf



Mok with small fish, frogs, aquatic insects and shrimp

Reptiles and Amphibians

Reptiles and Amphibians

Among reptiles and amphibians as foodstuff, frogs are most commonly used as important protein source for people in Mekong river basin. Reptiles are not as often used as daily food than amphibians, but sometimes tortoise, lizards and snakes are caught to eat. In this study, estimated 20 species of reptiles, 20 species of amphibians are identified, but we assume that more variety of animals are being consumed at home; they are just not seen in markets.

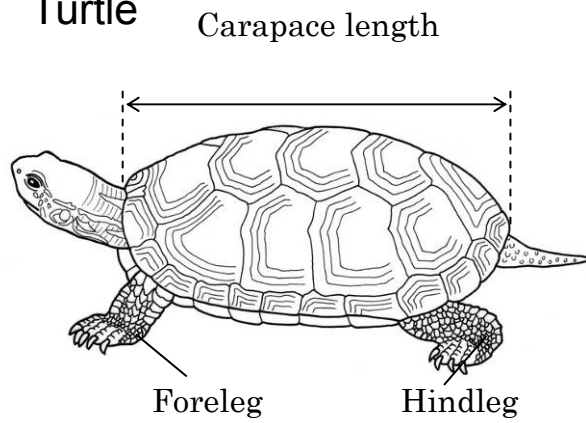
Common reptiles seen in markets are Indochinese snail-eating turtle (*Malayemys subtrijuga*) and calotes (*Calotes versicolor*). Indochinese snail-eating turtle is also sold in the cities, and is not only sold as food, but also large demand for mercy release (releasing catch into wild to make up the lost lives of those had been eaten). It is a unique sight in Buddhist country. Other species of tortoise are relatively expensive than other animals. We assumed that they are not affordable to ordinary population and are less popular as food unless someone catches them by himself. Snakes are occasionally seen in markets and some people like them, but those are not used in daily meal preparation. A few markets sell *Varanus nebulosus* once in a while. Overall, reptiles may not make up popular dishes, but they are considered familiar foodstuff as they are consumed among rural villagers and are seen in markets occasionally. It is even possible that they are cultured by professionals.

As for amphibians, larger species of *Hoplobatrachus rugulosus* and smaller species of *Fejervarya limnocharis* and *Occidozyga lima* are frequently sold at market. Not only adults but also tadpoles are used and sold in markets. Frogs are served in eateries in the cities, and most of the time, *H. rugulosus* is used. *H. rugulosus* is cultured widely and is readily available throughout year. In the market, both harvested and wild caught ones are sold, but wild caught are more expensive. Other than *H. rugulosus*, which is cultured, frogs are basically caught in wild. They have different seasons, so one sees different species in the market throughout the year. Many of the species live in close proximity of villages and forest around it. They are popular as *Mizube no Sachi*.

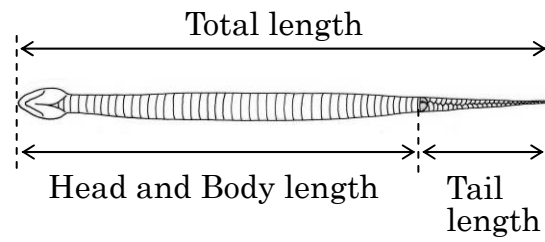


Morphology of Reptiles and Amphibians

Turtle

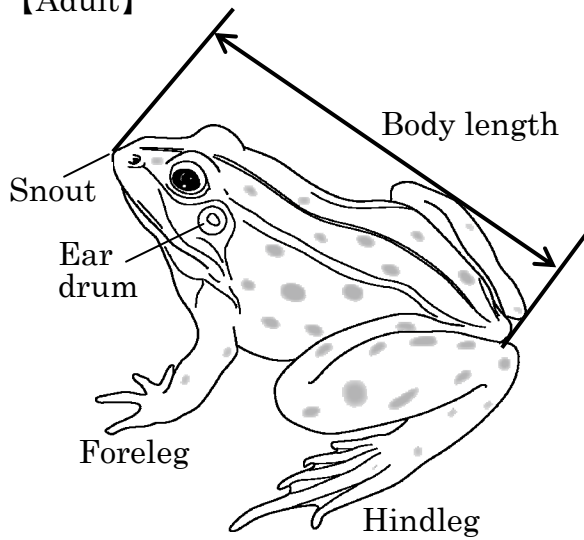


Snake

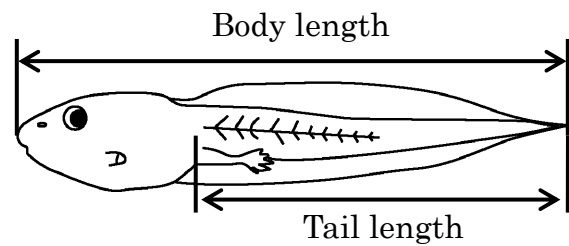


Frog

【Adult】



【Larva】



Geoemydidae spp.

Order: Testudines
Family: Geoemydidae

LA	Tao, Tao nam	
KH	Andawk	
TH		
VN	<u>Cyclemys dentata</u> : Rua dua <u>Malayemys subtrijuga</u> : Rua ba go <u>Cuora amboinensis</u> : Rua nap: Tua hop	<u>Cyclemys dentata</u> : Rùa dứa <u>Malayemys subtrijuga</u> : Rùa ba gờ <u>Cuora amboinensis</u> : Rùa nắp: Tùa hộp
JP	Ishi-game (Photo: Nokoheri-marugame)	イシガメ科の複数種

Remarks



Cyclemys dentata

23 May 2009 Phonekeo, Vientiane
Province, Laos

Basic Information

Its distribution is centered in temperate and tropical Asia and South Europe, North Africa, and Central and South Asia.

Use

The team identified *Cyclemys dentata*, *Malayemys subtrijuga*, *Cuora amboinensis* as food source. These species are popularly served roasted or in soup. In the market, *M. subtrijuga* is found most. It is because they are also used in “mercy release” (as in Buddhist belief, releasing a catch in the wild is considered act of virtue) as well as food. In Cambodia, one *C. amboinensis* is sold at a price of twenty US dollar which is very high compared to other market goods.



Malayemys subtrijuga

19 Nov. 2009 Thong Khan Kham Market, Vientiane
Capital, Laos



Cuora amboinensis

06 Nov. 2008 Neak Loeung, Kandal, Cambodia



Malayemys subtrijuga

19 Nov. 2009 Thong Khan Kham Market, Vientiane
Capital, Laos

Platysternon megacephalum

Order: Testudines
Family: Platysternidae

LA	<u>Tao, Poulou</u>	
KH	<u>Andawk</u>	
TH		
VN	<u>Rua dau to</u>	<u>Rùa đầu to</u>
JP	<u>Ooatama-game</u>	<u>オオアタマガメ</u>

Remarks

Basic Information

It is distributed in Southern China, Hainan Island, and Indo-China Peninsula. The shell length is 11 to 20cm. It lives along mountain streams.

Use

It was found as a food source in Sainyabuli province in Laos, mainly as a soup ingredient. It is highly-priced trade goods as used in Chinese cuisine (we heard in an interview as 1,000,000 kip/kg). Apart from collecting in the wild, people catch the young and raise it until it is mature (semi-farm raised) and ready to be sold. Collection mainly occurs along mountain streams.



18 Sep 2011 Nan Pui, Sainyabuli, Laos



18 Sep 2011 Nan Pui, Sainyabuli, Laos

Trionychidae spp.

Order: Testudines
Family: Trionychidae

LA	<u>Pa fa</u>	
KH	<u>Konthiev</u>	
TH	<u>Tapab nam</u>	
VN	<u>Ba ba; Cua dinh</u>	<u>Ba ba; Cua dinh</u>
JP	<u>Suppon</u> (Photo: Maru-suppon)	<u>スッポン科の複数種</u>

Remarks

Use

They are used in multiple countries as a soup ingredient. In Laos, *Pelochelys cantorii* was identified as a food source.



Pelochelys cantorii
23 May 2009 Phonekeo, Vientiane
Province, Laos

Testudinidae spp.

Order: Testudines
Family: Testudinidae

LA	<u>Tao</u>	
KH		
TH		
VN	<u>Rua nui vien</u>	<u>Rùa núi viên</u>
JP	<u>Riku-game</u> Photo:Bekkou-mutsuashi-game	<u>リクガメ科の複数種</u>

Remarks

Use

In Laos, both adults and eggs are consumed as food. Adult *Manouria impressa* and eggs of *Testudinidae* spp. are identified in the market. The adult is used in soup, and eggs are boiled and served.



Manouria impressa
25 May 2009 Vang Vieng Market,
Vientiane Province, Laos



19 Nov 2011 Dong Makkai Market,
Vientiane Capital, Laos

Calotes versicolor

Order: Squamata
Family: Agamidae

LA	<u>Ka pom</u>	
KH	<u>Bong kuoi</u>	
TH		
VN	<u>Kỳ nhông; Cắc kè</u>	<u>Kỳ nhông; Cắc kè</u>
JP	<u>Irokae-Karotesu</u>	<u>イロカエカロテス</u>

Remarks

Basic Information

It is distributed in Southwest Asia to India and Sri Lanka, Indo-China, South China, Sumatra, and islands in the Indian Ocean such as Mauritius and Reunion. The length of a normal individual measures about 35cm, but sometimes grows up to 50cm. Its scales on the lateral trunk point toward up and behind. It changes its color from red to metallic blue. It mainly habituates in forests but is adapted to living near human habitats. Larger individuals, especially males, have a tendency to be found in the upper part of tall trees.

Use

In the Lao market, it was sold at 10,000kip for three. It is served roasted or put in Laap. People collect it in forests near the villages.



25 Jun. 2010 Dong Makkai, Vientiane
Capital, Laos



14 Feb. 2010 Lak8 Market, Savannakhet,
Laos

Physignathus cocincinus

Order: Squamata
Family: Agamidae

LA	<u>Ka thang</u>	
KH		
TH		
VN	<u>Rong dat; Nhung cat</u>	<u>Rồng đất; Nhung cát</u>
JP	<u>Indo-China-water-dragon</u>	<u>インドシナウォータードラゴン</u>

Remarks

Basic Information

It is distributed in South China to Indo-China. The total length is 60 to 90cm. It is often found in lowland forests. It is diurnal and mostly lives on the ground, but is able to climb trees. The body is green and can adapt to surrounding colors to some degree.

Use

The team witnessed its use as food in Laos. It is often served roasted or put in Laap.



18 Sep. 2011 Sainyabuli Market,
Sainyabuli, Laos



18 Sep. 2011 Sainyabuli Market,
Sainyabuli, Laos

Varanus nebulosus

Order: Squamata
Family: Varanidae

LA	<u>Laen</u>	
KH	<u>Trokuot</u>	
TH		
VN	<u>Kỳ đà vân; Kỳ đà hoa</u>	<u>Kỳ đà vân; Kỳ đà hoa</u>
JP	<u>Higashi-bengal-ootokage</u>	<u>ヒガシベンガルオオトカゲ</u>

Remarks

Basic Information

It is distributed in Southwest area of Guangdong Province, Guangxi Zhuang Autonomous Region, South Yunnan Province in China, Vietnam, Laos, Cambodia, Thailand, East and South Myanmar, Malay Peninsula, Sumatra Island, Java Island and Lesser Sunda Islands in Indonesia. It is a large lizard with the full body length of about 140cm (about 54cm snout to vent length). It is found in small patches of a forest and green areas in suburbs. It is known for the large consumption of small catches. Most of its diet consists of invertebrates such as beetles, grasshoppers, ants, scorpions, centipedes, and snails.



27 May 2009 Tha Heua Market, Louang Phrabang, Laos



12 Sep. 2011 Ton Vieng Kham, Bolikhamsai, Laos

Use

In Laos and Cambodia, adults and eggs are consumed. It is especially preferred in markets around Luang Prabang in Laos where one adult was sold at 45,000kip/kg. Live adults are sold with its legs tied on its back to avoid any movement. Adults are served grilled or put in soups or in Laap. In Laos, first it is chopped with the bone-in, then seasoned with garlic, chili, lemongrass, fish sauce, salt and MSG and grilled. Eggs are boiled to eat. It is collected using a type of a tie up trap.

Colubridae spp.

Order: Squamata

Family: Colubridae

LA	<u>Ngu</u>	
KH	<u>Poah</u>	
TH		
VN	<u>Ran bong sung</u>	<u>Rắn bông súng</u>
JP	<u>Nami-hebi</u>	<u>ナミヘビ科の複数種</u>
	<u>(Photo:Shina-mizuhebi)</u>	

Remarks

Use

Snakes are not heavily sought after as food, but they are consumed in many countries. It is served roasted and put in Laap or soup. Sometimes it is preserved in alcohol, and this is often sold as a souvenir around Luang Prabang in Laos. In Cambodia, small snakes on a stake were sold at two for One US dollar. It is assumed that snakes are consumed at homes, but a detail on how it is done was not clear in this study.



Enhydris chinensis
29 May 2009 Norng Bon, Vientiane
Capital, Laos



06 Nov. 2008 Neak Loeung, Kandal, Cambodia



09 Nov. 2008 Tha Heua Market, Louang Phrabang,
Laos



Enhydris plumbea

25 Aug. 2010 Phonekeo, Vientiane Province, Laos



Amphiesma stolatum
27 Jul. 2008 Vientiane Capital, Laos



Dendrelaphis pictus
07 Aug. 2010 Phonekeo, Vientiane Province,
Laos



28 May 2009 Xang Hai, Louang Phrabang,
Laos



Enhydris plumbea
28 May 2009 Xang Hai, Louang Phrabang,
Laos



Ahaetulla nasuta
28 May 2009 Xang Hai, Louang Phrabang,
Laos



Ahaetulla prasina
28 May 2009 Xang Hai, Louang Phrabang,
Laos



Boiga multomaculata
28 May 2009 Xang Hai, Louang Phrabang,
Laos



Chrysopelea ornata
28 May 2009 Xang Hai, Louang Phrabang,
Laos



Dryocalamus davisonii
28 May 2009 Xang Hai, Louang Phrabang,
Laos



Oligodon purpurascens
28 May 2009 Xang Hai, Louang Phrabang,
Laos



Oligodon sp.
28 May 2009 Xang Hai, Louang Phrabang,
Laos



Xenochrophis piscator
28 May 2009 Xang Hai, Louang Phrabang,
Laos

Duttaphrynus melanostictus

Order: Anura
Family: Bufonidae

LA	<u>Khan khak</u>	
KH	<u>King kuok</u>	
TH		
VN	<u>Cóc nhà</u>	<u>Cóc nhà</u>
JP	<u>Heriguro-hikigaeru</u>	<u>ヘリグロヒキガエル</u>

Remarks

Basic Information

It is distributed in China, Pakistan in South Asia, Indo-China, Malaysia, Borneo Island, and Indonesia in Southeast Asia. The snout-vent length is 60 to 110mm. There is a black bordered ridge from the top of its snout to the top of its eye. Its color can range from grey, reddish brown, to yellow. Eggs are clustered in a long string and larvae measures 20mm. It is found in disturbed areas such as a cultivated field and also in villages and cities.

Use

They are not commonly circulated in markets; however, in North Thailand, Laos and Cambodia, they are consumed by skinning them and either fried or roasted. In Cambodia, they were highly recommended as tasty frogs.



17 Sep. 2007 Wat Preah Yesu, Siem Reap, Cambodia



11 Feb. 2010 Mouth, Louang Phrabang, Laos

Fejervarya limnocharis

Order: Anura
Family: Ranidae

LA	<u>Khiat moo</u>	
KH	<u>Kongkaeb ai(ch)ko, Ai(ch)ko</u>	
TH		
VN	<u>Nhai ngoe</u>	<u>Nhái; Ngóe</u>
JP	<u>Numa-gaeru</u>	<u>ヌマガエル</u>

Remarks

Basic Information

It is widely distributed in tropical Asia from Pakistan to Japan. The snout-vent length is 32 to 58mm. It has a narrow head and a slightly pointed snout. There is a low ridge on the back. Some individuals have a whitish line on the back. The abdomen is white. It is found in secondary natural growth such as a paddy field, as well as near villages. It is commonly sighted with abundance. Mating occurs during the rain season. It lays eggs in paddies and other temporary wetlands, and metamorphosis occurs in one to two months.

Use

This is the most popular species of the small edible frogs category in Indo-China. Adults are sold in markets. It is often served by frying with the bone-in after it is gutted, or used in soups and sir-fried dishes. It is found easily around villages in abundance, so people often collect it for consumption. Collection often takes place at night. People use their bare hands or hand nets for collecting frogs. One Lao collector told the team that he can sell the frog at a price of 25,000 kip/kg at market (Vientiane Province).



28 Jun. 2010 Phonekeo, Vientiane Province, Laos



22 Jul. 2008 Nong Chanh Market, Vientiane Capital, Laos

Hoplobatrachus rugulosus

Order: Anura
Family: Ranidae

LA	<u>Kob na</u>	
KH	<u>Kongkaep ouk</u>	
TH		
VN	<u>Ech dong</u>	<u>Ếch đồng</u>
JP	<u>Babatorafu-gaeru</u>	<u>ババトラフガエル</u>
Remarks		

Basic Information

It is distributed in Indo-China, China and Taiwan. It is also transplanted in Malaysia and the Philippines. It resembles *Fejervarya limnocharis*, but this species is larger. Larva of this species can be distinguished from the same size of larva of *Fejervarya limnocharis* by its more developed webbing on its hind legs. It has a white abdomen and mottled jaw. It is found near water in paddies, marshes, flood plains and lakes.



23 Jul. 2008 Dong Makkai, Vientiane Capital, Laos



12 Sep. 2007 Vientiane Capital, Laos

Use

This is the most popular edible frogs in Indo-China, and is sold at most of the markets. It is served by gutting then fried, roasted, or boiled. Sometimes it is stuffed with herbs and ground meat and fried, or used as the main ingredient of chili paste. Dried frogs are roasted or fried to eat. Because of its large size, it is very filling. Farm-raising is popular and breeders of this species are distributed in Thailand and Laos. In markets, many farm-raised frogs are sold, but in general, wild caught ones are said to taste better. Thus, the wild collection is also popular. Collection methods are by hand, fixed fishing traps, and basket traps. Collecting by hand is done at night. Hand-held nets, harpoons, and spearguns are also used for collection. In Laos, a type of bamboo fish trap called Bet Kob is used. When 30 baits (earthworms) are attached to a Bet Kob and left near the water overnight, 10 to 15 frogs can be collected the next day. Another type of trap is Toun Kob, which is a bamboo basket. A piece of fish is left in the basket near the water overnight. 20 of those basket traps will yield 1 to 2kg of frogs. These traps are used more often during October through February. People say Bet Kob is more efficient. Other than those consumed at home, collected frogs are sold to markets at a price of 40,000 kip/kg. During the research, *H. chinensis* of same genus is confirmed.



23 Jul. 2008 Dong Makkai, Vientiane Capital, Laos



27 Jun. 2010 Phonekeo, Vientiane Province, Laos



22 Jul. 2008 Nong Chanh Market, Vientiane Capital, Laos



12 Sep. 2007 Thong Khan Kham Market, Vientiane Capital, Laos



28 Jul. 2010 Dong Makkai, Vientiane Capital, Laos



30 Jun. 2010 Had Saun, Vientiane Capital, Laos



23 Jul. 2008 Dong Makkai, Vientiane Capital, Laos



23 Jul. 2008 Dong Makkai, Vientiane Capital, Laos



(Toum Kob)
03 Sep. 2010 Na Pak, Vientiane Capital, Laos



03 Sep. 2010 Na Pak,
Vientiane Capital, Laos



03 Sep. 2010 Na Pak,
Vientiane Capital, Laos



03 Sep. 2010 Na Pak,
Vientiane Capital, Laos



12 Nov. 2008 Sivilay,
Vientiane Capital, Laos



Hoplobatrachus chinensis
04 Nov. 2008 Tropeang Thom Khang Cheung,
Takeo, Cambodia

Hylarana erythraea

Order: Anura
Family: Ranidae

LA	<u>Khiat tapath, Khiat lang</u>	
	<u>khiew</u>	
KH	<u>Kanchang cheik</u>	
TH		
VN	<u>Chang hiu xanh</u>	<u>Chàng hiu xanh</u>
JP	<u>Asia-midori-gaeru</u>	<u>アジアミドリガエル</u>

Remarks

Basic Information

It is distributed in Southeast Asia. Its snout-vent length is 32 to 75mm. It has a green dorsal side with a distinctive black lined white band. Some individuals have a brown back. Its abdomen is white and the hind legs are very long. Males are considerably smaller than females. It is widely found in paddy fields, villages, farmlands and forests, especially in disturbed lands. Mating occurs throughout the year, and eggs are laid in shallow stagnant water.

Use

It is rarely seen in markets, but commonly eaten at homes. It is served fried, roasted, or in soup. Sometimes it is dried. In Cambodia, skewed or tempura (deep fried) frogs are sold at stalls. The team confirmed several species of genus *Hylarana*, and all of them were used in the same manner.



31 May 2009 Na Ngom, Vientiane
Capital, Laos



15 Aug. 2007 Kampong Phluk, Siem
Reap, Cambodia

Hylarana guentheri

Order: Anura
Family: Ranidae

LA	<u>Khiat makleuang</u>	
KH	<u>Kanchang cheik dai</u>	
TH		
VN	<u>Chau chang</u>	<u>Chẫu chàng</u>
JP		

Remarks

Basic Information

It is distributed in China and Taiwan through Vietnam. The snout-vent length is 63 to 76mm. The male is smaller than the female. It has a brown body with a white abdomen.

Its hind legs and toes are long. It is found in paddy fields, marshes and ponds.



Hylarana guentheri
22 Jul. 2008 Dong Makkai Market,
Vientiane Capital, Laos

Hylarana macrodactyla

Order: Anura
Family: Ranidae

LA	<u>Khiat tapath, Khiat lang saek</u>	
KH	<u>Kanchang cheik</u>	
TH		
VN	<u>Chang hui</u>	<u>Chàng hui</u>
JP	<u>Yubinaga-tonosama-gaeru</u>	<u>ユビナガトノサマガエル</u>

Remarks

Basic Information

It is distributed in Southern China to Indo-China and Malay Peninsula. It has a slender body, even the snout is narrow. Its hind legs and toes are long. It lives in lakes, flood plains and paddy fields.



25 Jul. 2008 Naphang, Vientiane
Province, Laos

Hylarana taipehensis

Order: Anura
Family: Ranidae

LA	<u>Khiat tapath, Khiat lang saek</u>	
KH	<u>Kanchang cheik</u>	
TH		
VN	<u>Chang hieu dai bac</u>	<u>Chàng hieu Đài Bắc</u>
JP		

Remarks

Basic Information

It is distributed throughout Taiwan, China to Indo-China Peninsula. There are some records from Bangladesh.

It has a slender body and very long hind legs. Its appearance resembles *Hylarana macrodactyla*. It lives in paddy fields, flood plains, marshes and forest ponds.



Hylarana taipehensis
29 May 2009 Norng Bon, Vientiane
Capital, Laos

Hylarana nigrovittata

Order: Anura
Family: Ranidae

LA	<u>Khiat lueong, Khiat ta oad</u>	
KH	<u>Kanchang cheik</u>	
TH		
VN	<u>Ech suoi</u>	<u>Ếch suối</u>
JP		

Remarks

Basic Information

It is distributed in China through Indo-China Peninsula and Malay Peninsula. There are records from Sumatra and India. It is found in slow streams of the evergreen forests.



Hylarana nigrovittata
22 Nov. 2009 Mueng Song Market,
Vientiane Province, Laos

Limnonectes kuhlii

Order: Anura
Family: Ranidae

LA	<u>Khiat khakham, Kob hin,</u>	
	<u>Kob houay</u>	
KH	<u>Kongkaep</u>	
TH		
VN	<u>Ech tron</u>	<u>Ếch tron</u>
JP	<u>Kuhl-gaeru</u>	<u>クールガエル</u>

Remarks

Basic Information

It is distributed in Southeast Asia. There are some records from India as well. Its snout-vent length is 44 to 67mm. It has a broad head and torso with a stocky body. The male has a broader head than the female. Its hind toes have webbing but not the front toes. It lives in streams of the higher mountain forests. It is nocturnal and tends not to stay out of water for a long period.

Use

It is occasionally found in markets. It is fried, roasted, dried or put in soups to be served. In Laos, it is prized for its good taste, and traded with high value. It is collected by hand, using a light during the night in the fringe of a river forest. It is often found in markets in nearby mountains.



22 Nov. 2009 Vang Vieng Market,
Vientiane Province, Laos



22 Nov. 2009 Vang Vieng Market,
Vientiane Province, Laos

Odorrana sp. (cf. livida)

Order: Anura
Family: Ranidae

LA	<u>Khiat leuang, Khiat khiew,</u>	
	<u>Khiat tapath</u>	
KH	<u>Kanchang cheik</u>	
TH		
VN	<u>Ech nui xanh</u>	<u>Ếch núi xanh</u>
JP		

Remarks

Use

It is found in a market in Vang Vieng in Laos. It is fried, roasted, steamed, dried or put in soup to be eaten. It is collected by hand, using a light at night nearby rivers in forests.



Odorrana sp.
22 Nov. 2009 Vang Vieng Market,
Vientiane Province, Laos

Sylvirana lateralis

Order: Anura
Family: Ranidae

LA	<u>Khiat tapath</u>	
KH	<u>Kanchang cheik</u>	
TH		
VN		
JP		

Remarks

Use

It is fried, roasted, dried or put in soup to be served.



Sylvirana lateralis
25 May 2009 Vang Vieng Market,
Vientiane Province, Laos

Occidozyga lima

Order: Anura
Family: Ranidae

LA	<u>Khiat taath, Khiat tana,</u>	
	<u>Khiat sa</u>	
KH	<u>Kounk'at</u>	
TH		
VN	<u>Cocnuoc lima</u>	<u>Cóc nước lima</u>
JP	<u>Asia-uki-gaeru</u>	<u>アジアウキガエル</u>

Remarks

Basic Information

It is distributed in Indo-China Peninsula to Bengali area in India, and Malay Peninsula to Java Island. The snout-vent length is 25 to 35mm. The body is brown to a green color. Its eyes protrude upward. The webbings on the legs are well developed. Larvae have a long tail which has partially broad areas. Its habitat is near the water such as paddy fields, marshes, waterways, ponds and lakes, and found in abundance. It is often seen floating in water with only its eyes above the water surface. It lives along water most of the time, and eats small aquatic insects.

Use

It is consumed often but due to its small size, it is rarely sold on its own; rather, mixed with larvae of water beetles, larvae of dragonflies, shrimps, and tadpoles. It is fried, roasted, steamed or put in soup to be served. In Laos, it is mixed with other aquatic insects/animals and wrapped in banana leaves to be steamed. Other than food, it is used as bait of long line fishing to catch carnivorous fish. It is also circulated as bait for ornamental carnivorous fish. It is collected by using small nets, colanders, or seine nets.



23 Jul. 2008 Dong Makkai, Vientiane
Capital, Laos



26 Jun. 2010 Vang Vieng Market,
Vientiane Province, Laos



29 May 2009 Norng Yao,
Vientiane Capital, Laos



16 Sep. 2007 Arak Svay,
Siem Reap, Cambodia



12 Sep. 2007 Phoxai,
Vientiane Capital, Laos



28 Jun. 2010 Phone Ngeun,
Vientiane Province, Laos



01 Aug. 2010 Napuheuy,
Vientiane Province, Laos



10 Jun. 2007 New Nong Neow Market,
Vientiane Capital, Laos



15 Sep. 2007 Kampong Phluk,
Siem Reap, Cambodia



28 Jun. 2010 Houay Yae,
Vientiane Province, Laos

Polypedates leucomystax

Order: Anura
Family: Rhacophoridae

LA	<u>Khiat tapath khayao, Khiat tapad</u>	
KH	<u>Kongkaeb ai(ch)ko, Ai(ch)ko</u>	
TH		
VN	<u>Ech cay mep trang</u>	<u>Ếch cây mép trắng</u>
JP	<u>Shiroago-gaeru</u>	<u>シロアゴガエル</u>

Remarks

Basic Information

It is distributed in South and Southeast Asia from Nepal to Indonesia and the Philippines. Its snout-vent length is 37 to 75mm. It has a slender body with long front and hind legs. Toes are long with developed sucker-like adhesive disks on the tips. Its upper jaw is white. There are 4 dark lines on the back, but sometimes they are unclear for some individuals. The larvae have eyes on the side of their head and the distance between each eye is wide. The tail of the larvae is wide in the middle. Its habitat is consisted of various environments from villages in the lowland, plowed land, fringe forest and even in urban areas. It is nocturnal, often found in trees, but can be found on the ground or in grasslands. Eggs are covered with cream-colored foam.

Each foam forms a lump consisted of several hundred eggs, and are laid near water, in paddles, or at the edge of water tanks.

Use

It is mainly eaten by frying. It is collected by hand using a light at night. A researcher followed a collector at Don Makai and Khun Neua villages in Laos and observed the collection. He could easily catch the frogs because many were on branches of small trees in the villages and near marshes. *Megacephalus* in the same genus was also found in markets.



29 Jul. 2010 Pakkagnoung, Vientiane Province, Laos



24 May 2009 Vang Vieng Market, Vientiane Province, Laos



29 Jul. 2010 Dong,
Vientiane Province, Laos



16 Sep. 2007 Arak Svay,
Siem Reap, Cambodia



28 Jun. 2010 Phone Ngeun,
Vientiane Province, Laos



27 Jul. 2008 Nathone,
Vientiane Capital, Laos



28 Jul. 2010 Dong Makkai,
Vientiane Capital, Laos



Polypedates megacephalus
23 May 2009 Vang Vieng Market, Vientiane
Province, Laos

Kaloula pulchra

Order: Anura
Family: Microhylidae

LA	<u>Eung yang</u>	
KH	<u>Hing</u>	
TH		
VN	<u>Enh uong</u>	<u>Enh uong</u>
JP	<u>Asia-jimuguri-gaeru</u>	<u>アジアジムグリガエル</u>

Remarks

Basic Information

It is distributed throughout tropical Asia from India to China. Its snout-vent length is 54 to 75mm. It has a stout and a round body with a small head and short legs. Toes are slender and long, with their tips swelled. Its hind legs have webbings. The skin is smooth and brown in color. There is a light brown line from the snout to its body. The abdomen is white and covered with a pale mottle. Its lower jaw is dark. It puffs up when threatened. It usually habituates in forest floors of flat areas. It adapts well to the ever-changing

12 Sep. 2007 Hou Kua Market,
Vientiane Capital, Laos



27 Jun. 2010 Vang Vieng Market,
Vientiane Province, Laos

environment by human activities, thus often found in towns and paddy fields. It is nocturnal and hides under fallen leaves or rocks during the daytime. Its diet is mainly ants and other small insects. Eggs are laid in temporally stagnant water such as puddles.

Use

Roasting and putting in soups are popular ways to serve it. It has a reputation for its taste in Laos and Cambodia. It is collected around paddy fields by hand with a light at night. It is said that collection is more productive at paddies which are closer to forests. Many adults are found in June and July when it is after the beginning of the rain season. It is harder to find them in other times of the year. Its Cambodian name, “Hing”, comes from the sound of the frogs call.



12 Sep. 2007 Nong Chanh Market,
Vientiane Capital, Laos



12 Sep. 2007 Nong Chanh Market,
Vientiane Capital, Laos



27 May 2009 Nakha, Louang Phrabang, Laos



27 May 2009 Nakha, Louang Phrabang, Laos



27 May 2009 Nakha, Louang Phrabang, Laos

Microhyla berdmorei

Order: Anura
Family: Microhylidae

LA	<u>Khane khak, Khiat kha</u>	
	<u>kham</u>	
KH	<u>Kongkaep koun kromom</u>	
TH		
VN	<u>Nhai bau</u>	<u>Nhái bầu</u>
JP	<u>Oohime-amagaeru</u>	<u>オオヒメアマガエル</u>
Remarks		

Basic Information

It is distributed in Northeastern India, Bangladesh, Southern China through Indo-China Peninsula, Malay Peninsula and Sumatra Island and Borneo Island. The snout-vent length is 24 to 32mm. There are warts on its back. It has long hind legs and toes. It is found in primary forests in a lowland but sometimes found in secondary forests. It is nocturnal.

Use

It is fried, roasted, dried or put in soups to be served. In Lao market, it was found at 1,000kip for 4 frogs. Other species of Narrow-mouthed frogs are used in the same way. During the research, use of *Microhyla fissipes* and *Kalophrynus interlineatus* were confirmed, and there are some other species that are not confirmed. It is collected at night by hand. In Champasak province in Laos, Narrow-mouthed frogs are collected during the dry period. Adult frogs gather at areas where fallen leaves are accumulated, so it is easy to find and catch them.



19 Nov. 2009 Dong Makkai Market,
Vientiane Capital, Laos



22 Nov. 2009 Mueng Song Market,
Vientiane Province, Laos



19 Nov. 2009 Dong Makkai Market,
Vientiane Capital, Laos



19 Nov. 2009 Dong Makkai Market,
Vientiane Capital, Laos



Microhyla fissipes
14 Feb. 2010 Seno Market, Savannakhet, Laos



20 Jan. 2013 Salao, Champasak, Laos



20 Jan. 2013 Salao, Champasak, Laos



20 Jan. 2013 Salao, Champasak, Laos



Microhyla fissipes
17 Aug. 2010 Phonekeo, Vientiane Province,
Laos



Kalophrynus interlineatus
26 Jul. 2008 Sivilay, Vientiane Capital, Laos

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Freshwater Fish

Freshwater Fish

There is wide variety of freshwater fish in Mekong River Basin, and people in the area have been utilizing it as valued protein sources for a long time. People in inland area especially depend on freshwater fish. Even today, with advanced development transportation, freshwater fish dominates the fish markets in inland area. Kinds of fish that are utilized are numerous from those caught in waterways and paddies near houses, to those caught by large scale fishing in Mekong River mainstream or Lake Tonle Sap.

In markets, there are many kinds and sizes of fish. One can find small fish with size of 1-2cm, to big fish of more than 1m. Many markets are not equipped with refrigeration, so fresh caught fish need to be sold as quickly as possible. One might worry if they could be all sold when we see huge pile of fish, but there will be a new pile the next morning. Traded products are not limited to fresh fish, but fermented products such as fish sauce, fermented fish sushi, or processed and non-perishable food such as dried and smoked fish are also available. Fermented products are especially important when understanding food culture of Mekong river basin. From their wide variety, we know that freshwater fish is deeply embedded in culture of Mekong river basin.

People use not only market-bought fish. They catch on their own to make daily meals. It is men's work to do large scale fishing with boats, but small scale fish collection in shallow waters around villages are for women and children. In the shallow waters, catches are mostly small fish and it becomes dishes for the day. Some fish are farmed, and there are company- based large scale farming, and smaller, more casual ones done by individuals by making pond in their own backyard or paddy.

In this study, we collected data on species that are commonly used and traded in markets. As for fish that are collected around villages, we went out to field to observe habitat and surrounding environment, and interviewed about collection methods. Within the data collected in markets and fields, we found some species which are typically not considered edible. For those species, we could not clearly record all the usage, but included them as data at large.



Collection Method (fishing)

There are many freshwater fish in Mekong river basin, and fishing methods vary according to seasons and type of fish. In this section, we introduce fishing methods around homes and villages.

<Fishing>

A method with a pole, string, and a hook to pull fish out of water. There are fiberglass pole in stores, but many people make their own with bamboo. Poles, strings, and hooks vary depending on what to catch. Shrimp, worms, cut piece of fish are used as baits, depending on the target. This method is used widely in waterways and rivers and lakes.



<By hand>

A method to catch fish by hand in shallow waters during dry season. Target is fish that are temporarily left in the remaining water. This is a simple method of putting hands in roots of grass or in a hole, but it works effectively as the fish cannot escape quickly with the water being so low. Medium-sized fish such as snakehead and Climbing perch can be caught with this method.

<Four-sided life net>

In this method, four corners of a square net are lifted by crossed bamboo or pipe, and the net is submerged for a period of time. A fisher catches what is in the net after he lifts it from the water. Center of the net is made to sag so that fish in the net would naturally roll toward it. The net is usually lifted on a bamboo stick. Women and children often use it. Many people use this method when water rises in rain season to catch incoming fish in overflowed areas. Size of the net varies depending on targets.



<Bamboo sieve, hand-held net>

A method using a round bamboo sieve or a net set on round or triangular bamboo frame to scoop water. Small and slow fish can be collected. Aquatic insects and shrimp are collected at the same time. It is often used in shallow and stagnant waters such as paddies and marshes. It is often used by women and children.

<Fish basket>

A method to use a cylindrical basket by putting it vertically in the water and catch the fish inside by hand. As a fisher walks around, bamboo basket is put into water like one is inserting a cane stick. Once the basket is put over a fish, the fish moves by surprise and shakes the basket. When a fisher feels the vibration, he puts his hands in the basket without lifting it, to grab the fish. It is used in marshes and shallow parts of lakes. Medium-sized fish are often caught.



<Cast net>

A method using a net to be cast over water, and it spreads in circle or oval shape to cover fish. Weights or chain are attached to the edges of the net so that the edges will touch the bottom of water. Some nets have its bottoms sewn together to make a sack so that fish in the net would be collected in that part. If the net is not sewn and flat, fishers catch fish in the net by hand after it is cast. It is used widely in rivers, marshes, and lakes and ponds. It is mainly used by men.

<Drying pond>

This method is used during dry season where people pump out water from a pond to collect fish that are left behind. When water became very low, people go into water with sieves, lift nets, or catch fish by hand. This method is often done by large groups such as teams, families, and sometimes a whole community. To do this, they need to purchase a permit from the owner of the pond, but the income surpasses the investment. It is like an annual event during dry season. The catch is very large so even it requires heavy labor, people enjoy and look forward to this like a party.



<Fish Trap>

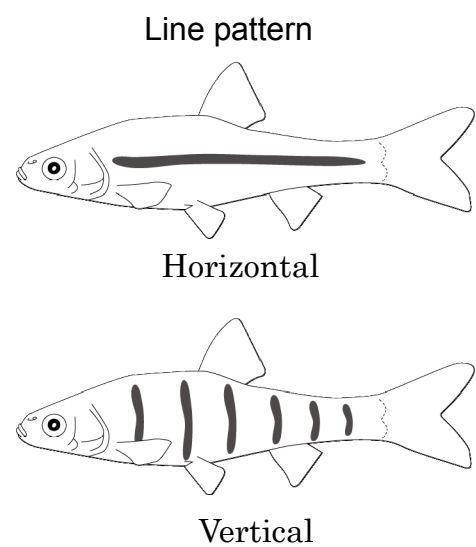
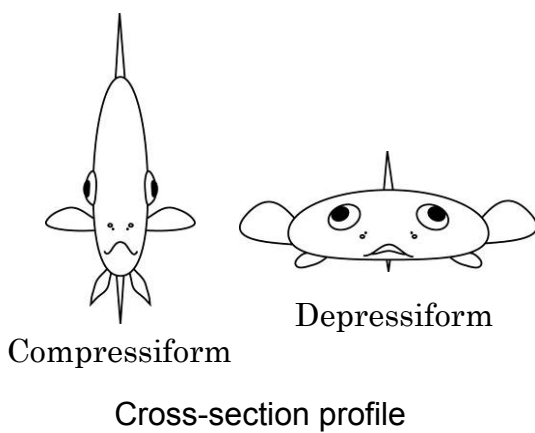
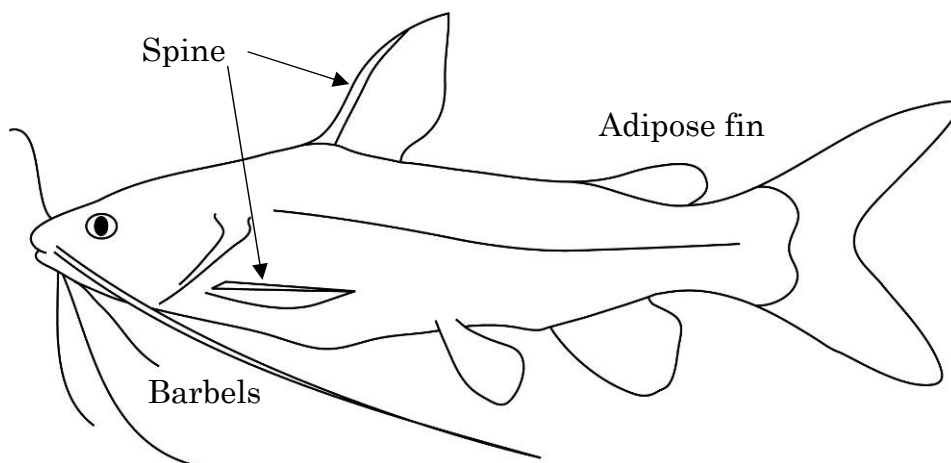
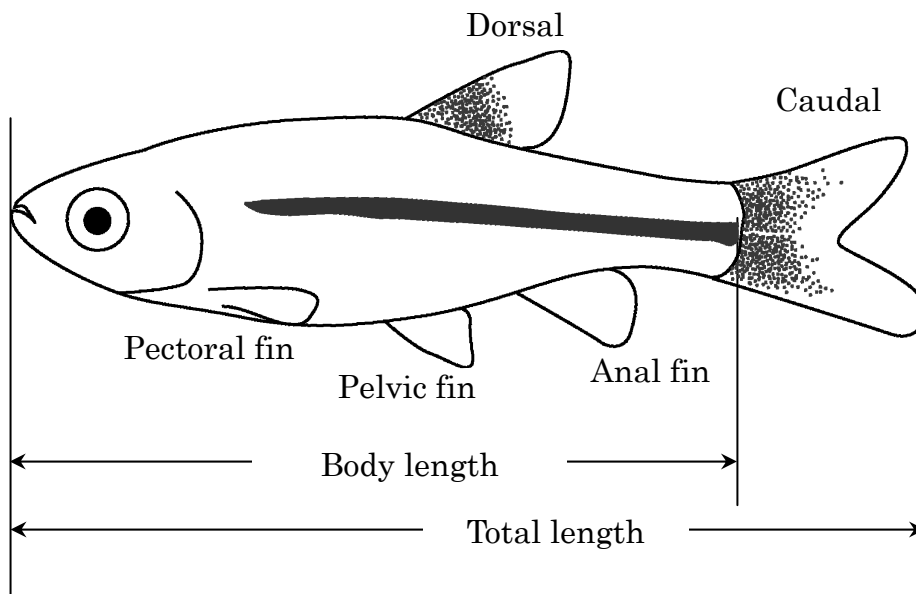
A cylindrical bamboo trap which is put in water run off or in the stream in paddies and waterways. There is a one-way valve so that a trapped fish cannot exit back. Often bait is used when it is used in stagnant waters. One can purchase this in markets and stores so anyone can easily obtain it.

<Bag net>

A bag net is used in water run off or in the stream in paddies and waterways. Fish in the net cannot escape because of falling water or water flow. Small to medium-sized fish are caught. This is used often in rain season.



Morphology of Fish



Dasyatis laosensis

Order: Rajiformes
Family: Dasyatidae

LA	Pa fa lai	
KH	Tray bobail krobai	
TH	Pla kraben, Pla ben	
VN	Ca duoi	Cá đuối
JP		
Remarks		

Basic Information

It is distributed along the Mekong River basin (Laos, Thailand, and Cambodia). Its body is flat and circular. There is a string-like tail which is longer than the body, and bears a venomous spine on the upper surface.

Use

A small number is being sold at the markets. In Louang Phrabang in Laos, it is caught often and is famous as edible fish. It is used in soup such as Tom yum, or seasoned with herbs and fish sauce to be steamed in banana leaves. Stale rays have strong ammonium odor which makes the whole market stink. It is collected from mainstream of Mekong.



07 Nov. 2008 Phoshy Market, Louang Phrabang, Laos



30 Jun. 2010 Dong Makkai Market, Vientiane Capital, Laos

Notopterus notopterus

Order: Osteoglossiformes
Family: Notopteridae

LA	Pa tong dang, Pa tong na	
KH	Tray slaat	
TH	Pla chalet (salat), Pla tong	
VN	Ca that lat	Cá thát lát
JP	Naginata-namazu	ナギナタナマズ

Remarks

Basic Information

It is distributed from India to Southeast Asia. *Notopteridae* are deep-bodied, and laterally compressed. Its anal fin is long and is fused with the caudal fin. This species is the smallest in the *Notopteridae* family, and its length is 50 to 60cm at the most, but it is usually much smaller. Its color is bronze to silver gray without distinctive patterns; however, the juvenile has stripes. It lives in lakes, flood plains, waterways, and ponds. It is active from evening to the night, and feeds on insects and other fish.



25 Jul 2008 Bo, Vientiane Province, Laos



30 May 2009 Thong Khan Kham Market, Vientiane Capital, Laos

Use

It is eaten by putting it in Laap, soup, meat balls, fried fish cakes, or being smoked. Its fried fish cake is made by scraping the meat off from the skin with a spoon, and rolling it into a ball, and deep frying it. In Laos and northeast Thailand, it is also used as an ingredient for Padek (fish sauce). In general, *Notopteridae* fish is used as common ingredients for Laap and fish paste. It is caught by cast net, gill net, trap or weir. Other than *Notopterus notopterus* within the *Notopteridae*, culinary use of *Chitala blanci* and *Chitala ornate* are confirmed. These two species are larger than *Notopterus notopterus*, but they are used in the same manner.



25 Jul. 2008 Bo, Vientiane Province, Laos



Notopterus notopterus *Chitala blanci*
12 Sep. 2007 Hou Kua Market, Vientiane
Capital, Laos



28 Nov. 2010 Vientiane Capital, Laos



28 Nov. 2010 Vientiane Capital, Laos

Chitala blanci

Order: Osteoglossiformes

Family: Notopteridae

LA	<u>Pa tong kay</u>	
KH	<u>Tray ka-ev, Tray k'ai</u>	
TH	<u>Pla tong lai</u>	
VN		
JP		

Remarks

Basic Information

Its length reaches almost 1m long, but 60 to 70cm individuals are popularly sold in the markets. There is a black spot at the base of its pectoral fin.

Black spots on the body, caudal fin and anal fin are connected and form slanted line patterns.



22 Jun. 2008 Nong Chanh Market,
Vientiane Capital, Laos

Chitala ornata

Order: Osteoglossiformes

Family: Notopteridae

LA	<u>Pa tong dao</u>	
KH	<u>Tray kray</u>	
TH	<u>Pla krai, Pla hang pan, Pla tong lao, Pla tong grai</u>	
VN	<u>Ca that lat com</u>	<u>Cá thát lát còm</u>
JP		

Remarks

Basic Information

Its maximum length reaches 1m, but 40 to 60cm individuals are usually sold in the market. A distinctive line of 5 to 10 large eye-like marking is found along the anal fin.



30 May 2009 Dong Makkai Market,
Vientiane Capital, Laos

Amblypharyngodon chulabhornae

Order: Cypriniformes
Family: Cyprinidae

LA	<u>Pa sill, Pa taeb kaew</u>	
KH	<u>Tray chongwa srae</u>	
TH	<u>Pla siew kaew, Pla dork gaew, Pla chaw pha</u>	
VN	<u>Ca trao</u>	<u>Cá tráo</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, and Cambodia) and Chao Phraya delta. Its length is 3.8cm, and the body is laterally compressed. It is golden color and has no barbel. It lives in slow streams such as waterways or rice paddies.

Use

It is served boiled or steamed. In Laos, it is also used as an ingredient for fish sauce (Padaek). It is usually sold in a market as a mix with other small fish. It is caught by a hand-held lift net or cast net. It is a familiar fish often seen around paddy fields.



16 Sep. 2007 Arak Svay, Siem Reap,
Cambodia



30 Jun. 2010 Khun Neua, Vientiane
Province, Laos

Bangana behri

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa pia</u>	
KH	<u>Tray pawa mok pii</u>	
TH	<u>Pla wa na nor</u>	
VN		
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, and Cambodia). Its length is 45cm. Its mouth has a dent which gives the fish unique appearance.

It is herbivorous and feeds on phytoplankton and algae.



16 Feb. 2010 Lak2 Market, Champasak, Laos

Use

It is served fried, roasted, in soup, or in salad. It is caught by draw net, gill net, or cast net.



16 Feb.2010 Lak2 Market, Champasak, Laos



16 Feb.2010 Lak2 Market, Champasak, Laos

Barbonymus altus

Order: Cypriniformes
Family: Cyprinidae

LA	<u>Pa viene fai</u>	
KH	<u>Tray kahae krohom</u>	
TH	<u>Pla kapien tong, Pla haang deang, Pla e jae</u>	
VN	<u>Ca he vang</u>	<u>Cá he vàng</u>
JP		
Remarks		

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia and Vietnam) and Chao Phraya delta. It grows up to 16cm and has a deep-bodied shape. Its pectoral fin is tinged with yellow. The pelvic fin, anal fin, and caudal fin are red, and the dorsal fin is black. It lives in rivers, and when the water level increases, it scatters into the flood plains. Many of its local names are based on its red fin.

Use

It is served fried, roasted or in soup. Juveniles are used as an ingredient for fish sauce. It is caught by draw net, fixed net, or trap. In Vietnam, it is farm raised.



25 Nov. 2009 Hou Kua Market, Vientiane Capital, Laos



26 May 2009 Vang Vieng Market, Vientiane Province, Laos

Barbonymus gonionotus

Order: Cypriniformes
Family: Cyprinidae

LA	<u>Pa pak</u>	
KH	<u>Tray chhpin prak</u>	
TH	<u>Pla tapien khao, Pla pak na</u>	
VN	<u>Ca me vinh</u>	<u>Cá mè vinh</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, and Vietnam) and Chao Phraya delta, Malay Peninsula, Sumatra Island, and Java Island. It is 30cm long. It is deep-bodied, but not so much than *Barbonymus altus*. Its caudal and dorsal fin are gray colored while pectoral and anal fin are pale yellow. It lives in rivers, brooks and flood plains.

Use

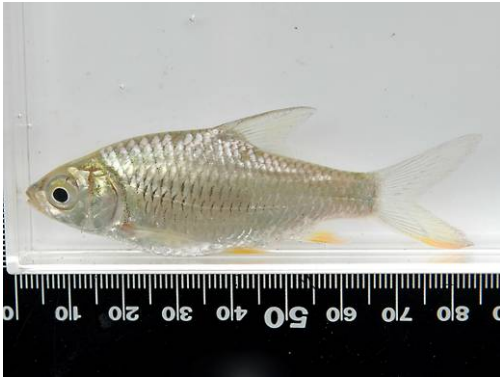
It is served fried, roasted, dried, in soup or Laap. It is also used in fermented sushi. Juvenile is used as an ingredient for fish sauce. It is caught by draw net, gill net, fixed net, cast net, hand-held lift net, or trap. It is also raised in extensive farming.



22 Jul. 2008 Naxaikang, Vientiane
Capital, Laos



Som Pa
15 Feb.2010 Savan Say Market,
Savannakhet, Laos



13 Sep. 2007 Phoxai, Vientiane Capital, Laos



04 Nov.2008 Phnom Penh, Cambodia



20 Feb.2010 Nam Lo,
Bolikhamsai, Laos



12 Sep. 2007 Nong Nieng,
Vientiane Capital, Laos



22 Jun. 2008 Naxaikang, Vientiane, Laos



13 Sep. 2007 Phoxai, Vientiane, Laos



13 Sep. 2007 Phoxai, Vientiane Capital, Laos



13 Sep. 2007 Phoxai, Vientiane Capital, Laos

Cirrhinus ornatipinnis

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa kaeng</u>	
KH	<u>Tray riel (ompal)</u>	
TH	<u>Pla soi peek daeng</u>	
VN		
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, and Cambodia). It is about 9cm long. Its pectoral, pelvic, and anal fin are colored in orange.



22 Jul. 2008 Phangheng, Vientiane Capital, Laos

Use

It is served fried, roasted, boiled, dried, or in soup. It is also used as an ingredient for fish sauce. Other *Cirrhinus* fish are used in the same way. Large individuals are used in Laap. It is caught by draw net, cast net, gill net, fixed net, and trap. *C. cirrhosus* is being cultivated.



Cirrhinus ornatipinnis

11 Nov. 2008 Thong Khan Kham Market, Vientiane Capital, Laos



Cirrhinus cirrhosus

11 Nov. 2008 Thong Khan Kham Market, Vientiane Capital, Laos



Cirrhinus cirrhosus

20 Feb. 2010 Nam Lo, Bolikhamsai, Laos



Cirrhinus cirrhosus

25 Nov. 2009 Hou Kua Market, Vientiane Capital, Laos



Cirrhinus molitorella

22 Jul. 2008 Thong Khan Kham Market, Vientiane
Capital, Laos



Cirrhinus siamensis

24 Jul. 2008 Khun Neua, Vientiane Province, Laos

Cosmochilus harmandi

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa pak ban</u>	
KH	<u>Tray kompol bay</u>	
TH	<u>Pla nam lang, Pla takak, Pla dog jok</u>	
VN	<u>Ca duong bay</u>	<u>Cá đuông bay</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, and Vietnam) and Chao Phraya delta. Its length is 60cm, and the body is blue-tinged silver.

Its lips are covered by papillae, and the dorsal ray is serrated. It lives in rivers during the dry season and moves to the floodplains during rain season.

Use

It is served roasted, in soup, or Laap. It is also used in fish sauce and fermented sushi. It is caught by draw net, fill net, fixed net or trap.



07 Nov. 2008 Phoshy Market, Louang
Phrabang, Laos

Cyclocheilichthys enoplos

Order: Cypriniformes
Family: Cyprinidae

LA	<u>Pa chok houa liam</u>	
KH	<u>Tray ch'kaok</u>	
TH	<u>Pla jok, Pla jork</u>	
VN	<u>Ca coc</u>	<u>Cá cóc</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, and Vietnam), Chao Phraya delta, Malaysia, and Indonesia. Its length is 55cm, and it has a long dorsal ray.

Use

It is served fried, roasted, cooked in a pot or in Laap. It is also used in fish sauce (Padaek or Prahok) and fermented sushi. Other fish in genus *Cyclocheilichthys* are used in the same way. It is caught by draw net, cast net, fixed net, and trap.



18 Sep. 2007 Old Market, Siem Reap, Cambodia



19 Nov. 2009 Vientiane Capital, Laos



15 May 2009 Dong Makkai Market, Vientiane Capital, Laos



Cyclocheilichthys sp.
09 Jan. 2011 Vientiane Capital, Laos



Cyclocheilichthys repasson
22 Jun. 2008 Nong Chanh Market, Vientiane Capital, Laos



Cyclocheilichthys repasson
02 Aug. 2010 Nakhouy, Vientiane Capital, Laos



Cyclocheilichthys repasson
02 Aug. 2010 Nakhouy, Vientiane Capital, Laos



Cyclocheilichthys armatus
30 May 2009 Vientiane Capital, Laos



Cyclocheilichthys apogon
29 Nov. 2009 Dong Makkai Market, Vientiane Capital, Laos



Cyclocheilichthys repasson
25 Jul. 2008 Bo, Vientiane Province, Laos

Cyprinus carpio

Order: Cypriniformes

Family: Cyprinidae

LA	Pa nai	
KH	Tray kap samain, Tray srok chan	
TH	Pla nai	
VN		
JP	koi	コイ
Remarks		



24 Oct. 2009 Phonekeo, Vientiane Province, Laos

Basic Information

It originates in Eurasia and is introduced to various parts of the world including Indo-China Peninsula. Its length is 80cm and has 2 pairs of barbels.

Base of its dorsal fin is long, and the pectoral fin is located in lower part of the body. It is omnivorous and feeds on shells, sludge worm, and aquatic plants. It sucks in the mud and sand which contain the food, by stretching its mouth.

Use

It is served roasted, steamed, in soup or Laap. It is caught by draw net or gill net. Its farming is also very popular.



24 Oct. 2009 Phonekeo, Vientiane Province, Laos



08 Nov. 2008 Tha Heua Market, Louang Phrabang, Laos



May.2009 Vientiane Capital, Laos

Esomus metallicus

Order: Cypriniformes
Family: Cyprinidae

LA	Pa sill nouad	
KH	Tray chongwaa phlieng (ch'nout)	
TH	Pla siew nuad yaw	
VN	Ca long tong sat	Cá long tong sắt
JP		
Remarks		

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia and Vietnam), Chao Phraya delta, Salween delta, and north of Malay Peninsula. It is 5.5cm long. There is a prominent black lateral stripe. The maxillary barbels are very long. Its pectoral fin is long, but it does not reach the ventral fin. Its close species, *E. longimanus*, has a pectoral fin that extends to the ventral fin. It lives in slow streams and stagnant water. A school of this fish is often seen in the shallow waters of marsh and paddy fields. It is also found in a temporary aquatic environment such as submerged road or grassland during the rain season.



10 Sep. 2007 Phoxai,
Vientiane Capital, Laos



Mok pa
18 Jul. 2010 Vientiane Capital, Laos

Use

It is served fried, steamed, cooked in a pot, or in soup. It is also used in fish sauce (Padaek and Prahok). It is often sold mixed with other small fish in the market. Sometimes it is sold with other aquatic insects or beetles. It is caught by draw net, hand-held lift net, hand net, fixed net, and trap. Since its habitat is in the water near where people live, it is frequently collected by individuals for domestic consumption; therefore, it is used by people more frequently than one can assume by the amount traded in the market. It is especially favored in farming villages as an easy catch of the day.



22 Nov. 2009 Na Kom,
Vientiane Province, Laos



17 Sep. 2010. Phonekeo,
Vientiane Province, Laos



21 Oct. 2010. Phonekeo,
Vientiane Province, Laos



02 Jul. 2010 Vientiane Capital, Laos



23 Jul. 2008 Dong Makkai,
Vientiane Capital, Laos



23 Jul. 2008 Dong Makkai,
Vientiane Capital, Laos



12 Sep. 2007 Elai, Vientiane Capital, Laos



22 Jul. 2008 Sikeud, Vientiane Capital, Laos

Hampala dispar

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa soud</u>	
KH	<u>Tray khman (so)</u>	
TH	<u>Pla kasoop, Pla sood jaum</u>	
VN	<u>Ca ngua nam</u>	<u>Cá ngựa nam</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, and Cambodia). It is 32cm long. There is a large black blotch under the dorsal fin. The barbels are shorter than the eye width. Juveniles resemble *Hampala macrolepidota*. It lives in ponds, lakes, or slow current of rivers.

Use

It is served roasted, in soup, or Laap. In Laos, it is used in fish sauce (Padaek). It is caught by draw net, hand-held lift net, cast net, gill net, fishing or trap. *H. macrolepidota* in same genus is used in the same manner.



22 Jul. 2008 Naxaikang, Vientiane
Capital, Laos



25 Oct. 2010 Vientiane Capital, Laos



02 Sep. 2010 Norng Yao,
Vientiane Capital, Laos



20 Aug. 2010 Vientiane Capital, Laos



08 Feb. 2010 Vientiane Capital, Laos



29 Jun. 2010 Dong Borng,
Vientiane Capital, Laos



29 Jun. 2010 Dong Borng,
Vientiane Capital, Laos



29 Jun. 2010 Dong Borng,
Vientiane Capital, Laos



Hampala macrolepidota
22 Jul. 2008 Nong Chanh Market, Vientiane
Capital, Laos



Hampala macrolepidota
30 May 2009 Nong Chanh Market, Vientiane
Capital, Laos

Hypophthalmichthys molitrix

Order: Cypriniformes
Family: Cyprinidae

LA	<u>Pa kethlaap</u>	
KH	<u>Tray kap so</u>	
TH	<u>Pla song</u>	
VN	<u>Ca me trang</u>	<u>Cá mè trắng</u>
JP	<u>Hakulen</u>	<u>ハクレン</u>

Remarks

Basic Information

It originates in China and eastern Siberia, but is introduced widely in the world. Its length is 70cm and is silver colored. It is deep-bodied with a large head, and the eyes are located low. It lives in rivers and lakes and ponds. It is often found swimming near the water surface.

Use

It is served roasted, steamed, in soup, and Laap. It is cultivated and commonly found in markets.



12 Sep. 2007 Hou Kua Market,
Vientiane Capital, Laos



13 Nov. 2008 Thaheua Market, Vientiane
Province, Laos

Labeo chrysophekadion

Order: Cypriniformes
Family: Cyprinidae

LA	<u>Pa pia</u>	
KH	<u>Tray k'aik</u>	
TH	<u>Pla ka, Pla e-tuu, Pla pea</u>	
VN	<u>Ca et moi</u>	<u>Cá ét moi</u>
JP		

Remarks

Basic Information

It is distributed in Southeast Asia. It is 60cm long. Juveniles have a black body, and adults are greyish to black in color. All of the fins are black. It lives in rivers, small streams, waterways, and floodplains. It is caught more frequently when river water level is higher.

Use

It is served roasted, steamed, fried, dried, smoked, salted and in soup and Laap. It is one of an important edible fish in Southeast Asia. It is caught by draw net, fill net, fixed net, and trap. Other fish in the genus *Labeo* are used in the same way. *Labeo rohita* is being cultivated.



14 Nov. 2008 Nong Chanh Market,
Vientiane Capital, Laos



20 Feb. 2010 Nam Lo, Bolikhamxai, Laos



Labeo pierrei

16 Feb. 2010 Lak2 Market, Champasak, Laos



Labeo rohita

22 Jul. 2008 Nong Chanh Market, Vientiane Capital,
Laos

Mystacoleucus marginatus

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa lang name, Pa lang kaw</u>	
KH	<u>Tray temprak</u>	
TH	<u>Pla kae yok, Pla nam lang,</u>	
	<u>Pla hang lueng</u>	
VN	<u>Ca vay xuoc</u>	<u>Cá vảy xước</u>
JP		
Remarks		



20 Aug. 2010 Vientiane Capital, Laos

Basic Information

It is distributed in Southeast Asia. It is 15cm long. There is a horizontal ray in the front of its dorsal fin.

Outer edge of the dorsal fin is lined black. The caudal fin is yellowish with black edge. Black mottles are scattered on the lateral body.

Use

It is served fried, roasted, stir-fried, in Laap. It is caught by draw net, cast net, and trap.



13 Feb. 2010 Tha Heua Market, Louang Phrabang, Laos



15 Feb. 2010 Savan Say Market, Savannakhet, Laos



Mystacoleucus lepturus

14 Feb. 2010 Phonekeo, Vientiane Province, Laos

Esomus metallicus

Order: Cypriniformes
Family: Cyprinidae

LA	Pa sill nouad	
KH	Tray chongwaa phlieng (ch'nout)	
TH	Pla siew nuad yaw	
VN	Ca long tong sat	Cá long tong sắt
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia and Vietnam), Chao Phraya delta, Salween delta, and north of Malay Peninsula. It is 5.5cm long. There is a prominent black lateral stripe. The maxillary barbels are very long. Its pectoral fin is long, but it does not reach the ventral fin. Its close species, *E. longimanus*, has a pectoral fin that extends to the ventral fin. It lives in slow streams and stagnant water. A school of this fish is often seen in the shallow waters of marsh and paddy fields. It is also found in a temporary aquatic environment such as submerged road or grassland during the rain season.



10 Sep. 2007 Phoxai,
Vientiane Capital, Laos



Mok pa
18 Jul. 2010 Vientiane Capital, Laos

Use

It is served fried, steamed, cooked in a pot, or in soup. It is also used in fish sauce (Padaek and Prahok). It is often sold mixed with other small fish in the market. Sometimes it is sold with other aquatic insects or beetles. It is caught by draw net, hand-held lift net, hand net, fixed net, and trap. Since its habitat is in the water near where people live, it is frequently collected by individuals for domestic consumption; therefore, it is used by people more frequently than one can assume by the amount traded in the market. It is especially favored in farming villages as an easy catch of the day.



22 Nov. 2009 Na Kom,
Vientiane Province, Laos



17 Sep. 2010. Phonekeo,
Vientiane Province, Laos



21 Oct. 2010. Phonekeo,
Vientiane Province, Laos



02 Jul. 2010 Vientiane Capital, Laos



23 Jul. 2008 Dong Makkai,
Vientiane Capital, Laos



23 Jul. 2008 Dong Makkai,
Vientiane Capital, Laos



12 Sep. 2007 Elai, Vientiane Capital, Laos



22 Jul. 2008 Sikeud, Vientiane Capital, Laos

Hampala dispar

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa soud</u>	
KH	<u>Tray khman (so)</u>	
TH	<u>Pla kasoop, Pla sood jaum</u>	
VN	<u>Ca ngua nam</u>	<u>Cá ngựa nam</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, and Cambodia). It is 32cm long. There is a large black blotch under the dorsal fin. The barbels are shorter than the eye width. Juveniles resemble *Hampala macrolepidota*. It lives in ponds, lakes, or slow current of rivers.

Use

It is served roasted, in soup, or Laap. In Laos, it is used in fish sauce (Padaek). It is caught by draw net, hand-held lift net, cast net, gill net, fishing or trap. *H. macrolepidota* in same genus is used in the same manner.



22 Jul. 2008 Naxaikang, Vientiane
Capital, Laos



25 Oct. 2010 Vientiane Capital, Laos



02 Sep. 2010 Norng Yao,
Vientiane Capital, Laos



20 Aug. 2010 Vientiane Capital, Laos



08 Feb. 2010 Vientiane Capital, Laos



29 Jun. 2010 Dong Borng,
Vientiane Capital, Laos



29 Jun. 2010 Dong Borng,
Vientiane Capital, Laos



29 Jun. 2010 Dong Borng,
Vientiane Capital, Laos



Hampala macrolepidota
22 Jul. 2008 Nong Chanh Market, Vientiane
Capital, Laos



Hampala macrolepidota
30 May 2009 Nong Chanh Market, Vientiane
Capital, Laos

Hypophthalmichthys molitrix

Order: Cypriniformes
Family: Cyprinidae

LA	<u>Pa kethlaap</u>	
KH	<u>Tray kap so</u>	
TH	<u>Pla song</u>	
VN	<u>Ca me trang</u>	<u>Cá mè trắng</u>
JP	<u>Hakulen</u>	<u>ハクレン</u>

Remarks

Basic Information

It originates in China and eastern Siberia, but is introduced widely in the world. Its length is 70cm and is silver colored. It is deep-bodied with a large head, and the eyes are located low. It lives in rivers and lakes and ponds. It is often found swimming near the water surface.

Use

It is served roasted, steamed, in soup, and Laap. It is cultivated and commonly found in markets.



12 Sep. 2007 Hou Kua Market,
Vientiane Capital, Laos



13 Nov. 2008 Thaheua Market, Vientiane
Province, Laos

Labeo chrysophekadion

Order: Cypriniformes
Family: Cyprinidae

LA	<u>Pa pia</u>	
KH	<u>Tray k'aik</u>	
TH	<u>Pla ka, Pla e-tuu, Pla pea</u>	
VN	<u>Ca et moi</u>	<u>Cá ét moi</u>
JP		

Remarks

Basic Information

It is distributed in Southeast Asia. It is 60cm long. Juveniles have a black body, and adults are greyish to black in color. All of the fins are black. It lives in rivers, small streams, waterways, and floodplains. It is caught more frequently when river water level is higher.

Use

It is served roasted, steamed, fried, dried, smoked, salted and in soup and Laap. It is one of an important edible fish in Southeast Asia. It is caught by draw net, fill net, fixed net, and trap. Other fish in the genus *Labeo* are used in the same way. *Labeo rohita* is being cultivated.



14 Nov. 2008 Nong Chanh Market,
Vientiane Capital, Laos



20 Feb. 2010 Nam Lo, Bolikhamxai, Laos



Labeo pierrei

16 Feb. 2010 Lak2 Market, Champasak, Laos



Labeo rohita

22 Jul. 2008 Nong Chanh Market, Vientiane Capital,
Laos

Mystacoleucus marginatus

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa lang name, Pa lang kaw</u>	
KH	<u>Tray temprak</u>	
TH	<u>Pla kae yok, Pla nam lang,</u>	
	<u>Pla hang lueng</u>	
VN	<u>Ca vạy xuoc</u>	<u>Cá vảy xước</u>
JP		
Remarks		



20 Aug. 2010 Vientiane Capital, Laos

Basic Information

It is distributed in Southeast Asia. It is 15cm long. There is a horizontal ray in the front of its dorsal fin.

Outer edge of the dorsal fin is lined black. The caudal fin is yellowish with black edge. Black mottles are scattered on the lateral body.

Use

It is served fried, roasted, stir-fried, in Laap. It is caught by draw net, cast net, and trap.



13 Feb. 2010 Tha Heua Market, Louang Phrabang, Laos



15 Feb. 2010 Savan Say Market, Savannakhet, Laos



Mystacoleucus lepturus

14 Feb. 2010 Phonekeo, Vientiane Province, Laos

Osteochilus hasseltii

Order: Cypriniformes
Family: Cyprinidae

LA	Pa ithai, Pa khao mong	
KH	Tray kroh mimay	
TH	Pla soi nok khao, Pla kae khom	
VN	Ca me lui soc	Cá mè lui soc
JP		

Remarks

Basic Information

It is distributed in Southeast Asia. Its length is 27cm. Juvenile has 6 to 8 rows of dark spots on the lateral side, but they become obscure in adult. Its caudal peduncle has a large round blotch. The dorsal, pelvic, anal, and caudal fins are red. It lives in variety of habitats such as rivers, small streams, waterways, marshes, lakes, and ponds.

Use

It is served fried, roasted, steamed, cooked in a pot, dried, and in Laap. It is also used in fermented sushi or fish sauce. It is often seen in the markets. Similar genus *Osteochilus* is used in the same manner. It is caught by draw net, cast net, gill net, hand-held lift net, fixed net, and trap.



25 Jun 2008 Phonyang, Vientiane Province, Laos



30 May 2009 Nong Chanh Market, Vientiane Capital, Laos



Osteochilus lini

22 Nov. 2009 Mueng Song Market, Vientiane Province, Laos



Osteochilus melanopleurus

18 Sep. 2007 Old Market, Siem Reap, Cambodia



Osteochilus microcephalus
20 Aug. 2010 Vientiane Capital, Laos



Osteochilus waandersii
13 Sep. 2011 Tha Ngam, Khammouane, Laos

Puntioplites falcifer

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa sa kang</u>	
KH	<u>Tray chrokaing , Tray chrokaing kdaong</u>	
TH	<u>Pla sakang kreeb soong, Pla kamang</u>	
VN	<u>Ca danh</u>	<u>Cá danh</u>
JP		
Remarks		



20 Aug. 2010 Vientiane Capital, Laos

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, and Yunnan Province, China).

It is 30cm long with laterally compressed deep-body. The pelvic, anal, caudal and dorsal fins are pale orange in color. It has long dorsal fin ray.

Use

It is served roasted, steamed, dried, in salad or soup. It is also used in chili paste or fish sauce. It is caught by draw net, gill net, cast net, fixed net, and trap.



18 Nov. 2008 Phoshy Market,
Louang Phrabang, Laos



12 Sep. 2007 Thong Khan Kham Market,
Vientiane Capital, Laos



Puntioplites proctozyron
04 Nov. 2008 Phnom Penh, Cambodia

Puntius aurotaeniatus

Order: Cypriniformes

Family: Cyprinidae

LA Pa khao mon

KH Tray ongkot prak stang

TH Pla khao, Pla ta pien song
jud

VN

JP

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, and Vietnam), and Southeast Thailand. It is 5.5cm long.

Is has a black lateral raw of mottles and a black spot at the base of the dorsal fin. Juveniles have black lateral mottles.

Use

It is served fried, roasted, boiled or steamed. It is also used in fish sauce. It is sold at the markets as well as caught by individual households; therefore, it is frequently consumed as a daily dish. It is caught by draw net, cast net, hand-held lift net, hand net, fixed net, and trap. It is often sighted at a paddy field. Other species in the genus *Puntius* are often caught in marshes and paddy fields and used in the same way.



06 Sep. 2010 Dong, Vientiane Province,
Laos



Puntius aurotaeniatus

23 Jul. 2008 Dong Makkai Market,
Vientiane Capital, Laos



Puntius sp.

12 Sep. 2011 Ton Vieng Kham, Bolikhamsai,
Laos



Puntius jacobusboehlkei
24 Mar. 2010 Phonekeo,
Vientiane Province, Laos



23 Jul. 2008 Dong Makkai,
Vientiane Capital, Laos



Puntius partipentazona
10 Sep. 2007 Phoxai,
Vientiane Capital, Laos



Puntius brevis
24 Jul. 2008 Khun Neua ,
Vientiane Province, Laos



Puntius stoliczkanus
09 Nov. 2008 Xiangmouak,
Louang Phrabang, Laos



Puntius orphoides
22 Nov. 2009 Mueng Song Market,
Vientiane Province, Laos



Puntius rhombeus
24 Nov. 2009 Phonekeo,
Vientiane Province, Laos

Rasbora borapetensis

Order: Cypriniformes
Family: Cyprinidae

LA	Pa sill hang daeng	
KH	Tray chongwa sroloung ch'nout	
TH	Pla siew haang daeng	
VN	Ca long tong do duoi	Cá long tong đỏ đuôi
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, and Vietnam), Chao Phraya delta, Mae Klong delta, and Northern Malay Peninsula. It is 4cm long and has dark lateral stripe. Its base of caudal fin is bright red.

Use

It is served steamed, stir-fried, and cooked in a pot. It is also used as fish sauce ingredient. It is found in the markets; however, it is more often caught and consumed at home than in a commercial way. It is usually mixed with other small fish to be cooked. It is caught by hand-held lift net, hand net, fixed net and trap. Women and children are able to catch small fish including this species with a hand-held lift net near the water, especially during the rain season.

Rasbora rubrodorsalis and *R. spilocerca* are often caught together. It is consumed daily and is a familiar fish for people in a rural area. Other species in the genus *Rasbora* are used in the same manner.



10 Sep. 2007 Phoxai, Vientiane Capital, Laos



R. borapetensis ,
R. rubrodorsalis , *R. spilocerca*

12 Sep. 2007 Elai, Vientiane Capital, Laos

Rasbora rubrodorsalis

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa sill</u>	
KH	<u>Tray chongwa sroloung</u>	
TH	<u>Pla siew haang daeng</u>	
VN	<u>Ca long tong</u>	<u>Cá long tong</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, and Cambodia), Chao Phraya delta, and Mae Klong delta. It is 3.3cm long with bright red base of dorsal and caudal fins.



22 Jul. 2008 Phangheng, Vientiane
Capital, Laos

Rasbora aurotaenia

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa sill</u>	
KH	<u>Tray chongwa moul</u>	
TH	<u>Pla siew kwai</u>	
VN	<u>Ca long tong da</u>	<u>Cá lòng tong đá</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, and Vietnam). It grows up to 11.8cm. It has a dark lateral stripe.

Its origin of the dorsal fin is closer to the base of the caudal fin than to the eye.



12 Jan. 2011 Vientiane Capital, Laos

Rasbora dusonensis

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa sill</u>	
KH	<u>Tray chongwa</u>	
TH	<u>Pla siew haang daum, Pla siew aow</u>	
VN	<u>Ca long tong</u>	<u>Cá long tong</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, Vietnam, and Yunnan Province in China), Chao Phraya delta, Malay Peninsula, Borneo Island, and Sumatra Island.

It is 12cm long with a dark lateral stripe. Its origin of the dorsal fin is closer to the eye than to the caudal fin base.



30 May 2009 Vientiane Capital, Laos

Rasbora dorsinotata

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa sill</u>	
KH		
TH	<u>Pla siew</u>	
VN	<u>Ca long tong</u>	<u>Cá lòng tong</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos and Northern Thailand). It is 4.3cm long with a black tipped dorsal fin. It has a lateral stripe which is broader at the anterior to the dorsal fin origin, and the posterior part is connected to the black mottle at the caudal peduncle.



24 May 2009 Phonekeo, Vientiane Province, Laos

Rasbora paviana

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa sill eao</u>	
KH	<u>Tray chongwa phnom</u>	
TH	<u>Pla siew khang lai</u>	
VN	<u>Ca long tong</u>	<u>Cá lòng tong</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, and Vietnam), Chao Phraya delta, Mae Klong delta, and Northern Malay Peninsula.

It is 7.5cm long. Its dark lateral stripe is connected to the dark mottle at the base of caudal fin.



Apr.2009 Vientiane Capital, Laos

Rasbora spilocerca

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa sill</u>	
KH	<u>Tray chongwa pout toui(ch)</u>	
TH	<u>Pla siew daok khao noi</u>	
VN	<u>Ca long tong</u>	<u>Cá lòng tong</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, and Cambodia). It is 2.6cm long. Its caudal fin is yellow with 3 black blotches, including one at the base of the fin.



02 Sep. 2009 Norng Yao, Vientiane Capital, Laos

Gyrinocheilus pennocki

Order: Cypriniformes
Family: Gyrinocheilidae

LA	Pa kaw	
KH	Tray smok	
TH	Pla nam pueng, Pla dood	
VN	Ca bam da	Cá bầm đá
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, and Cambodia). It is 25.5cm long. It has no barbels and each fin has black spots.

Use

It is served roasted, steamed, and in soup. It is used in fish sauce in Laos. It is caught by draw net, gill net, fixed net, trawling or trap.



24 Jun. 2010 150 Tieng Market,
Vientiane Capital, Laos



15 Feb. 2010 Savan Say Market,
Savannakhet, Laos

Acantopsis spp.

Order: Cypriniformes
Family: Cobitidae

LA	<u>Pa hak kouay</u>	
KH	<u>Tray ruh cheik</u>	
TH	<u>Pla rak kuay</u>	
VN	<u>Ca khoai song</u>	<u>Cá khoai song</u>
JP		

Remarks

Basic Information

Some species exceed 20cm long. Its snout is long with a pair of barbels. Its caudal fin is a shallow fork. Several species exist in Indo-China Peninsula.

Use

It is served fried, roasted, and dried, and also used in fish sauce. It is often sighted in the markets. It is caught by draw net or fixed net.



Acantopsis sp. "large spot"
(Kottelat, 2001),

Acantopsis sp. 1 (Rainboth, 1996)
03 Sep. 2010 Vang Hou, Vientiane
Capital, Laos



03 Sep. 2010 Vang Hou, Vientiane Capital,
Laos



Acantopsis sp. 1 (Rainboth,1996)
30 Dec. 2009 Vientiane Capital, Laos



Acantopsis sp.2
30 Dec. 2009 Vientiane Capital, Laos



Acantopsis sp. 1 (Rainboth,1996)
03 Jan. 2010 Vientiane Capital, Laos



Acantopsis sp. 3
03 Jan. 2010 Vientiane Capital, Laos



Acantopsis sp.
03 Jan. 2010 Vientiane, Laos



19 Jan. 2013 Champasak, Laos

Lepidocephalichthys hasselti

Order: Cypriniformes

Family: Cobitidae

LA	Pa eath	
KH	Tray rus kamplaok	
TH	Pla id, Pla rak kuay	
VN	Ca heo rau	Cá heo râu
JP		

Remarks

Basic Information

It is distributed in Southeast Asia. It length is 4.5cm.



Lepidocephalichthys hasselti

25 Jul. 2008 Bo, Vientiane Province, Laos

Use

It is served fried, roasted, steamed, cooked in a pot, and dried. When it is caught in abundance, it is used as fish sauce ingredient. It is caught by hand net, hand-held lift net, fixed net, and trap. It is not frequently sold in the markets, but is caught and used often at homes.

Lepidocephalichthys berdmorei and *L. furcatus* in the same genus are also widely in use.



Lepidocephalichthys hasselti

24 Jan. 2010 Phonekeo,
Vientiane Province, Laos



Lepidocephalichthys berdmorei

13 Feb. 2010 Tha Heua Market,
Louang Phrabang, Laos



Lepidocephalichthys furcatus

23 Jun. 2008 Dong Makkai,
Vientiane Capital, Laos

Yasuhikotakia modesta

Order: Cypriniformes
Family: Cobitidae

LA	Pa mou, Pa mou man, Pa kheokai	
KH	Tray kanchruk krohom	
TH	Pla mu, Pla mu kao	
VN	Ca heo vach	Cá heo vach
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, and Vietnam). It is 25cm long. A black vertical stripe is present at the base of caudal fin. Each fin is orange, and the caudal fin is deeply forked. There is a sharp spine at below and anterior to the eye, but it is usually tucked in. Juveniles have 7 to 8 dark lateral stripes. It is mainly found in rivers.

Use

It is served fried, roasted, dried or in soup. It is also used in fish sauce and fermented sushi. It is caught by draw net, push net, and trap. Other species confirmed in genus *Yasuhikotakia* are *Y. lecontei*, *Y. caudipunctata*, and *Y. eos*. Similar genus *Syncrossus* is used in the same way. Its Lao and Thai names mean “wild boar (hog) fish”, which is derived from the spine under the eye.



29 Jun. 2010 Ban Khun Market, Market, Vientiane Province, Laos



29 Jun. 2010 Ban Khun Market, Market, Vientiane Province, Laos



29 Jun. 2010 Ban Khun Market, Market,
Vientiane Province, Laos



Yasuhikotakia lecontei
30 Dec. 2009 Vientiane Capital, Laos



Yasuhikotakia caudipunctata
27 Jan. 2013 Thong Khan Kham Market,
Vientiane Capital, Laos



Yasuhikotakia eos
19 Jan. 2013 Lak2 Market, Champasak, Laos



Synrossus helodes
19 Jan. 2013 Lak2 Market, Champasak, Laos

Schistura spp.

Order: Cypriniformes

Family: Balitoridae

LA	<u>Pa phan</u>	
KH	<u>Tray kanchrieit</u>	
TH	<u>Pla khor</u>	
VN		
JP		

Remarks

Basic Information

Its body is slender with horizontally compressed head. Its scales are small and the posterior caudal fin is a shallow fork.



Schistura ephelis

24 Aug.2009 Phonekeo, Vientiane
Province, Laos

Use

It is served fried, roasted, and dried. It is caught by draw net and trap.



14 Nov. 2008 Dong Makkai Market, Vientiane
Capital, Laos



Schistura porthos

11 Feb.2010 Mouth, Louang Phrabang, Laos



Schistura sp.

24 May 2009 Xiangmouak, Louang Phrabang, Laos

Piaractus brachypomus

Order: Characiformes
Family: Characidae

LA	Pa vee, Pa hou xang, Pa ja la <u>mit</u>	
KH	Tray chaap	
TH	Pla jalamet nam jeud	
VN	Ca chim	Cá chim
JP		

Remarks

Basic Information

It originates in South America, and those found in Indo-China Peninsula are transplanted. It resembles a fish in *Cyprinidae* family, but can be distinguished by its presence of the adipose fin.

Use

It is served fried, steamed, in Laap or in soup. It is cultivated in places such as dams. It is confirmed in a market in Laos, but it seems to be not a familiar fish for the locals.



06 Sep. 2010 Thong Khan Kham Market,
Vientiane Capital, Laos



Lap pa
06 Sep. 2010 Thong Khan Kham Market,
Vientiane Capital, Laos

Hemibagrus filamentus

Order: Siluriformes
Family: Bagridae

LA	<u>Pa kothdam</u>	
KH	<u>Tray ta nel</u>	
TH	<u>Pla kod</u>	
VN	<u>Ca lang</u>	<u>Cá lãg</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, and Vietnam). It is 35cm long.



18 Sep. 2007 Old Market,
Siem Reap, Cambodia

The genus *Hemibagrus* is a catfish in *Bagridae* family with very long barbels. It resembles genus *Mystus* in the same *Bagridae* family, but can be distinguished by the length of its adipose fin measuring the same or shorter than the length of base of the anal fin.

Use

It is served fried, roasted, steamed, boiled, or in soup. It is caught by draw net, gill net, fixed net, fishing, or trap. Other *Hemibagrus* species are commonly sold at the market, and they are used in the same way as this species.



Hemibagrus filamentus

26 Jul. 2010 Mueng Song, Vientiane Province,
Laos



Hemibagrus spilopterus

18 Nov. 2008 Tha Heua Market, Louang
Phrabang, Laos



Hemibagrus wyckii

14 Nov. 2008 Nong Chanh Market, Vientiane
Capital, Laos



Hemibagrus wyckioides

2008.Jul.28 Thong Khan Kham Market, Vientiane
Capital, Laos



Hemibagrus sp. (cf. *nemurus*)

24 May 2009 Vang Vieng Market, Vientiane
Province, Laos

Mystus mysticetus

Order: Siluriformes
Family: Bagridae

LA	<u>Pa khayang</u>	
KH	<u>Tray kanchoh ch'nout</u>	
TH	<u>Pla kha yaeng kang lai</u>	
VN	<u>Ca chot soc</u>	<u>Cá chốt sọc</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos and Thailand) and Chao Phraya delta. It is 13cm long and is a catfish in the genus *Mystus* in the *Bagridae* family with very long barbels. It resembles genus *Hemibagrus*, but can be distinguished by the length of its adipose fin being longer than that of base of the anal fin. The adipose fin is shorter than that of others in genus *Mystus*. It has 3 dark and 2 white indistinct lateral stripes.

Use

It is served fried, roasted, steamed, cooked in a pot, dried, or in soup. It is caught by draw net, gill net, fixed net, cast net, fishing, and trap. Other *Mystus* species are sold frequently in the market, and they are used in the same way.



12 Sep. 2007 Nong Nieng, Vientiane
Capital, Laos



11 Sep. 2007 Vientiane Capital, Laos



12 Sep. 2007 Nong Nieng,
Vientiane Capital, Laos



12 Sep. 2007 Nong Nieng,
Vientiane Capital, Laos



19 Nov. 2011 *Mystus mysticetus*
Haignon-mai, Vientiane Province,
Laos



03 Nov. 2008 *Mystus albolineatus*
Central Market, Phnom Penh,
Cambodia

Mystus albolineatus

Order: Siluriformes
Family: Bagridae

LA	<u>Pa kha yaeng khoo</u>	
KH	<u>Trey kanchoh baai</u>	
TH	<u>Pla kha yaeng</u>	
VN	<u>Ca chot ngua</u>	<u>Cá chốt ngua</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, and Cambodia) and Chao Phraya delta. It is 35cm long with a large adipose fin and a narrow white lateral stripe.



15 May 2009 Vientiane Capital, Laos

Mystus atrifasciatus

Order: Siluriformes

Family: Bagridae

LA	<u>Pa kha yang noy</u>	
KH	<u>Trey kanchoh stang</u>	
TH	<u>Pla kha yaeng kang lai</u>	
VN	<u>Ca chot vang</u>	<u>Cá chốt vàng</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, and Cambodia), Chao Phraya delta, and Mae Klong delta. It is 12.5cm long. It has 3 dark and 2 white vague lateral stripes. Its adipose fin is large.



19 Aug. 2010 Vientiane Capital, Laos

Mystus singaringan

Order: Siluriformes

Family: Bagridae

LA	<u>Pa khayang</u>	
KH	<u>Tray kanchoh baai so</u>	
TH	<u>Pla kha yaeng bai kao</u>	
VN	<u>Ca chot</u>	<u>Cá chốt</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, and Vietnam), Chao Phraya delta, and Sundaland. It is 30cm long with no lateral stripe. The adipose fin is large.



22 Jul. 2008 Thong Khan Kham Market,
Vientiane Capital, Laos

Pseudomystus siamensis

Order: Siluriformes
Family: Bagridae

LA	<u>Pa khee hiav</u>	
KH	<u>Tray kanchoh t'mo</u>	
TH	<u>Pla khi hea</u>	
VN	<u>Ca chot bong</u>	<u>Cá chốt bông</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, and Cambodia) and Chao Phraya delta. It is 15cm long with a deep body. It has short barbels and distinctive black and yellow stripes.

Use

It is served fried, roasted, steamed, cooked in a pot, and in soup. It is caught by draw net, gill net, and cast net.



22 Jul. 2008 Dong Makkai Market,
Vientiane Capital, Laos



30 May 2009 Nong Chanh Market,
Vientiane Capital, Laos

Belodontichthys truncatus

Order: Siluriformes

Family: Siluridae

LA	<u>Pa khob</u>	
KH	<u>Tray klang haai</u>	
TH	<u>Pla kang beung</u>	
VN	<u>Ca tren rang</u>	<u>Cá trèn răng</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta and Chao Phraya delta. It is 60cm long and laterally compressed in whole. It has an upturned mouth with conspicuous large teeth. The pectoral fin is longer than its head, and the dorsal fin is small. The base of anal fin is long.

Use

Large sized individuals are sold at the market. It is served fried, roasted, steamed, cooked in a pot, and in soup.



13 Feb. 2010 Tha Heua Market, Louang Phrabang, Laos



26 Nov. 2009 Hou Kua Market, Vientiane Capital, Laos



26 Nov. 2009 Hou Kua Market, Vientiane Capital, Laos

Kryptopterus apogon

Order: Siluriformes

Family: Siluridae

LA	<u>Pa pik kai</u>	
KH	<u>Tray keh</u>	
TH	<u>Pla nam ngueng</u>	
VN		
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, and Yunnan Province, China), Chao Phraya delta, Malay Peninsula, Sumatra Island, and Borneo Island. It is 70cm long and is laterally compressed. It has a long anal fin and no dorsal fin.

The caudal fin is split in a fork. 2 pairs of barbels are present with ones on the lower jaw being shorter than the diameter of an eye.



13 Feb. 2010 Tha Heua Market, Louang
Phrabang, Laos

Use

It is served fried, roasted, steamed, cooked in a pot in a pot, dried, and in soup. It has soft white flesh. It is caught by draw net, gill net, cast net, fixed net, and trap. Other *Kryptopterus* are used in the same manner.



19 Nov. 2009 Thong Khan Kham Market,
Vientiane Capital, Laos



Kryptopterus sp.
03 Nov. 2008 Central Market,
Phnom Penh, Cambodia



Kryptopterus geminus
24 Jul. 2009 Vientiane Capital, Laos

Ompok bimaculatus

Order: Siluriformes
Family: Siluridae

LA	<u>Pa xeuam</u>	
KH	<u>Tray ta aon, Tray kromom</u>	
TH	<u>Pla neua on, Pla cha on</u>	
VN	<u>Ca tren bau</u>	<u>Cá trên bầu</u>
JP		

Remarks

Basic Information

It is widely distributed in South Asia to Southeast Asia. It is 40cm long and has a laterally compressed body. The base of anal fin is long and the dorsal fin is relatively larger than the other catfish. The caudal fin is forked and the pectoral fin has a distinctive black blotch on the upper side. Its snout is small; it does not reach the eye. It lives in a slow current of rivers, small streams, and waterways. It can be spotted frequently in a paddy field or marsh when the river water level is high.

Use

It is served fried, roasted, steamed, cooked in a pot, and dried. It is a commonly sighted catfish in the market with 20 to 30cm individuals being the most popularly sold. Roasting is the most popular method, and the ones ready for roasting, which are seasoned with salt or marinated with fish sauce, are sold.

It is said that its taste deteriorates rather quickly as it loses freshness. It is caught by draw net, cast net, hand-held lift net, fixed net, and trap.



09 Sep. 2010 Thating Hang,
Savannakhet, Laos



12 Nov. 2008 Nongsa, Vientiane Province,
Laos



22 Jul.2008 Sikeud, Vientiane Capital, Laos



24 Aug.2009 Phonekeo, Vientiane Province, Laos



28 Jun. 2010 Mueng Song, Vientiane Province, Laos



10 Feb. 2010 Vientiane Capital, Laos



22 Jul.2008 Sikeud, Vientiane Capital, Laos

Wallago attu

Order: Siluriformes
Family: Siluridae

LA	Pa khao	
KH	Tray sondai, Tray kropoat, Tray ch' kae nii	
TH	Pla khao kao	
VN	Ce leo	Cá leo
JP		
Remarks		

Basic Information

It is widely distributed from India to Southeast Asia. It is a large catfish that exceeds 1m, and sometimes grows almost to 2m. Its body is laterally compressed with a horizontally compressed head. Base of the anal fin is long and the caudal fin is forked. The pectoral fin is round. Its snout is very large and reaches posterior edge of the eye. It lives mainly in rivers.

Use

It is served fried, roasted, steamed, cooked in a pot, and in soup. Even the roe is said to be tasty. 50cm to 1m individuals are popularly sold in the markets. It can be distinguished easily in the market because of its size and the large mouth.

It is caught by draw net, gill net, and fishing. It is called by different names at different stages of its growth in Cambodia.



28 Jul. 2008 Nong Chanh Market,
Vientiane Capital, Laos



09 Sep. 2007 Dong Makkai Market,
Vientiane Capital, Laos

Pangasianodon gigas

Order: Siluriformes
Family: Pangasiidae

LA	Pa beuk	
KH	Tray riei(ch)	
TH	Pla buak	
VN	Ca tra dau	Cá tra dầu
JP	Mekon-oo-namazu	メコンオオナマズ

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, and Vietnam). It is one of the largest freshwater fish in the world with a measurement at 3m and a weight at 350kg. The body is stout with its eyes located low. The ventral side is white and the dorsal side is silver gray. The mouth is located at the top of a snout. Its caudal fin is forked and a small adipose fin is present. Juveniles have teeth and barbels, but they disappear when they reach the length of 30 to 50cm. It lives in Mekong river and migrates long distance. Juveniles feed on zooplankton, and adults feed mainly on algae.



14 Nov. 2008 Nong Chanh Market,
Vientiane Capital, Laos



20 Sep. 2009 Sannayao, Chiang Rai,
Thailand

Use

It is rarely seen in the markets. It is served fried, roasted, steamed, boiled, cooked in a pot, and in soup. It is also used in a fish sauce and fermented sushi. It has red flesh, and in Davidson's book (Davidson, A. (2003) Fish and Fish Dishes of Laos, pp.66-67. Prospect Books), its steak is referred as the tastiest by charcoal grilling. Each part of the fish has suitable way of cooking; for example, the liver is thinly sliced and salted for roasting, and the head is used in soup, etc. Even its roe is up for consumption. It is said that the tastiest part is in mid lateral, closer to the head. It is caught by gill net. Its number is rapidly decreasing in recent years. In Thailand, research for its cultivation is in progress, and artificially hatched juveniles have been experimentally released. Farmed individuals are also said to be traded. It is not eaten very often in Cambodia because it is considered an unlucky fish. Moreover, Cambodian fishery administration is protecting it by issuing penal rules, so in case of collecting and consumption, it is 3 million riel fine, and an informer would receive a 50 US dollars reward.



07 Nov, 2008 Phoshy Market, Louang
Phrabang, Laos



20 Sep.2009 Sannayao, Chiang Rai, Thailand



20 Sep. 2011 Thong Khan Kham Market,
Vientiane Capital, Laos



20 Sep. 2011 Thong Khan Kham Market,
Vientiane Capital, Laos



20 Sep. 2011 Vientiane Capital, Laos



20 Sep. 2011 Vientiane Capital, Laos

Pangasianodon hypophthalmus

Order: Siluriformes

Family: Pangasiidae

LA	<u>Pa swai</u>	
KH	<u>Tray praa , Tray praa thom</u>	
TH	<u>Pla sauy, Pla swai</u>	
VN	<u>Ca tra</u>	<u>Cá tra</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, and Vietnam) and Chao Phraya delta. It is 1.3m long. It resembles *Pangasianodon gigas* but can be distinguished by its developed teeth and barbels.

Juveniles have 2 black lateral stripes.



14 Sep. 2011 Na Bo Market,
Khammouane, Laos

Use

It is served fried, roasted, steamed, cooked in a pot, dried, in soup or in curry. Its cultivation is very popular in Thailand and Vietnam. It is caught by draw net, gill net, fixed net, and trap.



24 Jan. 2013 Pakse New Market, Champasak, Laos



14 Nov. 2008 Nong Chanh Market, Vientiane Capital,
Laos



20 Feb. 2010 Nam Lo, Bolikhamsai, Laos

Pangasius conchophilus

Order: Siluriformes

Family: Pangasiidae

LA	<u>Pa phow</u>	
KH	<u>Tray kae</u>	
TH	<u>Pla phor</u>	
VN	<u>Ca hu</u>	<u>Cá hú</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, and Vietnam) and Chao Phraya delta. It is 1m long and has a dark grey dorsal color with pearly luster. The genus *Pangasius*, which this species belongs to, is known to have a stout body, a developed spine of dorsal and pectoral fin, a forked caudal fin, anal fin with a long base, and 2 pairs of barbels.

Its appearance is close to genus *Pangasianodon*, but can be distinguished by lesser number of pelvic soft rays.



09 Nov. 2008 Tha Heua Market, Louang Phrabang, Laos

Use

It is served roasted, steamed, cooked in a pot, and in soup. It is caught by draw net, cast net, gill net, and trap. Other species in *Pangasius* are used in the same manner.



Pangasius larnaudii

18 Sep. 2007 Old Market, Siem Reap, Cambodia



Pangasius macronema

15 May 2009 Vientiane Capital, Laos

Bagarius yarrelli

Order: Siluriformes

Family: Sisoridae

LA	Pa khæ	
KH	Tray krobai thom	
TH	Pla khæ, Pla took kae	
VN	Ca chien	Cá chiên
JP		

Remarks

Basic Information

It is distributed from India to Borneo Island. It is 1.4m long with a thick body. It has a solid dorsal spine, an adipose fin, a forked caudal fin, and broad barbels.

The adipose fin originates above or anterior to the origin of the anal fin. It lives in rivers.

Use

It is served stir-fried, blanched, cooked in a pot, or in soup. It is also used in a fish sauce. It is caught by draw net, gill net and fishing. *Bagarius bagarius* in the same genus is used in the same manner.



14 Sep. 2011 Na Bo Market,
Khammouane, Laos



Bagarius yarrelli

21 Jan. 2013 Pakse New Market, Champasak, Laos



14 Sep. 2011 Khammouane, Laos



Bagarius bagarius

26 May 2009 Tha Heua Market, Louang Phrabang,
Laos

Clarias macrocephalus

Order: Siluriformes
Family: Clariidae

LA	<u>Pa douk oui</u>	
KH	<u>Tray onding ton</u>	
TH	<u>Pla dook na, Pla dook oui</u>	
VN	<u>Ca tre vang</u>	<u>Cá trê vàng</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, and Vietnam) and Chao Phraya delta. It is 30cm long with a cylindrical body and a horizontally compressed head. It has 4 pairs of long barbels, and the base of dorsal and anal fin are long. Its habitat ranges widely from rivers, waterways, lakes and ponds, to marshes. Because of its ability to air-breathe, it can be kept live for a while without water if it is kept moist.

Use

It is an important edible fish in Indo-China, so it is one of the most commonly sighted fish in the markets.

It is served fried, roasted, cooked in a pot, dried, and in Laap. It is easy to keep it fresh because it can live with little water. Sometimes individuals which escaped from the market can be seen wiggling on a street. It was one of frequently used fish in the research of daily meals in Laos. It is caught by draw net, gill net, cast net, by hands, and trap. Other *Clariidae* are used in the same manner, and are being cultivated including *Clarias gariepinus* which originates in Africa



22 Sep. 2009 Vientiane Capital, Laos



Cheo-Pa douk

08 Jul. 2009 Vientiane Capital, Laos



Clarias macrocephalus
14 Sep. 2009 Siem Reap, Cambodia



12 Sep. 2007 Thong Khan Kham Market,
Vientiane Capital, Laos



Clarias sp. (cf. *batrachus*)
20 Feb. 2010 Nam Lo, Bolikhamsai, Laos



Clarias sp. (cf. *batrachus*)
20 Nov. 2009 Vientiane Capital, Laos



Clarias sp. (cf. *batrachus*)
20 Nov. 2009 Vientiane Capital, Laos



Clarias sp. (cf. *batrachus*)
28 Jun. 2010 Mueng Song,
Vientiane Province, Laos

Pterygoplichthys disjunctivus

Order: Siluriformes
Family: Loricariidae

LA	<u>Pa douth fune</u>	
KH		
TH	<u>Pla sucker, Pla dood</u>	
VN	<u>Ca lau kinh</u>	<u>Cá lau kính</u>
JP	<u>Madara-loricaria</u>	<u>マダラロリカリア</u>

Remarks

Basic Information

It is native to South America, and those found in Indo-China are imported. It is 50cm long. Its dorsal and pectoral fins are large, and it has a pair of barbels. The body is covered with dark mottles, including its ventral side. It lives in rivers and ponds. Its ability to air-breathe enables it to live even under low oxygen. When rivers flood, it migrates to the shallow areas such as marshes.

Use

It is not sighted in the markets very often, but it is served in soup in Laos. No other use was confirmed in any other countries.

It is assumed that since it is an alien species, it is not familiar as food source for the locals. It is caught by gill net, cast net, or when ponds are dried.



26 Nov. 2009 Hong Kae, Vientiane
Capital, Laos



24 Jun. 2010 Hong Kae, Vientiane
Capital, Laos

Xenentodon spp.

Order: Belontiiformes

Family: Belontiidae

LA Pa ka thong, Pa sa thong

KH Tray phtoung

TH Pla kra toong haew

VN Cá nhái Cá nhái

JP

Remarks

Basic Information

It is distributed from India to Indonesia. Its body is slender and both jaws are sharply extended. The dorsal and anal fins are located at posterior.

Use

It is served fried, roasted, cooked in a pot, in soup, and dried. It is caught by draw net, fixed net, cast net and hand-held lift net.



Xenentodon sp.

03 Sep. 2010 Vang Hou, Vientiane
Capital, Laos



Xenentodon cancila

25 Jul. 2008 Phonyang, Vientiane Province, Laos



Xenentodon sp.

20 Sep. 2011 Thong Khan Kham Market, Vientiane
Capital, Laos



Xenentodon sp.

20 Sep. 2011 Vientiane Capital, Laos

Dermogenys siamensis

Order: Beloniformes
Family: Hemiramphidae

LA	Pa ka thong	
KH	Phting-toch , Tray phting toi(ch)	
TH	Pla sob thaong noi, Pla khem	
VN	Ca lim kim ao	Cá lim kim ao
JP		
Remarks		

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, and Vietnam) and Chao Phraya delta. Males are 4cm long while females are 6cm long. The body is slender and the lower jaw extends sharply. Its dorsal and anal fins are located at posterior, with the origin of dorsal fin being more posterior than the anal fin origin. The posterior edge of caudal fin is round.

Use

It is served fried, roasted, cooked in a pot, dried, and in soup. It is caught by draw net, fixed net, cast net and hand-held lift net.



15 Sep. 2007 Tonle Sap, Siem Reap, Cambodia



15 Sep. 2007 Tonle Sap, Siem Reap, Cambodia

Oryzias mekongensis

Order: Belontiiformes
Family: Adrianichthyidae

LA	<u>Pa sill</u>	
KH	<u>Tray chongwaa ongkoo</u>	
TH	<u>Pla kao sarn, Pla siew khao</u>	
VN	<u>Ca soc</u>	<u>Cá sóc</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, and Cambodia). It is 1.4cm long with a broad anal fin. Upper and lower tip of the caudal fin are bright orange. It lives in slow streams such as lakes, marshes, paddy field, waterways, and ponds.

Use

Due to its small size, it is not actively sought after as food, but it is eaten with other small fish and aquatic animals. They are cooked in a pot or steamed. In Laos, it is used in a fish sauce (Padaek). It is not found in the market. It is caught by a fine-mesh hand-held lift net or hand net.



25 Jul. 2008 Naphang, Vientiane
Province, Laos



25 Jul. 2008 Naphang, Vientiane
Province, Laos

Gambusia affinis

Order: Cyprinodontiformes

Family: Poeciliidae

LA	Pa sill, Pa kin ngung	
KH		
TH	Pla kin yoong	
VN	Ca an muoi	Cá ăn muỗi
JP	Kadayashi	カダヤシ

Remarks

Basic Information

Its origin is in Central and South America. Those found in Indo-China Peninsula have been imported. Males are 3cm long while females are 5.5cm long.

The dorsal fin of a female is located at posterior to its anal fin, and the posterior edge of caudal fin is round. It lives in stagnant water.

Use

It is occasionally sold in the market, but used primarily at home. It is cooked in a pot or steamed. It is used in fish sauce (Padaek) in Laos. Other than food, it is also used as a bait for catching larger fish. It is caught by cast net, hand-held lift net, and hand net.



23 Jul. 2008 Dong Makkai, Vientiane Capital, Laos



Mok pa
01 Aug. 2010 Vientiane Capital, Laos



09 Nov. 2008 Xiangmouak, Louang Phrabang, Laos



23 Jul. 2008 Dong Makkai, Vientiane Capital, Laos

Monopterus albus

Order: Synbranchiformes
Family: Synbranchidae

LA	<u>Eian</u>	
KH	<u>Antong</u>	
TH	<u>Pla lai, Pla ian</u>	
VN	<u>Luon dong</u>	<u>Lươn đồng</u>
JP	<u>Taunagi</u>	<u>タウナギ</u>

Remarks

Basic Information

It is distributed in Indo-China Peninsula, Indonesia, the Philippines, Taiwan, mainland China, Korean Peninsula, and Japan. It grows more than 80cm long, with a slender body and no pectoral and pelvic fins. Its dorsal, caudal, and anal fins are also inconspicuous, that it almost looks like a snake. It lacks scales and the body surface is covered with mucus. It lives in a stagnant to slow water such as paddy fields, marshes, waterways, small streams, rivers, lake, and ponds. It can air-breathe so that it survives the waterless dry period by burrowing in a moist soil.



15 May 2009 Vientiane Capital, Laos



12 Sep. 2007 Vientiane Capital, Laos

Mature adults actively air-breathe so it even suffers from oxygen deficiency when it is not able to bring its head above the surface in stagnant water. It is known to reverse sex. When it is small, it lays eggs as a female, and as it grows larger, it becomes a male and participates in mating.

Use

It is an important food source in Indo-China, and it is always found in large markets. It is one of the most frequently found fish in the market. It is served fried, roasted, stir-fried, in soup and dried. It is usually chopped with bone-in to be used. Its flesh has slightly distinct aroma, so it is often cooked with herbs and spices. Smaller sized ones in the market are sometimes used as in mercy release (In Buddhist belief; releasing a catch into wild is considered an act of mercy). It is caught by cast net, by hands, fishing, drying a pond, and trap. There is a special bamboo trap just for catching this species. Sometimes it is dug out from a pond and marsh bottom during the dry season. In the rice planting season, when a tractor breaks up the soil, many fish including this species are found, and people scoop them out with a colander.



22 Jul. 2008 Dong Makkai Market,
Vientiane Capital, Laos



24 Nov. 2009 Phonekeo,
Vientiane Province, Laos



05 Sep. 2010 Nong Pet,
Vientiane Province, Laos



25 Nov. 2009 Naxaineua,
Vientiane Capital, Laos



30 May 2009 Thong Khan Kham Market,
Vientiane Capital, Laos



30 May 2009 Vientiane Capital, Laos



22 Jul. 2008 Nong Chanh Market,
Vientiane Capital, Laos



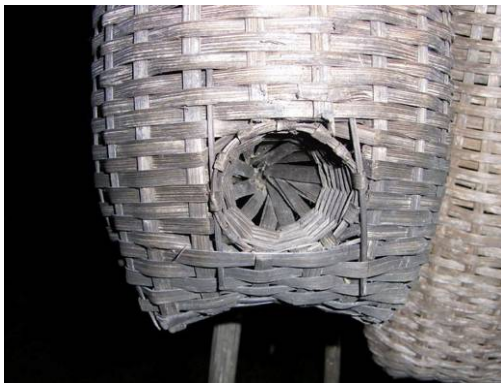
18 Sep. 2011 Sainyabuli, Laos



18 Sep. 2011 Sainyabuli, Laos



01 Sep. 2010 Vientiane Capital, Laos



01 Sep. 2010 Vientiane Capital, Laos



01 Sep. 2010 Vientiane Capital, Laos



01 Sep. 2010 Vientiane Capital, Laos



29 Jul. 2010 Pakkagnoung,
Vientiane Province, Laos

Macrognathus siamensis

Order: Synbranchiformes
Family: Mastacembelidae

LA	<u>Pa loth na</u>	
KH	<u>Tray chlowin</u>	
TH	<u>Pla lod</u>	
VN	<u>Ca chach xiem</u>	<u>Cá chạch xiêm</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, and Vietnam) and Chao Phraya delta. It is 20 to 30cm long with a slender body. Its snout is long, and distinct rows of blotches are found on the dorsal fin. It lives in a stagnant to slow water such as a paddy field, marsh, waterway, and pond. It is nocturnal and burrows in a sand most of daytime.

Use

It is served fried, roasted, dried, smoked, and in soup. It is not very large, so that it is often cooked and eaten as a whole, including the bone. It is often seen in the markets. This species is the most popular as food among *Mastacembelidae*.

It is caught by draw net, push net, hand-held lift net, hand net, and fixed net. Other species in *Mastacembelidae*, such as *Macrognathus semiocellatus* and *Macrognathus circumcinctus* in the same genus with this species, and several species in the genus *Mastacembelus* are used in the same manner.



23 Jul. 2008 Dong Makkai, Vientiane
Capital, Laos



04 Nov. 2008 Tropeang Thom Khang
Cheung, Takeo, Cambodia



06 Sep. 2010 Dong, Vientiane Province, Laos



24 Jul. 2008 Khun Neua, Vientiane Province, Laos



29 Nov. 2009 Dong Makkai, Vientiane Capital, Laos



24 May 2009 Vang Vieng Market, Vientiane Province, Laos



16 Feb. 2010 Lak2 Market, Champasak, Laos



19 Jan. 2013 Ban Watlouang, Champasak, Laos



Macrognathus siamensis
19 Nov. 2009 Thong Khan Kham Market, Vientiane Capital, Laos



Macrognathus siamensis
Mastacembelus favus
19 Nov. 2009 Nong Chanh Market, Vientiane Capital, Laos

Macrognathus circumcinctus

Order: Synbranchiformes

Family: Mastacembelidae

LA	<u>Pa loth</u>	
KH	<u>Tray chlowin bongkong</u>	
TH	<u>Pla lod kang lai</u>	
VN	<u>Ca chach ran</u>	<u>Cá chạch rắn</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta. It is 15cm long with a slender body and a long snout. There are 15 to 19 dark vertical lateral stripes.



25 Jul. 2010 Warin Chamrap Market,
Ubon Ratchathani, Thailand

Macrognathus semiocellatus

Order: Synbranchiformes

Family: Mastacembelidae

LA	<u>Pa loth</u>	
KH	<u>Tray chlowin kaeo</u>	
TH	<u>Pla lod saai, Pla lod lai</u>	
VN	<u>Ca chach com</u>	<u>Cá chạch côm</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta, Chao Phraya delta, and Mae Klong delta. It is 19cm long with a slender body and a long snout. There are rows of unclear circular mottles under dorsal fin.



25 Jul. 2010 Warin Chamrap Market,
Ubon Ratchathani, Thailand

Mastacembelus armatus

Order: Synbranchiformes

Family: Mastacembelidae

LA	<u>Pa lath</u>	
KH	<u>Tray k'chung</u>	
TH	<u>Pla lard, Pla kra ting</u>	
VN	<u>Ca chach lau, Ca chach bong</u>	<u>Cá chạch lấu, cá chạch bông</u>
JP		

Remarks

Basic Information

It is distributed from Pakistan to Vietnam and Indonesia. It is 70cm long with a slender body and a long snout. It has irregular reticulated pattern on its lateral side, but it does not reach the ventral aspect.



22 Jul. 2008 Dong Makkai Market,
Vientiane Capital, Laos

Mastacembelus fавus

Order: Synbranchiformes

Family: Mastacembelidae

LA	<u>Pa lath</u>	
KH	<u>Tray k'chung t'moo</u>	
TH	<u>Pla kra ting, Pla lard</u>	
VN	<u>Ca chach lau</u>	<u>Cá chạch lấu</u>
JP		

Remarks

Basic Information

It is distributed from Indo-China Peninsula to Malay Peninsula. It is 70cm long with a slender body and a long snout. It has an irregular reticulated pattern on its lateral side, and it reaches the ventral side.



26 Apr. 2009 Vientiane Capital, Laos

Parambassis siamensis

Order: Perciformes
Family: Ambassidae

LA	<u>Pa khap khong</u>	
KH	<u>Tray kanchan chrah toi(ch)</u>	
TH	<u>Pla kra jok, Pla pan</u>	
VN	<u>Ca son xiêm</u>	<u>Cá sơn xiêm</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, and Cambodia), Chao Phraya delta, Mae Klong delta, and Malay Peninsula. It is the fish which is called glass fish in general. It is 5cm long with laterally compressed and almost transparent body. There is a black mottle posterior to the eye. It lives in slow currents of rivers, waterways, lakes and ponds, and marshes.

Use

It is served stir-fried and cooked in a pot. It is also used as a fish sauce ingredient, and is commonly sighted in the markets. As it loses freshness, the transparent body becomes cloudy. There is also a demand for its aquarium use.

It is caught by draw net, trap, hand-held lift net, cast net, and fixed net. It is often caught in rivers and lakes, but also frequently seen around a paddy field.



27 Jul. 2008 Nathone, Vientiane Capital,
Laos



10 Sep. 2007 Phoxai, Vientiane Capital,
Laos

Nandus oxyrhynchus

Order: Perciformes
Family: Nandidae

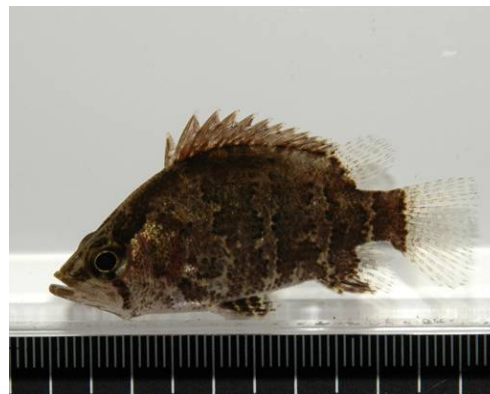
LA	<u>Pa moh</u>	
KH	<u>Tray khlaa bang</u>	
TH	<u>Pla kha baeung phaeng mor,</u> <u>Pla doom set, Pla sue daam</u>	
VN		
JP		
Remarks		

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, and Vietnam), Chao Phraya delta, and Mae Klong delta. It is 7cm long with a deep and laterally compressed body. It has a large mouth which upper jaw reaches posterior end of the eye.

Use

It is served roasted and fried. It is used as a fish sauce ingredient in Laos. It is sold at the market, often mixed with other fish or aquatic insects. It is caught by draw net, hand-held lift net, push net, hand net, and trap.



10 Sep. 2007 Phoxai, Vientiane Capital,
Laos



10 Sep. 2007 Phoxai, Vientiane Capital,
Laos

Pristolepis fasciata

Order: Perciformes
Family: Nandidae

LA	Pa ka	
KH	Tray kontrop	
TH	Pla mor chang yead, Pla kha	
VN	Ca ro bien	Cá rô biển
JP		
Remarks		

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, and Vietnam), Chao Phraya delta, Malay Peninsula, Sumatra Island, and Borneo Island. It is 18cm long with a deep body. There are rows of dark vertical stripes. It resembles *Nandus oxyrhynchus*, but can be distinguished by the shorter snout, smaller mouth, and rounder body. It lives in a slow to stagnant water, and can be found where aquatic plants are abundant.

Use

It is served roasted, fried, and dried. It is used as a fish sauce ingredient in Laos. It is often sold at the market. It is caught by draw net, hand-held lift net, hand net, fishing, gill net, and fixed net.



03 Sep. 2010 Vang Hou, Vientiane
Capital, Laos



05 Sep. 2010 Muang Fuang Market,
Vientiane Province, Laos

Oreochromis niloticus

Order: Perciformes
Family: Cichlidae

LA	<u>Pa nin</u>	
KH	<u>Tray tilapia chhnout</u>	
TH	<u>Pla nil</u>	
VN	<u>Ca rô phi van</u>	<u>Cá rô phi vằn</u>
JP	<u>Nile-tilapia</u>	<u>ナイルティラピア</u>

Remarks

Basic Information

It originates in Nile River system north of Lake Tanganyika, Niger River system in Western Africa, and Yarkon River in Israel. Those found in Southeast Asia are imported. It grows up to 50cm with 20 to 30cm ones being the most abundant. There are 8 to 10 unclear dark, vertical, lateral stripes. The caudal fin has clear vertical stripes. During egg laying season, the vertical stripes of males disappear, and the edges of dorsal and caudal fins turn to pale red. It lives in rivers, ponds, and lakes, and also spotted along waterways among paddy field. Males build a circular nest at the bottom of sandy mud in which females lay eggs during season. Females incubate eggs and grow juveniles in their mouth.

Use

Although it is imported fish, it is one of the most important edible fish in Indo-China. It is served roasted, fried, steamed, in salad (Laap), and in soup. When it is steamed, herbs are put into the abdomen to rid the smell. It is also used as a fish sauce ingredient. Among many methods of cooking this fish, salted roasting is the most popular, and it is even seen at the restaurants for foreign tourists. It is widely cultivated; therefore, it is available in markets throughout a year. It is often sold alive in a tank, so that people can obtain one fresh. Wild caught individuals are also sold that are caught by draw net, gill net, hand-held lift net, cast net, fishing, and drying ponds.



10 Sep. 2007 Namxouang Aquaculture
Development Center,
Vientiane Capital, Laos



12 Sep. 2007 Thong Khan Kham Market,
Vientiane Capital, Laos



Koi pa nin
27 Jun. 2010 Phonekeo,
Vientiane Province, Laos



19 Nov. 2009 Thong Khan Kham Market,
Vientiane Capital, Laos



26 Nov. 2009 Vientiane Capital, Laos



08 Nov. 2008 Tha Heua Market, Louang
Phrabang, Laos



11 Nov. 2008 Thong Khan Kham Market,
Vientiane Capital, Laos



19 Nov. 2009 New Nong Neow Market,
Vientiane Capital, Laos



05 Nov. 2010 Laos



12 Sep. 2007 Vientiane Capital, Laos

Oxyeleotris marmorata

Order: Perciformes
Family: Eleotridae

LA	<u>Pa bou</u>	
KH	<u>Tray domray</u>	
TH	<u>Pla boo</u>	
VN	<u>Ca bong tuong</u>	<u>Cá bóng tương</u>
JP		

Remarks

Basic Information

It is distributed from Indo-China Peninsula to Indonesia. It is 65cm long with a stout body. The pelvic fin is divided into two, and left and right one does not merge. There are 2 dorsal fins, and its caudal fin is round. Distinctive lateral mottles which are black to dark gray in color are present. It lives in slow to stagnant water, but also seen at the mouth of a river.

Use

It is served roasted, fried, steamed, and cooked in a pot. It is treated as a gourmet fish in Thailand and Cambodia, but since it can be caught near the villages, it is also available for ordinary households. Some restaurants in town that are equipped with a fish tank serve it very fresh.

It is caught by draw net, gill net, cast net, fishing, and trap.



27 Jul. 2008 Nathone, Vientiane Capital, Laos



03 Nov. 2008 Phnom Penh, Cambodia

Its cultivation is also being studied.

Anabas testudineus

Order: Perciformes
Family: Anabantidae

LA	<u>Pa kheng</u>	
KH	<u>Tray kran</u>	
TH	<u>Pla mor, Pla sadet, Pla kheng</u>	
VN	<u>Ca ro dong</u>	<u>Cá rô đồng</u>
JP	<u>Kinoboriuo</u>	<u>キノボリウオ</u>

Remarks

Basic Information

It is distributed in Sri Lanka to China, Indonesia and the Philippines. It is 25cm long, but 10 to 15cm individuals are the most abundant. It has an olive colored body and the bases of dorsal and anal fins are long. The caudal fin is round. There is a dark mottle above the origin of pelvic fin. It lives in wide range of slow to stagnant water, such as a paddy field, marsh, waterway, river, lake, and pond. Its ability to air-breathe enables it to tolerate dryness; thus, it is often seen in temporary water bodies such as puddles in a paddy field or streets. It is also adaptable to various water qualities, and can be found in soiled water with water buffalo dungs. It is able to walk on a land when the ground is wet.



12 Nov. 2008 Namxouang Aquaculture
Development Center, Vientiane Capital,
Laos



24 Oct. 2009 Vientiane Capital, Laos

Use

It is one of the most important edible fish in Indo-China. Since it lives near towns and villages, it is used frequently as a daily dish. It is served fried, roasted, cooked in a pot, and in Laap. It is also used as a fish sauce ingredient. It can be sold fresh because of its ability to survive outside water. Sometimes ones escaped from a container in a market can be seen walking on the ground. It is caught by gill net, hand-held lift net, fish basket, by hands, grains, fixed net, fishing, overnight hook fishing, drying pond, and trap. Smaller scale fishing is more popular.



09 Sep. 2010 Thating Hang,
Savannakhet, Laos



07 Aug. 2010 Phonekeo,
Vientiane Province, Laos



23 Jun. 2011 Vientiane, Laos



30 May 2009 Thong Khan Kham Market,
Vientiane Capital, Laos



31 Jan. 2010 Vientiane Capital, Laos



28 Jul. 2010 Dong Makkai,
Vientiane Capital, Laos

Betta spp.

Order: Perciformes
Family: Osphronemidae

LA	Pa kath	
KH	Tray kroem chul	
TH	Pla kad	
VN	Ca lia thia	Cá lia thia
JP	Betta	ベタ類

Remarks

Basic Information

It belongs to *Osphronemidae*, and it has a smaller and shallower body than others within the family. It resembles genus *Trichopsis*. The base of anal fin is long, and the caudal fin is round. It lives in slow current water. Due to the ability to air-breathe, it can live in waters with low oxygen level. It is very aggressive.

Use

It is served fried, roasted, cooked in a pot, steamed, dried or in soup. Usually, it is cooked with other small fish. Other than culinary use, its demand as an aquarium fish or fighting fish is high, and individuals which are bred and have bright colors for such purpose are often seen sold in a bottle.

Since its aggressive nature, it has to be kept separately in the bottles. There are people who catch the fish near their house and keep it as a pet in a container. In this research, we confirmed use of *Betta smaragdina* and *B. splendens*.



Betta smaragdina

16 Sep. 2007 Arak Svay, Siem Reap,
Cambodia



Betta spp.

08 Nov. 2008 Louang Phrabang, Laos



Betta smaragdina
31 May 2009 Na Ngom,
Vientiane Capital, Laos



Betta smaragdina
31 May 2009 Vientiane Capital, Laos



Betta splendens
24 Jul. 2008 Keun Market,
Vientiane Province, Laos



Betta splendens
25 Jul. 2008 Keun Market,
Vientiane Province, Laos



Betta splendens
25 Jul. 2008 Keun Market, Vientiane Province,
Laos

Trichopodus trichopterus

Order: Perciformes
Family: Osphronemidae

LA	<u>Pa ka deuth</u>	
KH	<u>Tray komphliein srae</u>	
TH	<u>Pla kra dee mor,</u> <u>Pla ka derd</u>	
VN	<u>Ca sac buom</u>	<u>Cá sặc bươm</u>
JP		
Remarks		

Basic Information

It is distributed in Southeast Asia. It is 10cm long. Its soft rays of pelvic fin become strings and extend as long as its body. The end of caudal fin has a slit, and there are numerous dark lateral oblique stripes. Bluish black spots are present in the center and at the origin of the caudal fin. Together with the eye, which is used to resemble a third blotch, those spots give its aquarium name of “three spot gourami”. It lives in marsh, waterways, and ponds.

Use

It is served fried, roasted, cooked in a pot, dried, and in soup. It is also used as a fish sauce ingredient in Laos. They are found in abundance around a paddy field and other surrounding areas, so it is frequently used in a daily dish.

It is caught by draw net, hand-held lift net, cast net, fixed net, and trap. Other species in genus *Trichopodus* are used in a same manner, but this species is more common in nearby environment.



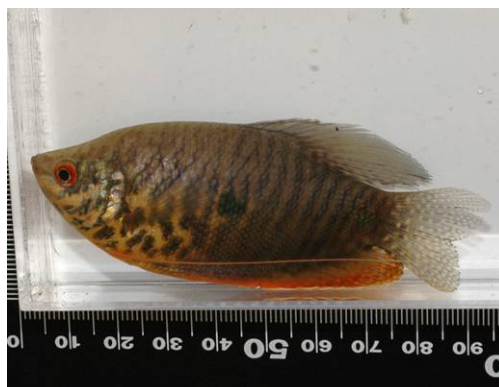
22 Jul. 2008 Sikeud, Vientiane Capital,
Laos



23 Jun. 2011 Vientiane Capital, Laos



Trichopodus trichopterus
17 Sep. 2007 Wat Preah Yesu, Siem Reap,
Cambodia



Trichopodus trichopterus
22 Jul. 2008 Phangheng, Vientiane Capital,
Laos



01 Aug. 2010 Napuheuy, Vientiane Province,
Laos



30 Jul. 2010 Khun Neua, Vientiane Province,
Laos



30 Jul. 2010 Khun Neua, Vientiane Province,
Laos



22 Jul. 2008 Phangheng, Vientiane Capital,
Laos



30 May 2009 Nong Chanh Market, Vientiane
Capital, Laos

Trichopodus microlepis

Order: Perciformes
Family: Osphronemidae

LA	<u>Pa ka deuth</u>	
KH	<u>Tray kom phliein phluk</u>	
TH	<u>Pla kra dee nang,</u> <u>Pla ka derd</u>	
VN	<u>Ca sac diep</u>	<u>Cá sặc diệp</u>
JP		

Remarks

Basic Information

It is 13cm long with a silvery body. The end of its caudal fin is slit.



16 Sep. 2007 Arak Svay, Siem Reap,
Cambodia

Trichopodus pectoralis

Order: Perciformes
Family: Osphronemidae

LA	<u>Pa ka deuth, Pa sa lit</u>	
KH	<u>Tray konthoo</u>	
TH	<u>Pla sa lid, Pla bai mai</u>	
VN	<u>Ca sac ran</u>	<u>Cá sặc rằn</u>
JP		

Remarks

Basic Information

It is 17cm long with a slit on the edge of caudal fin. Numerous black oblique lateral stripes are present. Some individuals have a black band running through the eye to the caudal fin.



30 May 2009 Hou Kua Market, Vientiane
Capital, Laos

Trichopsis schalleri

Order: Perciformes
Family: Osphronemidae

LA	<u>Pa math</u>	
KH	<u>Tray kram tonsai</u>	
TH	<u>Pla krim see, Pla maud</u>	
VN	<u>Ca bai trau</u>	<u>Cá bãi trầu</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos and Thailand) and grows up to 4cm. Soft rays of the pelvic fin are thread-like, but shorter than the body. Soft rays of the anal fin extend to middle of caudal fin. The caudal fin is round and tapered at the end. There are 1 to 2 black lateral stripes. Edge of the caudal, anal, and dorsal fins is red with scattered blue spots. It resembles *Trichopsis vittata*, but can be distinguished by lack of the black stripe under the eye. It lives in stagnant water body such as marsh, pond, and paddy field.

Use

It is served steamed, cooked in a pot, and stir-fried. It is also used as a sh sauce ingredient in Laos.

Since it is found in abundance near houses such as a paddy field and marsh, it is frequently used in a daily dish. It is often cooked with other small fish or aquatic insects or animals. It is caught by hand net, hand-held lift net, fixed net, and trap. It is caught often around a paddy field. *T. vittata* is used in the same manner.



09 Sep. 2010 Thating Hang,
Savannakhet, Laos



29 May 2009 Norng Yao, Vientiane
Capital, Laos



Trichopsis schalleri
09 Sep. 2010 Thating Hang, Savannakhet,
Laos



Trichopsis vittata
17 Sep. 2007 Wat Preah Yesu, Siem Reap,
Cambodia



Trichopsis vittata
02 Sep. 2010 Norng Bon, Vientiane Capital,
Laos



Trichopsis vittata
12 Sep. 2007 New Nong Neow Market,
Vientiane Capital, Laos

Channa lucius

Order: Perciformes

Family: Channidae

LA	Pa ii jone, Pa ka chon	
KH	Tray kanchoun chev	
TH	Pla e-jaun, Pla ka song	
VN	Ca day	Cá dầy
JP		

Remarks

Basic Information

It is distributed in Southeast Asia. Its length exceeds 30cm. Its lateral side has black mottles, and the ventral side has rows of oblique stripes. It lives in slow currents of rivers, lakes, marshes, and ponds.

Use

It is served fried, roasted, cooked in a pot, steamed, dried and in soup. It is caught by draw net, gill net, long-line fishery, and hand net.



30 May 2009 Dong Makkai Market,
Vientiane Capital, Laos



30 May 2009 Nong Chanh Market, Vientiane
Capital, Laos



30 May 2009 Vientiane Capital, Laos



26 Nov. 2009 Dong Borng, Vientiane Capital, Laos

Channa gachua

Order: Perciformes
Family: Channidae

LA	<u>Pa khor kang</u>	
KH	<u>Tray k'saan</u>	
TH	<u>Pla kang</u>	
VN	<u>Ca chanh duc</u>	<u>Cá chanh dục</u>
JP		

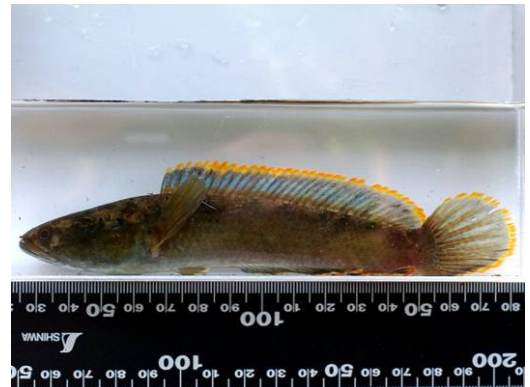
Remarks

Basic Information

It is distributed from Sri Lanka to Mekong delta (Laos, Thailand, Cambodia, Vietnam, and Yunnan Province in China) and Bali Island. Its length exceeds 17cm. Adult has light orange to yellowish or white tip of dorsal, anal, and caudal fin. A black eclipse-shaped mottle is present at the origin of the pectoral fin. It lives in rivers, small streams, lakes, marshes, and ponds.

Use

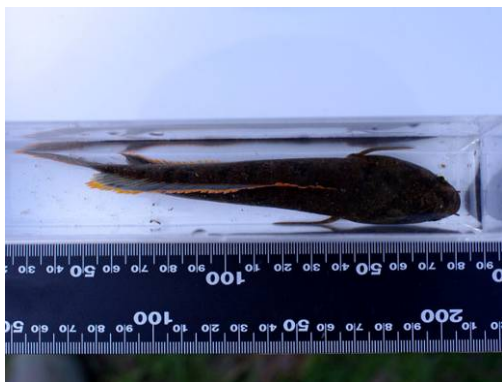
It is served fried, roasted, cooked in a pot, steamed, dried and in soup. Compared to the other species in *Channidae*, it is less often sold in the market, but it is a familiar fish around the villages and is used daily. It is caught by draw net, gill net, hand net, and cast net.



26 Nov. 2009 Dong Borng,
Vientiane Capital, Laos



13 Feb. 2010 Tha Heua Market,
Louang Phrabang, Laos



26 Nov. 2009 Dong Borng,
Vientiane Capital, Laos



26 May 2009 Nakha,
Louang Phrabang, Laos



26 Nov. 2009 Dong Borng,
Vientiane Capital, Laos



24 Feb 2010 Phonekeo,
Vientiane Province, Laos



17 Jul. 2010 Phonekeo,
Vientiane Province, Laos



24 Aug. 2010 Phonekeo,
Vientiane Province, Laos

Channa micropeltes

Order: Perciformes
Family: Channidae

LA	Pa do	
KH	Tray diep, Tray chhdao	
TH	Pla doh, Pla chado, Pla melang pu	
VN	Ca loc bong	Cá lóc bông
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, and Vietnam), Chao Phraya delta, Malay Peninsula, Sumatra Island, and Borneo Island. Its length exceeds 90cm. Bold and black lateral stripes are present. Juveniles have 2 black lateral lines and the space between the lines is colored bright orange. It lives in slow current and stagnant water.

Use

It is served fried, roasted, cooked in a pot, steamed, dried, and in soup. It is often seen in the market, and sometimes individuals over 50cm are found. This species and *Channa striata* are more popular as food source among *Channidae* family. It is caught by draw net, gill net, trap, and long-line fishery.



18 Sep. 2007 Old Market, Siem Reap, Cambodia



20 Sep. 2011 Thong Khan Kham, Market, Vientiane Capital, Laos

Channa striata

Order: Perciformes
Family: Channidae

LA	<u>Pa khor</u>	
KH	<u>Tray phtoah, Tray roh</u>	
TH	<u>Pla chon, Pla khor</u>	
VN	<u>Ca loc dong, Ca loc den</u>	<u>Cá lóc đồng, Cá lóc đen</u>
JP		

Remarks

Basic Information

It is distributed from Sri Lanka to Indonesia, the Philippines, and China. It can grow up to 90cm long, but typical individuals are 30 to 70cm. It has a dark body with white ventral side. Adults have oblique black lateral stripes. Juveniles have an orange-colored body. It lives in a paddy field, marsh, waterway, river, pond, and lake. Sometimes it migrates to temporary a water such as puddles.

Use

It is the most frequently used species within *Channidae* family, and it can represent the food in Indo-China. It is found in abundance around a paddy field, so it is easy for people to catch and use it daily.

There are several ways of using the fish, including its juveniles and hatchlings. It is mainly fried, roasted, steamed, cooked in a pot, dried, in soup, and ground to make a paste. It is particularly popular to fry or make a soup with it. Hatchlings are wrapped in banana leaves and steamed. It is caught by drying of pond, gill net, bag net, hand-held lift net, fish basket, by hands, fishing, fixed net, and trap. In Laos, there is even a trap that is named after this species (Chan-Pa khor). It is cultivated both commercially and individually. Individual small scale farms are often extensive, but locals prefer wild-caught over farmed ones, and they differ in market prices as well.



14 Sep. 2011 Houyyon, Khammouane, Laos



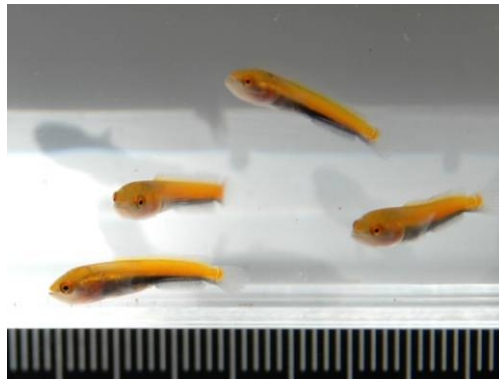
04 Nov. 2008 Phnom Penh, Cambodia



19 Nov. 2009 Thong Khan Kham Market,
Vientiane Capital, Laos



27 Jul. 2008 Nathone,
Vientiane Capital, Laos



17 Sep. 2007 Wat Preah Yesu,
Siem Reap, Cambodia



03 Aug. 2010 Phonekeo,
Vientiane Province, Laos



17 Sep. 2007 Wat Preah Yesu,
Siem Reap, Cambodia



29 May 2009 Norng Bon,
Vientiane Capital, Laos



19 Nov. 2009 New Nong Neow Market,
Vientiane Capital, Laos



28 Jul. 2008 Thong Khan Kham Market,
Vientiane Capital, Laos



12 Sep. 2007 Vientiane Capital, Laos



27 Jul. 2009 Vientiane Capital, Laos



17 Sep. 2007 Tonle Sap,
Siem Reap, Cambodia



17 Sep. 2007 Tonle Sap,
Siem Reap, Cambodia



Chan-Pa khor
29 May 2009 Norng Bon,
Vientiane Capital, Laos



28 Nov. 2009 Vientiane Capital, Laos



26 Apr. 2009 Vientiane Capital, Laos



29 May 2009 Norng Bon,
Vientiane Capital, Laos

Brachirus harmandi

Order: Pleuronectiformes
Family: Soleidae

LA	Pa pam, Pa line maa	
KH	Tray ondat chhkae khmau	
TH	Pla lin maa, Pla line kwai	
VN	Ca lui meo	Cá lưỡi mè
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, and Cambodia), Chao Phraya delta, and Malay Peninsula. It is 8cm long with a flat body. Its pectoral fin is rudimentary. It lives in the sand and muddy bottom of large rivers.

Use

It is used in soup. It is caught by draw net, trawling, fixed net, and cast net.



Nov. 2008 Phnom Penh, Cambodia



05 Nov. 2008 Phnom Penh, Cambodia

Tetraodon turgidus

Order: Tetraodontiformes
Family: Tetraodontidae

LA	<u>Pa pao</u>	
KH	<u>Tray kompot para</u>	
TH	<u>Pla pak pao</u>	
VN	<u>Ca noc</u>	<u>Cá nóc</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos and Thailand). It is 18.5cm long. Numerous dark orange to reddish mottles are present on the lateral side.

Use

It is used as food in Laos and Cambodia, but it is not a popular cooking fish. Although not frequent, it is sold at the market. It is served roasted, steamed, and in soup. Many species of *Tetraodontidae* family are known to have poison, but details about freshwater species in Indo-China Peninsula remain unknown. During an interview in Laos, there were tales of people having stomach ache or died after consuming pufferfish, but the truth needs confirmation.

It is caught by cast net, hand-held lift net, hand net, fixed net, and trap. Other than this species, use of *T. cambodgiensis*, *T. cochinchinensis*, and *T. suvattii* are confirmed.



24 Jul. 2008 Khun Neua, Vientiane
Province, Laos



24 Jul. 2008 Khun Neua, Vientiane
Province, Laos



23 Nov. 2009 Nam Song,
Vientiane Province, Laos



Tetraodon cambodgiensis
13 Nov. 2008 Thaheua Market,
Vientiane Province, Laos



Tetraodon cochinchinensis
06 Aug. 2010 Vientiane Capital, Laos



Tetraodon cochinchinensis
12 Sep. 2010 Sivilay, Vientiane Capital, Laos



Tetraodon suvattii
23 Nov. 2009 Hin Kham Mad Market,
Vientiane Province, Laos

Other cooking fish

There are many fish being used in Mekong delta, other than those introduced in this report. It is assumed that fish that are not frequently used remain unconfirmed. In this chapter, the pictures, scientific names, and the local names of fish that are confirmed of their use, but lack detailed information, are introduced.

Anguilla marmorata

Order: Anguilliformes

Family: Anguillidae

LA	<u>Pa lai fai faa</u>	
KH		
TH	<u>Pla ian hoo</u>	
VN	<u>Cá chình hoa</u>	<u>Cá chình hoa</u>
JP		オオウナギ

Remarks

Basic Information

It is not often found in market. It is served in soup



21 Jan. 2013 Pakse New Market,
Champasak, Laos

Clupeichthys aesarnensis

Order: Clupeiformes

Family: Clupeidae

LA	<u>Pa mak phang, Pa sanak</u>	
KH	<u>Tray kbok</u>	
TH	<u>Pla mak phang</u>	
VN	<u>Cá trích xiêm</u>	<u>Cá trích xiêm</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, and Cambodia). It lives in large rivers without much current. It is dried and served in stir-fry. It is also used as a fish sauce ingredient.



19 Nov. 2009 Hou Kua Market, Vientiane
Capital, Laos

Tenuالosa thibaudeaui

Order: Clupeiformes

Family: Clupeidae

LA Pa mak phang, Pa sanak

KH Tray kbok

TH Pla mak phang

VN Ca chay nam Cá chày nam

JP _____

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia and Vietnam). It has a deep body, and adults have rows of black spots on the upper lateral body. It feeds on phytoplankton and other small food.



Tenuالosa thibaudeaui

26 Jun. 2010 Vientiane Capital, Laos

Boraras micros

Order: Cypriniformes

Family: Cyprinidae

LA Pa sill

KH Tray changwa la-et

TH _____

VN _____

JP _____

Remarks

Basic Information

It is stir-fried or steamed with other small fish. It is not eaten as a single cooking fish, but rather is cooked as small fish collectively.



25 Jul. 2008 Naphang, Vientiane
Province, Laos

Danio roseus

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pasill, Pa vien fai, Pa sill</u>	
	<u>dang</u>	
KH		
TH	<u>Pla siew</u>	
VN		
JP		

Remarks

Basic Information

It is distributed in Mekong delta (North of Laos, Thailand and Myanmar). It is 3.5cm long with a pinkish to orange colored band on pelvic and anal fin. It has long barbels, and is served steamed or cooked in a pot.



26 May 2009 Nakha, Louang Phrabang,
Laos

Devario gibber

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa sill khao</u>	
KH	<u>Tray changwaa phlieng</u>	
	<u>phnom</u>	
TH	<u>Pla siew</u>	
VN		
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos). It is 6.5cm long with 3 to 4 dark blue lateral stripes.



Phonekeo, Vientiane Province, Laos

Discherodontus ashmeadi

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa sill hang deang</u>	
KH	<u>Tray kontoy krohom</u>	
TH	<u>Pla haang dang, Pla dangnoi</u>	
VN		
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, and Cambodia). It is 13.5cm long with a black tip of dorsal fin. Part of the caudal fin turns bright red. It is served fried, roasted, and steamed. It is also used as a fish sauce ingredient in Laos.



11 Nov. 2008 Thong Khan Kham Market,
Vientiane Capital, Laos

Hemiculterella macrolepis

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa kang</u>	
KH		
TH		
VN		
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos and Yunnan Province in China). It is 13.5cm long. Between the base of the pelvic fin and the anal fin becomes keel. Dried fish are sold, and they are served fried and stir-fried.



17 Feb. 2010 Pakse New Market,
Champasak, Laos

Hypsibarbus lagleri

Order: Cypriniformes

Family: Cyprinidae

LA Pa pak mon, Pa pak

KH Tray chhpin sdaeng

TH Pla pak, Pla pak nuad

VN _____

JP _____

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, and Cambodia). It is 35cm long with a laterally compressed and deep body.



13 Feb. 2010 Phoshy Market,
Louang Phrabang, Laos

Hypsibarbus pierrei

Order: Cypriniformes

Family: Cyprinidae

LA Pa pak ta leung

KH Tray ch'pun miah

TH Pla pak

VN _____

JP _____

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Vietnam, and Cambodia), Dong Nai delta and Malay Peninsula. It is 25cm long.



21 Jun. 2009 Vientiane Capital, Laos

Hypsibarbus malcolmi

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa pak kom</u>	
KH	<u>Tray ch'pun moul</u>	
TH	<u>Pla pak, Pla tapak</u>	
VN		
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, and Cambodia), Chao Phraya delta, Mae Klong delta, and Malay Peninsula. It is 40cm long.



22 Jul. 2008 Nong Chanh Market,
Vientiane Capital, Laos

Labiobarbus leptocheila

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa khilam</u>	
KH	<u>Tray khnong veng , Tray ai(ch)kok</u>	
TH	<u>Pla khui larm, Pla laung khon</u>	
VN	<u>Ca linh ray</u>	<u>Cá linh rây</u>
JP		

Remarks

Basic Information

It is distributed in Southeast Asia. It is 26cm long with dark caudal and dorsal fins. Usually it has rows of dark spots on the lateral side. It is served fried and roasted.



22 Jul. 2010 Vientiane Capital, Laos

Labiobarbus siamensis

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa poth, Pa ithai</u>	
KH	<u>Tray ai(ch)kok, Tray khnong veng</u>	
TH	<u>Pla sa, Pla moliluay</u>	
VN	<u>Ca linh ria xiêm</u>	<u>Cá linh rìa xiêm</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, and Cambodia), and Chao Phraya delta. It is 16.5cm long with dark caudal and dorsal fins. Usually it has rows of dark spots on lateral side.



15 Sep. 2007 Kampong Phluk, Siem Reap, Cambodia

Onychostoma gerlachi

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa khing</u>	
KH	<u>Tray ronoung ch'nout</u>	
TH	<u>Pla soi</u>	
VN		
JP		

Remarks

Basic Information

It is distributed in Mekong delta (North of Laos and Yunnan Province in China), Ma delta, Red River delta, and Nanpan delta. It is 26.5cm long.



24 Nov. 2009 Vang Vieng Market, Vientiane Province, Laos

Opsarius pulchellus

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa khan heua</u>	
KH	<u>Tray ongkot krophom</u>	
TH	<u>Pla nam mueng</u>	
VN		
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, and Yunnan Province in China), Ma delta, and Chao Phraya delta. It is 10cm long with 7 to 10 dark blue vertical mottles. It lives in rivers and small streams.



24 Nov. 2009 Vang Vieng Market,
Vientiane Province, Laos

Parachela siamensis

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa tab houa bith</u>	
KH	<u>Tray chuntia phlok</u>	
TH	<u>Pla taeb kaew, Pla tong prus</u>	
VN	<u>Ca lanh canh xiêm</u>	<u>Cá lạnh canh xiêm</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, and Cambodia) and Chao Phraya delta. It is 12cm long with its ventral side being keel.

The pectoral fin is long, but does not reach the edge of the pelvic fin. It is served fried and roasted. It is also used as a fish sauce ingredient.



30 May 2009 Vientiane Capital, Laos

Poropuntius laoensis

Order: Cypriniformes

Family: Cyprinidae

LA Pa iath

KH Tray kroh phnom

TH Pla jard, Pla kavao

VN _____

JP _____

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, and Cambodia). It is served fried, roasted, and steamed. It is used as a fish sauce ingredient.



13 Feb. 2010 Tha Heua Market, Louang Phrabang, Laos

Poropuntius normani

Order: Cypriniformes

Family: Cyprinidae

LA _____

KH Tray kroh phnom

TH Pla jard

VN _____

JP _____

Remarks

Basic Information

It is served fried, roasted, and steamed. It is used as a fish sauce ingredient.



22 Nov. 2009 Mueng Song Market, Vientiane Province, Laos

Probarbus jullieni

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa eune</u>	
KH	<u>Tray trosok</u>	
TH	<u>Pla yeesok, Pla urn</u>	
VN	<u>Ca tra soc</u>	<u>Cá trà sóc</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, and Cambodia), Chao Phraya delta, Mae Klong delta, and Malay Peninsula.

It is 1m long with distinct black lateral stripes. The caudal fin is black and forked. It is served roasted, in soup, and Laap, and as a stake.



14 Oct. 2009 Vientiane Province, Lao

Puntius sp. (cf. masyai)

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa khao</u>	
KH	<u>Tray ongkot prak</u>	
TH	<u>Pla tapien sai</u>	
VN	<u>Ca ram</u>	<u>Cá rắm</u>
JP		

Remarks

Basic Information

It has a black blotch in the middle of base of dorsal fin and caudal peduncle. It is served fried, roasted, cooked in a pot, and steamed. It is used as a fish sauce ingredient.



24 Jul. 2008 Naphang, Vientiane Province, Laos

Rasbora sp. (cf. *steineri*)

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa sill</u>	
KH	<u>Tray chongwa ch'nout</u>	
TH	<u>Pla siew hang daeng</u>	
VN	<u>Ca long tong</u>	<u>Cá long tong</u>
JP		

Remarks

Basic Information

It is distributed in Ma delta, North to Central Vietnam, and Southeast China. It is 6cm long with a dark lateral band that reaches the edge of caudal fin.



Rasbora sp. (cf. *steineri*)
28 Jun. 2010 Phone Ngeun,
Vientiane Province, Laos

Scaphiodonichthys acanthopterus

Order: Cypriniformes

Family: Cyprinidae

LA		
KH		
TH	<u>Pla moom</u>	
VN		
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, Vietnam, and Yunnan Province in China), Nam Xam delta, Da delta, and Chao Phraya delta. It is 31cm long. It lives in clear streams in the mountains.



29 Sep. 2009 Phonekeo, Vientiane
Province, Laos

Scaphognathops bandanensis

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa pian tadam</u>	
KH	<u>Tray paphak</u>	
TH	<u>Pla ta dam, Pla ta pean</u>	
VN		
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, and Cambodia). It is 18cm long with a pale yellow caudal fin. It has no barbels and has a blunt sharp snout. It lives in rivers during the dry period and migrates to the branches of river or flood plains during rain season. It is served roasted, in soup and Laap, and dried.



08 Nov. 2008 Tha Heua Market, Louang
Phrabang, Laos

Sikukia gudgeri

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa mok mang</u>	
KH	<u>Tray kombot chromoh, Tray phneik krohom</u>	
TH	<u>Pla kra mang, Pla si kook</u>	
VN	<u>Ca danh</u>	<u>Cá danh</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, and Yunnan Province in Chin) and Chao Phraya delta. It is 15cm long with a silver body.

It is served fried, roasted, cooked in a pot, and steamed. It is used as a fish sauce ingredient.



10 Jul. 2009 Vientiane Capital, Laos

Thynnichthys thynnoides

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa kaum</u>	
KH	<u>Tray lin</u>	
TH	<u>Pla soi kred tee</u>	
VN	<u>Ca linh cam</u>	<u>Cá linh cá</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, and Vietnam), Chao Phraya delta, Malay Peninsula, Sumatra Island, and Borneo Island.

It is 20cm long with a laterally compressed body and keeled ventral side. It is silvery with fine scales. It lives in rivers, waterways, and flood plains. It is roasted and cooked in a pot. It is used as a fish sauce ingredient.



15 May 2009 Vientiane Capital, Laos

Tor tambroides

Order: Cypriniformes

Family: Cyprinidae

LA	<u>Pa daeng</u>	
KH	<u>Tray k'ao</u>	
TH	<u>Pla wien</u>	
VN	<u>Ca ngựa xám</u>	<u>Cá ngựa xám</u>
JP		

Remarks

Basic Information

It is distributed in Southeast Asia. It is 55cm long with a bright ventral side and dark dorsal side. Its scales are large. It is served roasted, steamed, cooked in a pot, in Laap and soup.



07 Nov. 2008 Phoshy Market, Louang Phrabang, Laos

Helicophagus leptorhynchus

Order: Siluriformes

Family: Pangasiidae

LA	<u>Pa naa nou</u>	
KH	<u>Tray pra kondol</u>	
TH	<u>Pla sa wai noo</u>	
VN	<u>Ca tra chuot</u>	<u>Cá tra chuột</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, and Vietnam) and Chao Phraya delta. It lives in rives and river branches. It is 47cm long with 2 pairs of relatively short barbels.



13 Feb. 2010 Morpou, Champasak, 2010

Pseudolais pleurotaenia

Order: Siluriformes

Family: Pangasiidae

LA	<u>Pa yone thong kom</u>	
KH	<u>Tray chhwiet kdaa</u>	
TH	<u>Pla vorn taa po</u>	
VN	<u>Ca xac bau</u>	<u>Cá xác bầu</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, and Vietnam), Chao Phraya delta, Mae Klong delta, and Tapi delta.

It is 30cm long with a laterally compressed body and keeled ventral side. It is served fried and cooked in a pot.



16 Feb. 2010 Lak2 Market,
Champasak, Laos

Clupisoma sinensis

Order: Siluriformes

Family: Schilbeidae

LA	<u>Pa ngon thong</u>	
KH	<u>Tray chhwiet prak luang</u>	
TH	<u>Pla vorn thong</u>	
VN		
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, Vietnam, and Yunnan Province in China) and Malay Peninsula. It is 27cm long with 4 pairs of barbels.



Clupisoma sinensis

14 Oct. 2009 Vientiane Capital, Laos

Laides longibarbis

Order: Siluriformes

Family: Schilbeidae

LA	<u>Pa yone ta loh</u>	
KH	<u>Tray chhwiet prak</u>	
TH	<u>Pla vorn mauk</u>	
VN		
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, Vietnam, and Yunnan Province in China), Chao Phraya delta, and Mae Klong delta. It is 14cm long with 3 pairs of barbels.



22 Jul. 2008 Dong Makkai Market,
Vientiane Capital, Laos

Polynemus aquilonaris

Order: Perciformes
Family: Polynemidae

LA	_____	_____
KH	<u>Tray pream sor</u>	_____
TH	_____	_____
VN	<u>Cá phen song</u>	<u>Cá phèn sông</u>
JP	_____	_____

Remarks

Basic Information

It was sold in Cambodian water market.



15 Sep. 2007 Tonle Sap, Siem Reap,
Cambodia

Boesemania microlepis

Order: Perciformes
Family: Sciaenidae

LA	<u>Pa kouang</u>	_____
KH	<u>Tray promar</u>	_____
TH	<u>Pla kuang</u>	_____
VN	<u>Cá suu</u>	<u>Cá sừu</u>
JP	_____	_____

Remarks

Basic Information

It is cooked in a pot or put in soup.



19 Jan. 2013 Lak2 Market, Champasak,
Laos

Brachygobius mekongensis

Order: Perciformes

Family: Gobiidae

LA	<u>Pa bou</u>	
KH	<u>Tray ka-san boeung</u>	
TH		
VN	<u>Ca bong dieu</u>	<u>Cá bông diều</u>
JP		

Remarks

Basic Information

It is cooked in a pot, stir-fried, or steamed with other small fish and aquatic animals.



22 Jul. 2008 Phangheng, Vientiane
Capital, Laos

Osphronemus exodon

Order: Perciformes

Family: Osphronemidae

LA	<u>Pa men</u>	
KH	<u>Tray romeas</u>	
TH	<u>Pla mhen</u>	
VN	<u>Ca tai tuong</u>	<u>Cá tai tượng</u>
JP		

Remarks

Basic Information

It is served fried, roasted, cooked in a pot, or stir-fried. It is also used as an ingredient for fish sauce and fermented sushi.



18 Feb. 2010 Lak14 Market, Champasak,
Laos

Datnioides undecimradiatus

Order: Perciformes

Family: Lobotidae

LA	<u>Pa seu</u>	
KH	<u>Tray kontrop khla</u>	
TH	<u>Pla sua</u>	
VN	<u>Ca huong ven</u>	<u>Cá hương vên</u>
JP		

Remarks

Basic Information

It is distributed in Mekong delta (Laos, Thailand, Cambodia, and Vietnam). It is 24cm long with 4 to 5 distinct vertical black stripes. It is served fried, roasted, and in soup.



2010.Feb.16 Lak2 Market,
Champasak, Laos

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Insects

Insects

Mekong river basin has tradition of eating insects and one sees variety of insects in the market today. Insects and freshwater fish have been used as good source of protein especially among inland areas. Although modern advancement of transportation enabled to have food from distance and made insects as less important as a sole source of protein, they are still popular as food to enjoy. They can be a main dish, a snack or an appetizer so they are enjoyed by everybody from elderly to young. In the cities, insect dishes are available in markets, stalls, and eateries.

In the market, there are insects that are sold throughout year, only in certain season, and only by chance. Geographic difference plays a role and marketed insects change from area to area. Commonly seen insects are from Orthoptera, Hemiptera, Hymenoptera, Coleoptera, Lepidoptera. There are even insects that are very popularly consumed in Mekong river basin yet they are protected species in Japan. In this study, we recorded more than 120 species of insects, but in reality, there are more species consumed than one can see in market.

Most popular method to cook insects is frying and seasoning it with salt, fish sauce and MSG, or mix it with chili. Other than frying, they can be roasted, boiled, stir fried, steamed, eaten raw or mixed with chili paste. Also noted is an insect is cooked differently according to its development phase of egg, larva, cocoon, and adult form.

Many of insects are common species and caught in wetlands near villages. They are consumed at home as well as sold at markets in exchange of money. Some species such as silkworm (*Bombyx mori*) and house cricket (*Acheta domestica*) are cultured to enable stable supply to markets. There are suppliers that export them overseas. In this study, approximately 120 species of edible insects have been confirmed. Those species that lack detailed information are introduced with only picture and name. Our purpose here is to introduce as many species as possible.

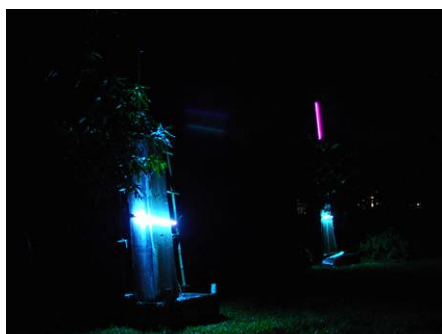


The Collection Method

As mentioned before, many insect species are utilized as food source in Mekong river basin. Various collection methods exist according to species, seasons, and habitat. In this section, we introduce most popular collection methods.

<Light trap>

This method incorporates fluorescent light and black light which emits strong ultraviolet to be lit during night. It attracts insects with phototactic behavior. Insects fly into light and hit a piece of galvanized metal sheet or cloth set behind the light and drop into a bucket or box underneath. The bucket or box is filled with water so that fallen insects would not escape. This type of trap is often set up in one's yard where it has easy access to electric outlet. The light is shone towards waterfronts such as paddy fields. The trap is filled with water and lit in the evening, then they collect the trapped insects in the morning. It is simple and effective. Typical catches are giant water bug, predaceous diving beetle, water scavenger beetle, termite, mole cricket and others. Large insects and popular species are sorted out and others are frozen altogether to be sold at market or cooked at home. Kinds and amount of insects vary depending on the season, so some people set trap throughout year while others only collect during certain seasons.



<Night collection>

In this method, people go out at night with a light. It is a casual walk to paths, forest fringe, or paddy field near the village. Diurnal insects such as grasshopper which does not move at night are often caught in this method.



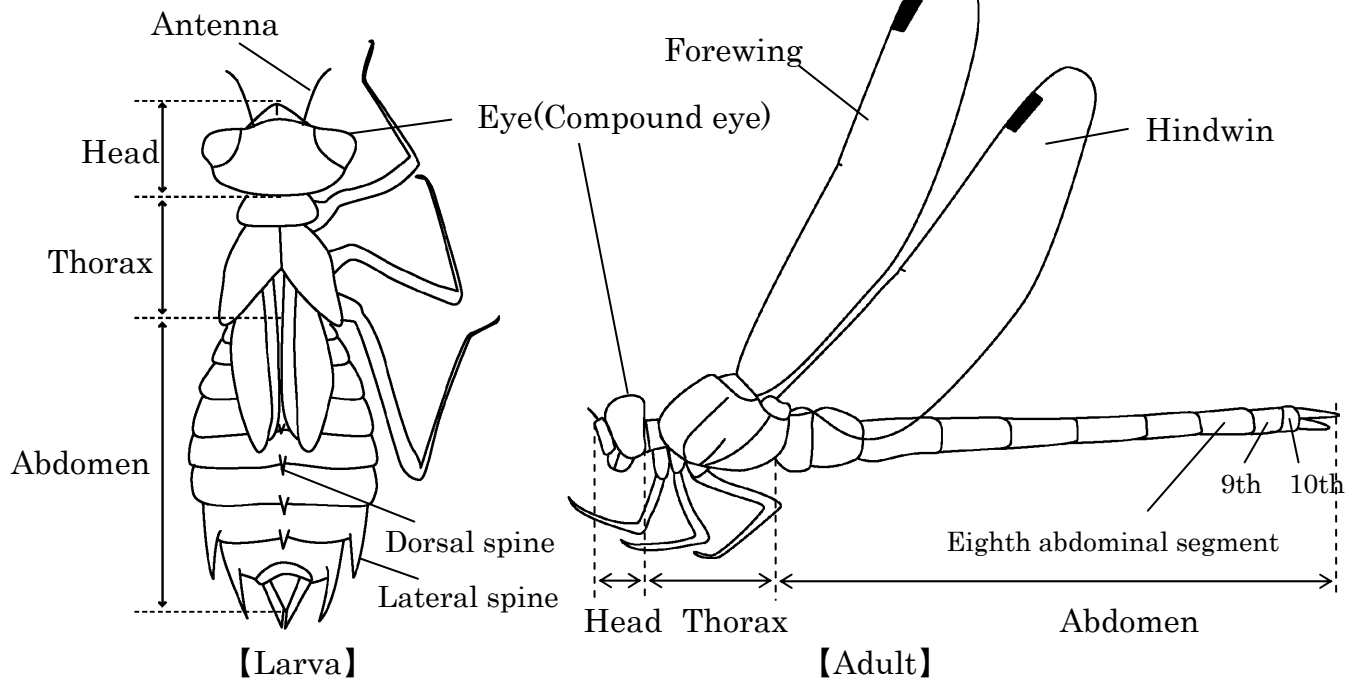
<Bamboo colander>

A round bamboo colander is used, or a handle-less net which is spread and fitted in round or triangular woven bamboo is used to scoop water in. This method is used in shallow water such as paddy or marsh. Aquatic insect such as dragonfly larva, Ferocious water bug, Water stick insect and aquatic coreoptera such as predaceous diving beetle and water scavenger beetle are popular catch. Shrimp, small fish and tadpoles are caught at the same time. It is often used by women and youth.

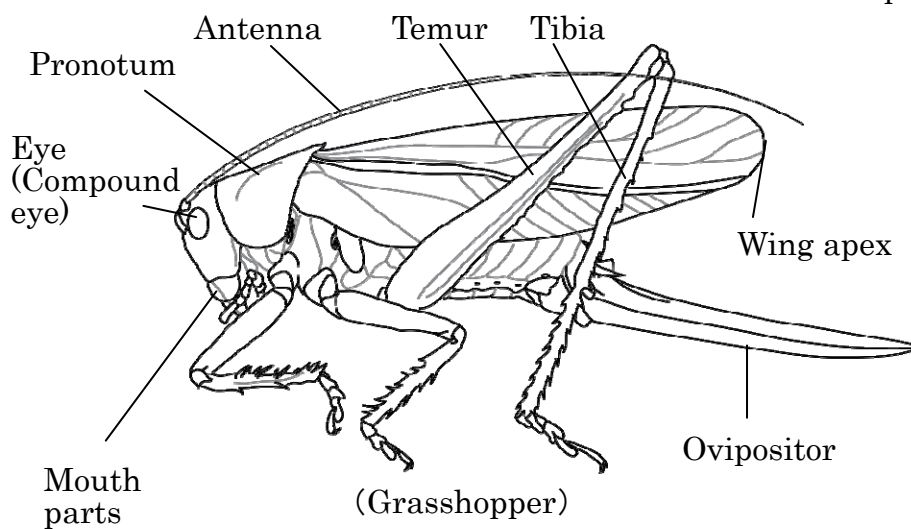


Morphology of insects

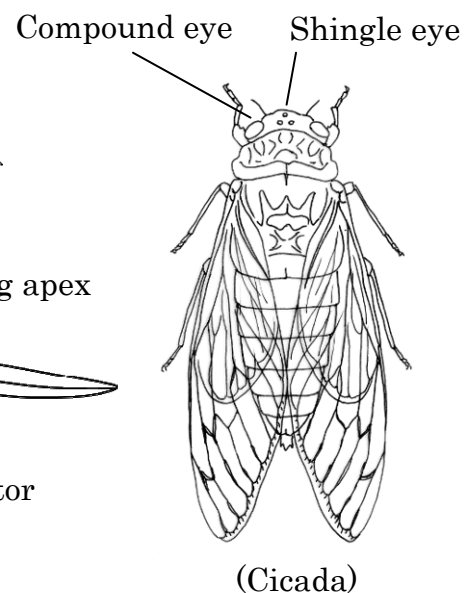
Odonata



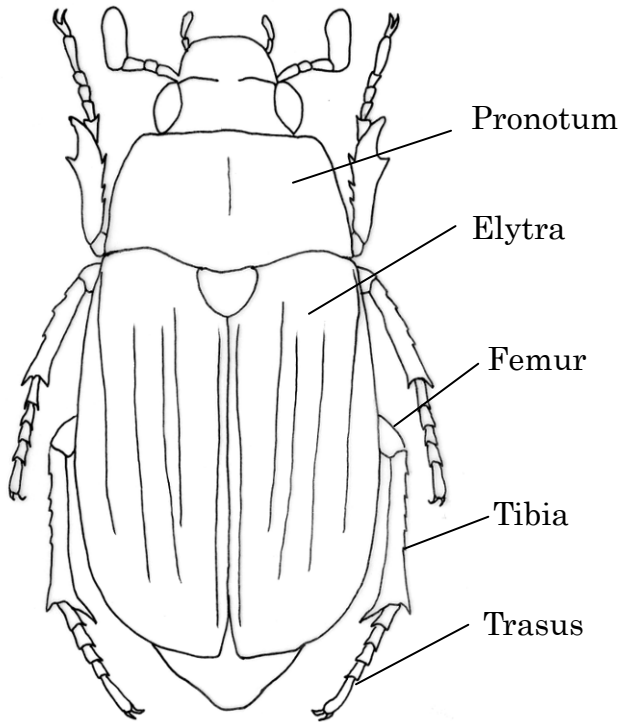
Orthoptera



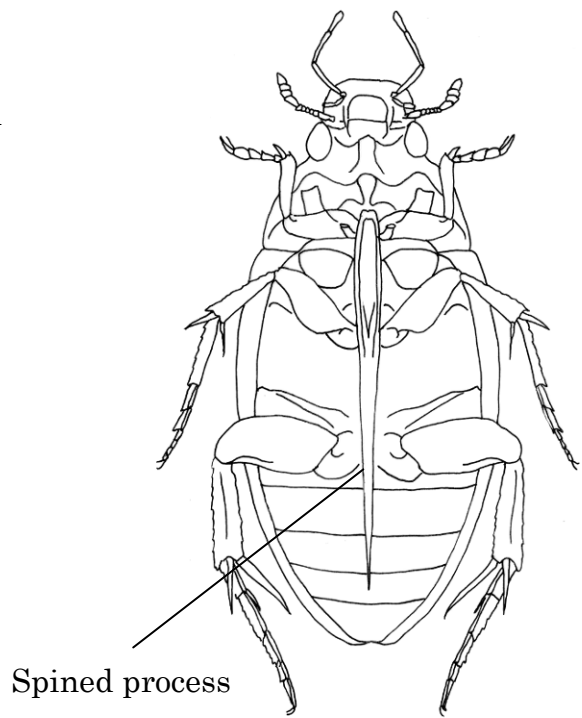
Hemiptera



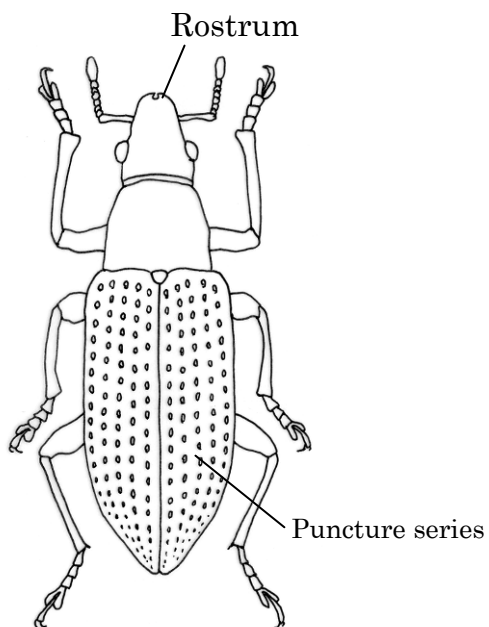
Coreoptera



(Beetle)

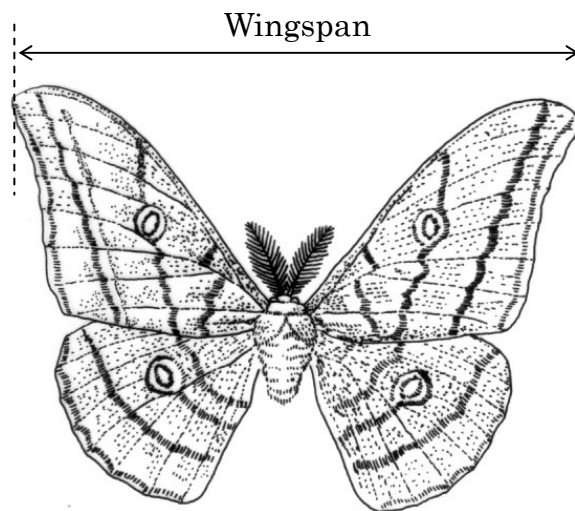


(Water scavenger beetle)



(Billbug)

Lepidoptera



(Emperor moth)

Odonata spp.

Order: Odonata
Family:

LA	Maeng por, Maeng nangam, Iniauw	
KH	Kantomroy , Dounchy , Meichah	
TH	Tou on ma lang por bann, Tou on ma lang por seau	
VN	Chuon chuon trau	Chuồn chuồn trâu
JP	Tombo (adult), Yago (larva)	トンボ (adult), ヤゴ (larva)
Remarks		



Epophthalmia frontalis frontalis
18 May.2010 Laos



Epophthalmia frontalis frontalis
8 Jul.2009 Laos

Basic Information

Dragonfly larvae have completely different appearance from the adults. The body of a larva is short and thick, usually cylindrical. Larvae of *Aeshnidae* have a proportion of their body width and length as 1:5. Larvae of *Gomphidae* and *Macromiidae* have flat abdomen, and the proportion is 1 to 2:3.5. Larvae of *Libellulidae* have proportion of 1:4. Most of the species are one generation per year, and larvae are aquatic. Both adults and larvae are carnivorous.

They eat other smaller insects. Depending of the species, eggs are dropped on a water body or laid on a plant body in water. When larvae are ready for their final molt, they leave the water and crawl onto a bank where they will molt into adults. Newly emerged adults leave the aquatic environment for a while then come back when they are fully matured.

Use

The dragonfly larvae are primarily used as food. Adults are said to be eaten in some areas, but it is not a common habit. Especially in Laos, dragonfly larvae are used frequently, whereas in Cambodia, they are not a popular insect as food. Larvae are fried, stir-fried, or steamed to be served. In Lao market, steamed larvae wrapped in banana leaves are sold. Adults are roasted or fried to be eaten.

Collection of larvae is usually done by skimming them by using a colander or a hand-held net. During rain season, collection takes place at shallow water with ample aquatic vegetation, such as marshes, and during the dry season, it is done at rivers which have decreased water volume. Several species of larvae are more frequently used, such as *Aeshnidae*, *Gomphidae*, *Corduliidae*, and *Libellulidae*. They are often sold mixed with other small aquatic animals. In this section, we introduce species that are often sighted in markets and around water. It is assumed that there are many more species used as food other than those written in this report.



04 Sep. 2010 Vang Vieng Market, Vientiane Province, Laos



Epophthalmia sp.
02 Sep. 2010 Dong Makkai Market, Vientiane Capital, Laos



10 Jun. 2007 Dong Makkai Market, Vientiane Capital, Laos



25 Nov. 2009 Hou Kua Market, Vientiane Capital, Laos



14 Oct. 2009 Dong Makkai Market, Vientiane Capital, Laos



06 Sep. 2009 Dong Makkai Market, Vientiane Capital, Laos



09 Sep. 2010 Phon Sim, Savannakhet, Laos



19 Jan. 2013 Lak14 Market, Champasak, Laos



21 Feb 2009 Vientiane Capital , Laos



26 Jun. 2010 Mueng Song Market, Vientiane Province , Laos



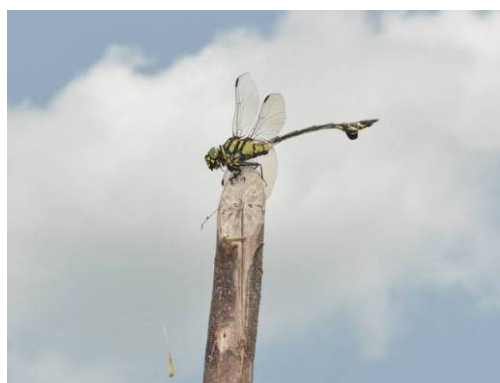
Anax guttatus
16 Sep. 2007 Arak Svay, Siem Reap, Cambodia



26 Aug. 2010 Cambodia



Sinictinogomphus clavatus
Laos



Sinictinogomphus clavatus
02 Sep. 2010 Norng Bon, Vientiane Capital, Laos



Ictinogomphus decoratus melaenops
25 Nov. 2010 Vientiane Capital, Laos



Ictinogomphus decoratus melaenops
8 Jul.2009 Laos



Gomphidia perakensis
27 Jul. 2008 Nathone, Vientiane Capital, Laos



Gomphidia perakensis
Jul.2008 Vientiane, Laos



Hydrobasileus croceus
18 May.2010 Cambodia



Hydrobasileus croceus
12 Oct.2010 Laos



Orthetrum
23 Jul. 2008 Dong Makkai, Vientiane Capital ,
Laos



Orthetrum glaucum
9 Sep.2009 Laos



Orthetrum triangulare
6 May.2010 Laos



Orthetrum pruinsum neglectum
27 Jun. 2010 Phonekeo, Vientiane Province,
Laos



Orthetrum sabina sabina
16 Aug.2010 Dong Makkai, Vientiane Capital ,
Laos



Brachydiplax
27 Jul. 2008 Nathone, Vientiane Capital, Laos



Brachydiplax chalybea chalybea
9 Nov.2007 Vientiane Capital, Laos



Brachydiplax farinosa
26 Jul. 2010 Phone Ngeun, Vientiane Province,
Laos



Diplacodes trivialis
12 Sep. 2007 Phoxay, Vientiane Capital, Laos



Diplacodes trivialis
7 May.2010 Laos



Neurothemis tullia tullia
02 Sep. 2010 Vang Hou, Vientiane Capital,
Laos



Neurothemis tullia tullia
8 Nov.2007 Siem Reap, Cambodia



Tholymis tillarga
02 Sep. 2010 Norng Bon, Vientiane Capital,
Laos



Tholymis tillarga
13 Oct.2010 Laos



Pantala flavescens
04 Sep. 2010 Vientiane Province, Laos



Pantala flavescens
12 Oct.2010 Laos



Potamarcha congener
25 Jul. 2010 Na Seng, Vientiane Province, Laos



Trithemis pallidinervis
01 Aug. 2010 Napuhey, Vientiane Province,
Laos



Trithemis aurora
26 Jul. 2010 Phone Ngeun, Vientiane Province,
Laos



Diplacodes nebulosa
26 Nov. 2009 Dong Borng, Vientiane Capital,
Laos



Brachythemis contaminata
28 Jun. 2010 Mueng Song, Vientiane Province,
Laos



Crocothemis servilia servilia
01 Aug. 2010 Napuheuy, Vientiane Province,
Laos



Rhyothemis triangularis
09 Sep. 2010 Thating Hang, Savannakhet,
Laos



Rhyothemis plutonia
22 May 2009 Houasang, Vientiane Capital,
Laos



Neurothemis fluvia
27 Jun. 2010 Phonekeo, Vientiane Province,
Laos

Gryllotalpa orientalis

Order: Orthoptera
Family: Gryllotalpidae

LA	Maeng sone	
KH	Tok tol	
TH	Maeng gi son, Ma lang kra sone, Krachorn	
VN	De nhui	Đế nhũi
JP	Kera	ケラ

Remarks

Basic Information

It is widely distributed in Southeast Asia, Australia, and Africa. Its length is 30 to 35mm. Its front legs are formed so that they are suitable to dig holes and bury itself. There is no significant difference in appearance between a male and female. It lives in burrows in the ground of paddy or farm field. Both male and female make a sound, and they communicate while being underground. It is omnivorous and eats any organic matter. Adults have tendency to fly during night and gather around the light sources. It can swim as well.



30 Jun.2009 Laos



02 Jul. 2010 Phonekeo, Vientiane
Province, Laos

Use

It is used as food in many areas. It is often fried, roasted, or stir-fried to be served. In Laos, it is used as an ingredient of chili paste. It has neutral taste, and people like it very much. Collection is mostly done by light trap method.

Gryllidae spp.

Order: Orthoptera
Family: Gryllidae

LA	Chinav, Chilo, Chilli	
KH	Chongrat	
TH	Ji pon, Chi reed	
VN	De com	Dé côm
JP	Koorogi	コオロギ類

Remarks

Basic Information

Its body is horizontally flat with black to dark brown color, and its antennae are thin and long. Most of the species live closer to the ground surface, and many are nocturnal. Adults live hiding behind an object on the ground, or by digging a shallow hole close to the surface. It is omnivorous and feed on carcass of small animals or dead plants.

Use

Both adult and larva are used as food. It is fried, roasted, or stir-fried to be eaten. In Laos, it is used as an ingredient of chili paste.

In Thailand, it is blanched first then cooked slowly in a fish paste. Canned, fried Gryllidae spp. is also popularly distributed. Popular species that are sold in markets are large *Brachytrupes portentosus*, mid-sized *Gryllus bimaculatus*, and cultured *Acheta domesticus*. In Cambodia, *B. portentosus* is very popular, therefore it is sold at higher price than other *Gryllidae* spp.. Other species confirmed in this study are; *Teleogryllus occipitalis*, *Gymnogryllus vietnamensis*, and *Teleogryllus* sp.. The farming technology of *A. domesticus* has been studied in advance, and its farms are widely seen in many areas. The cultured crickets are fed with artificial diet, and it takes a little over one month for an egg to become ready for shipping. Other than being shipped to the markets, it is also traded as food for pet reptiles to pet stores and zoos.

Collection of Gryllidae spp. takes place at dry paddy field or grass areas by digging soil to find it in the nest.



Tarbinskiellus portentosus
9 Sep.2008 Laos



10,000kip
12 Sep. 2007 Dong Makkai Market,
Vientiane Capital, Laos



24 Jun. 2010 Laos



10 Sep. 2010 Laosou Liya, Savannakhet, Laos



06 Oct. 2010 Vientiane, Laos



15 Feb. 2010 Yang Song, Savannakhet, Laos



15 Feb. 2010 Yang Song, Savannakhet, Laos



15 Feb. 2010 Yang Song, Savannakhet, Laos



15 Feb. 2010 Yang Song, Savannakhet, Laos



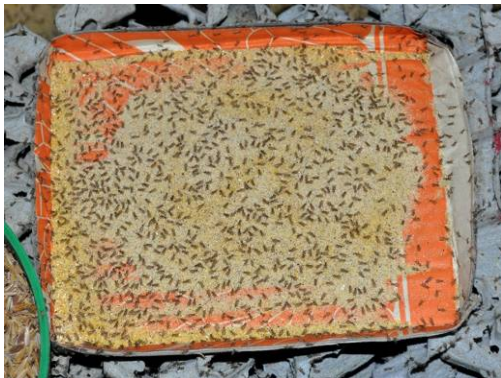
20 Sep. 2011 Na Bong University,
Vientiane Capital, Laos



20 Sep. 2011 Sokham, Vientiane Capital, Laos



20 Sep. 2011 Sokham, Vientiane Capital, Laos



20 Sep. 2011 Sokham, Vientiane Capital, Laos



Acheta domestica



Gryllus bimaculatus
19 May.2009 Cambodia



Gymnogryllus vietnamensis
19 May.2009 Cambodia



Teleogryllus occipitalis
19 May.2009 Cambodia



Teleogryllus sp.
29 Jun.2009 Laos

Mecopoda elongata

Order: Orthoptera
Family: Tettigoniidae

LA	Maeng yong vo	
KH		
TH		
VN	Vat sanh	Vat sành
JP	Taiwan-kutsuwa-mushi	タイワングツワムシ

Remarks

Basic Information

It is distributed in Indo-China, tropical Asia, Taiwan, and Japan (Nansei Islands). Its length is 50 to 75mm. It lives in a grass area or on a leaf of bushes in forest fringes. It is more active during the night, and adult males make a loud sound during the night.

Use

The general use of *Gampsocleis* spp. will be described in this section. People eat only adult *Gampsocleis* spp.. It is usually fried or stir-fried to be served, and its legs are typically removed

when cooking because they tend to prick a person's mouth. *Gampsocleis* spp. is sold in markets, but it is less often seen when compared to other grasshoppers. It is popular as homemade dish, and some people really favor it in Cambodia. Large species are collected by bare hands during the night by flashing a light. It is often found in grass, in a bush, or in forest fringe along the paddy field. *Mecopoda elongate* is especially attracted to a light, so it is collected by light trap method. Small species are collected by swinging a net in the grassland. With this method, other grasshoppers will be caught as well, so they are all eaten together. Other than *Mecopoda elongate* in the *Gampsocleis* spp., *Conocephalus maculatus* is also popularly used. Other species are also used commonly.



16 Nov.2007 Vientiane Capital, Laos



12 Sep. 2007 Dong Makkai Market,
Vientiane Capital, Laos



03 Aug. 2009 Vientiane Capital, Laos



17 Sep. 2011 Sainyabuli, Laos



Conocephalus maculatus
20 Oct.2010 Laos



Ducetia curciata
9 Sep.2008 Laos



Euconocephalus gracilis
18 May.2009 Cambodia



Holochlora venosa
26 Jun.2009 Laos



Pyrgocorypha sp.
26 Jun.2009 Laos

Cryptocanthacris tatarica

Order: Orthoptera
Family: Acrididae

LA	<u>Takten thong</u>	
KH	<u>Kon dob krohom, Kon dob para</u>	
TH	<u>Tak ka tan lai</u>	
VN	<u>Cao cao vo, Chau chau</u>	<u>Cào cào vồ, châu châu</u>
JP	<u>Tsuchi-inago</u>	<u>ツチイナゴの一種</u>
Remarks		

Basic Information

Female length is about 52mm to the end of wings. Male length is about 4.2cm to the end of wings. Its body is grayish brown and has distinct dark brown mottle.

Use

The general use of *Acrididae*, and *Pyrgomorphidae* in *Orthoptera* spp. will be described in this section. Only adults are used as food, and it is fried to be served most of the time. Variety of seasonings are used such as dipping sauce of MSG and fish sauce, salting to fry, frying with leaves of *Citrus hystrix* as a flavor, or frying chili together to make it spicy.

When eating larger grasshoppers, their legs are removed because they tend to prick a person's mouth. Smaller ones are sometimes stir-fried with other grasshoppers. Larger ones are collected by bare hands at night by flashing a light. *Cryptocanthacris tatarica* is a species particularly collected well by this method. Smaller ones are caught by swinging a net in grass areas. In this method, other grasshoppers are caught in the net as well, so they are all eaten together. Other species that are seen in the markets are *Chondracris rosea*, *Patanga succincta*, and *Oxya japonica japonica*. Other species which we could not confirm in the markets are eaten in the same way. Confirmed species are described with basic information below. Some of other unconfirmed species are introduced by pictures.



24 Sep.2008 Cambodia



12 Sep. 2009 Dong Makai Market,
Vientiane Capital, Laos

Chondracris rosea

Order: Orthoptera
Family: Acrididae

LA	<u>Takten, Maeng meuin</u>	
KH	<u>Kon dob kiew</u>	
TH	<u>Tak ka tan kha daeng</u>	
VN	<u>Cao cao</u>	<u>Cào cào</u>
JP	<u>Taiwan-oo-batta</u>	<u>タイワンオオバッタ</u>

Remarks

Basic Information

Female length is about 60mm to the end of wings. Male length is about 45mm.

4 Sep.2008 Laos

Its body is bright green, with yellowish brown compound eyes. It is usually found in tall grass areas and on the leaves of bushes along the forest edge. It flies away when approached by a human. It is mostly active in a daylight.



Patanga succincta

Order: Orthoptera
Family: Acrididae

LA	<u>Takten thong</u>	
KH	<u>Kon dob krohom</u>	
TH	<u>Tak ka tan pa tan ga</u>	
VN	<u>Cao cao</u>	<u>Cào cào</u>
JP	<u>Taiwan-tsuchi-inago</u>	<u>タイワンツチイナゴ</u>

Remarks

Basic Information

Female has about 53mm body length to the end of abdomen, about 70mm to the end of wings.

24 Sep.2008 Cambodia

Its body is light brown. Its forewings are generally thin and long. Part where wings extend past abdomen is distinctively longer than that of other species. From its dorsal side of prothorax toward an area where forewings overlap is colored grayish brown. Its prothorax has distinctive vertical and broad dark brown bands when seen from the side.



Oxya japonica japonica

Order: Orthoptera

Family: Acrididae

LA	<u>Takten thong</u>	
KH	<u>Kon dob smau</u>	
TH	<u>Tak ka tan kheow</u>	
VN	<u>Cao cao xanh, Chau chau</u>	<u>Cào cào xanh, Châu châu</u>
JP	<u>Hanenaga-inago</u>	<u>ハネナガイナゴ</u>

Remarks

Basic Information

It is distributed in Southeast Asia, China, Taiwan, India and Sri Lanka.

26 Jun.2009 Laos

Male has a body length of about 17 to 34mm (to the end of wings), and female 21 to 40mm. Individuals differ in coloration of their body and dorsal side; either yellow green or yellow brown. In general its body is glossy. There is a dark brown band from behind the compound eyes to the side of the wings when folded. Both adults and larvae live in a paddy field and surrounding wet grasslands. They favor eating leaves of gramineous plants.



19 Nov. 2009 Thong Khan Kham Market, Vientiane Capital, Laos



31 May 2009 Na Ngom, Vientiane Capital, Laos



26 May 2009 Na Khan, Louang Phrabang, Laos



25 Jun. 2010 Don Makkai, Vientiane Capital,
Laos



Cryptocanthacris tatarica
25 Jun. 2010 Don Makkai, Vientiane Capital,
Laos



Cryptocanthacris tatarica
25 Jun. 2010 Don Makkai, Vientiane Capital,
Laos



24 Jun. 2010 Hong Kae, Vientiane Capital,
Laos



Atractomorpha sp.
Cambodia



Tagasta sp.
Laos



Acrida sp.
Laos



Aiolophus thalassinus tamulus
Cambodia



Calephorus vitalisi
Cambodia



Catantops pinguis
Laos



Choroedocus sp.
Laos



Eyprepocnemis sp.
Laos



Gastrimargus marmoratus
08 Sep. 2008 Laos



Hieroglyphus banian
Cambodia



Locusta migratoria
04 Sep. 2008 Laos



Patanga luteicornis
24 Sep. 2008 Cambodia



Phlaeoba antennata
Sep.2007 Vientiane, Laos



Pternoscirta sp.
Sep.2007 Vientiane, Laos



Trilophidia annulata
Sep.2007 Vientiane, Laos



Valanga nigricornis
Sep.2007 Vientiane, Laos



Xenocatantops humilis
Sep.2007 Vientiane, Laos

Cicadidae spp.

Order: Hemiptera
Family: Cicadidae

LA	Chakchan	
KH	Rev. Dong kau duong	
TH	Juk jan. Ma lang e	
VN	Ve sau	Ve sầu
JP	Semi	セミ類

Remarks

Basic Information

Many of the adults of this species have wings that are membranous and transparent. The abdomen of males serve as a sounding organ and their abdominal cavity is hollow to serve as a resonance chamber. Females use the tip of their abdomen to scratch a tree branch to lay eggs. After the larvae emerge, they descend to the ground by themselves, and go underneath the soil through cracks on the surface. They stay there and grow slowly over a few years. When it is closer to the final molt, they emerge to the surface during the evening to the night, then climb on a tree or a grass to molt as adults.

When matured, males sing to attract females in order to mate.

Use

In Laos and Thailand, several species of adults and larvae are used. Its culinary use in Cambodia was not confirmed in this study. Adults are often fried to eat, and sometimes roasted ones are served with salt. Larvae are also fried and served. In this study, 4 genus and 6 species are confirmed, however, it is assumed that more species are being used. Adults are collected by using a hand-held net with a long handle, a slingshot, a birdlime, or hand-collected by shaking trees during the night. In the Lao mountainous region, there is the method to lure in imitation sound of the cicada voice by bamboo. In Laos, they use Ton Yang as a birdlime, which is made by adhesive resin extracted from woody vines. Using Ton Yang, a collector catches newly emerged adults when they come to acquire water from the moist ground along the Mekong River. He can collect more than 10 *Meimuna subviridissima* in a matter of 5 minutes. Larvae are collected by digging the base of a tree with a hoe. In Vientiane Prefecture, Laos, they were collected in forests around paddy fields during the dry period. People can collect 20 to 30 larvae in an hour.



Macrosemia umbrata
21 Oct.2010 Laos



19 Nov. 2009 Dong Makkai Market,
Vientiane Capital, Laos



Macroseмия tonkiniana
21 Oct.2010 Laos



Meimuna subviridissima
14 Apr.2010 Laos



Muda sp.
21 Oct.2010 Laos



Platylomia bocki
2 Dec.2010 Laos



Pomponia sp. (aff. *linearis*)
28 Nov.2007 Vientiane Capital, Laos



17 Nov.2008 Laos



Apr.2010 Vientiane Capital, Laos



19 Nov. 2009 Dong Makkai Market, Vientiane Capital, Laos



18 Feb. 2010 Morpou, Champasak, Laos



18 Feb. 2010 Morpou, Champasak, Laos



18 Feb. 2010 Morpou, Champasak, Laos



Meimuna subviridissima
18 Feb. 2010 Morpou, Champasak, Laos



27 Nov. 2009 Dong Makkai, Vientiane Capital, Laos



27 Nov. 2009 Dong Makkai, Vientiane Capital, Laos



27 Nov. 2009 Dong Makkai, Vientiane Capital, Laos



27 Nov. 2009 Dong Makkai, Vientiane Capital, Laos

Tessaratoma quadrata

Order: Hemiptera
Family: Scutelleridae

LA	<u>Maeng kheng</u>	
KH		
TH	<u>Maeng krang, Mung lum yai, Mang kheng</u>	
VN	<u>Bo xit nhan</u>	<u>Bọ xít nhân</u>
JP		
Remarks		

Basic Information

The stink bugs have a length of 24.5mm to 34mm. Its body is relatively flat and a light yellowish brown color. It is a pest for longan and lychee trees; therefore, it can be easily found in and around a longan orchard. It feeds on plant sap by inserting a needle-like sucking mouthparts on a leaf vein or the stem of a plant. Eggs are laid in a cluster on the back of a leaf. Larvae live together right after hatching, they are then dispersed to have a solitary life.

Use

Both adults and larvae are used as food.

Live and cooked ones are sold at markets. We could not confirm its use in Cambodia in this study. It is fried or stir-fried to be served. In Laos, it is a popular ingredient for chili paste, called Cheo, and served with sweet rice. Other edible stink bugs tend to have a distinct aroma, but this species is found to be less aromatic. Adults and larvae that are on longan and lychee trees are collected by insect nets. In Laos, a larger amount is collected just before the rain season. From April to June, 3 to 4kg can be collected per day.



26 May 2009 Khouathi, Louang
Phrabang, Laos



5,000kip
13 Feb. 2010 Tha Heua Market, Louang
Phrabang, Laos



26 May 2009 Khouathi, Louang Phrabang, Laos



26 May 2009 Khouathi, Louang Phrabang, Laos



17 Sep. 2011 Sampana, Vientiane Capital, Laos



17 Sep. 2011 Sampana, Vientiane Capital, Laos



13 Feb. 2010 Tha Heua Market, Louang Phrabang, Laos



15 Feb. 2010 Savan Say Market, Savannakhet, Laos



29 Jun. 2010 Dong Borng, Vientiane Capital, Laos



(Cheo-Maeng khen)
17 Sep. 2011 Sampana, Vientiane Capital, Laos

Leptocoris spp.

Order: Hemiptera
Family: Coreidae

LA	<u>Maeng kheng khao</u>	
KH		
TH	<u>Ma lang singh</u>	
VN	<u>Bò xít hoi</u>	<u>Bọ xít hôi</u>
JP	<u>Kumo-heri-kamemushi</u>	<u>クモヘリカメムシ属の一種</u>

Remarks

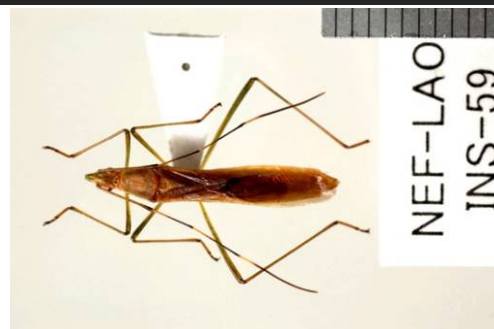
Basic Information

Its length is 14 to 17mm. The body is slender overall. It has a pale green body with brown wings when alive, but the green part changes to yellow when it dies. It lives in gramineous grassland or near the paddy field, and sucks on plant sap from the plant spikes. Its Lao name, “khao”, means rice, since it is often found around rice paddies.

Use

Adults are used as food in Laos. It is fried or roasted and also used as an ingredient for chili paste. It has the distinctive fruity aroma of stink bugs.

The collection takes place at night. Adults are inactive at night, so a collector walks by shining a light to catch them.



Leptocoris sp.
21 Nov.2007 Vientiane Capital, Laos



Leptocoris sp.
10 Jun. 2007 Dong Makkai Market,
Vientiane Capital, Laos

Coreidae sp.

Order: Hemiptera
Family: Coreidae

LA	<u>Maeng kheng ka po</u>	
KH		
TH	<u>Mung nug kran</u>	
VN	<u>Bo xit nau</u>	<u>Bọ xít nâu</u>
JP	<u>heri-kamemushi</u>	<u>ヘリカメムシ科の一種</u>

Remarks

Basic Information

Its length is 15 to 18mm. Its body is a long oval shape with a dark brown color. There are three distinctive brown bands on its hind femur.

Use

Adults are eaten in Laos and Thailand. It is fried or stir-fried to be served. In Laos, it is a popular ingredient of chili paste. It is favored for its fruity aroma. Collection is done by using a tool which is a long stick with a bag attached at the end.

A collector would tap on the insect in the tree, and when it drops, he catches it in the bag. A few species within *Coreidae* sp. are confirmed, but the above pictured species is most commonly seen in the market.



20 Apr.2010 Laos



28 Jan. 2013 Thoag Mang, Vientiane
Province, Laos



19 Nov. 2009 New Nong Neow Market,
Vientiane Capital, Laos



10,000kip
11 Nov. 2008 Nongsa, Vientiane Province, Laos



14 Feb. 2010 Vientiane Capital, Laos



14 Feb. 2010 Vientiane Capital, Laos



28 Jan. 2013 Don Makkai Market, Vientiane
Capital, Laos



28 Jan. 2013 Don Makkai Market, Vientiane
Capital, Laos

Drosicha sp.

Order: Hemiptera
Family: Margarodidae

LA	<u>Khai chakchan</u>	
KH		
TH	<u>Phai pang</u>	
VN		
JP	<u>Waraji-kaigaramushi</u>	<u>ワラジカイガラムシ属の一種</u>

Remarks

Basic Information

Its body is oval and flat. Larvae and adults have evolved into a shape that is well adapted to a parasitic life in which it attaches to the host plant. There is almost no border or joint between its head, thorax and abdomen. Its suctorial mouth is a long thread-like tube which can extend a few times more than its body length. Adults cover their body with wax coating. Only during the larva stage, can they crawl and move. While maturing, they lose their vestigial legs, antennae, eyes and become immobile. They feed on plant sap.



15 May 2009 Dong Makkai Market,
Vientiane Capital, Laos



10,000kip

15 May 2009 Dong Makkai Market,
Xaythany, Vientiane Capital, Laos

Use

It is used as food in Laos, but rarely seen in the market. It only circulates in the market in May of each year. It is fried or steamed in banana leaves. It is often mistaken for a cicada's eggs.

Lethocerus indicus

Order: Hemiptera
Family: Belostomatidae

LA	Maeng da, Maeng da na	
KH	Kanteatuk	
TH	Maeng da, Malang da	
VN	Ca cuong	Cà cuống
JP	Taiwan-tagame	タイワントガメ

Remarks

Basic Information

It is distributed in tropical to subtropical areas in Eastern Asia and India. Its body is 60 to 90mm. Its body is oval and flat. It lives in a deep pond or a water hole with abundant aquatic plants. Eggs are laid in a pattern that surrounds a branch. The beginning of the rain season marks the peak of the egg laying season. Males protect the eggs until they hatch. The larvae and adults hide between aquatic plants, and catch aquatic insects, tadpoles and small fish by their front legs to feed.

Use

It is one of a famous edible insect in Indo-China, and is very popular. Adults have distinct aroma which resembles coriander, which is the reason it is favored. Males are supposed to be more aromatic than females, so they are traded at a higher price. Mature females with eggs are said to be as tasty as males. It is roasted, fried, or steamed to eat. It is also used as a spice to add flavor to other dishes. In Laos and Thailand, it is used as an ingredient for chili paste. In Cambodia, it is popular as a snack to go with alcohol beverages. There is even an artificial seasoning that tastes like *Lethocerus indicus*. Many methods are used to collect it: skimming it by a colander or hand net, cast net, draw net, gill net, or a light trap. In Laos, during the high season, 45 to 50 counts, sometimes 100 of these can be caught by a colander in half a day. Using a cast net, 20 to 30 counts can be collected in 1 hour.



24 Jun.2009 Laos



10,000kip

11 Jul. 2008 Dong Makkai Market,
Vientiane Capital, Laos



17 Jul. 2010 Napuheuy, Vientiane Province, Laos



28 Jun. 2010 Mueng Song, Vientiane Province, Laos



05 Sep. 2010 Vientiane Capital, Laos



02 Jul. 2010 Napuheuy, Vientiane Province, Laos



15 May 2009 Vientiane Capital, Laos



09 Sep. 2010 Phon Sim, Savannakhet, Laos



02 Jul. 2010 (Cheo-Maeng da)
Ban Khun Market, Vientiane Province, Laos



02 Jul. 2010 Ban Khun Market, Vientiane Province, Laos



03 Aug. 2010 Suvarnabhumi International
Airport, Thai



21 Sep 2011 Talat Sao, Vientiane Capital, Laos



29 Jan. 2013 Thalot Sao, Chanthabuly,
Vientiane Capital, Laos



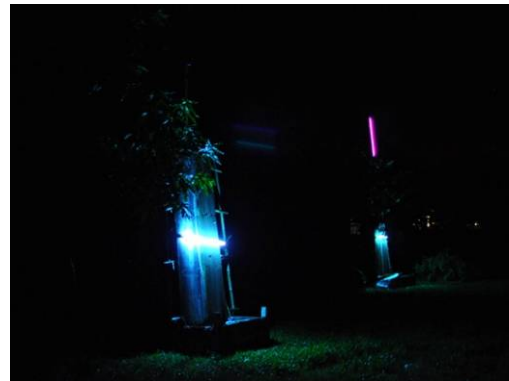
25 Jun. 2010 Dong Makai, Vientiane Capital,
Laos



02 Jul. 2010 Napuhey, Vientiane Province,
Laos



29 Jun. 2010 Dong Borng, Vientiane Capital,
Laos



Appasus sp.

Order: Hemiptera
Family: Belostomatidae

LA	<u>Maeng khaosan</u>	
KH		
TH	<u>Malang da suan</u>	
VN	<u>Ca cuong nho</u>	<u>Cà cuống nhỏ</u>
JP	<u>Kooimushi</u>	<u>コオイムシ科の一種</u>

Remarks

Basic Information

Its length is about 13mm. The body is flat and has an elongated oval shape with the widest part occurring at 1/3 from the caudal end. There are dark and light mottles along the edge of latter part of forewings. Adults hide under dead plants at the bottom of the water, and catch nearby aquatic insects and tadpoles or small fish by their fore legs. The life cycle of larvae is not fully known.

Use

In Laos, adults and larvae are eaten. They are fried or steamed to be served.

This species is often not eaten by itself, but rather mixed with other aquatic organisms. Collection takes place in a shallow marsh or paddy field. Hand-held nets are used, and other aquatic small animals are collected together. It is not well recognized among local people. It is often confused with *Lethocerus indicus* or *Dytiscidea* sp.. Sometimes, a *Naucoridae* sp. is caught because of its similar appearance and used in the same way.



Appasus sp.
24 Jun.2009 Laos



30 Jun. 2010 Dong, Vientiane Province,
Laos



Appasus sp.
28 Jun. 2010 Mueng Song, Vientiane Province,
Laos



Appasus sp.
28 Jun. 2010 Mueng Song, Vientiane Province,
Laos



Naucoris scutellaris
9 Jul.2009 Laos



Naucoris sp.
9 Jul.2009 Laos

Laccotrephes grossus

Order: Hemiptera
Family: Nepidae

LA	<u>Maeng ngoa nam</u>	
KH	<u>Kan tea</u>	
TH	<u>Mung mang pong nam</u>	
VN	<u>Bu cap nuoc</u>	<u>Bù cap nước (Bu cap nuoc)</u>
JP	<u>Taiwan-taikouchi</u>	<u>タイワンタイコウチ</u>

Remarks

Basic Information

It is distributed in Southeast Asia and China. Body length is 24 to 29mm. Its body is long, thin and flat, with a dark brown color. *L. maculatus* is the smaller species in the same family. *L. maculatus* has 16 to 18mm body length, and has a blunt beak at the base of the femur of its front legs. Adults hide in dead plants at the bottom of the water and with its front leg catch aquatic insects, tadpoles, and small fish. Its larva stage of lifecycle is not well known. Mature females lay a cluster of eggs, about 10, in the wet soil near the waterline.

It is assumed that hatched larvae molt 5 times in about 2 months, before becoming adults.



22 Sep. 2008 Laos



24 May 2009 Phonekeo, Vientiane
Province, Laos

Use

Adults and larvae are used as food. It is not sold by itself, but mixed with other aquatic organisms such as shrimp, small fish, or larvae of a dragonfly. The mixture is steamed, stir-fried, or fried to be served. Due to its slenderness, this insect is not specially favored as food. It is not used in Cambodia. Other than culinary use, it is sometimes used as food for farmed fish. It is collected by using a hand net or colander in the shallow water with abundant aquatic plants such as marshes. Usually, other aquatic insects and animals are caught together. *L. maculatus* is used in the same manner.



Laccotrephes sp.
24 May 2009 Phonekeo, Vientiane Province,
Laos



Laccotrephes sp.
24 Nov 2009 Phonekeo, Vientiane Province,
Laos



Laccotrephes sp..
24 Nov. 2009 Phonekeo, Vientiane Province,
Laos



Laccotrephes maculatus
29 Aug.2008 Laos

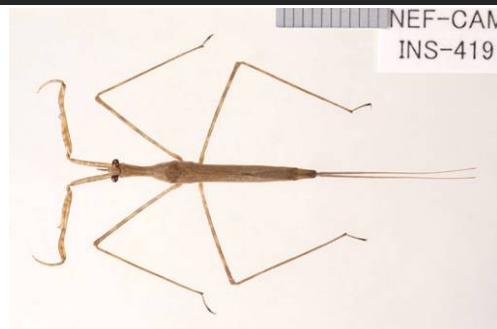
Ranatra longipes

Order: Hemiptera

Family: Nepidae

LA	<u>Maeng ngord nam</u>	
KH	<u>Chang kom</u>	
TH	<u>Mung mang pong num</u>	
VN	<u>Chom chom nuoc</u>	<u>Chôm chôm nước</u>
JP	<u>Madara-ashimizu-kamakiri</u>	<u>マダラアシミズカマキリ</u>

Remarks



Basic Information

It is widely distributed throughout Southeast Asia. It is also found in Taiwan and Japan (Ryukyu Islands).

10 Dec.2008 Cambodia

Its body is 24 to 29mm, with a stick-like long and narrow appearance. The color varies from light brown to brown. There are 2 small blunt beaks in the middle of front leg femurs.

Use

General use is similar to that of *Laccotrephes grossus*. Both adults and larvae are used. It is stir-fried with other aquatic animals or steamed in banana leaves. Genus *Cercotmentus* in the same family is used in the same way. It is collected by a hand net or a colander in shallow waters with abundant aquatic plants such as marshes. Other aquatic animals are caught together.



17 Sep.2007 Wat Preah Yesu, Siem Reap Cambodia



Cercotmentus brevipes

24 Jun.2009 Laos



Cercotmentus sp.

17 Sep.2008 Laos

Termitidae spp.

Order: Isoptera
Family: Termitidae

LA	<u>Maeng mao</u>	
KH	<u>Me pleing</u>	
TH	<u>Malang mao</u>	
VN	<u>Moi</u>	<u>Mối</u>
JP	<u>Shiroari</u>	<u>シロアリ類</u>

Remarks

Basic Information

Adult length is 6 to 20mm, with a queen of largest species reaches up to 120mm. The winged caste has brown to dark brown coloration on the dorsal side, and light colored lateral and ventral sides. Soldier caste has a larger head than worker caste and its jaw is well developed and black in color. Larvae are white. Its colony is consisted of kings and a queen and other family members, and their social life is based on division of labor. Adults possess wings only for a short period, of which they are involved in reproduction. During the mating season, some of them are attracted to lights.

Some colonies become as large as containing 300 million individuals over the period of a few years.

Use

Winged adults are used as food. They are fried or stir-fried to be eaten. In Thailand, grilled ones are sun-dried and used as preserved food. Its collection takes place in the beginning of a rain season, which is when they start to fly in clusters. At this time, when a collector sets up a light in his yard, a large number of them swarm to it.



23 Jul. 2010 Stung Treng, Cambodia



15 May 2009 Vientiane Capital, Laos

Corydalidae sp.

Order: Neuroptera
Family: Corydalidae

LA	<u>Maeng kan ter</u>	
KH		
TH	<u>Maeng song kan</u>	
VN		
JP	<u>Hebitombo</u>	ヘビトンボ類

Remarks

Basic Information

Forewings and hindwings of an adult are about the same shape. They are broader than that of a dragonfly, and the wingspan is 40 to 150mm. Larvae become 50 to 60mm at final molt. They have hard head and prothorax, and a well-developed mandible and legs. Middle and hind thorax are soft, and each segment of the abdomen has distinctive flexible protuberance. Its egg, pupa, and adult are terrestrial whereas the larva is aquatic. Larva period is usually 1 to 3 years during which it molts about 10 times and grows. During the daytime, it hides under dead leaves or small gravels in the water, and becomes active at night.

It is carnivorous and catches aquatic insects with its well-developed mandible. At the final molt, larvae leave the water and make a round room in the ground to become a pupa. A pupa emerges as an adult in about 10 days.

Use

In Laos, larvae are used as food. It is sold in the market together with other aquatic organisms, but it is not found very often. It is fried, put in soups, or skewed to be served. Sometimes it is steamed with other fish or aquatic insects. Its collection takes place at rivers and streams, but it is not intended to catch solely this species. Other aquatic animals are collected together with colanders and nets.



22 Nov. 2009 Na Kom, Vientiane
Province, Laos



24 Nov. 2009 Vang Vieng Market,
Vientiane Province, Laos

Oecophylla smaragdina

Order: Hymenoptera
Family: Formicidae

LA	<u>Mod som, Mod deng</u>	
KH	<u>Ang krong</u>	
TH	<u>Mod daeng</u>	
VN	<u>Kien vang</u>	<u>Kiến vàng</u>
JP	<u>Asia-tsumugi-ari</u>	<u>アジアツムギアリ</u>

Remarks

Basic Information

It is distributed in Indo-China peninsula, Malaysia, India, South China, and the Philippines. Total length is 5 to 10mm. Its body is pale, semi-transparent brown in color. Their habitat is forest, and they make a ball-shaped nest in the tree by gathering nearby leaves. Their colony is made up of a large number of ants, sometimes 500 thousand individuals. Adults are extremely aggressive, and if a human comes close to the nest, they would bite with their strong jaw. It is called “weaver ant” because it makes its nest by weaving leaves together using a thread which is secreted from its body.



17 Sep.2007 Wat Preah Yesu, Siem Reap, Cambodia



16 Jan. 2013 Kham Hai Market, Khon Kaen, Thailand

Use

Adult, pupa, larva, and egg are used as food. It is stir-fried, made into a salad, put in soup or omelet to be served. In Cambodia, it is stir-fried together with a float plant *Neptunia oleracea*. It is often used to add sour flavor to a dish. In Cambodia, it is used as a medicine to condition the uterus. In Laos, it is collected in a forest near a village or a paddy field. A bag is attached at the end of a rod of about a few meters, and using the bagged end, a collector will tap the nest and catches the adult, pupa, larva and egg that are dropped into the bag. Cambodia exports a large amount of collected *Oecophylla smaragdina* to Thailand. Other than this species, use of *Clematogaster* sp. was confirmed, but it is not often found in the markets. *Clematogaster* sp. is used in the same way.



24 Oct.2008 Cambodia



14 Feb. 2010 Lak2 Market, Khammouane, Laos



14 Feb. 2010 Lak2 Market, Khammouane, Laos



19 Sep.2007 Siem Reap, Cambodia



06 Nov. 2008 Dong, Prey Veng, Cambodia



02 May 2009 Nakhone, Vientiane Capital, Laos



27 May 2009 Na Khan, Louang Phrabang, Laos



19 Jan. 2013 Lak14 Market, Champasak, Laos



28 Aug. 2008 Otdom, Prey Veng, Cambodia



23 May 2009 Vang Vieng, Vientiang Province, Laos



19 Jan. 2013 Ban Watlouang, Champasak, Laos



27 Jan. 2013 Vientiane Capital, Laos



14 Mar. 2009 Dong Borng, Vientiane Capital, Laos



Clematogaster sp.
14 Feb. 2010 Lak2 Market, Khammouane, Laos

Vespa affinis

Order: Hymenoptera
Family: Vespidae

LA	<u>Tor hua seua</u>	
KH	<u>Au mal, Koun au mal, Som boh au mal</u>	
TH	<u>Tor hua suea</u>	
VN	<u>Ong vo ve</u>	<u>Ong vò vễ</u>
JP	<u>Tsumaguro-suzumebachi</u>	<u>ツマグロスズメバチ</u>
Remarks		



12 Sep.2008 Laos

Basic Information

It is distributed in tropical areas of East Asia, Himalayan region, India, Southeast Asia, and New Guinea. Workers have 18 to 28mm body length with a dark brown color. Its abdomen has distinctive coloration with yellow anterior half and black posterior half. They live in secondary environment, and make their nests on a tree branch, on grass near the ground surface, on a vine up to 1m above ground, or space under the eaves of a house.



02 Jul. 2010 Vientiane Capital, Laos

Use

Larva, pupa, and adult are used as food. In Cambodia, only the larva is used. Larvae and pupae are steamed or fried to be served. Usually, a nest itself is steamed and pupae and larvae inside are picked up to be eaten. In Thailand, it is marinated in fish sauce and being sold. This is eaten by grilling with butter and served as a snack hood of alcohol. Adults are often fried to be served. In Laos and Thailand, an alcohol beverage in which adults are pickled, is sold. Other species of *Vespa* are used in the same manner.



13 Jul. 2010 Vientiane Capital, Laos



29 Jul. 2010 Nong Yao, Vientiane Capital, Laos



29 Nov. 2009 Dong Makkai Market, Vientiane Capital, Laos



26 May 2009 Tha Heua Market, Louang Phrabang, Laos



06 Sep. 2009 Dong Makkai Market, Vientiane Capital, Laos



27 Jul. 2010 Dong Makkai Market, Vientiane Capital, Laos



24 Jun. 2010 Dong Makkai Market, Vientiane Capital, Laos



Vespa sp.
01 Dec. 2010 Laos

Apis spp.

Order: Hymenoptera
Family: Apidae

LA	<u>Pheuang</u>	
KH	<u>Pong rout, Tak khmom</u>	
TH	<u>Pheung min</u>	
VN	<u>Ong mat</u>	<u>Ong mât</u>
JP	<u>Mitsubachi</u>	<u>ミツバチ類</u>

Remarks

Basic Information

Worker bees are about 15mm. They have a dark brown body with relatively large head which has no significant development on its hind angle. The compound eyes are large, and they reach from front angle of the head to hind angle. Antennae are relatively short. Abdomen is yellow, but it looks striped due to dark lining of a posterior edge of each segment. Bees that are kept by humans from ancient times, such as *Apis mellifera*, make a nest in closed space such as a hollow of a tree, and develop a few honeycombs that are suspended in parallel.

Bees such as *Apis dorsata* and *Apis florea* make a nest in open space with one honeycomb. One nest of *Apis mellifera* is consisted of 40 to 60 thousand workers, 200 males and one queen. The queen lays 1,500 eggs per day, and usually lives 1 to 5 years. Workers secrete wax to make perpendicular honeycombs filled with hexagonal rooms. Workers also maintain the nest, nurse the eggs and larvae, and collect flower nectar. Their life span is about 6 weeks. When a queen weakens or number of workers exceeds a certain level, colony fission (swarming) occurs.

Use

Larva and nest (honey) are used as food. Honey is especially favored in every day diet. A nest that contains larvae are cut into square bars and roasted or steamed in banana leaves to be served. It is very sweet. In Thailand, larvae marinated in fish sauce are sold. It is grilled with butter and served with alcohol.



Apis cerana
01 Dec.2010 Laos



16 Feb. 2010 Dongfai Market,
Savannakhet, Laos



19 Feb. 2010 Lak2 Market, Khammouane, Laos



13 Feb. 2010 Tha Heua Market, Louang Phabang, Laos



23 Nov. 2009 Tam Chan, Vientiane Province, Laos



21 Jan, 2013 Pakse New Market, Champasak, Laos



31 Jan. 2010 Dong Makkai Market, Vientiane Capital, Laos



29 Nov. 2009 Dong Makkai Market, Vientiane Capital, Laos



29 Nov. 2009 Dong Makkai Market, Vientiane Capital, Laos



29 Nov. 2009 Dong Makkai Market, Vientiane Capital, Laos

Heliocopris bucephalus

Order: Coleoptera
Family: Scarabaeidae

LA	Chuchee, Bao	
KH	Kom poun aeh	
TH	Chuchee bou	
VN	Bo hung	Bò hung
JP	Seaka-namban-daikoku-kogane	セアカナンバンダイコクコガネ
Remarks		



22 Apr. 2010 Laos

Basic Information

Body length is 30 to 50mm, with some large ones reaching maximum of 70mm. It is entirely black color and has a round figure. Its thickness of lateral side and width of dorsal side are about the same. Its front edge of the head broadens like a fan. Front legs are serrated which are adapted to digging. It gathers around a dung of an elephant or a water buffalo, and larvae feed on it. A pair will mate at a dung site and they dig a tunnel under the dung to make a broad chamber. Parents roll the dung to make a ball and bring it into the chamber.



14 Feb. 2010 Boung Huana Market,
Khammouane, Laos

Each dung ball has one egg inside. Hatched larva feeds on the dung ball and becomes pupa inside the ball. Parents stay with the ball inside the chamber during this period to keep the ball free from mold and flies.

Use

Larva, pupa and adult are used as food in southern Laos and surrounding area. Larva and pupa are mainly used, and dung balls that contain those are sold in the markets. They are fried or put in soup, stew, omelet and salad. They are gutted when cooking. Adults are fried, or roasted then ground to be put into a curry dish. Since its nature of feeding on dungs, many local people avoid eating it. Dung balls are collected mainly in dry season from November to May. It takes place in and around a paddy field. A collector tells that the high season is March through April, during which individuals are plump and taste better. The grooming chamber is sought by digging under old and dried dung of a water buffalo. A few dung balls and a female adult are found per chamber.



14 Feb. 2010 Boung Huana Market,
Khammouane, Laos



17 Feb. 2010 Pakse New Market, Champasak,
Laos



15 Feb. 2010 Haumeueng Toy, Savannakhet,
Laos



15 Feb. 2010 Haumeueng Toy, Savannakhet,
Laos



23 Jan. 2013 Watlouang, Champasak, Laos



23 Jan. 2013 Lak20, Salavan, Laos



24 Jan. 2013 Pa khaor yai, Champasak, Laos



24 Jan. 2013 Pa khaor yai, Champasak, Laos

Proagoderus mouhoti

Order: Coleoptera
Family: Scarabaeidae

LA	<u>Chuchee</u>	
KH	<u>Kom poulaieh</u>	
TH	<u>Chuchee bou</u>	
VN	<u>Bo hung</u>	<u>Bo hung</u>
JP	<u>Kabuto-emma-kogane</u>	<u>カブトエンマコガネ</u>

Remarks

Basic Information

Its body length is 15 to 19mm. The entire body is dark green and shiny. Adult flies and finds dungs which become food for its larva. It digs a shallow tunnel underneath the dung, and brings in the dung ball to lay one egg in it. Larva feeds on the dung ball from inside, and eventually becomes a pupa and emerges. Adult is active during daytime, but more so after evening through night, and is attracted to a light.



24 Jun. 2010 Hou Kua Market, Vientiane Capital, Laos



24 Jun. 2010 Hou Kua Market, Vientiane Capital, Laos

Use

No culinary use was confirmed in Thailand, but adult use was observed in Laos. It is fried or roasted to be eaten. People take time to clean the dung from a beetle, then soak it in the water or wash thoroughly before cooking. If this process is not thoroughly done, the odor lingers. Since it feeds on dungs, some local people avoid eating it. It is collected by picking adults that gather around dungs of a water buffalo in the early morning, or by digging underneath the dung. Collection mainly takes place around a dried paddy field during the dry season. Other than this species, adults of smaller to medium sized dung beetle are also used. Smaller species which body size is 10 to 20mm, are preferred in the markets. Other than this species, many individuals from genus *Onthophagus* are sold. Many other species are mixed and sold.



24 Jun. 2010 Hou Kua Market, Vientiane Capital, Laos



24 Jun. 2010 Hou Kua Market, Vientiane Capital, Laos



26 Jul. 2009 Vientiane Capital, Laos



26 Jul. 2009 Vientiane Capital, Laos



28 Jul. 2010 Dong Makkai, Vientiane Capital, Laos



24 Jun. 2010 Hou Kua Market, Vientiane Capital, Laos



17 Feb. 2010 *Onthophagus* spp.
Pakse New Market, Champasak Laos



30 May 2009 *Onthophagus* spp.
Dong Makai Market, Vientiane Capital, Laos



24 Nov. 2009 Phonekeo, Vientiane Province,
Laos



Onthophagus. sp.
24 Nov. 2009 Phonekeo, Vientiane Province,
Laos



24 Nov. 2009 Phonekeo, Vientiane Province,
Laos



Catharsius birmanensis
22 Apr.2010 Laos



Copris siamensis
30 Jun.2009 Laos



Copris sinicus
01 Jun.2010 Laos



Digitonthophagus bonasus
22 Apr.2010 Cambodia



Liatongus rhammistus ♂
01 Jun.2010 Laos



Microcopris reflexus
01 Jul.2009 Laos



Onitis sp.
30 Jun.2009 Laos



Onthophagus armatus
21 Jan.2009 Laos



Onthophagus recticornutus ♀
09 Sep.2009 Laos



Onthophagus sagittarius ♂
01 Jul.2009 Laos



Onthophagus seniculus ♂
01 Jul.2009 Laos



Onthophagus sp.
09 Sep.2009 Laos



Paracopris punctulatus
01 Jun.2010 Laos

Holotrichia spp.

Order: Coleoptera
Family: Scarabaeidae

LA	Maeng chee noun, Chee noun deng	
KH	Khnyong krophom	
TH	Malang chinoon	
VN	Bo ray, Ray me	Bọ rầy, Rầy me
JP	Kurokogane	クロコガネ属の複数種
Remarks		

Basic Information

Body length is 15 to 35mm. It is uniformly brown to a black color with oval shape. Larva lives underground near the surface, and feeds on plant roots. Adult is active during the daytime, and feeds on various plant leaves. Adult becomes more active after the evening, and is attracted to a light after dark.

Use

Adult is used as food. It is fried or stir-fried to be served. It is collected by placing a light in the yard.

Other than genus *Holotrichia*, culinary use of herbivorous beetles such as *Anomala*, *Apogonia*, and *Lepidiota* is confirmed. Genus *Holotrichia* is preferred in Laos, and *Anomala antique* is preferably used in northeastern Thailand. In Cambodia, it is used in only a few areas.



Holotrichia sp.
02 Dec.2010 Loas



Holotrichia sp.
16 Apr. 2010 Vientiane Capital, Laos



28 Jul.2010 Dong Makai, Vientiane Capital, Laos



10 Jun. 2007 New Nong Neow Market, Vientiane Capital, Laos



13 Feb. 2010 Dong Makai Market, Vientiane Capital, Laos



Anomala antique
02 Dec.2010 Cambodia



Anomala sp.1
02 Dec.2010 Cambodia



Anomala sp.2
02 Dec.2010 Laos



Apogonia cribricollis
02 Dec.2010 SCambodia



Lepidiota bimaculata
02 Dec.2010 Vientiane, Laos

Xylotrupes gideon tonkinensis

Order: Coleoptera
Family: Scarabaeidae

LA	<u>Maeng kham</u>	
KH	<u>Kanh chae</u>	
TH	<u>Malang kham</u>	
VN	<u>Kien vuong</u>	<u>Kiến vương</u>
JP	<u>Gideon-hime-kabuta</u>	<u>ギデオンヒメカブト</u>

Remarks

Basic Information

Male has a length of 35 to 80mm. Female length is 28 to 55mm. Entire body is glossy reddish brown to a black color. Females lack cephalic horn, but males have distinctive forked-horns one on the head and the other pointing forward from the center of the thorax. Larvae feed on decomposed plant material and become pupae over the period of 2 years. Adults feed on plant sap and live 2 to 4 months.

Use

Larva, pupa, and adult are used as food. In Laos, adults are used more often. Adults are cooked by removing forewings and fried or roasted. Usually the abdomen is the only part that is eaten, but since there is not much volume, it is not very popular as edible insect. Larva and pupa are marinated in coconut milk and roasted. Other than culinary use, its male is very popularly used in an insect fight in northern Thailand. Adults raised for fighting is also sold.



04 Nov. 2008 Takeo, Cambodia



12 Sep. 2007 Dong Makkai Market,
Vientiane Capital, Laos



26 Nov.2007 Vientiane Capital, Laos



10 Oct. 2009 Vientiane Capital, Laos



19 Sep. 2009 Thung Yao, Lamphun, Thailand



19 Sep. 2009 Thung Yao, Lamphun, Thailand



19 Sep. 2009 Thung Yao, Lamphun, Thailand



19 Sep. 2009 Thung Yao, Lamphun, Thailand

Cybister limbatus

Order: Coleoptera
Family: Dytiscidea

LA	Tap tao, Maeng nieng, Maeng cheid	
KH	Khonteh long, Dong kam bot	
TH	Doung ding	
VN	Bu nieng	Bù niềng
JP	Fuchitori-gengprou	フチトリゲンゴロウ
Remarks		



22 Jul.2009 Laos



Cybister sp.
28 Jun. 2010 Phonekeo, Vientiane
Province, Laos

Basic Information

It is distributed in Southeast Asia, China, Taiwan, Japan (Nansei Islands), the Philippines, India and Nepal. Adult length is 32 to 35mm and has a long oval shape. Its dorsal side is shiny and black with brownish tint. There is a yellowish brown lining from lateral dorsal prothorax to the lateral forewing. Ventral side is uniformly black. Adults are carnivorous. Eggs are laid singularly in the aquatic plant tissue. In a captive life, a larva molts twice in one month before leaving the water, then it buries itself about a few to 10cm in the ground to become a pupa and emerges. Newly emerged adult comes out from the ground then starts an aquatic life.

Use

Not only this species but most of the genus *Cybister* is used as food. Adult is used in many countries, but the use of larva is only confirmed in Laos. Adult is mainly fried or stir-fried to be eaten. Hard forewings are removed when cooking. In the market, it is often found mixed with other types of *Hydrophilidae*. Larva is stir-fried, cooked, or steamed to be served. It is rarely used solely, but rather, it is cooked as a mixture with larvae of dragonfly, tadpoles, or shrimps and other aquatic organisms. Adults are collected by skimming with a hand net or a colander, or gathered by light trap method. Larvae are skimmed by a hand net or a colander. Many adults are found in the remaining puddles of dried paddy field during the dry season.



06 Sep. 2009 Dong, Vientiane Province, Laos



24 Jul. 2010 Phonekeo, Vientiane Province, Laos



Cybister sp.
27 Jun. 2010 Phonekeo, Vientiane Province, Laos



06 Sep. 2009 Dong, Vientiane Province, Laos



Cybister sp.
12 Sep. 2010 Sivilay, Vientiane, Vientiane Capital, Laos



30 May 2010 Phonekeo, Vientiane Province, Laos



Cybister sp. 28 Jan. 2013 Thoag Mang, Vientiane Province, Laos



Cybister sp.
Jan. 2013 Lak14 Market, Champasak, Laos



19 Jan. 2013 Lak14 Market, Champasak, Laos



26 Nov. 2009 Dong Bong, Vientiane Capital, Laos



24 Jul. 2008 Mai Haiyone, Vientiane Province, Laos



Cybister rugosus
01 Sep.2008 Laos



Cybister sp. 1
01 Sep.2008 Laos



Cybister sp. 2
2007 Vientiane Capital, Laos



Cybister sugillatus
2 Jul.2009 Laos



Cybister tripunctatus ssp.
2 Sep.2009 Laos

Hydrophilus bilineatus cashimirensis

Order: Coleoptera
Family: Hydrophilidae

LA	Tap tao, Maeng cheid	
KH	Khonteh long	
TH	Malang neang	
VN	Dien dien	Diền điển
JP	Kogata-gamushi	コガタガムシ

Remarks

Basic Information

Its body length is about 35mm. It has a shiny black body with slender oval shape. *Hydrophilus cavisternum* has a similar appearance to this species. Adults are often found clinging to an aquatic plant and staying still. Adults are herbivorous except for the mating season, during which they feed on animals. Females use plant fragments in the water to make an egg sac filled with eggs, called “cradle”, near the water surface. There are several tens of eggs in one egg sac. Eggs are expected to hatch in about 2 weeks. Larvae are carnivorous, catching small animals alive by their strong mandibles. After larvae molt twice, they leave the water to bury themselves in the ground and become pupae, then adults.

Newly emerged adults come out from the ground and start an aquatic life.



05 Oct.2010 Laos



Larva, *Hydrophilus* sp.
25 Jun. 2010 Dong Makai, Vientiane
Capital, Laos

Use

Adults are eaten including *H. cavisternum* in the same genus. It is mainly fried or stir-fried to be served. The hard forewings and prickles on the underside are removed when cooking. Larvae are almost never used, but in Lao market, it is found occasionally mixed with larvae of dragonfly, frogs, or shrimps and other aquatic animals. Adults are skimmed and collected with a hand net or a colander. Light trap is also used for collection. Adults of *Hydrophilidae* are called by the same local name with *Dytiscidae*, and the two are not distinguished as separate species. In Laos, *Hydrophilus* and *Cybister* are considered as female and male of the same species. *Hydrophilus* is considered as males because people mistakenly recognize the spiny protuberance on the underside of its abdomen as a reproductive organ.



Hydrophilus sp.
06 Sep. 2010 Dong, Vientiane Province, Laos



Hydrophilus sp.
25 Jun. 2010 Dong Makai, Vientiane Capital, Laos



Hydrophilus sp.
29 Nov. 2009 Dong Makai Market, Vientiane Capital, Laos



Hydrophilus sp.
06 Nov. 2008 Neak Loeung, Kandal, Cambodia



Hydrophilus bilineatus cashimirensis
27 Sep.2010 Cambodia



Hydrophilus cavisternum
04 Oct.2010 Laos

Sternocera sp.

Order: Coleoptera
Family: Buprestidae

LA	<u>Maeng khap</u>	
KH	<u>Kom phem</u>	
TH	<u>Malang tub</u>	
VN	<u>Kim quit</u>	<u>Kim quit</u>
JP	<u>Midori-futo-tamamushi</u>	<u>ミドリフトタマムシ類</u>

Remarks

Basic Information

It is a large beetle with body length of 30 to 40mm. Overall, its color is light golden green with metallic luster. Some species have reddish brown antennae and legs. A few species are distributed in Indo-China region. They are very similar in appearance, such as *Sternocera aeguisignata* and *S. ruficornis*. Their detailed ecology is not understood yet; however, larvae of *Sternocera* sp., including this species, are known to feed on plant roots in the ground. Adults are diurnal and feed on plant pollen and leaves.



27 Nov. 2007 Vientiane Capital, Laos



Sternocera sp.

10 Sep. 2010 Chaleun Souk, Savannakhet,
Laos

Use

Adults are used as food. It is occasionally found in the markets. When cooking, its forewings are removed and the remaining is fried, roasted, or stir-fried to be served. To collect, it is picked up by hands if it is on a tree, or by shaking it off the tree. In Cambodia, it is said to be cultivated, but it is assumed to be merely protecting the host trees that the beetles feed on.

Cerambycidae spp.

Order: Coleoptera
Family: Cerambycidae

LA	Maeng nam fon	
KH		
TH	Doung creem, Doung hnoud yao	
VN	Xen toc	Xén tóc
JP	Kamikirimushi	カミキリムシ類

Remarks

Basic Information

Adult body is 40 to 70mm for larger species and about 3mm for smaller species. Medium to large sized species of more than 30mm are popularly used. In general, the body is slender and cylindrical. It is known for its long antennae, which are the longest among other beetles. When touched, it produces sound by rubbing the edge of the pronotum scraping against a file on the mesonotum. Smaller species usually matures in one year, while larger species takes 3 to 5 years to mature. Most of the species bore holes on plant materials, usually a tree, and feed on them.

Use

Larvae, pupae and adults of larger species are used as food. Adults are occasionally spotted in the markets, but it is not sold solely, but mixed with other insects. Adults are fried, stir-fried or roasted to be eaten. Hard parts such as the forewings are removed when cooking. In Thailand, larvae and pupae of *Apriona japonica* are fried or steamed in banana leaves to be served. Species that are attracted to lights are collected by light trap method. In Laos, adult use of *Dorysthenes walker*, *Hoplocerambyx spinicornis*, *Xystrocera globosa*, and *Batocera davdis* are confirmed.



Dorysthenes walker

29 Jun. 2010 Dong Borng, Vientiane
Capital, Laos



Hoplocerambyx spinicornis

29 Jun. 2010 Dong Borng, Vientiane
Capital, Laos

Hypomeces squamosus

Order: Coleoptera
Family: Curculionidae

LA	<u>Maeng sang</u>	
KH	<u>Me ambok</u>	
TH	<u>Malang kom tong</u>	
VN	<u>Cau cau xah</u>	<u>Câu cầu xanh</u>
JP	<u>Zoumushi</u>	<u>Family ゾウムシ</u>

Remarks

Basic Information

Adult length is about 10mm. Its mouthparts are stout and short. Fresh adult is covered with shiny green scales, but eventually they all scrape off. The color of scales varies depending on the region it resides, from green, reddish copper, purple, to gray, but green individuals are most abundant. It lives in a flatland to low hill areas, and commonly found on leaves of trees along the roadside.

Use

Adults are eaten in Laos and Cambodia. It is mainly fried to be served. Insect nets with a long-pole are used to collect ones on a tree.



28 Nov.2007 Cambodia



18 Feb. 2010 Pakse New Market,
Champasak, Laos

Cryptotrachelus spp.

Order: Coleoptera
Family: Rhynchophoridae

LA	<u>Maeng kwang</u>	
KH		
TH	<u>Duang mai pai</u>	
VN	<u>Duong tre</u>	<u>Đông tre</u>
JP	<u>Oo-osazoumushi</u>	オオオサゾウムシ属の複数種

Remarks

Basic Information

Adult body is 15 to 30mm. Its coloration is shiny vermillion. Larvae have a dark brown head with yellowish brown body, and they do not have legs. They feed on bamboos from inside, sometimes reaching to the outer layer and making a hole. Fully grown larvae make a simple chamber in a bamboo joint, using tree debris and become pupae then emerge.

Use

Larvae are used in Laos and Thailand. It is usually fried to be served. In Laos, people said larvae of bamboo-eating weevils have soft skin and are tastier than larvae of *Rhynchophorus ferrugineus*.

Its collection takes place in a bamboo forest, and larvae are sought inside bamboos.



Cryptotrachelus sp.
09 Sep. 2010 Thating Hang,
Savannakhet, Laos



Larva, *Cryptotrachelus* sp.
24 Sep. 2010 Phonekeo, Vientiane
Province, Laos



Crytotrachelus sp.
03 Oct. 2010 Phonekeo, Vientiane Province,
Laos



14 Oct. 2010 Phonekeo, Vientiane Province,
Laos



24 Sep. 2010 Phonekeo, Vientiane Province,
Laos



24 Sep. 2010 Phonekeo, Vientiane Province,
Laos

Rhynchophorus ferrugineus

Order: Coleoptera
Family: Rhynchophoridae

LA	Duang ton tan, Maeng kwang	
KH		
TH	Duang sakoo	
VN	Duong dua	Đuông Dừa
JP	Yashi-oo-osazoumushi	ヤシオオオサゾウムシ
Remarks		

Basic Information

It is distributed in Southeast Asia, India, China, Taiwan, Japan (Okinawa), and Papua New Guinea. Adult length is 22 to 35mm. Its body is shaped like a grain of rice. Larvae have a dark brown head with yellowish brown body, and they do not have legs. Larvae feed on palm trees, and the woody part of palm trees become powdery after larvae feed on it. When larvae have reached their full growth, they make pupal chamber by using palm fibers and pupate then emerge.



17 May 2009 Vientiane Capital, Laos



27 Jun. 2010 Phonekeo, Vientiane
Province, Laos

Use

Larvae and pupae are used as food in Laos and Thailand. They are mainly fried to be served. Texture and taste are close to that of French fries. It is a pest for Palmyra Palm (*Borassus flabellifer*). It is collected from an infested, dying Palmyra Palm. It is occasionally found in the markets. Its harvesting method is being studied in universities in Thailand and Laos.

Omphisa sp.

Order: Lepidoptera
Family: Pyralidae

LA	<u>Duang mai phai, Duang mae</u>	
KH	<u>Dong kau neang</u>	
TH	<u>Rot duan, Duang mai pai,</u> <u>None mai pai</u>	
VN		
JP	<u>Taketsutoga</u>	<u>タケツトガ</u>

Remarks

Basic Information

Adult wingspan is 20 to 30mm for males, and slightly larger for females. Adults fly out from bamboo stem during the night to mate and lay eggs on the surface of a young bamboo shoot. Hatched larvae gather around and move to a fresh part of the shoot in a single line and make a hole in the joint to go inside. Larvae feed on the inside tissue of a bamboo. Larvae become pupae in about 10 months. Pupae collectively hang from the joint of a bamboo, and emerge as adults after 40 to 60 days.



17 Nov. 2008 Laos



10,000kip

11 Nov. 2008 Dong Makkai Market,
Vientiane Capital, Laos

Use

Larvae are one of the frequently used edible insects, and often found in the markets. It is widely used in Laos and Thailand. In Cambodia, it is not a common edible insect, but it is popular near the border of Thailand. It is usually fried to be eaten. It is popular as a snack to go with a beer. Its collection takes place in a bamboo forest. First a collector looks for a dying bamboo stem due to the infection by this species. If there is a hole of about 2mm in diameter near the bamboo root, he would cut open the joint to check for the presence of larvae. If there are larvae, the joint one below where the larvae are is cut to fell the bamboo and extract the larvae. From one bamboo, about a cup full of larvae can be collected.



19 Nov. 2009 Dong Makkai Market, Vientiane
Capital, Laos



19 Sep. 2009 Thung Yao, Lamphun, Thailand



11 Nov. 2008 Dong Makkai Market, Vientiane
Capital, Laos



20 Sep. 2009 Bokeo, Laos



21 Sep. 2009 Huay Khom Nok, Chiang Rai,
Thailand



21 Sep. 2009 Huay Khom Nok, Chiang Rai,
Thailand



21 Sep. 2009 Huay Khom Nok, Chiang Rai,
Thailand



21 Sep. 2009 Huay Khom Nok, Chiang Rai,
Thailand

Bombyx mori

Order: Lepidoptera
Family: Bombycidae

LA	<u>Duck dae morn</u>	
KH	<u>Dok dua</u>	
TH	<u>Duk dae mai</u>	
VN	<u>Nhong tam</u>	<u>Nhông Tằm</u>
JP	<u>Kaikoga</u>	<u>カイコガ</u>

Remarks

Basic Information

Adult wingspan is 180 to 230mm. Its body and wings are covered with white scales. Larvae of popular breeds have a white body, and at full growth, they are 6 to 7cm long and weigh 5 to 6g. Larvae exclusively feed on mulberry leaves, and they molt 4 times before making a cocoon and become a pupa. Pupae emerge in about 2 weeks

Use

It is one of the most popular edible insects, and its pupa is found in the markets throughout a year. It is fried, roasted, or boiled to be served. It has distinct aroma.

In Laos, a tea made out of dried larvae dungs are sold, but it is not very popular. The pupa after having taken the silk is supplied steadily.



12 Sep 2007 Hou Kua Market, Vientiane
Capital, Laos



21 Jun. 2009 Hou Kua Market, Vientiane
Capital, Laos



03 Nov. 2008 Central Market, Phnom Penh, Cambodia



10 Jun. 2007 Dong Makkai Market, Vientiane Capital, Laos



21 Sep. 2011 Talat Sao, Vientiane Capital, Laos, Laos



21 Sep. 2011 Talat Sao, Vientiane Capital, Laos, Laos

Saturniidae sp.

Order: Lepidoptera
Family: Saturniidae

LA	Douang, Duck dae morn ka beua, Ka beua	
KH		
TH	Duk dae mai pa	
VN		
JP	Yamamayu	ヤマムユガ属の一種

Remarks

Basic Information

Adult wingspan is about 130mm. Its body and wings are covered with yellowish brown scales. Full grown larvae are measured 70 to 80mm, and weigh 17 to 20g. Its cocoon is milk white in color and 18mm in length. Pupae are yellowish brown to dark brown in color and 14 to 15mm in length. From one cocoon, 600 to 700m of silk thread can be produced.

Use

In Laos, pupae are used as food.

Although it is not a popular insect as food, pupae in the cocoon and pupae without cocoon are sold in the market. It is mainly fried to eat.



26 May 2009 Tha Heua Market, Louang
Phrabang, Laos



26 May 2009 Tha Heua Market, Louang
Phrabang, Laos

Sphingidae spp.

Order: Lepidoptera
Family: Sphingidae

LA	<u>Ka bee, Cha ruad</u>	
KH		
TH	<u>Pee seu cha ruad</u>	
VN		
JP	<u>Suzumega</u>	スズメガ科の複数種

Remarks

Basic Information

It is a medium to large sized moth, with adult wingspan measuring about 30 to 150mm. Wings are slender and long, with the forewings considerably longer than the hindwings. Its thorax is stout and streamline shaped. Its pectoral muscle is well developed, and provides strength for its ability to fly. Its body is covered with hair-like scales, and they are easily scraped off when touched. It has a long and thin mouthpart like that of butterflies, which are adapted to suck flower nectar. There are varieties of patterns on its prothorax and wings, depending on the species. In general, its forewings have dull color and patterns, while hindwings have brighter colors.

Larvae have classic shape of worms and lack major hair. They are characterized by a distinctive spiny protuberance on the posterior abdomen. Adults of many species are nocturnal, but there are species which are active during daytime or in the evening. It can fly very fast, with some species reach a speed of 50km per hour. Many are attracted to lights at night, and many are found staying there even after sunrise due to drop of temperature. Larvae live a solitary life since their early stages. They feed on various plant leaves. When touched, larvae take threatening position by raising their head and thorax high and swinging them right to left. At full growth, larvae bury themselves in the ground and become pupae without making a cocoon.

Use

In Laos, adult use was confirmed, but it is rarely seen in the markets. It is fried or stir-fried to be served. People capture the moth with other insects by using a light trap. *Sphingidae* spp. is not intended to be eaten solely but rather, cooked as mixture with other insects.



31 Jun. 2010 Dong Borng, Vientiane
Capital, Laos



01 Mar. 2009 Dong Makkai Market,
Vientiane Capital, Laos

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Snails and Bivalves

Snails and Bivalves

Freshwater shellfish is popularly consumed by people along Mekong River. Live, heated, and cooked ones are available in markets, and they are also cooked and served at home daily. Roasted or boiled shellfish are sold at the stall in the city, and one can even eat right there. Among the shellfish sold in market, snails are most widely available both commercially and domestically because they are easily caught in nearby *Mizube* (water front) such as paddy or marsh. Bivalves are not as commonly seen as snails, but there are some available in the market, often ones caught in rivers. Not only aquatic snails, but land snails are also consumed. The study team confirmed about 40 species (subspecies) including land snails such as Cyclophoridae, Ariophantidae, and aquatic snails such as Pilidae, Viviparidae, Thiaridae and aquatic bivalves such as Unionidae, Cyrenidae. Because it is difficult to identify shellfish at the site, we assume that there are more species than the ones we recognized during the study.

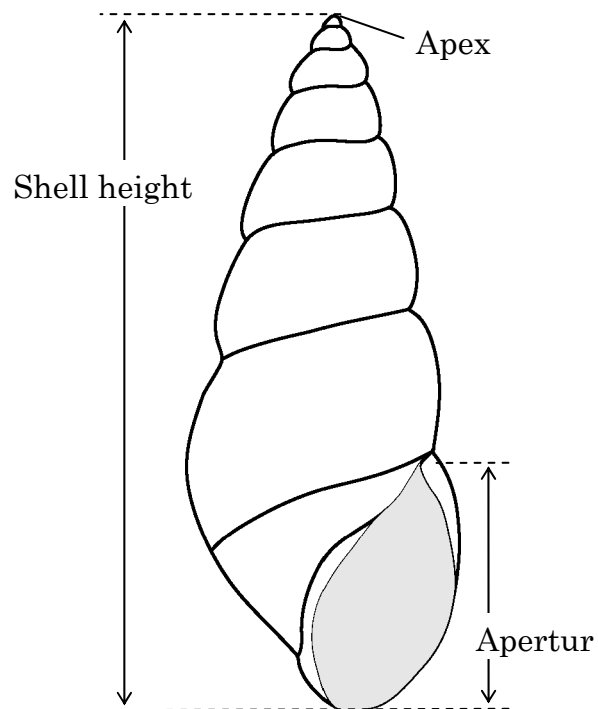
The most popular freshwater snail in Mekong river basin would be Applesnail (Ampullariidae) and Vivipalidae. Reason for the high popularity is they are abundant and easily caught in the surrounding areas such as paddy, marsh, and lakes. People are often sighted in water front near house to catch just enough to make dinner. Applesnail is an alien species from Central and South America, but they are widely habituated throughout Indochina peninsula and have become one of the most popularly used snails. However, Applesnail is also known for damaging rice crops and it is becoming a serious issue as the damage become widespread. Other popular snails other than Applesnail and Vivipalidae are pleuroceridae, bivalve, and land snails. *Tegillarca granosa* (related to Bloody clam) are small bivalves which have distinctively thick shells and bright red blood. They are often sold at market and stalls, but we do not include them as local *Mizube no Sachi* they are collected in tidal flat and brought inland.

Shellfish introduced in this section are available throughout year, although the ones live in rivers increase amount of catch during dry season when the water level is low. Paddies dry up during dry season, and people take the opportunity to dig and collect Vivipalidae and Applesnail. They are often stir-fried, steamed, or boiled with spices and herbs to rid the strong smell.

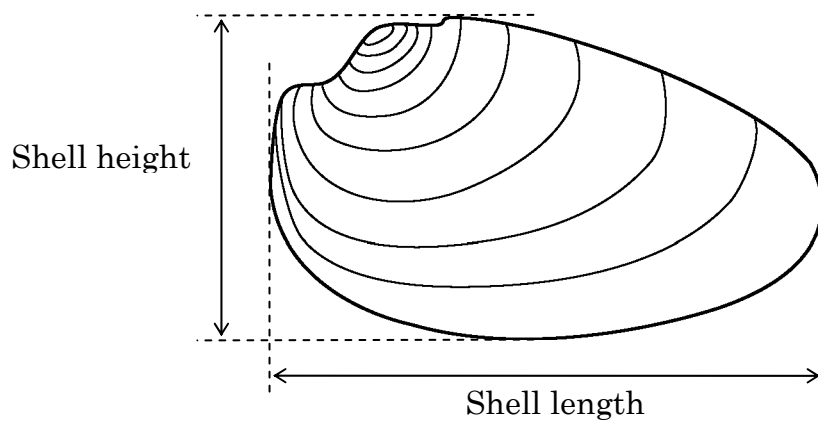


Morphology of Snails and Bivalves

Snail



Bivalve



Cyclophoridae spp.

Order: Architaenioglossa
Family: Cyclophoridae

LA	<u>Hov hom</u>	
KH	<u>Kchong hein</u>	
TH	<u>Hov ma la you</u>	
VN	<u>Oc</u>	<u>Ốc</u>
JP	<u>Yama-tanishi</u>	<u>ヤマタニシ科の複数種</u>

Remarks

Basic Information

It is distributed in Indo-China, mainland China, Hainan Island (China), Taiwan, Batan Island (the Philippines), and Japan. It is a type of gastropod. Although terrestrial, it is different from the common snail as it has a lid on the shell opening and eyes on the bottom of its antennae. The opening of the shell is rather large and the edge is thick. It has no gills. It is found in between fallen leaves in the shades of lowland to the mountains.

Use

They are prepared in the following ways: cooking them with shells-on in salted and spiced hot water, roasting them with the shells-on and dip them in chili sauce, or put in a soup. In Laos, they are boiled with Chinese star anise and dipped in chili sauce and served. The savory aroma of star anise is tantalizing.

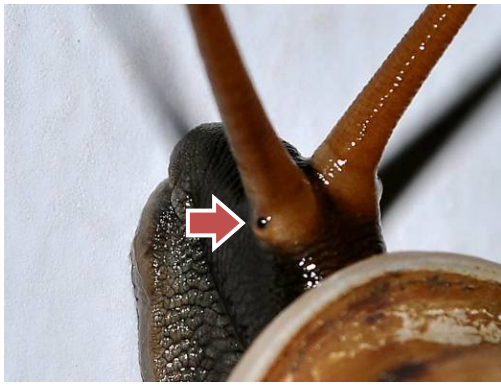
The team confirmed its use as food in Cambodia and Laos. Large amounts are consumed especially in Southern Laos. During a market research, 4 species of *Cyclophorus* were confirmed as being sold. It is found in open markets alongside the suburban roads, and more so than in big markets in the central city. Its collection is done by hand, picking individuals on tree trunks in the forests.



Cyclophorus sp. (cf. sogmaensis)
23 Jul. 2010 Near Wat Phou,
Champasak, Laos



Cyclophorus sp. (cf. sogmaensis)
23 Jul. 2010 Near Wat Phou, Champasak,
Laos



14 Sep. 2011 Kok Market, Khammouane, Laos



23 Jul. 2010 Near Wat Phou, Champasak, Laos



Cyclophorus spp.
23 Jul. 2010 Near Wat Phou, Champasak, Laos



14 Sep. 2011 Kok Market, Khammouane, Laos



Cyclophorus sp. 3
14 Sep. 2011 Kok Market, Khammouane, Laos



Cyclophorus sp. 2
14 Sep. 2011 Khammouane, Laos



Cyclophorus sp. 2
14 Sep. 2011 Kok Market, Khammouane, Laos



Cyclophorus sp. 2
14 Sep. 2011 Kok Market, Khammouane, Laos



Cyclophorus sp. 1
23 Jul. 2010 Near Wat Phou, Champasak, Laos



Cyclophorus sp. 1
23 Jul. 2010 Near Wat Phou, Champasak, Laos



Cyclophorus sp. 2
14 Sep. 2011 Kok Market, Khammouane, Laos



Cyclophorus sp. 2
14 Sep. 2011 Kok Market, Khammouane, Laos



Cyclophorus sp. 3
14 Sep. 2011 Kok Market, Khammouane, Laos



Cyclophorus sp. 3
14 Sep. 2011 Kok Market, Khammouane, Laos

Pomacea canaliculata

Order: Architaenioglossa
Family: Ampullariidae

LA	<u>Hov pakkouang</u>	
KH	<u>Kchong srae</u>	
TH	<u>Hov cherry</u>	
VN	<u>Oc buou vang</u>	<u>Ốc bươu vàng</u>
JP	<u>Sukumi-ringogai</u>	<u>スクミリンゴガイ</u>

Remarks

Basic Information

It originated in Central and South America, and has been transplanted in parts of Asia since the 1980s. It is a type of snail with the shell length of 80mm. The shell is close to spherical and its color varies from yellow-brown to blackish brown. Some shells have stripes. It is found in rice paddies, marshes, waterways, rivers, ponds, and lakes. It can tolerate drought, and survives the dry season by burying itself in the mud. It is omnivorous and prefers soft rice leaves which cause crop damage in various areas. It is labeled as one of the 100 World's Worst Invasive Alien Species.

Its eggs are bright pink. Females go above water to lay eggs on plants, stakes, or walls of waterways. Eggs hatch in about 2 weeks.

Use

Among the edible shells, this snail is as popular as river snails. It is commonly found in markets as well. It is very easily collected which makes it a popular dish in many homes. It is roasted or boiled and served with chili sauce and fish sauce, or cooked together with herbs such as tamarind and lemongrass. Kebabs of roasted snails seasoned with MSG or fish sauce are sold at markets. Sometimes it is boiled and fed to cattle and hogs. It is collected in nearby rice paddies and marshes. It can be picked by hand or scooped with nets or colanders. When using a net or colander, one has to sort snails from other aquatic species. Farmers frequently go out to collect it in a rice paddy as a means to collect food as well as to prevent it from feeding on newly sprouted rice plants. Other species of the genus *Pila* that resembles the shape of this snail are confirmed in Cambodia.



17 Feb .2010 Song, Champasak, Laos



14 Nov. 2008 Dong Makkai Market,
Vientiane Capital, Laos



Albino
14 Nov. 2008 Napuheuy, Vientiane Province,
Laos



25 Jul. 2010 Phonekeo, Vientiane Province,
Laos



11 Oct. 2010 Vientiane Province, Laos



Egg mass
26 Nov. 2009 Dong Borng, Vientiane Capital,
Laos



19 Nov. 2009 Thong Khan Kham Market,
Vientiane Capital, Laos



28 Jul. 2008 Thong Khan Kham Market,
Vientiane Capital, Laos



01 Sep. 2010 Vientiane Capital, Laos



12 Dec. 2010 Vientiane, Laos



20 Dec. 2010 Phonekeo, Vientiane Province,
Laos



09 Nov. 2008 Xiangmouak, Louang Phrabang,
Laos



24 Jul. 2008 Khun Neua, Vientiane Province,
Laos



Pila polita
10 Apr. 2009 Ra ka thnorl, Takeo, Cambodia



Pila sp. 1
27 Feb. 2009 Kampong Thom, Cambodia



Pila sp. 2
05 Jan. 2009 Kampong Cham, Cambodia



Pila sp. 3
06 Jan. 2009 Vi hear Kphours, Kampong
Cham, Cambodia



Pila sp. 4
30 Jan. 2009 Traw Paing ROUNG, Takeo,
Cambodia

Viviparidae spp.

Order: Architaenioglossa
Family: Viviparidae

LA	<u>Hov choup</u>	
KH	<u>Kchau k' hai, Kchau dong,</u>	
	<u>Kchau tnaot</u>	
TH	<u>Hoy khom</u>	
VN	<u>Oc dang</u>	<u>Ốc dăng</u>
JP	<u>Tanishi</u>	<u>タニシ科の複数種</u>

Remarks

Basic Information

It is a water spiral snail with shell length of 20 to 80mm. The opening is covered with a thick lid. As it matures, the shell around the opening becomes black and thicker. Its habitats are lakes, ponds, rice paddies, and rivers. The fertilization occurs in vivo and females raise eggs until they grow into young snails and then give birth.

Use

It is one of the most familiar and important water spiral snails as food. Most of the time, it is boiled to be served. After it is boiled with its shell on, people pull out the meat with a toothpick, or suck the meat out from the shell. It is commonly seen in the market, but also very popularly caught and consumed at home. Collection is done by hand, picking them while walking along the shore. During the dry season, it buries itself in the mud of a rice paddy. People scrape and scoop the mud at the bottom of a rice plant to find the snail. Also, in the dry season when the pond is dry, large amounts of water spiral snails can be collected. Water spiral snails that are collected in the study areas are multiple species. People eat any snails that are large enough.



Filopaludina (Filopaludina) sp. 1
05 Jan. 2009 Kampong Cham, Cambodia



24 Nov. 2009 Phonekeo, Vientiane
Province, Laos



15 Sep. 2007 Tonle Sap, Siem Reap, Cambodia



Trochotaia trochoides
25 Jun. 2010 Dong Makkai, Vientiane Province,
Laos



08 Nov. 2008 Tha Heua Market,
Louang Phrabang, Laos



16 Jan. 2013 Bang Lam Phoo Market,
Khon Kaen, Thailand



24 Nov. 2009 Mueng Song,
Vientiane Province, Laos



24 Nov. 2009 Mueng Song,
Vientiane Province, Laos



24 Nov. 2009 Mueng Song,
Vientiane Province, Laos



24 Nov. 2009 Mueng Song,
Vientiane Province, Laos



06 Dec. 2009 Vientiane Capital, Laos



Filopaludina (Filopaludina) sumatrensis
27 Feb. 2009 Kampong Thom, Cambodia



Filopaludina (Filopaludina) sumatrensis subsp. 1
17 Feb. 2010 Song, Champasak, Laos



Filopaludina (Filopaludina) sumatrensis subsp. 2
24 Jun. 2009 Phonekeo, Vientiane Province, Laos



Filopaludina (Siamopaludina) maekoki
24 Jun. 2009 Phonekeo, Vientiane Province, Laos



Filopaludina (Siamopaludina) sp. (cf. martensi)
17 Feb. 2010 Dao Heuang Market, Champasak, Laos



Filopaludina (Siamopaludina) martensi cambodjensis



Idiopoma dissimilis
23 Jun. 2009 Mueng Song, Vientiane Province, Laos



Idiopoma ingallsiana
26 Feb.2009 Kampong Thom, Cambodia



Mekongia sp. 1
18 Jul. 2010 Near Central Market, Kampong Cham, Cambodia



Mekongia sp. 2
26 Feb.2009 Kampong Thom, Cambodia



Trochotaia trochoides
25 Jun. 2010 Dong Makkai, Vientiane Capital, Laos

Thiaridae spp.

Order: Mesogastropoda
Family: Thiaridae

LA	<u>Hov lekchan</u>	
KH	<u>Cha chraing</u>	
TH	<u>Hov chedi</u>	
VN	<u>Oc len</u>	<u>Ôc len</u>
JP	<u>Tougata-kawanina</u>	<u>トウガタカワニナ科の複数種</u>

Remarks

Basic Information

It is a type of snail. The shape of the shell varies from spindle to a long narrow cylinder, which is narrower and longer than the shell of a *Viviparidae* spp. The lid has a leather-like texture. There are two types; one lay eggs and the other keeps the eggs inside and when they grow into young snails they gives birth.

Use

Compared to *Viviparidae* spp. or *Pomacea canaliculata*, it is less often used, but still it is commonly found as food. It is sold live at markets, and cooked ones are available at

stalls. It is boiled to be served most of the time. The ones sold in the stalls are often seasoned with chili and are spicy. It is collected by grouping hands in small rivers or waterways. In the rice paddies in flatland, *Viviparidae* spp. or *Pomacea canaliculata* are more often found because they are easier to collect. Iin the mountain areas where there are less rice paddies, *Thiaridae* spp. can be used more often. Although Luan Pulabang in Laos is in a mountain area where there are not many rice paddies, large amounts of *Brotia manningi* were collected in nearby small rivers and sold at markets.

Larger type of genus *Brotia*, is used more often, but use of *Tarebia granifera* and *Thiara scabra* are confirmed as well. However, those smaller types of snails are not selectively used, rather, mixed in with the larger type of snails.



Brotia manningi
10 Jun. 2009 Xiengngeun, Louang
Phabang, Laos



25 May 2009 Louang Phabang, Laos



Brotia manningi
25 May 2009 Phoshy Market, Louang Phrabang, Laos



26 May 2009 Nam Ming, Louang Phrabang, Laos



26 May 2009 Nam Ming, Louang Phrabang, Laos



Brotia manningi
26 May 2009 Nam Ming, Louang Phrabang, Laos



Brotia sp. (cf. *binodosa*)
27 Feb. 2009 Kampong Thom, Cambodia



Brotia sp. (cf. *microsculpta*)
18 Feb. 2010 Dao Heuang Market, Champasak, Laos



Tarebia granifera
23 Jun. 2009 Song, Vientiane Province, Laos



Thiara scabra
May 2009 Vangvieng, Vientiane Province, Laos

Hemiplecta sp. (cf. *distincta*)

Order: Stylommatophora
Family: Ariophantidae

LA	<u>Hov khao leuane, Hov satang</u>	
KH	<u>Kchong hien, Kchong dua</u>	
TH	<u>Hov duea</u>	
VN	<u>Oc mo</u>	<u>Ốc mỡ</u>
JP	<u>Neptune-oomaimai</u>	<u>ネプチューンオオマイマイ属 の一種</u>

Remarks

Basic Information

It is a type of snail without a lid. Its eyes are located at the tip of its antennae. It is mainly herbivore, but sometimes will eat particles of dirt and shells of other snails. Mating occurs annually during the late dry period to the beginning of the rain period.

Use

It was spotted at a market in southern Laos. It is roasted, steamed, or boiled with its shell and served with chili sauce. The boiled ones felt slimy in one's mouth and could not taste the snail itself.

Other land snail that is confirmed as a food source is *Camaena* sp. Its preparation is same as this species.



Hemiplecta sp. (cf. *distincta*)
23 Jul. 2010 Near Wat Phou,
Champasak, Laos



Hemiplecta sp. (cf. *distincta*)
19 Feb. 2010 Thakhek, Khammouane,
Laos



Hemiplecta sp. (cf. *distincta*)
23 Jul. 2010 Near Wat Phou, Champasak, Laos



Hemiplecta sp. (cf. *distincta*)
23 Jul. 2010 Near Wat Phou, Champasak, Laos



23 Jul. 2010 Near Wat Phou, Champasak, Laos



Hemiplecta sp. (cf. *distincta*)
19 Feb. 2010 Thakhek, Khammouane, Laos



Hemiplecta sp.
20 Jan. 2013 Noun Market, Champasak, Laos



Hemiplecta sp.
20 Jan. 2013 Noun Market, Champasak, Laos



Camaena sp.
11 Oct. 2011 Laos



Camaena sp.
11 Oct. 2011 Laos

Unionidae spp.

Order: Unionoida
Family: Unionidae

LA	<u>Hov kii, Hov xai</u>	
KH	<u>Krom</u>	
TH		
VN	<u>Ngao</u>	<u>Ngao</u>
JP	<u>Ishi-gai</u>	<u>イシガイ科の複数種</u>

Remarks

Basic Information

It is a type of bivalve with a medium to large shell size. The shapes vary from egg-shaped to triangular. Pearlescence inside the shell is extremely bright. *Unionidae* spp. can be divided into two broad groups: one with teeth and one without teeth. All the species live in fresh water, between rocks or under mud.

Use

It is boiled with Tamarind leaves to be served. People like this dish with beer. It is collected mostly in rivers, using hand or hand-held nets. It is not seen in markets as often, however, if there is a pile of *Unionidae* spp in the market, it will contain several species and many types of shells are mixed.



Cristaria sp.(cf. *plicata*)

18 Feb. 2010 PakPeo , Champasak, Lao



19 Nov. 2009 Hou Kua Market, Vientiane Capital, Laos



24 Nov. 2009 Phonekeo, Vientiane Province, Laos



18 Feb. 2010 Lak14 Market, Champasak, Laos



Ensidens ingallsiana

26 Feb. 2009 Kampong Thom, Cambodia



Hyriopsis delaporteii

18 Feb. 2010 Lak14 Market, Champasak, Laos



Physunio cambodiensis

May 2009 Nalao, Vientiane Province, Laos



Pilsbryconcha exilis

13 Feb. 2010 Dong Makkai Market, Vientiane Capital, Laos



Pseudodon vondembuschianus chaperi

29 Jun. 2009 Dong Makkai Market, Vientiane Capital, Laos



Pseudodon vondembuschianus ellipticus

29 Jun. 2009 Dong Makkai Market, Vientiane Capital, Laos



Scabies crispate
26 Feb. 2009 Kampong Thom , Cambodia



Uniandra sp. 1
24 Jun. 2009 Phonekeo, Vientiane Province,
Laos



Uniandra sp. 2
12 Feb. 2010 Kok Sa Moi, Louang Phrabang,
Laos

Corbicula spp.

Order: Veneroida
Family: Corbiculidae

LA	Hoy kii, Hoy xai, Hoy lep maa	
KH	Liah bang	
TH	Hoy sai	
VN	Hen	Hén
JP	Shizimi-gai	シジミ属の複数種

Remarks

Basic Information

It is a small bivalve which is smaller than Unionidae spp..

It is often found buried in the sand under the water.

Use

It is eaten boiled with the shell-on, in the same way as the *Unionidae* spp.. Often times it is boiled with spices and herbs such as Tamarind leaves. It is collected by hand and hand-held nets.



Corbicula fluminea
29 Jun. 2009 Dong Makkai Market,
Vientiane Capital, Laos



03 Nov. 2008 Central Market, Phnom Penh,
Cambodia



14 Sep. 2007 Siem Reap, Cambodia



06 Nov. 2008 Neak Loeung, Kandal, Cambodia



Corbicula fluminea f. insularis
29 Jun. 2009 Dong Makkai Market, Vientiane
Capital, Laos



Corbicula moreletiana
18 Jul. 2010 Near Central Market, Kampong
Cham, Cambodia



Corbicula sp. 1
18 Jul. 2010 Near Central Market, Kampong
Cham, Cambodia



Corbicula sp. 2
18 Jul. 2010 Near Central Market, Kampong
Cham, Cambodia

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「Global invasive species database」 <http://www.issg.org/database/welcome/>

Other Invertebrates

Other Invertebrates

Many other groups of animals other than those introduced in previous chapters are consumed as food in Mekong river basin. Mammals, birds, crustacean, spiders are sold in market. Several of them are collected in the neighborhood and used daily. In this section, we will introduce crustacean and spiders.

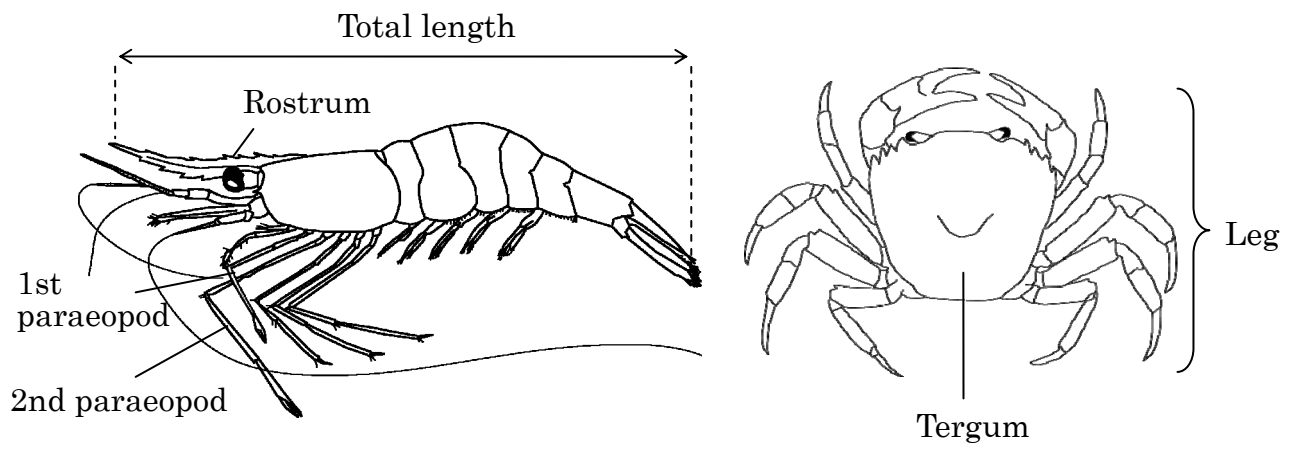
Among crustacean, shrimps and crabs are commonly sold and purchased. Most of the species used in inland are freshwater source. We confirmed close to ten species of crustacean in this study. Identification of crustacean is difficult at the site, so it is assumed that there are more species being used. In large markets, marine crabs are also sold but we did not include them in this report.

Macrobrachium rosenbergii cultured and has higher commercial value, so its distribution is stable. Other smaller shrimps and freshwater crab (Order Brachyura) are wild caught. Most of the catches that are sold in large quantity are collected in rivers and lakes, but many are also from paddies and marshes. Many of the food that are caught and consumed at home are *Mizube no Sachi* and are foraged from neighboring shallow waters. Common cooking methods for those are deep frying, roasting, stir-frying and boiling. These home-style dishes can be found in restaurant menu, and salted stir-fried small shrimps are the most popular and sold at food stalls as well.

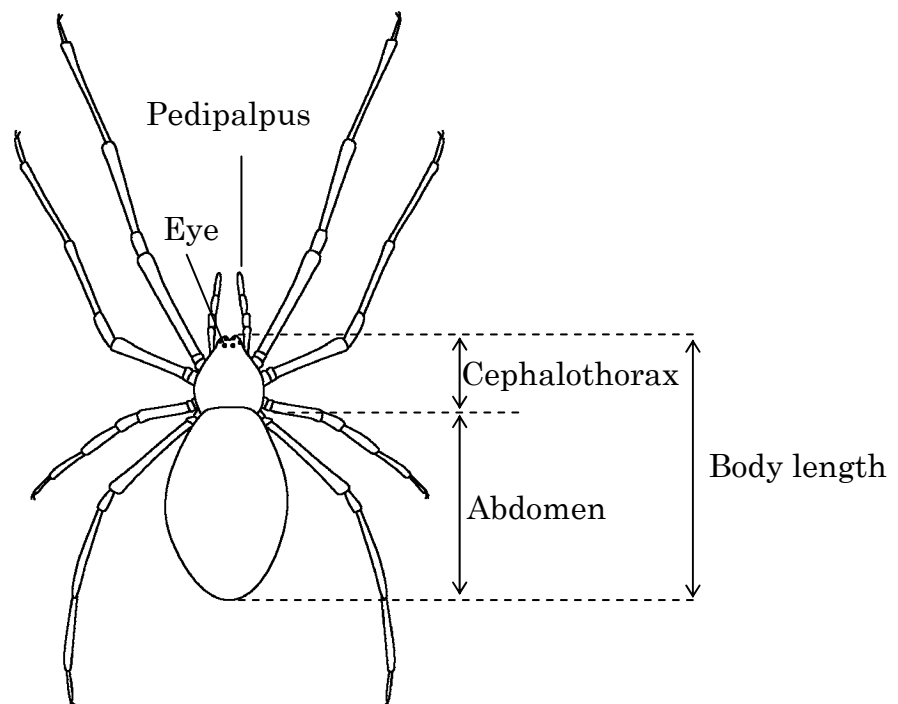
As for spiders, so-called tarantulas are used as food. Both live and cooked ones are sold in market, but cooked ones are seen more often. Tarantulas are more preferably eaten in some parts of Cambodia and it is not rare occasion to come across them in markets in those areas. Most of the time tarantulas are deep fried to eat. In this study, spiders other than tarantulas were not confirmed.



Morphology of Crustacea



Morphology of Spider



Palaemonidae spp.

Order: Decapoda
Family: Palaemonidae

LA	<u>Khung</u>	
KH	<u>Kompuh</u>	
TH	<u>Khung</u>	
VN	<u>Tép rong</u>	<u>Tép rong</u>
JP	<u>Tenaga-Ebi and its allies</u>	<u>テナガエビ科の複数種</u>

Remarks

General Information

Smaller species of these shrimp measure about 4 to 7cm, and larger species of *Macrobrachium rosenbergii* are about 30cm long. Large male species have a long second pair of legs, often longer than its body. Their habitat is mainly fresh water but they migrate to the ocean during the breeding season. They prefer areas with aquatic plants and some currents to live in.

Use

For the people in Indo-China, these shrimp are popular food and are consumed daily. Large shrimp are sorted and sold by themselves, while smaller ones are mixed in with other aquatic organisms and sold. Their preparation methods are; roast, stir-fry, cook, boil, and steam. They are also used in an omelet, soup, and a salad. Some people like it raw. In Laos, there is a dish in which live shrimp are mixed in a herb salad with chili. In Cambodia, there is a fried bun with shrimp.

These shrimp are abundant in marsh areas with aquatic plants. People catch them by hand-held nets or by using traps. They are often caught and consumed at home, so it is commonly seen in everyday meals.



20 Jan. 2013 Pakse New Market,
Champasak, Laos



Khung teng
27 Jan. 2013 Vientiane Capital, Laos



20 Jan. 2013 Pakse New Market, Champasak, Laos



18 Feb. 2010 Champasak, Laos



07 Jul. 2011 Kampong Cham, Cambodia



15 Sep. 2007 Siem Reap, Cambodia



28 Nov. 2009 Vientiane Capital, Laos



26 Nov. 2009 Dong Borng, Vientiane Capital, Laos



26 Nov. 2009 Dong Borng, Vientiane Capital, Laos



15 Sep. 2007 Tonle Sap, Siem Reap, Cambodia

Macrobrachium rosenbergii

Order: Decapoda
Family: Palaemonidae

LA	<u>Khung kam ngai</u>	
KH	<u>Bon kong</u>	
TH	<u>Khung vai</u>	
VN	<u>Tom cang xanh</u>	<u>Tôm càng xanh</u>
JP	<u>Oni-tenaga-ebi</u>	<u>オニテナガエビ</u>

Remarks

General Information

Their habitat range is from South Asia to Southeast Asia and North Australia. It is said to originate in Malay Peninsula. The maximum length is 32cm for male and 25cm for female. When a male extends its claws, it exceeds 80cm. The body is brownish-red, and its claws are dull blue. They live along a downstream river to a brackish water region and move down to the ocean during the laying period.



19 Jul. 2010 Kratie, Cambodia



09 Sep. 2007 Vientiane Capital, Laos

Use

They are seen at market regularly, often sold alive in a fish tank or in a basin. Roasting, frying, boiling and steaming are the common method for cooking this shrimp. They are popular on menus in eateries. They are cultured worldwide and so as in Thailand and Vietnam in Indo-China region.



19 Nov. 2009 Thong Khan Kham Market,
Vientiane Capital, Laos



12 Sep. 2007 Thong Khan Kham Market,
Vientiane Capital, Laos



2008.Nov.03 Central Market, Phnom Penh,
Cambodia



16 Jan. 2013 Bang Lam Phoo Market, Khon
Kaen, Thailand



03 Nov. 2008 Phnom Penh, Cambodia

Brachyura spp.

Order: Decapoda

Family:

LA	<u>Ka pou</u>	
KH	<u>Kdarm, Kdarm srae, Kdarm phnom</u>	
TH	<u>Poo, Pu</u>	
VN	<u>Cua dong, Ba khia</u>	<u>Cua đồng, Ba khía</u>
JP	<u>Kani</u>	<u>カニ類</u>

Remarks

General Information

They have one pair of claws. The form of their claws and shape of their teeth vary significantly reflecting their types of diet. The structure of their shells differs as well, from ones with protuberance and bristle hair to others with smooth shells. Females have a broader abdomen than the males because females lay eggs and protect them in the abdomen. They are found in every type of aquatic region, so they have a wide variety of lifestyles. Some even dig deep holes in sandy clay, live in a forest floor, or up a tree.



27 May 2009 Xiangmouak, Louang Phrabang, Laos



20 Jan. 2013 Champasak, Laos

Use

In the market, freshwater crabs that belong to two families in the *Parathelphusidae*, were sold. They are prepared by frying, roasting, boiling, steaming, or put in a soup. They are also used as ingredients in fish sauce (crab sauce). In Cambodia, these crabs are pickled with salt and served with citrus juice squeezed on top. In Xayabury province in Cambodia and northern Thailand, people typically use crab paste called Nam Pou. Nam Pou is made by crashing the crabs, straining the juice, mixing in salt and spices (galangal root, garlic, and chili) then boiling this down until it becomes paste. Nam Pou is used as a dip for vegetable and steamed sweet rice, or put in soups and noodles. It can be stored up to 1 to 2 years. The crabs that are used in Nam Pou are often collected in paddies near houses, and it is said that the smaller the size, the better the taste.

Smaller crabs living near paddies are often caught by hand. A collector would put his hand in a crabs' burrow which is found along the rim of the rice paddies and pull out the crabs. Crabs that live in mountain streams are often caught by using funnel traps. The research team met a person who catches mid-sized crabs with his hand. He would put his hand in a crab's burrow and a crab would nip his fingers. He would pull them out so his hands were full of scratches.



27 May 2009 Xiangmouak, Louang Phrabang, Laos



27 May 2009 Xiangmouak, Louang Phrabang, Laos



27 May 2009 Xiangmouak, Louang Phrabang, Laos



Somanniathelphusa sp.
23 Jul. 2008 Dong Makkai, Vientiane Capital, Laos



Somanniathelphusa sp.
12 Sep. 2007 Dong Makkai Market, Vientiane Capital, Laos



Somanniathelphusa sp.
10 Jun. 2007 Talat Sao, Vientiane Capital, Laos



30 May 2009 Nonsard Market, Vientiane Capital, Laos



14 Sep. 2011 Khammouane, Laos



12 Sep. 2011 Bolikhamsai, Laos



17 Jul. 2010 Phnom Penh, Cambodia



Cheo-Nam Pou
18 Sep. 2011 Sainyabuli, Laos



Cheo-Nam Pou
18 Sep. 2011 Sainyabuli, Laos



27 May 2009 Na Kham, Louang Phrabang, Laos



27 May 2009 Na Kham, Louang Phrabang, Laos



27 May 2009 Na Kham, Louang Phrabang, Laos



22 Nov. 2009 Na Kom, Vientiane Province, Laos



Pilosamon sp.
Feb.2010 Laos



Pudaengon hinpoon
Feb.2010 Laos



Parathelphusidae: *Esanthelphusa* sp.
Feb.2010 Cambodia



Parathelphusidae: *Heterothelphusa beauvoisi*
Feb.2010 Cambodia



Parathelphusidae: *Sayamia germaini*
Feb.2010 Cambodia



Parathelphusidae: *Sayamia melanodactylus*
Feb.2010 Laos



Parathelphusidae: *Somanniathelphusa lacuvita*
Feb.2010 Cambodia



Parathelphusidae: *Somanniathelphusa* sp.
13 Sep. 2007 Dong Makkai Market, Vientiane
Capital, Laos

Haplopelma sp.

Order: Araneae
Family: Atypidae

LA	<u>Bung</u>	
KH	<u>Aping krobai</u>	
TH		
VN	<u>Nhen</u>	<u>Nhện</u>
JP	<u>Oo-tsuchi-gumo (Tarantula)</u>	<u>オオツチグモ(タランチュラ)</u>

Remarks

Basic Information

They are often called Tarantulas in general. They measure about 8 to 10cm. They are large arachnids with a stocky body covered with bristle hair. Legs are thick and joints are short. There are a group of species called the Tree Spiders. Their nests are made in hollows of tree trunks above ground. The Earth Tiger makes the nest underground or under the fallen, decomposing tree. Usually Tarantulas live one per nest, but sometimes female lives with her offspring while they are young. Tarantulas have a very long life span, some live a few decades.

Use

The research team observed tarantula (*Haplopelma longipes*) sold at market. Tarantulas are often sold after being cooked, but live ones are occasionally sold. They are usually served fried.

Kampong Cham in Cambodia is known for Tarantula catching and many residents collect tarantulas. Recently catching tarantulas is also becoming popular in Kampong and Siem Reap.



18 Jul. 2010 Kampong Cham,
Cambodia



03 Nov. 2008 Central Market, Phnom
Penh, Cambodia



18 Jul. 2010 Kampong Cham, Cambodia



18 Jul. 2010 Kampong Cham, Cambodia



18 Jul. 2010 Kampong Cham, Cambodia



18 Jul. 2010 Kampong Cham, Cambodia



18 Jul. 2010 Kampong Cham, Cambodia



21 Jul. 2009 Vientiane Capital, Laos

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Plants

Plants

Plants of *Mizube no Sachi* are edible plants grown around villages. People pick them up on the way home from work at the end of the day, or elders and children who stay home would pick them up to make day's meal. Waterfront in Mekong river basin has plenty of sunshine and high temperature. It is an ideal habitat for Kaseth (*Neptunia oleracea*) or Phak Bong (*Ipomoea aquatica*) and other aquatic plants. Some terrestrial plants such as Yanang (*Tiliacora triandra*) and Samek (*Syzygium antisepticum*) are not picked up as weed, but let growing in open spaces and bushes of commons. Spices and herbs that are often incorporated in cooking are also left to grow in home gardens in homes. We conducted a questionnaire survey about uses of foodstuff at homes in Vientiane Province and Vientiane Capital in Laos in 2010. The result showed *Mizube no Sachi* accounted for about half of plant food source.

These plants are not only collected from natural distribution, but some of them are brought by people and grown in villages. Even though they are transplanted for harvesting, those kind of plants receive only a minimum care such as weeding, but even that is advantageous among competitive environment. Many of *Mizube no Sachi* plants are treated in such semi domestication. These plants may be indigenous to Mekong river basin or brought from ancient Africa, and more recently, introduced from new continent. Taro and Yam which played a vital role in the root cultivation which originated in ancient Southeast Asia are found as reminiscent of past as *Mizube no Sachi*. The origin of the plants of *Mizube no Sachi* range widely, but it is researcher's notion that they have a long history of being incorporated into human civilization.



Picture: Where *Mizube no Sachi* grow. Neither from mountain, nor from ocean.
Paddy field in Vientiane, Laos (Right before rain season)

Taste of *Mizube no Sachi* varies widely as well. Its unique taste cannot be compared to familiar taste of carrots or cabbage and other garden vegetables. Many of *Mizube no Sachi* plants have strong bitterness and acidity. Especially the bitterness of some was so strong that for Japanese

who are not used to tasting bitter food, we had some difficulty getting accustomed to it. (In the past, Japanese used to collect wild plants and many of them tasted bitter. But modern Japanese have lost this custom except for having them as occasional seasonal delicacy.) We thought bitterness was distinctive, but an elderly Lao woman said, “Today’s young people do not eat bitter food as much. When I was young, we were always told to ‘eat bitter for your health’.” In local published literature, there are descriptions on uses of plant in traditional medicine as well as food. Some of them are hard to believe at first, but many of the plants’ chemical components have been extracted and tested, and proven to be truly beneficial. In this report, those traditional healing methods are briefly introduced based on the original description. It is because this belief is possibly a reason that plant diet of people has been comprised of such variety in Mekong river basin. We do have to state a warning that it is not the intension of this report to prove the effect of medicinal power, so please do not try to medicinally use the plants according to this report.

We had generous cooperation from professionals around the world in order to record the plants in correct taxonomy. Lao names of plants referred "Mike Callaghan (2004), *Lao Plants listed by botanical, common, & regional / Asean names with Lao names & Lao script*" with cooperation of Lao University Department of Science. Cambodian names of plants are based on "Pauline Dy Phon (2000), *Dictionary of Plants used in Cambodia*" with direction of Royal University of Phnom Penh Department of Science. Thai names are quoted from *Flora of Thailand* based on direction of Dr. Thaya of Mahidol University. Japanese names are derived from Web version of BG Plants which Japanese plant scientists support. We also referred a book written by Mrs. Yoshiko Yoshida, a Southeast Asian food sources culture researcher, and some other reference books. As for scientific names, we chose *The Plant List* as the sole science name source to avoid confusion of synonyms being used for same plant species.

In this chapter, 142 species from three classes, 35 orders, 68 families of *Mizube no Sachi* plants are introduced. Those are popular plants and commonly sold in markets.



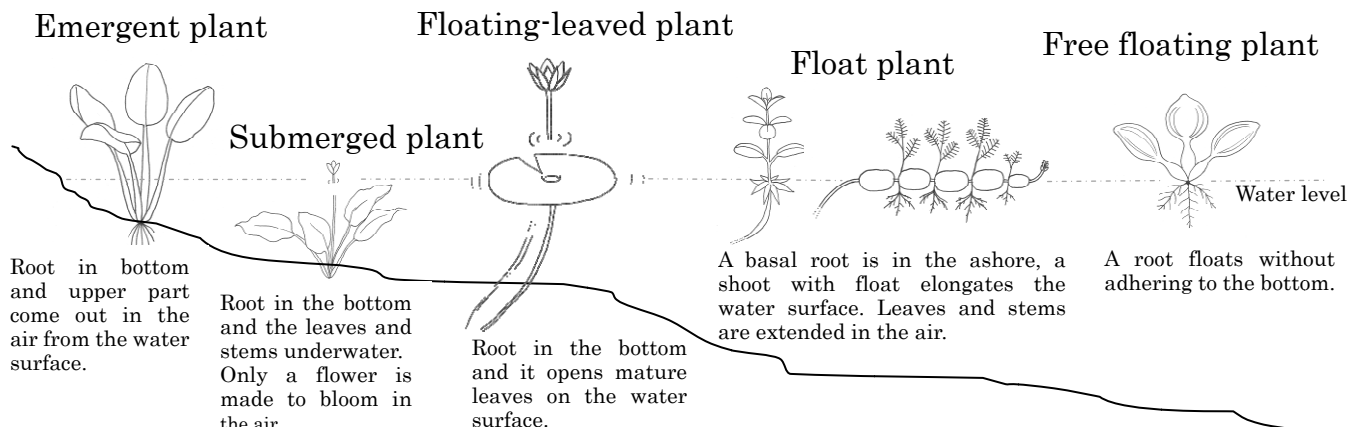
Ka don tree (*Careya arborea*) in paddy
17 Feb. 2010 Pakse, Laos



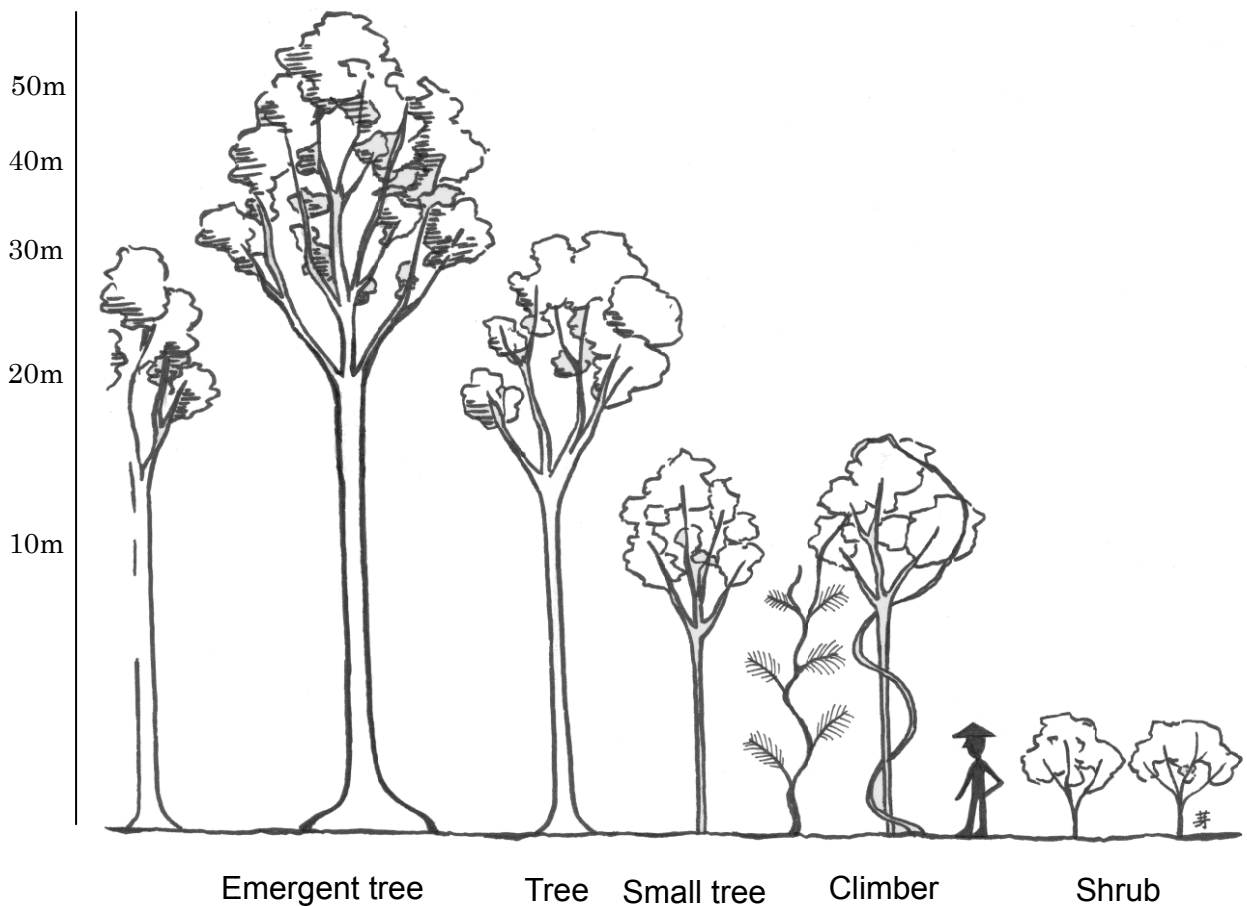
Glossary of plant in this chapter
26 Sep. 2009 Vientiane, Laos



Nymphaea rubra and *Ipomoea aquatica*
9 Oct. 2013 Chau doc, Vietnam



Life-form of aquatic plant



Life-form of woody plant

Mizube no Sachi plants used for Lao cooking



Chaom (*Acacia pennata* Subsp.), Bamboo, Yanan (*Tiliacora triandra*), Waen (*Marsilea crenata*)
2 Sep. 2012 Vientiane Laos



Pong (*Sagittaria guayanensis*), Khin (*Zingiber officinale*), Horm parn (*Coriandrum sativum*), Pumpkin flower and leaf (*Cucurbita maxima*)
20 Aug. 2010 Vientiane, Laos



Water hyacinth (*Eichhornia crassipes*)
30 Nov. 2010 Naxaitong, Vientiane, Laos



Kheelak (*Senna siamea*), Yanan, Khaa (*Alpinia galanga*), Kheua kheun (*Solanum capsicoides*)
3 Oct. 2010 Vientiane, Laos



Cassava leaf (*Manihot esculenta*)
1 Aug. 2010 Vientiane, Laos



Yanan, Kha yang (*Limnophila aromatica*), Kheua kheun, Hom pae (*Eryngium foetidum*)
3 Oct. 2010 Vientiane, Laos

Marsilea crenata

Order: Salviniales
Family: Marsileaceae

LA	Waen	ຜັກແວນ
KH	Chantol pnom	ចាន់តូប៉ន
TH	Waen, Limpi	ผักแว่น
VN	Rau bo, Rau deu rang	Rau bợ, Rau dệu rãng
JP	Nangoku-denjisou	ナンゴクデンジソウ

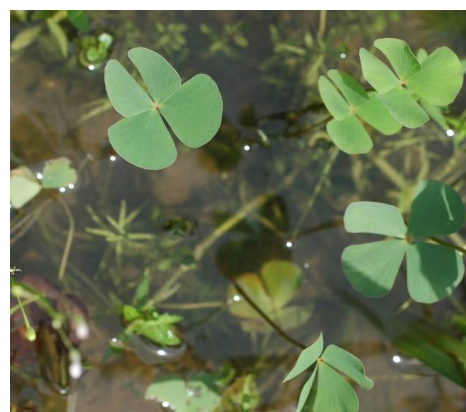
Remarks

Distribution: Tropical and sub-tropical Asia.

Life form: Aquatic fern. Emergent. 5-50cm tall. Root stalks expand horizontally in the soil. Grown in paddy fields and shallow village marshes.

Use: Shoots are eaten as salad with fermented fish or shrimp paste. Young leaves are cooked in a soup. It is used as medicine in Thailand for oral and throat ulcer, and fever.

Ref. No.: 5, 14, 20



Jul. 2008 Vientiane province, Laos

Diplazium esculentum

Order: Polypodiales
Family: Woodsiaceae

LA	Kouth, Koud nam	ຜັກກູດ
KH		
TH	Kuut khaao	
VN	Rang song quan rau, Rau don	Ráng song quần rau, Rau dón
JP	Kuwale-shida	クワレシダ

Remarks

Distribution: From the Himalayas to the Pacific Islands including south of Kyushu island of Japan.

Life form: Terrestrial fern. Grows alongside streams or canals along forest edges.

Use: Commonly eaten in Indochinese countries. Raw or slightly boiled shoots are eaten as salad. Used as an ingredient of various dishes. In Thailand, leaves are used as medicine for fever, inflammation, failing eyesight, anemia, and gingival bleeding. It has a diuretic effect and contains flavonoid.

Ref. No.: 5, 18, 19, 26



Sep. 2009 Chiang Rai, Thailand

Nymphaea lotus

Order: Nymphaeales
Family: Nymphaeaceae

LA	Bua khee bae, Bua ngern, Bua nov	
KH	Pralit, Prolet dong	ព្រឺលីត
TH	Bua kin sai	บัวกินสาย
VN	Sung trang, Sung lam	Súng trắng, Súng lam
JP	Yozaki-suilen	ヨザキスイレン

Remarks

Distribution: Originated from India. Distributed from Africa to Southeast Asia.

Life form: Floating-leaved plant. Leaves are round, 30-50 cm in diameter, and spread across the water's surface.

Use: The peeled flower-stalk is eaten raw. It has no particular taste and an enjoyable crunchy texture. Used as an ingredient in various dishes and Cambodian traditional soup.

Traditionally in Cambodia, it is applied as a compress for fever. The plant contains an alkaloid (nupharidine) which has medical effects. Seeds and root-stalks are used as medicine as well.

Ref. No.: 18, 27, 38, 46, 48



Jul. 2011 Kratie, Cambodia



Sep. Phnom Penh, Cambodia

Nymphaea rubra

Order: Nymphaeales
Family: Nymphaeaceae

LA	Saiboua	สายบัว
KH	Proret romchang	ព្រឺលីត
TH	Parn dien, Saiboua, Boua kiepe	บัวสายดอกชมพู
VN	Sung do	Súng đỏ
JP	Akabana-suilen	アカバナスイレン

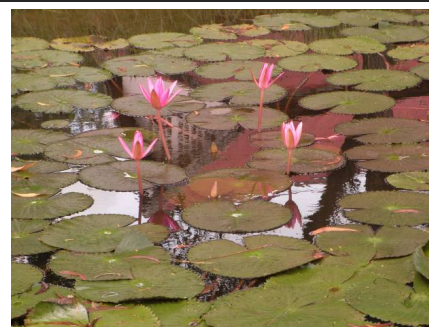
Remarks

Distribution: Originated from India. Distributed from Africa to Southeast Asia.

Life form: Floating-leaved plant. Leaves are round with a 30-50 cm diameter which spread across the water surface.

Use: The peeled flower stalk is eaten raw. It has no particular taste and an enjoyable crunchy texture. It is used as an ingredient in various dishes.

Ref. No.: 18, 27, 38, 46, 48



Sep. 2007 Siem Reap, Cambodia



Sep. 2012 Phnom Penh, Cambodia

Uvaria rufa

Order: Magnoliales

Family: Annonaceae

LA	<u>Mapipuan</u>	
KH	<u>Phlae treal</u>	<u>ទ្រៅជ្រោះក្របី</u>
TH	<u>Phi phuan noi</u>	<u>ผีพวนน้อย</u>
VN	<u>Bo qua hoe, Day du de</u>	<u>Bò quả hoe, dây dù dè</u>
JP		

Remarks

Distribution: Indochina, The Philippines and Indonesia.

Life form: Large size climber. Up to 20m tall.

Use: Fruits are used for cooking. In Cambodia, it is used as postnatal medicine.

Ref. No.: 27



Jul. 2010 Pakse, Laos

Uvaria sp.

Order: Magnoliales

Family: Annonaceae

LA	<u>Hao</u>	<u>ໝາກເຂົ້າ</u>
KH		
TH	<u>Maeng krang, Mung lum vai, Mang kheng</u>	
VN	<u>Bo qua</u>	<u>Bò quả</u>
JP		

Remarks

Use: Fruits are eaten. It has a slightly sour citrus flavor and is sold at local markets when in season. Its juice is sold in Vietnam.



Jul. 2008 Phonyang, Vientiane Province, Laos

Peperomia pellucid

Order: Piperales
Family: Piperaceae

LA		
KH	Krosangteap	ក្រសាំងទាប
TH	Kra sang	ผักกระดัง
VN	Rau cang cua	Rau cang cua
JP	Ishigaki-koshou, Usubana-sunakoshou	イシガキコショウ、ウスパナ スナコショウ

Remarks

Distribution: Originated from tropical America. Widely cultivated in tropical and subtropical countries of the world.

Life form: Annual herb. 10-20 cm tall. The color of a stem is translucent white.

Use: Stems and leaves are eaten raw or cooked. Cultivated in backyard gardens and homesteads. Sap from the leaves is used as oral medicine or liniment. It is known to have a sterilizing effect against *Staphylococcus aureus* and coliform bacteria.

Ref. No.: 5, 42, 45, 46, 47



Jul. 2010 Kratie, Cambodia

Piper sarmentosum

Order: Piperales
Family: Piperaceae

LA	Ii leuth, Eilert	ຜັກອີເລັດ
KH	Chaplu, Komplou	ចាប្លូ
TH	Cha phlu, Eilert	ข้าวพุด
VN	Lot	Lốt
JP	Haigoshou	ハイゴショウ

Remarks

Distribution: From Northeast India to South China, Southeast Asia, and the Andamang Islands.

Life form: Perennial herb. lower stems expand across the ground, upper stems assurgent up to 30cm.

It is planted in kitchen gardens or orchard water slots and it also grows wild.

Use: Young leaves are used to dress herbed ground meat, salad, and spicy Thai curry. Boiled leaves are eaten with fermented fish (shrimp) paste. Leaves are used to wrap fermented meat or fermented tea leaf (Mien). It is used as a traditional medicine. It has a degassing expectorant effect on the stomach. Roots are prepared as stomachic peptic. Since the leaf contains a high level of oxalic acid, eating it may cause calculus in the kidneys.

Ref. No.: 5, 10, 26, 47



Oct. 2008 Hong Ha, Hué, Vietnam

Piper sp.

Order: Piperales
Family: Piperaceae

LA	Sa khan, Sakhaa, Sa kharn	ສະຂ່າ
KH		
TH	Zakhan	
VN	Tieu	Tiêu
JP		

Remarks

Distribution: Indochina to Malesia.

Life form: Deciduous tree climber.

Use: Commonly used in northern Laos. Small cut stems are cooked with other ingredients. It is used as a spice and not eaten directly. Used as medicine for gastric problems and as a compress for cough. It contains eupomatene, crotepoxide, and pipericallosine which are sterilizers.

General info.: There are opinions that this species is *P. interruptum* however, because that classification is still controversial this work will deal with it as *Piper sp*

Ref. No.: 23, 32, 51



Jul. 2008 Phonyang, Vientiane Province, Laos

Houttuynia cordata

Order: Piperales
Family: Saururaceae

LA	Khao thong	ໝາກລາວທອງ
KH	Chi slak m'lu	ជីរផ្កាឈូក, ជីរឃាបកា
TH	Kra sang	ผักลาวทอง
VN	Rau giap ca, Diep ca	Rau Giấp cá, Diếp cá
JP	Dokudami	ドクダミ

Remarks

Distribution: Southeast Asia, China to Japan.

Life form: Perennial herb. Expand by underground stems and vertically elongate to 20-50cm.

Use: In Northern Thailand, Laos, and Vietnam, raw leaves are eaten for a salad. In Cambodia, leaves are used for aromatization of raw fish. In China, a leaf is not eaten but the underground stems are used to dress salad dishes. It contains lauryl aldehyde and quercitrin. In Japan, it is known also as a medicine called "Jyu-yaku". It is effective for swelling, bug bites, cuts, eye-washing, skin disease, gastroenteric disorders, and is also used as an anthelmintic.

Ref. No.: 14, 18, 23, 27, 29, 42



Feb. 2010 Savannakhet, Laos

Limnocharis flava

Order: Alismatales
Family: Alismataceae

LA	<u>Kan chong</u>	ຜັກກ້າມຈອງ
KH	<u>Trakiet paong</u>	ត្រកៀតប៉ោង
TH	<u>Talapat ruesi, Bua loi, Bua khuak</u>	ตาลปัตรฤๅษี
VN	<u>Keo neo, Cu neo</u>	Kèo nèo, Cù nèo
JP	<u>Kibana-omodaka</u>	キバナオモダカ

Remarks

Distribution: Originated from tropical America, introduced to South and Southeast Asia.

Life form: Aquatic plant. Emergent. Up to 1m tall. It grows in the shallow ends of a ponds.

Use: The raw or boiled young leaves, buds and inflorescences are used for a salad or a soup.

Ref. No.: 5, 14, 27, 46



Sep. 2009 Chiang Rai, Thailand

Sagittaria guayanensis subsp. *lappula*

Order: Alismatales
Family: Alismataceae

LA	<u>Pong</u>	ຜັກຍ້ອງ
KH	<u>Chrach</u>	ច្រាច់
TH	<u>Tao kiat, Phak khang kai</u>	เต้าเกี๋ยด
VN	<u>Tu co tron</u>	Từ cô tròn
JP	<u>Omodaka-modoki</u>	オモダカモドキ

Remarks

Distribution: From the tropical Africa to East and Southeast Asia.

Life form: Floating-leaved plant in lakes, swamps, and nearly stagnant water of streams.

Use: Leaves are cooked. It is used as an ingredient in Laos.

Ref. No.: 14, 46, 47



Sep. 2007 Vientiane province, Laos

Amorphophallus paeoniifolius

Order: Alismatales

Family: Araceae

LA	<u>Ka book</u>	
KH	<u>Toal</u>	<u>ទាល់ត្រី</u>
TH	<u>Lum e book</u>	
VN	<u>Nua chuong</u>	<u>Nưa chuông</u>
JP		

Remarks

Distribution: Thailand, Cambodia and Laos.

Life form: Perennial herb. 1~2m tall. In the ground a stalk grows a tuber fat. It grows in secondary vegetation, forest margins, and village groves.

Use: Edible after leaf stalk are well boiled, drained, and rinsed to rid oxalic acid . It is found at local markets in select areas of Cambodia, south Laos, and northeast Thailand.

In traditional Laos medicine, it is said that a tuber is effective against malaria.

General info.: It has acrid tubers and stems, due to the presence of calcium oxalate crystals and alkaloids.

Ref. No.: 7, 21, 27, 47



Jul. 2011 Ratanakiri, Cambodia

Colocasia esculenta

Order: Alismatales

Family: Araceae

LA	<u>Bon</u>	<u>ໂບບອນ, ຜັກບອນ</u>
KH	<u>Traw</u>	<u>ត្រាវហោរ</u>
TH		
VN	<u>Mon nuoc</u>	<u>Môn nước</u>
JP	<u>Sato-imo</u>	<u>サトイモ</u>

Remarks

Distribution: Originated in Southeast or southern Central Asia.

Life form: Perennial herb. Up to 1-2m tall.

Use: Corms, young leaf blades, and petioles can be eaten. The swollen stem base, known as corms, were the most important staple food in the ancient agricultural cultures all throughout southeast Asia, Oceania, and west Japan.

Ref. No.: 36,45, 47



Jul. 2008 Vientiane province, Laos

Lasia spinosa

Order: Alismatales

Family: Araceae

LA	Phak nam	ผักน้ำ
KH		
TH	Phak nam	ผักหนาม
VN	Choc gai, Mop	Chóc gai, Móp
JP	Mizu-yatsude	ミズヤツデ

Remarks

Distribution: India, South China, Southeast Asia.

Life form: Perennial herb. It grows in shade near river banks or ponds.

Use: Well boiled or pickled, young leaves and flowers are eaten for garnish.

The stalk is used for cough medicine and decoction is used for the itchiness associated with skin disease. Raw leaves and leaf stalks contains hydrocyanic acid and calcium oxalate.

Ref. No.: 7, 23, 42, 49,



Feb.2010 Pakse, Laos

Wolffia globosa

Order: Alismatales

Family: Araceae

LA	Pham	ผัก
KH	Chor bai tea	ເຜີ້ຫຼັກ
TH	Pham, Khai nae, Khai nam	ผัก, ไข่น้ำ
VN	Beo phan	Bèo phàn
JP	Mijinko-ukikusa	ミジンコウキクサ

Remarks

Distribution: Originated from warm temperate to tropical eastern Asia. It was introduced over Africa and America.

Life form: Floating plant. A single body is ellipsoid, 0.4~0.8 mm long. It is rootless. Grows in clumps on the water surface.

Use: Eaten as an ingredient of fish or chicken soup.

Raw plants contain 100g, energy 8kcal, 59 mg of calcium, 25 mg of phosphorus, and 6.6 mg of iron.

General info.: This species is the smallest seed plant in the world.

Ref. No.: 7, 14, 20, 49



Nov. 2011 Vientiane province, Laos

Ottelia alismoides

Order: Alismatales
Family: Hydrocharitaceae

LA	Houm hap	ຜັກຫອມແຮບ
KH	Slap changwa	ស្លាបច្រវ៉ា
TH	Santawa, Bai pai, Hoump hep	สันตะวา
VN	Ma de nuoc	Mã đề nước
JP	Mizu-Oobako	ミズオオバコ

Remarks

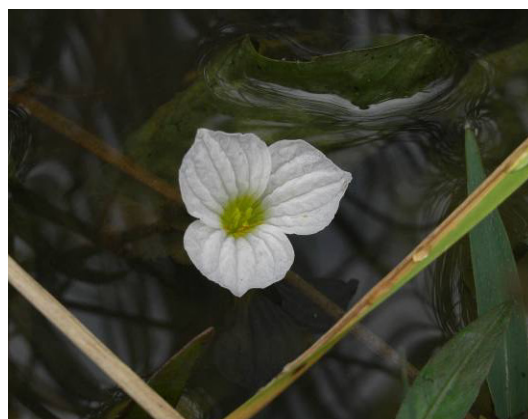
Distribution: From northeastern Africa to tropical Australia, through India, China, Japan and Southeast Asia.

Life form: Submerged plant. Leaves broadly ovate. Flower blooms above the water surface.

Use: Petioles and leaves are eaten as a vegetable with excellent flavor. The fruit is also edible. Even though it is seldom seen at the local market, it is used by villagers regularly.

Medicinally used for treatment of hemorrhoids and used as a poultice for fever.

Ref. No.: 7, 14, 18, 47



Nov. 2008 Phnom Penh, Cambodia



Nov. 2008 Phnom Penh, Cambodia

Dioscorea spp. (D. alata / D. bulbifera / D. esculenta)

Order: Dioscoreales
Family: Dioscoreaceae

LA	Mam pao / Ee moo / Ka thart	ຫມ່ຽວ
KH	Damloong chhiem moen / Dehs prei / Damloo chhvie prei	ដំឡូងឈាមមាន់, ដំឡូងភ្នក / លើប៊ីប, ល្វាស្រុក, ល្វាដី
TH	Man sao / Wan phra chim / Man mue suea	มันเสา / มันมือเสือ
VN	Khoai ngot	Khoa ngot
JP	Ooyamaimo, Mukagoimo, Togeimo	オオヤマイモ / ムカゴイモ / トゲイモ

Remarks

Distribution: Originated in the Far East.

Life form: Perennial climber.

Use: Tubers are used as a starch food. Broods formed on the side of leaf are also edible.

General info.: This group of plant is called Yam. Along with Taro, Yam was an important staple food of the ancient agricultural culture in the Far East. It is still found in local and city markets. Occasionally in the countryside it meets with a semi-domestic Yam species.

Ref. No.: 4, 18, 36, 38, 42, 45, 47



Nov. 2011 Vang Vieng, Laos

Borassus flabellifer

Order: Arecales
Family: Arecaceae

LA	Ton taan , Mak tao	ຕົ້ນຕານ (ໝາກຕ່າວ)
KH	T'naot	ត្នោត
TH	Tan	ตาล
VN	Thot not	Thốt nốt
JP	Ougi-yashi	オウギヤシ

Remarks

Distribution: Originated from Africa. It was introduced to Asia as useful plant in prehistoric age.

Life form: 25-40m tall palm.

Use: The edible fruits are much appreciated in cakes or jellies. Palm wine and palm sugar are made from the sap of inflorescence.

There are many known traditional medicinal uses for every part of the toddy palm. Leaves are used to make marketable products such as hats, mats, roof covers, and writing paper. Canoes may be made out of trunks. Bark is used to make strong rope.

Ref. No.: 10, 14, 27, 38, 42, 45, 46, 47



Jul. 2011 Kampong Cham, Cambodia



Endosperm Jul. 2011 Kampong Cham, Cambodia



Jul. 2011 Kampong Cham, Cambodia



Palm sugar Feb. 2010 Thakhek, Laos



Tapping Jan. 2013 Salavan, Laos

Calamus tenuis

Order: Arecales
Family: Arecaceae

LA	Naw yae	ນ້ຳເຍ້າ
KH		
TH		
VN	May dan, May manh	Mây đan, Mây manh
JP		

Remarks

Life form: A rattan.

Use: A peeled stem is cooked.

Ref. No.: 12



Jul. 2008 Vientiane Capital, Laos

Rhapis cochinchinensis

Order: Arecales
Family: Arecaceae

LA	Naw san	ນ້ຳສານ
KH	T'naot	
TH	Chang	จิ้ง
VN	Mat cat	Mật cật
JP		

Remarks

Life form: A rattan. Stems to 42 m tall, to 65 cm in diam.

Leaves palmate.

Use: The top of young shoot are edible.

Ref. No.: 12, 48



Feb. 2010 Thakhek, Laos

Bamboo shoot

Order: Poales
Family: Poaceae

LA	Naw mai	ໝໍ້ໄມ້ໄລ່
KH	Russey	ប្រសើរ
TH	Naw mai	
VN	Tre	Tre
JP	Takenoko	タケノコ

Remarks

Distribution: From tropical to temperate Asia.

Life form: Bamboo plant. Stems are fascicled. 10-30m tall. Usually planted beside a village.



Jul. 2011 Pakse, Laos

Use: Young shoot is commonly eaten in East and Southeast Asia. There are many bamboo ingredients in local markets. In Indochina genus *Indocalamus* and *Yushania* were seen but *Bambusa* predominates the region. Bamboo shoots are boiled and cooked. Yanan (*Tiliacora triandra*, Menispermaceae) is used for cooking in Laos and Thailand, Ngop (*Sauropus androgynus*, Phyllanthaceae) is used in Cambodia. In Japan there are many recipes for bamboo and the rice bran is used for boiling.

Ref. No.: 7, 12, 16, 27, 42



Bambusa sp. Jul. 2011 Ratanakiri, Cambodia



Jul. 2011 Kratie, Cambodia



Knaing russey Feb. 2010 Kratie, Cambodia



Naw Mai Soto Nov. 2011 Vang Vieng, Laos

Coix lacryma-jobi var. *ma-yuen*

Order: Poales
Family: Poaceae

LA	Deuay	ໝາກເດືອຍ
KH	Skuey	
TH	Dueai	เดื่อ
VN	Bobo nep, Ydi nep	Bobo nếp, Ýdĩ nếp
JP	Hato-mugi	ハトムギ

Remarks

Distribution: The origin is unknown. Indigenous to southern and eastern Asia.

Life form: Perennial grass. Up to 3 m tall.

General info.: The form with soft-shelled false fruit has been cultivated since ancient times - 3000-4000 years ago in India and 2000 years ago in China. It was very important before maize and rice. Forms with hard-shelled false fruit are also occasionally cultivated. Plants escaped from cultivation occur as weeds. Boiled Jobi was sold in northern Laos.

Ref. No.: 25, 35, 46, 47



Sep. 2009 Houayxay, Laos

Oryza sativa

Order: Poales
Family: Poaceae

LA	Khao kam	ຂ້າງກຳ
KH	Sraw ngai	ស្រូវ
TH	Khao	ข้าว
VN	Lua nuoc, Lua gao	Lúa nước, lúa gạo
JP	Ine	イネ

Remarks

Distribution: Originated from east foothills of the Himalayas.

Life form: Annual and perennial herb. 50-130 cm tall.

General info.: First cultivated in the middle and lower Yantze River 9000 years ago. This plant is a staple in East and Southeast Asia diets. The photo above is an example of young upland rice sold in northern Laos. Precooked rice is made from young rice (grains still attached not dropped); this is a very old and time-honored way to prepare rice.

Ref. No.: 36, 40, 47



Sep. 2009 Houayxay, Laos

Eleocharis dulcis var. *tuberosa*

Order: Poales
Family: Cyperaceae

LA	Heo	
KH	Mem plong khtim	
TH	Haeo chin	แห้วจีน
VN	Nang ngot	Năng ngot
JP	Shina-kuroguwai	シナクログワイ

Remarks

Distribution: The actual distribution is uncertain. Cultivated in the Old tropics from Africa to Papua.

Life form: Perennial herb. Emergent plant. Grows on

marshy or flooded ground. 40-80cm tall.

General info.: The tuber, know as "water chestnut", is eaten. Commonly cultivated. Japanese may have mistaken similar tuber of *Sagittaria trifolia* 'Caerulea' of Alismataceae.

Ref. No.: 14, 15, 48



Nov. 2011 Vientiane province, Laos

Eichhornia crassipes

Order: Commelinales
Family: Pontederiaceae

LA	Tob sava, Tob porng	ดอกบัวตอย
KH	Kom plau, Kon plaok	កំប្លោក
TH	Tob chawa, Tob pong	ผักตบชวา
VN	Luc binh	Lục bình
JP	Hotei-aoi	ホテアオイ

Remarks

Distribution: Native to Brazil, introduced and naturalized all over the tropics.

Life form: Perennial herb. Free floating plant or emergent plant rooted in mud. 30-60 cm tall.

Use: Boiled young shoots and young flowers are eaten with fermented fish or shrimp paste.

In the traditional medicine of Thailand, stems are used as an antidote for poison and to degas the belly.

Flower's primary use is ornamental. Stems of the emergent type are used to make baskets in a village beside Lake Tonle Sap in Cambodia. In Thailand, *E. hygrophilus* called "Makok nam" is more popular than this species.

General info.: One of the 100 of the world's worst invasive alien species of IUCN.

Ref. No.: 6, 14, 18, 27, 47



Nov. 2011 Vientiane province, Laos

Monochoria hastate

Order: Commelinales
Family: Pontederiaceae

LA	Tob	ផ្កាពិប
KH	Dong veik	ត្រីក្បែត
TH	Phak top thai	ผักตบไทย
VN	Rau mac thon	Rau mác thon
JP		

Remarks

Distribution: Native in tropical South and Southeast Asia extending to northern Australia.

Life form: Emergent plant. 50-200 cm tall.

Leaves triangular.

Use: Leaves and young flowers are eaten.

General info.: In the traditional medicine, the sap of leaves was used for suppressing a swelling of the gum.

Ref. No.: 5, 10, 14, 27, 47



Jan. 2009 Kampong Cham, Cambodia

Monochoria vaginalis

Order: Commelinales
Family: Pontederiaceae

LA	Iehin	ថ្នាំទឹក
KH	Chrach, Kom plau	ត្រាច់
TH	Phak khiat, Phak hin nam	ผักเขียด
VN	Rau mac bao, Co luoi vit	Rau mác bao, cô lười vịt
JP	Ko-nagi	コナギ

Remarks

Distribution: Native in South Asia, throughout Southeast Asia, extending also to China, Japan, Fiji islands and northern Australia. America and Europe.

Life form: Annual herb. Emergent plant. 5-50 cm tall.

Use: Young stems are eaten raw or boiled with fermented fish or shrimp paste. It is an ingredient of soup, Lap, and Salad.

General info.: In the traditional medicine of Thailand, the whole plant is used for high fever, asthma, bloody urine, conjunctivitis, etc. The dried leaf is used as powder and to cover swelling.

Ref. No.: 5, 10, 14, 18, 20, 27, 29, 47



Jun. 2007 Prek Toal Area, Cambodia

Alpinia galangal

Order: Zingiberales
Family: Zingiberaceae

LA	<u>Khaa</u>	<u>ຫົວຂ່າ</u>
KH	<u>Rum deng</u>	<u>រំដេង</u>
TH	<u>Kha pa, Kha luang</u>	<u>ข่าป่า, ข่าหลวง</u>
VN	<u>Rieng nep</u>	<u>Riềng nếp</u>
JP	<u>Nankyou</u>	<u>ナンキョウ</u>

Remarks

Distribution: The exact origin is unknown. It is cultivated from Southeast Asia to India.

Life form: Perennial herb. Up to 3.5 m tall.

Use: Rhizome is used for the spice as must-have in this region. A pungent condiment with a sweet flavor. Usually planted in home gardens.

General info.: As a medicine, rhizome is prescribed for diarrhea, nausea, abdominal fullness, parasitic extermination, etc.

There are many hybrids with *A. conchigera* in Thailand. The lower photo is an example of pure *A. galanga*.

Ref. No.: 21, 27, 42, 45, 47, 48, 51



Jun. 2011 Pakse, Laos



Jun. 2011 Pakse, Laos

Amomum sp.

Order: Zingiberales
Family: Zingiberaceae

LA	<u>Kouk</u>	
KH		
TH		
VN		
JP	<u>Myoga-modoki</u>	<u>ミョウガモドキ</u>

Remarks

Life form: Perennial herb. Up to 3 m tall.

General info.: The fruits are eaten raw, cooked or candied. The fresh, sweet, juicy aril around ripe seeds is considered a delicacy. Young shoots, young inflorescences and young fruits are eaten as vegetables cooked with rice.

It is rarely found in local market.

Ref. No.: 40, 47, 48



Sep. 2011, Phiang, Sainyabuli, Laos

Boesenbergia rotunda

Order: Zingiberales
Family: Zingiberaceae

LA	<u>Ka sai</u>	
KH	<u>Khchiev</u>	
TH	<u>Kra chai</u>	กระชาย
VN	<u>Cam dia ta</u>	<u>Cam dia ta</u>
JP	<u>Kurachai</u>	クラチャーイ

Remarks

Distribution: Native to Java and Sumatra. It is widely cultivated in Southeast Asia and Southern China.

Life form: Perennial herb. 30-80cm tall.

Use: *Boesenbergia rotunda* is principally used as a spice and a medicine. Enlarged roots that bud from rhizome are used. Usually it is used with fish. They are quite pungent and flavorful.

Ref. No.: 27, 42, 47



Jul. 2011 Pakse, Laos

Curcuma longa

Order: Zingiberales
Family: Zingiberaceae

LA	<u>Kha min, Kha min kheun,</u> <u>Kha min xan</u>	
KH	<u>Romiet ou lmiet</u>	
TH	<u>Khamin, Khamin chan</u>	ขมิ้น, ขมิ้นชัน
VN	<u>Nghe</u>	<u>Nghê</u>
JP	<u>Ukon</u>	ウコン

Remarks

Distribution: Originated from probably India. Cultivated in the tropics.

Life form: Perennial. 1-1.5 m tall.

Use: Turmeric powder is made from rhizomes. Young shoots are eaten.

Rhizomes have a lot of medicinal usage. For example, stomachic, stimulant, carminative, diarrhoea, rheumatism, cough, and tuberculosis. Turmeric also has insecticidal, fungicidal and nematocidal properties which make it a potential biocide.

The yellow powder is used by Cambodian women, in the countryside especially, to coat their face and body and have beautiful skin. The paint is used to dye fabrics, in particular the clothes of monks.

Ref. No.: 27, 42, 45, 47



Jul. 2011 Kratie, Cambodia

Curcuma sp.

Order: Zingiberales
Family: Zingiberaceae

LA	<u>Kachieng dang, Kachieng khao</u>	<u>ດອກກະຈຸ້ວແດງ</u>
KH	<u>Lum dein proi</u>	<u>រំដេងព្រៃ</u>
TH	<u>Kachieng dang</u>	
VN		
JP		

Remarks

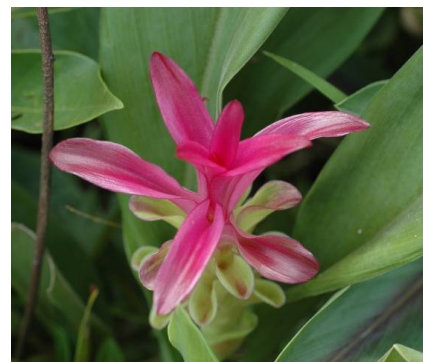
Distribution: This genus distribute from China to Malesia region.

Life form: Perennial herb. Up to 0.5 -1m tall. The white or red color parts are bracts. Pale yellow flower is inside of the green bract. See the lower photo.

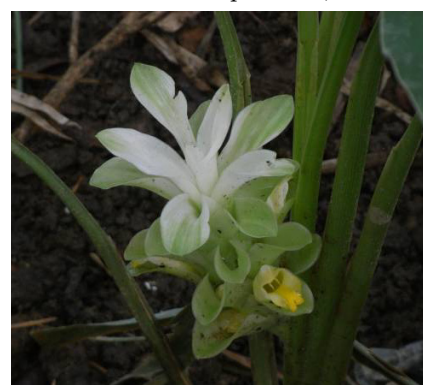
General info.: Young inflorescences have good flavor that is a bit strong. Young shoots are eaten raw with papaya salad.

Tubers, young shoots, and flowers have medicinal effect for extracting the gas of the belly.

Ref. No.: 5, 18



Jul. 2008 Vientiane province, Laos



Nov. 2008 Siem Reap, Cambodia

Etlingera elatior

Order: Zingiberales
Family: Zingiberaceae

LA	<u>Ton kha</u>	<u>ຕົ້ນຂ່າ</u>
KH		
TH	<u>Dala, Carlar</u>	<u>ดาหลา</u>
VN	<u>Da loc, Sen thai</u>	<u>Đà lộc, Sen thái</u>
JP	<u>Torch-jinger</u>	<u>トーチジンジャー</u>

Remarks

Distribution: Natural distribution in Malaysia, Java and Sumatra, but is also widely cultivated in tropical region.

Life form: Perennial, tillering herbs with a rhizome at or near the ground surface. Leafy stem up to 5 m tall. Flower is red, 0.5-2.5 m tall.

Use: Boiled young flowers and shoots are eaten with fermented fish paste, used for an ingredient of curries, and for Thai spicy salad. It is not so popular in Lao and Cambodian markets.

Ref. No.: 6, 18, 45



Jan. 2009 Kampong Cham, Cambodia

Kaempferia sp.

Order: Zingiberales
Family: Zingiberaceae

LA	<u>Toupmoub</u>	
KH	<u>Swaa</u>	<u>ស្វា</u>
TH	<u>Pro</u>	
VN	<u>Thieng lieng</u>	<u>Thiềng Liềng</u>
JP	<u>Ban-ukon</u>	<u>バンウコンの仲間</u>

Remarks

Distribution: Originated from India. It is widespread to tropical Asia and Malesia.

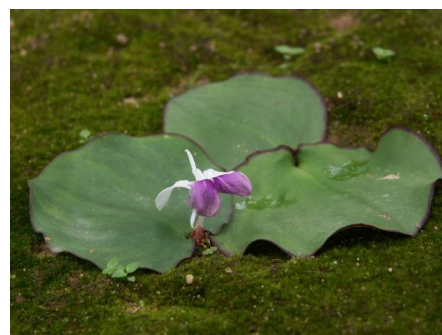
Life form: Perennial herb. Leaves usually 2-3 sheaths, blade often horizontal and appressed on the ground, broadly elliptical or suborbicular, 6-15 cm x 5-10 cm.

Use: Leaves are eaten in raw with “Cheo” in Attapu Laos. Fresh leaves are light texture and have a slight ginger flavor. It is cooked with bamboo shoot. Popular in the highland in southern Laos and northern Cambodia.

Ref. No.: 27, 42, 45, 46, 47, 48



Jun. 2011 Meuang Mai, Laos



Cambodian Kaempferia,
Photo H.Kashiwadani

Zingiber officinale

Order: Zingiberales
Family: Zingiberaceae

LA	<u>Khin</u>	ດອກຂາບ້ານ
KH	<u>Knvay</u>	ខ្លី
TH	<u>Khing</u>	ขิง
VN	<u>Gung</u>	Gùng
JP	<u>Shouga</u>	ショウガ

Remarks

Distribution: Wild forms of ginger have not been found and its origin is uncertain. Ginger has been grown in tropical Asia since ancient times.

Life form: Perennial herb. 50-100cm tall.

Use: Rhizomes are used for a lot of dishes as a spice. Young flower buds are eaten raw. There are red flower buds and green buds of *Z. officinale* in local markets. Commonly, it is planted in the home garden of each house.

General info.: Rhizomes have been used as medicine since B.C.. Gingerol, which is an extract of a raw rhizomes, controls liver problems. Shogaol, which is an extract from dried rhizomes, has painkilling, antitussive, and alleviation-of-fever effect.

Ref. No.: 18, 27, 40,42, 48



Jun. 2011 Pakse, Laos



Z. officinale Sep. 2009 Vientiane province, Laos



Zingiber sp.
Sep. 2009 Vientiane province, Laos



Z. officinale Jul. 2011 Pakse, Laos



Z. montanum Jul.2011 Pakse, Laos

Musa sp.

Order: Zingiberales

Family: Musaceae

LA	<u>Kuay</u>	
KH	<u>Chyeak</u>	<u>ឆៃក</u>
TH	<u>Kuay</u>	
VN	<u>Chuoi</u>	<u>Chuối</u>
JP	<u>Banana</u>	<u>バナナ</u>

Remarks

Distribution: Tropical Asia and Malesia are considered the center for Banana.

Life form: Perennial herb. Up to 5m tall. A pseudo stem is formed by overlapped and rolled leaf sheath.

Use: Fruits are "Banana" as we all know. Sliced reddish flower bracts and inside pseudo stems are also used as a garnish.

Ref. No.: 18, 47



Jul. 2010 Phnom Penh , Cambodia



Jul. 2010 Kampong Chhnang, Cambodia



Aug. 2013 Ho Chi Minh, Vietnam



Jul. 2010 Phnom Penh, Cambodia



Aug. 2013 Ho Chi Minh, Vietnam

Cyclea barbata

Order: Ranunculales
Family: Menispermaceae

LA	Ni ma nov	
KH		
TH	Ma noi, Khrua ma noi	
VN	Day sam, Sam long	Dây sâm, sâm lông
JP		

Remarks

Distribution: From India to Indochina, Sunda and Java.

Life form: Woody climber. Up to 5 m.

Use: A leaf and a thin vine are used in order to make a grass jelly.

General info.: A decoction made of the roots is used in local medicine against fever, stomatitis and liver disease.

Ref. No.: 7, 14, 47



Jul. 2010 Pakse, Laos

Tiliacora triandra

Order: Ranunculales
Family: Menispermaceae

LA	Yanang	ใบยาหนิง
KH		
TH	Thao yanang, Choi nang, Thao wan khieo	เถาข่านาง
VN	Day xanh	Dây xanh
JP		

Remarks

Distribution: Assam, South Burma, Cambodia, Laos, Vietnam and Malay peninsula.

Life form: Climber. Common in forest edges and open bush.

Use: Crushed leaves and thin vines are used to coax out flavor. It is an essential kitchen ingredient when cooking bamboo shoot in Laos and Thailand.

General info.: In the traditional medicine of Thailand, the shoot is used as an antifebrile and leaves are used as a medicine to discharge toxins. In Cambodia, a shoot is used for the preparation of a medicine for dysentery.

Ref. No.: 5, 14, 18, 40, 42



Sep. 2009 Houayxay, Laos

Nelumbo nucifera

Order: Proteales
Family: Nelumbonaceae

LA	Boua, Boua louang	ໝາກບົວ
KH	Chouk, Chuok sow	ឈូក
TH	Boua louang	บัวหลวง
VN	Sen	Sen
JP	Hasu	ハス

Remarks

Distribution: Asia, Europe, and Australia.

Life form: Perennial herb. Emergent plant. Leaf is 0.5-1m tall above the water face, circular, 25-90cm diameter, leaf stem attached on the center of leaf. Flower is taller than leaf,

10–23 cm in diameter, color white to pink.

Use: Thin young rhizomes are popular ingredients in Indochina. It is used as an ingredient in soup, boiled with coconuts milk, and fried with other vegetables. The texture of the young rhizome is light. Young seeds are eaten raw for a snack.

All parts of the *N. nucifera* are used for medicine. Alkaloid is included in the leaf, stamen, fruits, and seed. Rhizome and seed are effective against throat ulcers and skin disease.

Ref. No.: 5, 10, 18, 27, 29, 38, 48



Jul. 2010 Kampong Cham, Cambodia



Sep. 2009 Vientiane province, Laos



Feb. 2010 Thakhek, Laos



Jun. 2007 Chong Khnies, Cambodia



Jul. 2010 Kampong Cham, Cambodia

Cissus hastate

Order: Vitales
Family: Vitaceae

LA	Som loun	ສົມລົມ
KH	Sannda (as <i>C. repens</i>)	
TH	Som sandan, Som op ep.	ส้มสันดาน
VN	Ho dang mui giao	Hồ đẳng mũi giáo
JP		

Remarks

Distribution: From India to the east coast of Australia through Indochina, Thailand and Southeast Asia.

Life form: Evergreen climber. Family of grape.

Use: Leaves are used as a sour taste ingredient. It is used for mushroom soup. In Thailand, leaf, stem, and fruit are used for coughs, as an expectorant, and as an anti-emetic. The powder of a root is applied to swelling. In Cambodia, young leaves and fruits of *C. repens* are used for same purpose as *C. hastata*.

Ref. No.: 7, 27, 47



Jul. 2008 Vientiane province, Laos

Salacia chinensis

Order: Celastrales
Family: Celastraceae

LA	Takai	ใบต๋าไก่อ
KH		
TH	Kam phaeng chet chan, Ta kai	กำแพงเจ็ดชั้น
VN	Chop mau Trung Quoc	Chóp mau Trung Quốc
JP		

Remarks

Distribution: Scattered from tropical Africa, India, Indochina, Malesia and Fiji.

Life form: Liana or shrub. 3-10 m long.

General info.: The photo is of leaves that were put in order with other vegetables at a morning market in northern Laos. According to PROSEA, fruits are eaten. The roots are astringent. In the Philippines a decoction from the roots is used against amenorrhoea and is supposed to cause abortion.

Ref. No.: 12, 15, 47, 48



Sep. 2009 Houayxay, Laos

Connarus cochinchinensis

Order: Oxalidales
Family: Connaraceae

LA	Soapsap	ຜັກຊອບແຊບ
KH	Lumpuehs, Smach	ល្អិតស័
TH	Thopthaep, Ma wo	ถอบแตง
VN	Lop bop	Lốp bốp
JP		

Remarks

Distribution: South Laos, Cambodia, South Vietnam to Northern Malay Peninsula.

Life form: Climber or small tree.

Use: Young leaves are used as vegetable. The bark can be chewed with the betel.

General info.: *C. bariensis* and *C. semidecandrrus* have the same local name in Laos. These are not seen in a market.

Ref. No.: 12, 14, 27



Jul. 2008 Vientiane province, Laos

Irvingia malayana

Order: Malpighiales
Family: Irvingiaceae

LA	Mak bok	ໝາກບົກ
KH	Cham bak	
TH	Krabok	กระบอก
VN	Ko-nia	Ko-nia
JP		

Remarks

Distribution: From Indochina to Peninsula Malaysia, Borneo, and Sumatra.

Life form: Evergreen tree. 10-30 m tall in Indochina.

Use: The seeds are roasted and their inner part served as a snack.

Seeds are used for the manufacturing of wax, cocoa and soap.

Ref. No.: 10, 14, 27, 45



Sep. 2009 Vientiane province, Laos

Cratoxylum cochinchinense

Order: Malpighiales

Family: Hypericaceae

LA	Phak tao	
KH	Lngieng tuk	
TH	Tio klang	ติ้วเกลี้ยง
VN	Thanh nganh nam	Thành ngành nam
JP	Ohaguro-no-ki	オハグロノキ

Remarks

Distribution: From Indochina to Peninsular Malaysia, Borneo, Sumatra, and Palawan.

Life form: Deciduous small tree.

Use: Acid young leaves are appreciated as vegetables, eaten raw with rap in Laos, and for "samla" in Cambodia. A tree that has grown on a common is used. It makes good firewood.

Ref. No.: 16, 27, 45, 46



Jun. 2011 Parkse, Laos

Cratoxylum formosum

Order: Malpighiales

Family: Hypericaceae

LA	Tiew	ຜັກກະຕົວ, ໂປຕົວ, ຜັກຕົວ
KH	Lngieng	ឈ្លើង
TH	Tio khao	ติ้วขาว
VN	Thanh nganh dep, Do ngon	Thành ngành đẹp, Đồ ngon
JP		

Remarks

Distribution: MyanmarIndochina, Thailand, Malaysia, Indonesia, Philippines, and southern China.

Life form: Deciduous small tree. Up to 3–6 m tall..

Use: Young leaves and young flowers are eaten raw with Laap and used in fish curries, giving a fragrant and sour tannin-like taste.

Dried Leaves, bark and roots are consumed as a tea and have medicinal properties. In traditional medicine, resin from the bark is used to scrub the soles of feet with dry and broken skin. The wood is good for making charcoal.

General info.: This tree that has grown on a common of village is used. In Laos, *C. f.* subsp. *pruniflorum* called "Tiew daen" is similarly-used as this species.

Ref. No.: 7, 12, 21, 22, 23, 27, 45, 48, 49



Feb. 2010 Savannakhet, Laos

Antidesma ghaesembilla

Order: Malpighiales
Family: Phyllanthaceae

LA	<u>Hmauz noovz</u>	
KH	<u>Dangkiep k'dam</u>	<u>តង់ក្របីក្តាម</u>
TH	<u>Mao-khaipia, Mangmao, Maothung</u>	
VN	<u>Choi moi, Chua moi</u>	<u>Chòi mòi, Chua mòi</u>
JP		

Remarks

Distribution: Tropical Africa, India, southern China, Southeast Asia and Australia.

Life form: Deciduous small tree.

Use: Sour fruits are eaten raw and prepared into jams. Stems are used as construction material.

Ref. No.: 27, 45



Jul. 2013 Kampong Chhunang, Cambodia

Phyllanthus acidus

Order: Malpighiales
Family: Phyllanthaceae

LA	<u>Yom</u>	<u>ໝາກຍົມ</u>
KH	<u>Kantot</u>	<u>កន្ទុក</u>
TH	<u>Mayom</u>	<u>มะยม</u>
VN	<u>Chum ruot, Tam ruot</u>	<u>Chùm ruột, Tầm ruột</u>
JP	<u>Amedama-no-ki</u>	<u>アメダマノキ</u>

Remarks

Distribution: Probably native to coastal Brazil. Cultivated in tropical Asia and Polynesia islands since immemorial times.

Life form: Small tree, up to 10 m. Fruits grow on a trunk.

Use: Sour ripe fruit is edible. Leaves are eaten as a salad. Since ancient times, the latex, root, bark, leaf, and fruit of this plant are used to make various medicines.

Ref. No.: 14, 16, 27, 42, 47



Feb. 2010 Pakse, Laos

Phyllanthus emblica

Order: Malpighiales
Family: Phyllanthaceae

LA	<u>Khampom</u>	ໝາກຂາມປ້ອມ
KH	<u>Kantout pray</u>	កន្ទុតព្រៃ
TH	<u>Ma kham pom</u>	มะขามป้อม
VN	<u>Chum ruot nui, Me rung</u>	Chùm ruột núi, Me rừng
JP	<u>Malakkanoki, Anmala, Yukan</u>	マラッカノキ、アンマラ、ユカン

Remarks

Distribution: India to Southeast Asia and Malaysia.

Life form: Tree. Up to 20 m tall. Small linear-oblong single leaves are alternate and densely crowd along the branch. A shoot looks like a compound leaf.

Use: Sour ripe fruit is edible. Used for the sour ingredient of dishes. It is rich in vitamin C and applied for expectorant. Roots, leaves, bark, and insect galls are used for the making of many medicines. The decoction of roots is used against fever. Tannin is extracted from the bark. Woods are used for furniture construction and as firewood.

Ref. No.: 14, 26, 27, 37, 42, 47



Sep. 2009 Vientiane province, Laos

Sauropus androgynus

Order: Malpighiales
Family: Phyllanthaceae

LA	<u>Wan ban</u>	
KH	<u>Ngup</u>	ង៉ុប
TH	<u>Wan ban, Kan tong</u>	ผักหวานบ้าน
VN	<u>Bo ngot, Bu ngot</u>	Bồ ngót, Bù ngót
JP	<u>Amameshiba</u>	アマメシバ

Remarks

Distribution: From India to Indochina and Malaysia.

Life form: Shrub or small tree. Up to 4 m tall.



Jul. 2010 Stung Treng, Cambodia

Use: Leaves are used for cooking as vegetable. It is a popular ingredient of fried vegetable, soup, and curry. In Cambodia, bamboo shoots are boiled and they are essential kitchen ingredient. Fruits are edible. Jam can also be made.

In traditional medicine, leaves are used as a medicine against coughs. It is used to soothe the lungs, as a tonic, and as a febrifugal to relieve internal fever.

General info.: It is planted in most home gardens.

Ref. No.: 14, 18, 27, 42

Codiaeum variegatum

Order: Malpighiales
Family: Euphorbiaceae

LA	Ngeun, Kham	ใบเงี้ยวใบคำ
KH		
TH	Koson, Ko ton, Kri krasom	โกสน
VN	Co tong	Cô tông
JP	Henyouboku, Kuroton	ヘンヨウボク、クロトン

Remarks

Distribution: Malesia and the West Pacific Island arcs up to Fiji.

Life form: Shrub, up to 3 m high. Cultivated for the showy leaves, there is extreme variations among the various races.

General info.: Primarily an ornamental plant, for its variegated leaves, with a variety of races. Information as foods is not mentioned in the Flora of Thailand. Nevertheless, it was assured that this species had been sold as a vegetable at one market in north Thailand.

Ref. No.: 14, 46



Sep. 2009 Chiang Rai Thailand

Manihot esculenta

Order: Malpighiales
Family: Euphorbiaceae

LA	Manton	มันต้ม
KH	T'ngang	ថ្នាំ
TH	Man sampalang	มันสำปะหลัง
VN	Khoai mi, San	Khoai mì, Sắn
JP	Kyassaba	キャッサバ

Remarks

Distribution: Cultivation and found throughout SE Asia and Malesia.



Sep. 2007 Vientiane province, Laos

Life form: Shrub. Up to 7 m high. Leaf blade palmately 3-9-lobed, diameter 20cm wide.

Use: Tapioca is made from cassava. The roots are eaten cooked, steamed, fried or roasted when fresh or after drying or fermenting. The leaves and young flowers are also eaten, they contain reasonable amounts of carotene and vitamin C, though they too have to be cut in pieces and they have to be cooked to rid the HCN.

General info.: The roots constitute one of the world's most important stock crops for starch. It is also an important emergency crop. There are two types of Cassava; a sweet one and bitter one. Only sweet cassava can be eaten fresh in small quantities (the peel contains the most HCN). The bitter ones have to be treated due to a much higher HCN content.

Ref. No.: 14, 42, 48

Passiflora foetida

Order: Malpighiales
Family: Passifloraceae

LA	Baung, Yoth mak noth	ຜັກບ້ວງ, ຍອດໝາກນ້ອຍ
KH	Sau mau pray	សាវម៉ៅ
TH	Ka thok rok, Rok	กะทกรก
VN	Nhan long, Lac tien	Nhãn lòng, Lạc tiên
JP	Kusa-tokeisou	クサトケイソウ

Remarks

Distribution: Cultivated and often naturalized in most tropical countries.

Life form: Perennial climbing herb. Usually grows wild on a common and wayside of village.

Use: Young leaves are cooked. It is popular in local market in Indochina.

The ripe fruits are eaten raw. They are sweet and juicy.

Ref. No.: 42, 46, 47



Jul. 2010 Stung Treng, Cambodia

Microdesmis caseariifolia

Order: Malpighiales
Family: Pandaceae

LA	On taw	ຜັກອ່ອນຕໍ່
KH		
TH	Salot pa, Tana tua mia	สลอดป่า
VN	Chanh oc, Chan	Chanh óc, Chấn
JP	Kurokiibo	クロキイボ

Remarks

Distribution: From South China, Burma and Indochina to Malay Peninsula, Sumatra, Borneo and Philippines.

Life form: Small tree. Up to 10m tall.

General info.: A villager said that this is also eaten in Laos.

Ref. No.: 14, 46, 48



Jul. 2008 Vientiane province, Laos

Garcinia cochinchinensis

Order: Malpighiales
Family: Clusiaceae

LA		
KH	Sundang	ស៊ីណង់
TH		
VN	Bua nha, Tai chua	Bứa nhà, Tai chua
JP		

Remarks

Distribution: Indochina, often cultivated in Cambodia.

Life form: Small tree, 10-15 m tall.

Use: The acid fruits are used as culinary spices. When cut and dried in the sun they will keep for a long time. They are used in cooking as acid element, like a lemon. These fruits are more popular in Cambodia than they are in Laos or Thailand

Since this tree is the same genus as Mangosteen, a seedling is used as a rootstock of Mangosteen.

Ref. No.: 27, 47



Jul. 2010 Kampong Cham, Cambodia



Jul. 2011 Kampong Cham, Cambodia

Garcinia oliveri

Order: Malpighiales
Family: Clusiaceae

LA	Mohng	
KH	Tamoung	ទ្រូម៉ុង
TH	Mohng	
VN	Bua nui	Bứa núi
JP		

Remarks

Distribution: Indochina, often cultivated in Cambodia.

Life form: Tree, 20-30 m tall.

Use: Leaves are used as sour condiments. The fruit cut in slices can be kept in salt.

Popular in Cambodia and less so in Laos, Thailand, and Vietnam.

In the traditional medicine of Cambodia, bark is a component of a remedy against bronchitis. In ground form, it can be used to treat a hematoma and to make an anti-inflammatory analgesic plaster for sprains.

According to recent studies, a substance with an antioxidant action is extracted from the bark.

Ref. No.: 12, 27



Jul. 2010 Kampong Chhnang, Cambodia

Flacourtia indica

Order: Malpighiales

Family: Salicaceae

LA	<u>Kane</u>	<u>ໝາກເກັນ</u>
KH	<u>Ka khop pray</u>	<u>ក្រខ្មប់ព្រៃ</u>
TH	<u>Ta khop pa</u>	<u>ตะขบป่า</u>
VN	<u>Hong quan an</u>	<u>Hồng quân Ân</u>
JP	<u>Indo-lukamu</u>	<u>インドルカム</u>

Remarks

Distribution: Cultivated in Africa and Asia.

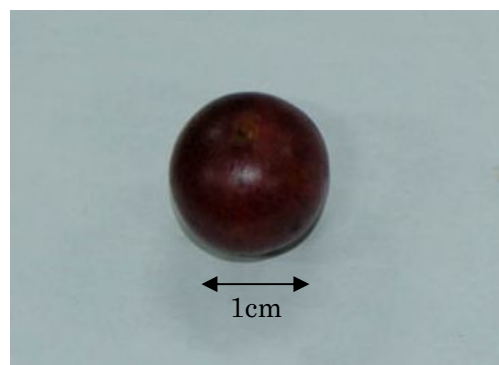
Life form: Deciduous tree. Up to 15 m tall. It has long spines on the twig.

Use: The fruit is edible.

In the traditional medicine of Cambodia, the roasted leaves, bark, and fruit were used to make tonic drinks prescribed to young mothers.

The wood, not affected by termites, is used to make columns for houses, pestles for rice, and axe handles.

Ref. No.: 27, 46



Sep. 2007 Vientiane province, Laos

Acacia concinna

Order: Fabales

Family: Fabaceae

LA	<u>Som poy</u>	<u>ສົມປອຍ</u>
KH	<u>Bay damnaeb, Banla saot</u>	<u>ក្រទុំថេត, ក្រមុំទេស</u>
TH	<u>Som poi</u>	<u>ส้มป่อย</u>
VN	<u>Keo dep, Phi tao giap</u>	<u>Keo đép, Phi táo giáp</u>
JP	<u>Okinawa-nemu</u>	<u>オキナワネム</u>

Remarks

Distribution: Tropical Asia

Life form: Woody climber.

Use: Young leaves are sour and eaten in salad.

In traditional medical treatment, the fruit is used; externally for eczema or leprosy and internally as a laxative. The seed has a medical reputation for providing a comfort effect during birth process.

Fruit is used for washing hair.

Ref. No.: 27, 46



Feb. 2010 Louang Phrabang, Laos

Acacia pennata subsp. *Insuavis*

Order: Fabales
Family: Fabaceae

LA	<u>Kha</u>	<u>ຜັກຂະ</u>
KH	<u>S'am, Thama toeb</u>	<u>ស័រ</u>
TH	<u>Cha om</u>	<u>ชาอม</u>
VN	<u>Keo kerr</u>	<u>Keo Kerr</u>
JP	<u>Chaom</u>	<u>チャオーム</u>

Remarks

Distribution: Introduced and cultivated to Southeast Asia.



Jul. 2010 Kampong Cham, Cambodia

Life form: Woody climber or shrub up to 5 m tall. Found in open, scrubby forest or swampy forest and along streams.

Use: Boiled or steamed young leaves are eaten with fermented fish paste, with Laap, and soup. The bark is used as a condiment.

Vitamin A, B1, B2, C, and Niacin are contained in new leaves. In the traditional medicine of Thailand, bark is used as a parasiticide. In Cambodia, seeds are used to treat diarrhea, dysentery, and hemorrhoids. It is long held belief that the oil yielded from seeds is a remedy for leprosy.

Ref. No.: 5, 23, 27, 51

Bauhinia variegata

Order: Fabales
Family: Fabaceae

LA	<u>Ban</u>	<u>ດອກບ້ານ</u>
KH	<u>Cheng koo</u>	
TH	<u>Siao dok khao</u>	<u>เสี้ยวดอกขาว</u>
VN	<u>Mong bo soc</u>	<u>Móng bò sọc</u>
JP	<u>Soshinka</u>	<u>ソシンカ</u>

Remarks

Distribution: Southeast Asia.

Life form: Shrub or small tree. The leaf shape is like

a butterfly with two lobes and veins radiating from the base of the leaf.

Use: The flowers are edible when fried. Young leaves, buds, and fruits are also edible.

In local medicine, the bark is used to cure wounds. A decoction of any part of the plants is taken against dysentery. It is planted on the roadside or in a garden as an ornamental plant.

Ref. No.: 27, 42, 45, 46



Feb. 2010 Louang Phrabang, Laos

Caesalpinia mimosoides

Order: Fabales
Family: Fabaceae

LA	<u>Nam panya</u>	<u>ຜັກນ້ຳ</u>
KH		
TH	<u>Puya, Nam puya</u>	<u>ฝักปู้ย่า, หนามปู้ย่า</u>
VN	<u>Diep trinh nu, Moc meo</u>	<u>Diệp trinh nữ, Móc mèo</u>
JP		

Remarks

Distribution: From India to China and Indochina.

Life form: Woody climber. Branchlets densely ferruginous glandular hairy, with curved prickles.

Use: Young shoots are eaten with soup and bamboo dishes. This is popular in the local markets of Laos.

In traditional medicine this plant is used as a medicine for blood and dizziness.

Ref. No.: 7, 48



Jun. 2011 Pakse, Laos

Delonix regia

Order: Fabales
Family: Fabaceae

LA	<u>Hang nok yung, Pang</u>	<u>ໝາກຫາງນົກຍຸງ ຫຼື ໝາກແປງ</u>
KH	<u>Kroap chukrot,</u> <u>Kngaok barang</u>	<u>ក្រូចក្រត</u>
TH	<u>Hang nok yung farang</u>	<u>หางนกยูงฝรั่ง</u>
VN	<u>Phuong vi, Diep tay</u>	<u>Phương vĩ, Diệp tây</u>
JP	<u>Houou-boku</u>	<u>ホウオウボク</u>

Remarks

Distribution: Originating from Madagascar. Planted as street or garden tree in the tropics.

Life form: Tree. 10-20m tall.

Use: In Laos, seeds are eaten as a snack. In Cambodia, the young leaves are sometimes consumed as vegetables.

It is supposed that the young leaves are effective against rheumatism.

Ref. No.: 27



Feb. 2010 Louang Phrabang, Laos

Leucaena leucocephala

Order: Fabales
Family: Fabaceae

LA	Kathin	ໄບກະທິນ
KH	Kanthom thead	ក្រំថេត, ក្រំថេស
TH	Kathin, Krathin	กระถิน
VN	Keo Binh linh, Keo giau, Bo chet	Keo Bình Linh, Keo giâu, Bo chét
JP	Gingoukan, Gin-nemu	ギンゴウカン、ギンネム

Remarks

Distribution: Native to tropical Central America.

Life form: Small tree to 4-8m tall. Often occupying the common and roadside of a village.

Use: The young leaves are eaten as salad with fermented fish paste or laap. Young fruits, green seeds are also eaten.

General info.: Poisonous amino acid called Mimosine is contained in this plant. There are reports of depilation and poisoning of people and livestock.

One of the 100 world's worst invasive Alien Species of IUCN.

Ref. No.: 6, 10, 16, 18, 27, 45, 46, 47



Sep. 2009 Vientiane province, Laos

Neptunia oleracea

Order: Fabales
Family: Fabaceae

LA	Kaseth	ຜັກກະເສດ
KH	Kanh chaet	កញ្ចៃត
TH	Kra chet, Kaseth nam, Ruunong	ผักกระเฉด
VN	Rau nhuc, Rau rut	Rau nhúc, Rau rút
JP	Mizu-ojigisou	ミズオジギソウ

Remarks

Distribution: Widely distributed in the tropics.

Life form: Floating plant rooted on the ground of shore. It forms the white thick float on the stem. Shoots run on the surface of water.

Use: Young shoots are removed and the float is eaten with fermented fish or shrimp paste. It is a popular ingredient in Indochina. It has rich nutrition containing protein, a mineral, and vitamin.

In the traditional medicine of Thailand, sap is used for a throat ulcer and hepatitis, and leaves are prescribed as an anodyne and for fever reduction.

General info.: Plants grown in the village reservoir and canals are self-consume or sold at market. Leaves are very sensitive to contact stimulation and will immediately close when touched.

Ref. No.: 5, 18, 23, 40, 42, 46, 47



Sep. 2007 Siem Reap, Cambodia

Senna siamea

Order: Fabales
Family: Fabaceae

LA	<u>Kheelak</u>	<u>ຂີ້ເລັກ</u>
KH	<u>Angkanh</u>	
TH	<u>Khi lek</u>	<u>ขี้เหล็ก</u>
VN	<u>Muong xiem, Muong den</u>	<u>Muồng Xiêm, Muồng đen</u>
JP	<u>Tagavasan</u>	<u>タガヤサン</u>

Remarks

Distribution: From India to Indochina, Malesia.

Life form: Tree, Up to 30m tall. It is often planted in the garden or wayside.

Use: In Thailand and Indochina, young fruits and leaves are eaten as a vegetable. During preparation, the cooking liquid is replaced three times to remove toxins. Fresh leaves and boiled leaves are seen in the local market.

In the traditional medicine of Thailand each part of the tree is used. Bark is used for hemorrhoids; leaves are used for calculus; flower buds and young leaves are used as a laxative; sapwood is used to treat a throat ulcer; and heartwood is used as a medicine for gonorrhea.

Ref. No.: 5, 17, 18, 37, 42, 47, 48



Feb. 2010 Pakse, Laos



Jul. 2010 Ubon Ratchathani, Thailand

Sesbania grandiflora

Order: Fabales
Family: Fabaceae

LA	<u>Khæ</u>	<u>ดอกแค</u>
KH	<u>Ong kie dai</u>	<u>អង្កាសដី</u>
TH	<u>Khæ ban</u>	<u>แคบ้าน</u>
VN	<u>So dua</u>	<u>So đũa</u>
JP	<u>Shiro-gochou</u>	<u>シロゴチョウ</u>

Remarks

Distribution: It is considered native to Southeast Asia. It is widely distributed to the tropics.

Life form: Small tree, 4-10m tall.

Use: Young flowers are used as a vegetable for salads, curries and soups. It is planted in a home garden and it doubles as an ornament tree.

Leaves have a medicinal effect against a cold and fever and the bark is used for diarrhea in traditional medicine. Young leaves and tender pods are used as a fodder.

Ref. No.: 5, 18, 23, 27, 43, 46, 47, 49



Sep. 2009 Lamphun, Thailand

Sesbania javanica

Order: Fabales
Family: Fabaceae

LA	<u>Khae</u>	<u>ອອກແອ</u>
KH	<u>Snau</u>	<u>ស្មៅ</u>
TH	<u>Sano</u>	<u>โสน</u>
VN	<u>Dien dien</u>	<u>Diên điển</u>
JP		

Remarks

Distribution: From India to Australia through China and Southeast Asia.

Life form: Small tree. 1-5m tall.

Use: Young flowers are used as an ingredient in soup and omelets. It is popular in Cambodia and south Vietnam, and also seen in Laos. The yellow color of the flower is carotene. The flower is used as food color since carotene is stable with heat.

In traditional medicine, leaves are used for swelling, flowers as a medicine of intestine, and roots for throat ulcers.

Ref. No.: 5, 23, 27, 42, 46, 47, 48, 49



Aug. 2013 Can Tho, Vietnam

Tamarindus indica

Order: Fabales
Family: Fabaceae

LA	<u>Kham</u>	<u>ຕົ້ນໝາກຂາມ</u>
KH	<u>Ampl</u>	<u>អម្ពិល</u>
TH	<u>Kham</u>	<u>มะขาม</u>
VN	<u>Me</u>	<u>Me</u>
JP	<u>Tamarindo</u>	<u>タマリンド</u>

Remarks

Distribution: Indigenous in Africa. Widely cultivated all over the tropics.

Life form: Tree. Up to 20m tall.

Use: The green fruits and flowers may be used for souring soupy dishes of fish and meat. The ripe fruit of the sweet type is usually eaten fresh, whereas the fruits of sour types are made into juice, jam, syrup and candy.

Fruits are used as an antifebrile, a laxative, and an antiscorbutic agent. In traditional medicine mature leaves are used for dysentery, fruit pulp is used as a laxative, and old seeds are used as a parasiticide for children.

Wood is hard and heavy. It is used for productive materials like a cutting board.

Ref. No.: 5, 15, 18, 37, 45, 47, 49



Jul. 2010 Pakse Laos

Artocarpus integer

Order: Rosales
Family: Moraceae

LA	<u>Mi</u>	
KH	<u>Chompa dok</u>	<u>ចំប៉ាដក់</u>
TH	<u>Champada, Champedak</u>	<u>จำปาดะ</u>
VN	<u>Mit to nu</u>	<u>Mít tổ nữ</u>
JP	<u>Koparamitsu</u>	<u>コパラミツ</u>

Remarks

Distribution: From Myanmar to Malesia through Indochina.

Life form: Tree. Up to 20m tall. It is same genus of Jack fruits.

Use: The fleshy perianths which surround the seeds are eaten fresh or cooked. It is sweet and juicy.

Ref. No.: 42, 46, 47



Jul. 2010 Kampong Chhnang, Cambodia

Ficus sp.

Order: Rosales
Family: Moraceae

LA	<u>Hai</u>	
KH	<u>Leap</u>	
TH		
VN		
JP		

Remarks

Life form: Tree.

Use: Young leaves are eaten raw with meat.

Ref. No.: 12, 27



Feb. 2010 Pakse, Laos

Ficus sp.

Order: Rosales
Family: Moraceae

LA	<u>Tour hair</u>	
KH	<u>L'vearom, Lvie dai</u>	
TH		
VN	<u>Va</u>	<u>Vả</u>
JP		

Remarks

Life form: Tree.

Use: Fruits are eaten. Some species of *Ficus* fruits are seen in local markets.

Ref. No.: 12, 27



Feb. 2010 Louang Phrabang, Laos

Morus alba

Order: Rosales
Family: Moraceae

LA	<u>Mom</u>	
KH	<u>Mon touch, Mon pooh</u>	
TH	<u>Mon</u>	<u>หม่อน</u>
VN	<u>Dau tam</u>	<u>Dâu tằm</u>
JP	<u>Ymama-guwa</u>	<u>ヤマグワ</u>

Remarks

Distribution: From Afghanistan to China and Japan through Himalaya region

Life form: Small tree. 3-10m tall.

Use: In the traditional medicine of Cambodia, the leaves are a component of a remedy against the conjunctivitis or wounds. The barks are used as an astringent.

It is an important sericulture food source.

Ref. No.: 14, 27, 48



Jul. 2010 Ubon Rachatani Thailand

Coccinia grandis

Order: Cucurbitales
Family: Cucurbitaceae

LA	_____	_____
KH	Bah	_____
TH	Tamlueng, Khaep	ตำลึง
VN	Day bat	Dây bát
JP	Yasai-kalasu-uri	ヤサイカラスウリ

Remarks

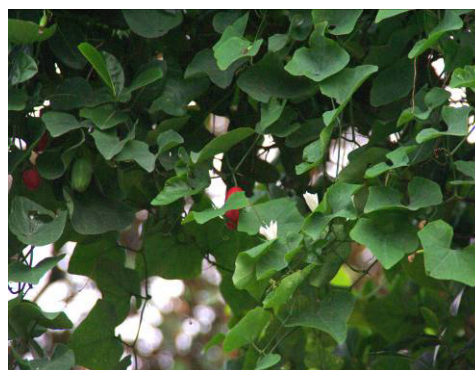
Distribution: Widely distributed in the Old World. From northern tropical Africa to North Australia through India and Malesia.

Life form: Climber to 8m long. Fruit is green, grow in rows, and turn bright red when ripe.

Use: Young shoots are eaten as a vegetable. It is used for "samla", liquid dishes in Cambodia. The plant is used in traditional medicine for scabies and diabetes.

General info.: Popular vegetable in local markets. Usually grown in home gardens and roadside.

Ref. No.: 14, 42



Jul. 2011 Kratie, Cambodia

Cucurbita maxima

Order: Cucurbitales
Family: Cucurbitaceae

LA	Eu, Fak kham	_____
KH	Lpeu	_____
TH	Fak khiao, Fak thong	_____
VN	Bi ro, Bi do	Bí rợ, Bí đỏ
JP	Seivou-kabocha	セイヨウカボチャ

Remarks

Distribution: Originated from America. It was introduced all over the world.

Life form: Annual herbaceous climber.

Use: All parts of this species are edible except thick stems and old leaves. In the Indochina region, flowers and young leaves are a popular ingredient of dishes. Flowers are eaten raw or with soup.

Ref. No.: 14, 27, 42, 46, 48



Sep. 2012 Phnom Penh, Cambodia

Luffa cylindrical

Order: Cucurbitales
Family: Cucurbitaceae

LA	Buab	
KH	No nong moul	
TH	Buap klom, Buap hom	
VN	Muop huong	Muóp hương
JP	Hechima	ヘチマ

Remarks

Distribution: Originally in south Asia. Widely cultivated.

Life form: Medium-sized climber to 5 m long.

Use: Young fruits that appear powdery-white are ready to eat. The photo was taken in Laos, flowers, young leaves, and young fruit are sold at local market.

Ref. No.: 42



Sep. 2009 Houayxay Laos

Momordica charantia f. *abbreviate*

Order: Cucurbitales
Family: Cucurbitaceae

LA	Sai	ຜັກໃສ່
KH	Marea	ម្រុះ
TH	Mara, Phakhoei, Phakhai, Mahoi	มะระ
VN	Muop dang, Kho qua	Muóp đắng, Khỏ qua
JP	Nigauri	ニガウリ

Remarks

Distribution: The tropics.

Life form: Annual herb. Climber. Up to 5 m long.

Use: Young leaves and fruits are edible. Boiled young leaves are eaten with fermented fish paste or with soup for the bitter-tasting ingredient. Fruits are eaten raw, stir-fried, or as pickles.

It is a popular ingredient. They are often grown in village clearings, waysides, and home-gardens.

It contains a chemical compound called Momordicin which cause bitter-taste. Fruits are prescribed for numerous medicinal uses. In traditional medicine, it is prescribed for diabetes, hepatitis, a knee pain, etc. A decoction of the root is used for allergy.

Ref. No.: 5, 14, 18, 26, 27, 42, 47, 49



Jul. 2008 Keun, Vientiane, Laos

Momordica cochinchinensis

Order: Cucurbitales
Family: Cucurbitaceae

LA	Khao, Kheua, Khai	
KH		
TH	Khao	
VN	Gac	Gấc
JP	Namban-karasu-uri	ナンバンカラスウリ

Remarks

Distribution: From India to Malesia through Indochina.

Life form: Deciduous woody climber. It climbs up tall

trees and fruiting occurs on a high position. It has a tuber in the ground trees. Fruiting on a high position. It has a tuber in the ground.

Use: Young fruits, new shoots and flowers are used for an ingredient of curry. Young shoots are cooked with shrimp or meat with oyster sauce. This plant is called "Rice vine". It is used to make red rice for celebration. Red ripe pulp and seeds are steamed with sticky rice.

General info.: Since it is rich in lycopene it has antioxidant properties. It is also rich in vitamin A, C, and alpha-linoleic acid.

Ref. No.: 14, 42, 46, 47, 49



Sep. 2010 Vientiane province, Laos

Castanopsis sp.

Order: Fagales
Family: Fagaceae

LA	Kaw	ໜາກກ່
KH	Khaohs	
TH	Maikou	
VN	De, Kha thu	Dẻ, Kha thụ
JP	Shii-no-mi	シイの実

Remarks

Life form: Tree.

Use: Nuts are eaten raw, boiled or roasted.

General info.: Some big trees are left behind village.

Ref. No.: 14, 23, 45



Sep. 2009 Vientiane province, Laos

Ludwigia adscendens

Order: Myrtales
Family: Onagraceae

LA	<u>Pouy nam</u>	ຜັກພວຍນ້ຳ
KH	<u>Komping pouy</u>	កំពង់ពូយស
TH	<u>Phaeng phuai nam</u>	แพ่งพวยน้ำ
VN	<u>Rau dua nước</u>	Rau dừa nước
JP	<u>Ke-mizu-kinbai</u>	ケミズキンバイ

Remarks

Distribution: Native of continental Asia. Introduced as a weed in tropical Africa.

Life form: Perennial herb. It roots on shallow bottom land and elongates stem to the water area. A stem forms a white float. The stem elongates above the water about 20cm, it opens leaves and white flowers.

Use: Young shoots are eaten raw with fish sauce. Not found in markets.

In traditional medicine of Cambodia, Leaves are used as a remedy against the diseases of the scalp.

Ref. No.: 10, 27, 46, 47



Sep. 2007 Vientiane province, Laos

Terminalia chebula

Order: Myrtales
Family: Combretaceae

LA	<u>Som mor</u>	
KH	<u>Srama</u>	
TH	<u>Samo thai</u>	สมอไทย
VN	<u>Xang, Tieu (ca lich, chieu lieu xanh)</u>	Xàng, Tiều, (cà lich, chiêu xanh).
JP	<u>Mirobalan-no-ki</u>	ミロ balan ノキ

Remarks

Distribution: From the sub-Himalayan region of Nepal and northern India to Indochina.

Life form: Deciduous tree. Up to 25 m.

Use: The bitter green fruit is eaten raw with roasted fish in Cambodia and eaten raw with Laap in Laos.

The fruit is rich in tannin. Leather tanned with this fruit is soft. The bark produces a gum.

Ref. No.: 18, 27, 46, 47



Jul. 2011 Pakse, Laos

Syzygium antisepticum

Order: Myrtales
Family: Myrtaceae

LA	Samek	ຜັກສະເມັກ
KH	Poun	
TH	Mek, Samet chun	เม็ก, เสม็ดชุน
VN	Tram	Trâm
JP		

Remarks

Distribution: From India to Malesia through Indochina.

Life form: Tree. Up to 20m tall. This small tree that has grown on a common is used.

Use: Young leaves are eaten with Laap in Laos. After eating with oily meat, mouth feels fresh. The bark has been used as a black dye.

Ref. No.: 7, 14, 45, 52



Jul. 2010 Pakse, Laos

Trapa natans

Order: Myrtales
Family: Lythraceae

LA	Chap	ໝາກຈັບ
KH	Krochap	ក្រូចាប៊
TH	Ma ngaeng	มะแง่ง
VN	Au nuoc	Ấu nước
JP	Tou-bishi	トウビシ

Remarks

Distribution: Widely cultivated in tropical and subtropical Asia.

Life form: Annual herb. Floating leaved plant. Two horn water chestnut. It grows in the slow-moving rivers, lakes, swamps, ponds.

Use: Fruits are eaten raw or cooked.

In Cambodia the hard pericarp, in infusion, is considered a tonic and febrifuge.

Ref. No.: 12, 27, 42, 46, 48, 52



Sep. 2007 Vientiane province, Laos

Bouea oppositifolia

Order: Sapindales
Family: Anacardiaceae

LA	<u>Phang</u>	<u>ໝາກຜາງ</u>
KH	<u>Mak prang</u>	<u>ម៉ាកប្រាង</u>
TH	<u>Ma pring, Ma yong chit</u>	<u>มะปริง</u>
VN	<u>Thanh tra, Xoai rung</u>	<u>Thanh trà, xoài rừng</u>
JP	<u>Pulam-mangoo</u>	<u>プラマンゴー</u>

Remarks

Distribution: Widely cultivated in tropical and subtropical Asia.

Life form: Tree. 6-30 m tall.

Use: Fruits are sweet and eaten as desserts.

Trunk is used to make a valuable varnish and wood is used for supports or pillars.

Ref. No.: 14, 27, 42



Feb. 2010 Louang Phrabang, Laos

Spondias dulcis

Order: Sapindales
Family: Anacardiaceae

LA	<u>Kork</u>	<u></u>
KH	<u>Makak</u>	<u>ម៉ាក</u>
TH	<u>Makok farang, Makok waan</u>	<u>มะกอกฝรั่ง</u>
VN	<u>Coc</u>	<u>Cóc</u>
JP	<u>Ama-yani-lingo, Tahichi-monbing, Tamago-no-ki</u>	<u>アマヤニリンゴ、タヒチモンビン、タマゴノキ</u>

Remarks

Distribution: Native from Melanesia to Polynesia.

Introduced into all over the tropics.

Life form: Tree. 10 - 15m tall.

Use: Young leaves and fruits are edible. Fruits are eaten raw with salt and pepper. Ripe fruit is stewed and used for jams, jellies, and juice. The green fruit is used frequently in green salads, curries, and making pickles.

In the traditional medicine of Cambodia, the bark is used against diarrhea. There are diverse medicinal uses of fruit, leaves, and bark in different parts of the world. Its use for the treatment of wounds, sores, and burns has been reported in several countries.

Ref. No.: 5, 14, 27, 42, 45, 46, 47



Jul. 2010 Kampong Chhnang, Cambodia

Spondias pinnata

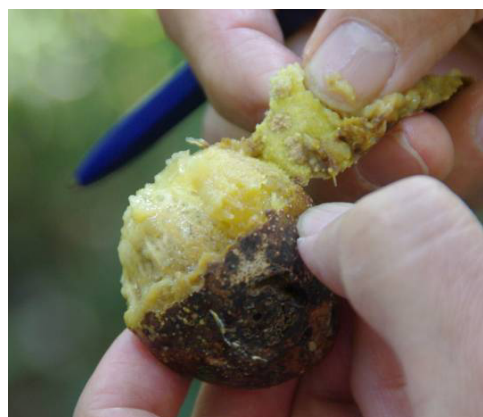
Order: Sapindales
Family: Anacardiaceae

LA	<u>Kok</u>	<u>ໝາກກອກ</u>
KH	<u>Mkak prei, Puen si phlae, Pounblay</u>	<u>ម្នាក់</u>
TH	<u>Ma kok, Kok-mon, Kok khao</u>	<u>มะกอก</u>
VN	<u>Coc rung</u>	<u>Cóc rùng</u>
JP	<u>Yani-lingo, Kohaku-monbing</u>	<u>ヤニリンゴ、コハクモンビン</u>

Remarks

Distribution: From India to Malesia through Indochina.

Life form: Deciduous tree. 5-25 m tall.



Jan. 2009 Chiang Mai, Thailand

Use: Young leaves are eaten raw with fermented fish paste. It is used for Laap and Coi in Laos.

Raw fruits are edible but not so popular because of their astringent, acid and turpentine flavor. It is used for a crystallized fruits, jam and ice cream.

The trunk is used against the malaria in Cambodia. Medicinally the fruit is used as an astringent, antiscorbutic and it is also used against bilious dyspepsia. The juice is applied against earache.

Ref. No.: 5, 14, 27, 42, 45, 46, 47

Azadirachta indica

Order: Sapindales
Family: Meliaceae

LA	<u>Ka dao, Khom</u>	<u>ກາເດົາ</u>
KH	<u>Sdau, Salien</u>	<u>ស្ដៅ</u>
TH	<u>Sadao, Saliam, Kadao</u>	<u>สะเดา</u>
VN	<u>Sau dau</u>	<u>Sầu đầu</u>
JP	<u>Indo-sendang</u>	<u>インドセンダン、ニーム</u>

Remarks

Distribution: Native to Indo-Pakistan to Myanmar. It is widely cultivated.

Life form: Tree. Up to 25m tall.

Use: Boiled young leaves and flowers are eaten as bitter-taste vegetable. Fruits are sweet and edible.

Mature leaves have anti-diabetic properties. Bark is used like quinine. India extracted a contraceptive ingredient from dried seed in 1994. In the traditional medicine of Thailand, tea made from dried flowers is used for stomach health and used as an antifebrile.

Ref. No.: 11, 21, 27, 41, 42, 45, 46, 47, 49



Feb. 2010 Louang Phrabang, Laos

Aegle marmelos

Order: Sapindales

Family: Rutaceae

LA	Tum	ໝາກຕຸ້ມ
KH	Pnou	កន្ទ្រី
TH	Matum	มะตูม
VN	Quanch, Bau nau	Quách, Bàu nâu
JP	Belu-no-ki	ベルノキ

Remarks

Distribution: Originated in the India. Cultivated in Indochina and Malesia.

Life form: Tree. Up to 10-15m tall.

Use: Young shoots are eaten as a salad. Ripe fruit is eaten fresh and is also prepared as sherbet, syrup, and jam. The most popular usage is tea made with sliced and dried young fruits.

As a medicine, the tea has an effect on chronic dysentery, diarrhea and constipation.

General info.: It is an old cultivated tree in India, particularly found in temple gardens. In Indochina, trees are grown nearby villages.

Ref. No.: 17, 42, 45, 47



Sep. 2009 Chiang Rai, Thailand

Citrus hystrix

Order: Sapindales

Family: Rutaceae

LA	Khee hoot	ໝາກ, ໃບຂີ້ຫູດ
KH	Kro sauch	ក្រូចសើច
TH	Makrut	มะกรูด
VN	Truc, Chanh sac	Trúc, Chanh sác
JP	Kobu-mikan	コブミカン

Remarks

Distribution: Widely naturalized from Sri Lanka to Malesia through Indochina.

Life form: Tree. Up to 12 m tall.

Use: Leaves are the flavoring ingredient famously called "Bai Makrut" in Thailand. The juice of the fruit is used for seasoning and to prepare drinks.

Fruits are used as an insecticide in shampoo and it is also used for treating feet to ward off leech attack.

General info.: Usually it is planted in a home-garden. In Cambodia, the fruit is mixed with lustral water for use in religious ceremonies.

Ref. No.: 12, 27, 42, 45, 47



Jul. 2013 Battambang, Cambodia



Sep. 2007 Vientiane Laos

Feroniella lucida

Order: Sapindales

Family: Rutaceae

LA	Sang	
KH	Krasang	ក្រសាំងស៊ីផ្លែ, ក្រសាំងពុល
TH	Ma sang, Mak ka sang	มะสัง
VN	Can thang	Cần thăng
JP		

Remarks

Distribution: Indochina and Java.

Life form: Tree. Up to 25 m tall.



Jul. 2010 Kratie, Cambodia

Use: The pulp which surround the seeds of young fruit is used as an acid element in Cambodian culinary called "samla mchu". The flowers are also used as vegetables or to prepare some dishes.

In traditional medicine, flowers and leaves are used as a medicine which helps digestion. In modern chemistry, some organic compounds are extracted from the root system. Control of cancer cells, anti-malarial activity, and an anti-tuberculosis activity has been reported. The bark is used to make incense sticks in Cambodia.

General info.: It is often seen at local markets in Cambodia and Vietnam.

Ref. No.: 10, 19, 27, 31, 45

Limonia acidissima

Order: Sapindales

Family: Rutaceae

LA	Ka sang	
KH	Khvat	ខ្នុត
TH	Ma khwit	มะขวิด
VN	Quach, Can thang	Quách, Cần thăng
JP	Wood-Apple	ウッドアップル

Remarks

Distribution: Wilde in India, Sri Lanka, Myanmar and Indochina. Cultivated and naturalized in Malaysia and Indonesia.

Life form: Tree. Up to 12m tall.

Use: The fresh pulp of the ripe fruit is eaten with sugar. It contains rich vitamin and minerals. In traditional Khmer medicine, fruits are used for a heart tonic and pulp is used for gingivitis. Leaves are used for an anti-diarrheal. In the modern chemistry, various components such as alkaloid and a steroid are extracted. It has an anticarcinoma activity.

Ref. No.: 17, 27, 28, 45, 46, 47, 52



Jul. 2010 Kratie, Cambodia

Murraya koenigii

Order: Sapindales

Family: Rutaceae

LA		
KH	Kontorop, Kantrook, Kantroob samla	កន្ទ្រោក, កន្ទ្រោកសម្ម
TH	Hom khaek, Bai kari	หอมแขก, ใบกะหรี
VN	La cari	Lá cà-ri
JP	Ooba-gekkitsu, Kalee-no-ki, Nanyo-sansho	オオバゲッキツ、カレーノキ、ナンヨウサンショウ

Remarks

Distribution: From India to Indochina.

Life form: Small tree. Up to 4 m tall.



Jul. 2010 Kampong Chhnang, Cambodia

Use: Leaves are used as condiments. It is used for soup called "Som low" in Cambodia, and the curry of India and Sri Lanka. English name is "Curry leaf".

One Japanese women scientist who lived in Indochina over the long term said that "Even if the white flowers boiled in soy sauce, it did not lose a scent. It was good side dish."

In India, it is used as a medicine from B.C.. In the traditional medicine of Cambodia, the bark, root, and leaves are considered invigorating and tonic. The decoctions of leaves are used to bathe children with scabies. Recent scientist reports indicate a decoction of leaves has strong antimicrobial action.

Ref. No.: 18, 27, 40, 42, 46, 48

Zanthoxylum sp.

Order: Sapindales
Family: Rutaceae

LA	<u>Khane</u>	
KH		
TH		
VN	<u>Hoang moc</u>	<u>Hoàng mộc</u>
JP	<u>Unnan-sansho (cf. 40)</u>	<u>ウンナンサンショウ (cf. 40)</u>

Remarks

Life form: Genus *Zanthoxylum* is shrub or tree. The leaves and fruits of this species looks like *Zanthoxylum ailanthoides* that distribute in Japan. The fruit is about 4mm in diameter.

Use: Fruit walls are used as a strong condiment. When the author bit into this fruit, the tongue went numb about 10 minutes. Young leaves are also used as a vegetable with laap or Bamboo shoot.

General info.: Literatures shows *Z. rhetsa* and *Z. myriacanthum* and we think this species in the photos may be *Z. myriacanthum* because of the fruit size.

Ref. No.: 13, 14, 17, 40, 47, 48



Nov. 2011 Vang Vieng , Laos



Nov. 2011 Vang Vieng , Laos

Arytera littoralis

Order: Sapindales
Family: Sapindaceae

LA	<u>Ka duk</u>	<u>ຜັກກາ</u>
KH	<u>Bei sanlek</u>	
TH	<u>Si puk dong, Kho kam</u>	
VN	<u>Truong duyen hai</u>	<u>Trường duyên hải</u>
JP	<u>Futago-no-ki</u>	<u>フタゴノキ</u>

Remarks

Distribution: From India to Solomon through China, Indochina and Malesia.

Life form: Small tree. 3-10m tall.

Use: Young leaves are eaten as vegetable in Laos. The fruits are also edible.

Ref. No.: 10, 14, 15, 27, 45, 46



Sep. 2009 Houayxay, Laos

Nephelium hypoleucum

Order: Sapindales
Family: Sapindaceae

LA	<u>Ton mak ngay</u>	<u>ຕົ້ນໝາກແງ່ວ</u>
KH	<u>Ser moen</u>	<u>ស៊ីរម៉ាន់</u>
TH	<u>Kho lean, Ma ngaao</u>	<u>คอแลน</u>
VN	<u>Chom chom trang duoi</u>	<u>Chôm chôm trắng dưới</u>
JP		

Remarks

Distribution: Indochina.

Life form: Tree. Up to 30m high. It grows in the forest nearby the village.

Use: The acidic fleshy seed coat is edible.

The wood is used to make tool handles.

Ref. No.: 14, 27



Jul. 2008 Vientiane, Laos

Schleichera oleosa

Order: Sapindales
Family: Sapindaceae

LA	<u>Kho som, Kho</u>	
KH	<u>Pongro</u>	<u>ពង្រ</u>
TH	<u>Ta khro, Kho, Kho som, Pan rong</u>	<u>ตะคร้อ</u>
VN	<u>Dau dau</u>	<u>Dầu dầu</u>
JP		

Remarks

Distribution: Introduced from Sri Lanka and India to east parts of Indonesia through Indochina.

Life form: Tree. Up to 40m tall. Typically growing near termite mounds. The fruit is reddish yellow, juicy and sour aril.

Use: Young leaves may be eaten as a vegetable in Thailand. The fruit is eaten raw or cooked, but eating too much of it causes stomach ache. Young fruits are sometimes used in spicy papaya salad in Lao. The golden yellow arillus is used to acidulate some liquid dishes, especially spawns "samla" in Cambodia.

The seed contain up to 70% oil, called "Macassar oil", which has the reputation of stimulating hair growth. Boiled seed is used to treat back pain and the peel of the fruit is applied to wounds. Bark and stem extracts are used for wounds and to slow down cancer cell growth. The bark is mixed with red ants to treat stomach aches. It has been believed that the bark is an effective remedy against malaria and various inflammations. It was discovered recently that sterol or steroid alcohols in the bark have anti-cancer properties.

Ref. No.: 14, 27, 51



Jun. 2011 Parkse, Laos

Ceiba pentandra

Order: Malvales
Family: Malvaceae

LA	Ngiu barn	
KH	Kou, Koor fii	ក្រូ
TH	Nun	
VN	Bong gon	Bông gòn
JP	Panya-no-ki	パンヤノキ

Remarks

Distribution: Originated from India. Cultivated in tropical South America, Africa and Asia.

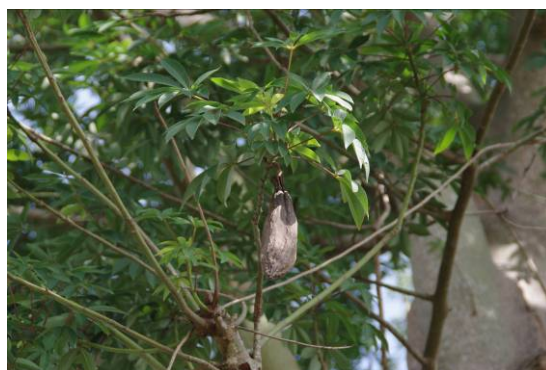
Life form: Deciduous tree up to 20m tall. Fruit capsule oblong, 12-15 by 3-5 cm, densely silky hairy inside. Seed shape is reniform and color is black.

Use: Young flowers and fruits are consumed as vegetables in Cambodia.

In the traditional medicine of Cambodia, resin from the trunk is diluted into water. It constitutes a delicious tonic dessert. Bark is used as a medicine for diarrhea.

Its cotton is used as contents for bedding or pillows.

Ref. No.: 14, 27, 46



Jul. 2010 Stung Treng, Cambodia

Hibiscus sabdariffa

Order: Malvales
Family: Malvaceae

LA	Sompodee	ສົມພໍດີ
KH	Kro chap kdam	ក្រូចាបក្តាម
TH	Krachiap daeng Sompormo, Sompodee	กระเจี๊ยบแดง
VN	Bup giam, Day nhat	Búp giấm, Đay Nhất
JP	Rozel-so	ローゼルソウ

Remarks

Distribution: Originated from Africa. Introduced to Pan-tropics.

Life form: Annual herb. 0.5-3m tall.



Sep. 2007 Vientiane, Laos

Use: Young leaves are used as an acidic ingredient for cooked dishes like Tamarindo soup. Ripe fruits are sour. It is used for jelly, syrup, and juice.

In the traditional medicine of Thailand, buds and leaves are used as digestive medicine. A decoction is used to wash a wound. Flowers are effective against fever, cough, and to remove bile. It is supposed that the seed reduces fat in blood.

Ref. No.: 6, 18, 46, 47, 49

Leptonychia heteroclite

Order: Malvales
Family: Malvaceae

LA	Wan	ผักหวาน
KH		
TH	Wan dam, Wan par	ผักหวานดำ
VN		
JP		

Remarks

Distribution: From India to Indonesia through Indochina.

Life form: Shrub, 1-3m tall.

Use: Buds, young leaves, and young fruit are boiled or steamed. It is taken with a fermented fish paste or with Laap. It is also cooked with ant egg, fish, and coconut soups.

In the traditional medicine of Thailand, a root suppresses the work of poison. It is prescribed when one is in ill-condition.

Ref. No.: 5, 14



Feb. 2010 Thakhek, Laos

Scaphium macropodum

Order: Malvales
Family: Malvaceae

LA	Jon, Jon ban	
KH	Samrang	
TH	Samrong, Phung thalai	ลำยอง, พุงทะลาย
VN	Luoi uoi	Lưòi uoi
JP	Funemi-no-ki	フネミノキ

Remarks

Distribution: From Indochina to Borneo and Sumatra through peninsula Malaysia.

Life form: Tree. Up to 45m tall.

Use: The Jelly made from water soaked seed is eaten. In Laos, the dish using this jelly called "Laap mak jon" is considered fine dining.

This jelly is also used as a medicine for the throat.

General info.: Seeds are collected from the forest. It is not in the village area.

Ref. No.: 12, 21, 27, 33, 34



Jul. 2011 Phnom Penh, Cambodia



1996 Pasoh FR, Malaysia

Muntingia calabura

Order: Malvales
Family: Muntingiaceae

LA	Ta khop	
KH	Krakhob	ក្រខុប
TH	Ta khop farang	ตะขบฝรั่ง
VN	Trung ca, Mat sam	Trúng cá, Mât sâm
JP	Nanyou-zakura	ナンヨウザクラ

Remarks

Distribution: Originated from West Indies and Mexico.
Cultivated in the tropics.

Life form: Small tree. Up to 10m tall.

Use: Ripe fruit is eaten raw. It is a snack for children. It is not seen in local markets.

In the traditional medicine of Cambodia, crushed fresh leaves are applied to bee and wasp stings.
Roots are a component of a medicine for some diseases of the liver.

General info.: Usually it is planted in front of a house and along the village wayside in the Indochina region.

Ref. No.: 14, 17, 18, 27, 46



Jul. 2011 Parske, Laos

Nasturtium officinale

Order: Brassicales
Family: Brassicaceae

LA	Si sang	ຜັກນ້ຳ
KH	Kong kep	ក្បោកដៃប
TH		
VN	Cai-soong	Cải soong, Xà lách xoong
JP	Oranda-galashi, Kuleson	オランダガラシ、クレソン

Remarks

Distribution: Originated from Europe. Introduced and cultivated in the world.

Life form: Aquatic perennial herb. Emergent plant. It grows in shallow water.

Use: Young shoots are eaten raw as a salad plant.

General info.: Cultivation canals are used for commercial production. Plants that have escaped cultivation canals can be found in the streams or drain canals of a village and are collected by the local people.

Ref. No.: 14, 18



Jul. 2010 Kampong Chhnang, Cambodia

Cleome gynandra

Order: Brassicales
Family: Cleomaceae

LA	Sien	
KH	Mamien	មមាញ
TH	Sian, Som siang	ผักเดียน
VN	Mangmang trang	Màng màng trắng
JP	Fuchoso	フウチョウソウ

Remarks

Distribution: Native to Asia. Widely introduced to the old world and new world tropics.

Life form: Annual herb. 15-80cm tall.

Use: Leaves are used for a vegetable. It is a bitter-taste ingredient. In traditional medicine, a decoction of the roots is taken as a febrifuge, and used against tuberculosis. The fermented plant is used to sober up, and placed on a tumor to sooth itchiness. Because it has a negative influence on the womb, it is supposed that a pregnant woman must not eat.

Ref. No.: 7, 27, 46, 47, 49



Aug. 2013 Battambang, Cambodia

Moringa oleifera

Order: Brassicales
Family: Moringaceae

LA	Li fim, Ihum	
KH	M'rom, Mrum	ម្រូម
TH	Marum, Phak e-heem, Phak e-hum, Ma khon kom	มะรุม
VN	Chum ngay	Chùm ngây
JP	Wasabi-no-ki	ワサビノキ

Remarks

Distribution: Originated from India. Cultivated and naturalized in tropical Asia, Africa and America.

Life form: Small tree. Up to 10m tall. Leaves compound, tripinnate, 30-60cm long.

Use: Young leaves and fruits are edible. Small leaflets are cooked with soup. Deep fried leaflets are eaten with salt. Young fruits without green peel are boiled or fried. Leaves and fruits are scent ? and not spicy. It is rich in vitamins, calcium, and iron.

In the traditional medicine of Cambodia, bark is given as tonic for women to drink after delivery. Ben oil is extracted from the seeds. This oil contains a powerful flocculant that is used to clarify turbid water.

General info.: The Ministry of HLW of Japan has called attention to the ingestion of this species; "http://www.mhlw.go.jp/topics/bukyoku/iyaku/syoku-anzen/hokenkinou/4e-3.html" (May 2004).

Ref. No.: 27, 40, 42, 45, 46, 48



Sep. 2012 Phnom Penh, Cambodia

Melientha suavis

Order: Santalales

Family: Opiliaceae

LA	Wan, Wan kok	ผักแว่น
KH	Preich	ព្រឹច
TH	Phak wan	ผักหวาน
VN	Ran sang	Rau sắng
JP		

Remarks

Distribution: Laos, Vietnam, Cambodia, Malay Peninsula, and Philippines.

Life form: Small tree. Up to 10m tall.

Use: Young shoots and flowers are eaten as vegetables. This plant is famous in Cambodia as a most delicious of all vegetables. They are eaten cooked in various culinary preparations. It contains rich vitamin C and the protein.

General info.: It is seen in the market uncommonly. The Flora of Thailand called attention to the difficulty in identifying *Melientha suavis* without flowers or fruits since similar leaves of other species are sometimes eaten. Thailand reports that poisoning and death may occur if leaves of the widespread *Urobotrya siamensis* are mistakenly eaten.

Ref. No.: 14, 27



Feb. 2010 Savannakhet, Laos

Glinus oppositifolius

Order: Caryophyllales
Family: Molluginaceae

LA	Dong kok	
KH	Dang'khem	
TH	Phak khuang	ผักขวง
VN	Rau dang dat	Rau đắng đất
JP		

Remarks

Distribution: The tropics.

Life form: Annual herb. Stem erect spreading sometime creeping; branches 3-50 cm.

Use: As a vegetable substitute. The bitter leaves are eaten cooked with meat or fish and for soup.

In traditional medicine, the leaves are used to treat head aches and flu as well as digestive-system troubles in Cambodia.

General info.: Grows in open land places which periodically flood, sandy banks, and paddy fields during the dry season. The acidity is quite similar to *Swertia japonica* (Japanese name is Senburi).

Ref. No.: 14, 27



Feb. 2010 Savannakhet, Laos



Feb. 2010 Thakhek, Laos

Portulaca oleracea

Order: Caryophyllales
Family: Portulacaceae

LA	Tin khii khap	ຕົ້ນຂີ້ຂັບ
KH	Kbet chun	ប្រមាត់ជូ
TH	Bia yai	ผักเบี้ยใหญ่
VN	Sam	Sam
JP	Suberi-hiyu	スベリヒユ

Remarks

Distribution: The tropics and the sub-tropics.

Life form: Annual herb, more or less creeping, branching out, 10-30cm. Grows in waysides and uncultivated places of a village.

Use: Eaten as a vegetable.

The decoction of leaves is absorbed to aid diarrhea.

Ref. No.: 14, 27, 46



Feb. 2010 Pakse Laos

Polygonum odoratum

Order: Caryophyllales

Family: Polygonaceae

LA	<u>Peo, Phaew</u>	<u>ຜັກແພ່ວ</u>
KH	<u>Krasang tumhum</u>	
TH	<u>Phak phai</u>	<u>ผักไผ่</u>
VN	<u>Rau ram</u>	<u>Rau răm</u>
JP		

Remarks

Distribution: Southeast Asia.

Life form: Annual herb. 50 -80cm tall.

Use: Leaves are used as a condiment. It is strong and pungent. It is eaten raw with meat. It has anthelmintic action.

Ref. No.: 12, 18, 22, 27, 42



Feb. 2010 Thakhek, Laos

Basella alba

Order: Caryophyllales

Family: Basellaceae

LA	<u>Pang</u>	<u>ຜັກບ້າ</u>
KH	<u>Chunlueng, Chilong</u>	<u>ជួន្គង់</u>
TH	<u>Plang</u>	<u>ผักปลัง</u>
VN	<u>Mong toi</u>	<u>Mồng toi</u>
JP	<u>Tsulu-murasaki</u>	<u>ツルムラサキ</u>

Remarks

Distribution: Introduced to the tropics. Probably from Africa.

Life form: Herbaceous climber.

Use: Leaves and flowers are eaten raw or cooked. It is a daily vegetable with high nutritive value. The seeds yield many things from juice to eye-salve. A tea made from the whole plant is used as a laxative for children and for easing child delivery.

General info.: It is often seen in a home garden, near villages, and old clearings.

Ref. No.: 5, 14, 23, 27, 41, 46, 49



Jul. 2010 Kratie, Cambodia

Amaranthus spinosus

Order: Caryophyllales
Family: Amaranthaceae

LA	Houm	ໄຜ່ກາທິມ
KH	Pti	ផ្លែប៊ុន
TH	Phak khom nam, Phak hom nam	ผักขมหนาม
VN	Den xanh, Den hoang, Den gai	Dền xanh, Dền hoang, Dền gai
JP	Hali-biyu	ハリビユ

Remarks

Distribution: Originated from the new world tropics. Distributed to the tropics and warm temperate regions of the world.

Life form: Annual herb. 40~80cm tall.

Use: Young leaves are eaten as a vegetable or soup.

In the traditional medicine of Indochina, roots are used as a diuretic, for gonorrhea, an anti-febrile, and a plaster for wound. Leaves are also used as an anti-febrile, a remedy for poison, a skin emollient, and a galactagogue.

Ref. No.: 6, 14, 18, 25, 27, 46, 47



Jul. 2008 Keun, Vientiane, Laos

Amaranthus tricolor

Order: Caryophyllales
Family: Amaranthaceae

LA	Hom den	ໄຜ່ກາທິມແດງ
KH	Pti leak	ផ្លែក្រហម ផ្លែដូង
TH	Khom si, Khom khao	
VN	Den canh, Den tia	Dền canh, Dền tia
JP	Hiyu	ヒユ

Remarks

Distribution: Cultivated in pan-tropic. Native to India.

Life form: Annual herb. Often much branched, up to 2m tall.

Use: Popular vegetable in local markets. Often cultivated in the home garden as a daily vegetable. Eaten like spinach. Seed contains rich starch.

Ref. No.: 14, 27, 39, 46



Feb. 2010 Savannakhet, Laos

Diospyros decandra

Order: Ericales
Family: Ebenaceae

LA	Chan	
KH	Chan	ឆាន់, ប៉ែន
TH	Chan	จัน
VN	Thi	Thi
JP		

Remarks

Distribution: India, South China, Indochina.

Life form: Evergreen tree. Up to 20m tall.

Use: Fruits are eaten raw. People of Indochina love the fragrance of this fruit.

Leaves, roots, and fruits are used in traditional medicine. Leaves are used as poultice applied on ulcers. Roots are a component of a remedy against the plague and venereal diseases. Fruits are used as vermifuge. Wood is very hard and used in cabinetwork.

Ref. No.: 14, 27, 47



Jul. 2010 Phnom Penh, Cambodia

Diospyros sp.

Order: Ericales
Family: Ebenaceae

LA	Ta kouang	ໝາກຕາກວາງ
KH		
TH		
VN		
JP		

Remarks

Use: Fruits are eaten raw. In February, the fruits were sold at a temporary market along a road in south Laos.



2010 Feb. 19 Thakhek, Laos

Barringtonia acutangula

Order: Ericales
Family: Lecythidaceae

LA	<u>Ka don nam</u>	<u>ຜັກກາໂດນນາມ</u>
KH	<u>Trouy reang</u>	<u>រាំងទឹក, រាំងអន្ទក់</u>
TH	<u>Chik na, Kra don tun, Kra don nam</u>	<u>จิกนา</u>
VN	<u>Chiec, Loc vung</u>	<u>Chiếc, Lộc vùng</u>
JP		

Remarks

Distribution: From Pakistern to Malesia and northern Australia through Indochina.

Life form: Tree. 10-25m tall. It grows in swamps, water-banks, and lowlands that get soaked in the rainy season.

Use: Young leaves are eaten as salads. It is rich and bitter tasting. It is popular in local markets of Indochina.

The edible part exhibits extremely high antioxidant activity. There are a lot of reports about its medicinal components i.e. an anticancer, antibacterial action, an opioid analgesia agent, and so on. In the local medicine of Cambodia, the bark is said to be efficient against fever, diarrhea, malaria, and gonorrhea. Root is usable in substitution for a cinchona. In Thailand, decoction of bark is used to wash wounds. Fruits are used as a cold medicine.

General info.: The dominant species of Lake Tonle Sap.

Ref. No.: 6, 7, 8, 9, 17, 27, 47, 49



Feb. 2010 Pakse, Laos a

Careya arborea

Order: Ericales
Family: Lecythidaceae

LA	<u>Ka don, Ka don hok</u>	<u>ผักกาดโดน</u>
KH	<u>Reang kouk</u>	<u>កណ្តោយ</u>
TH	<u>Kradon, Kradon kok</u>	<u>กระโดน</u>
VN	<u>Vung, Vung xoan</u>	<u>Vùng, Vùng xoan</u>
JP		

Remarks

Distribution: From India to Indochina and Malay peninsula.

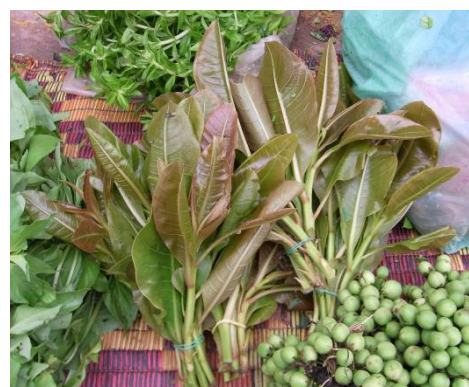
Life form: Tree. Up to 20m tall.

Use: Young leaves are eaten as a salad with fermented fish paste or Cheo in Laos and Thailand.

In traditional medicine, fruits are used for digestion. Seeds are used as antidote for poison and bark is a medicine of diarrhea. Black dye from the bark is used to wash and bandage ulcerated wounds.

The bark is used make saddlecloth for elephants.

Ref. No.: 7, 16, 17, 27, 44



Jul. 2010 Stung Treng, Cambodia



Feb. 2010 Nam Song, Pakse, Laos

Camellia sinensis

Order: Ericales
Family: Theaceae

LA	<u>Xar</u>	
KH	<u>Tae</u>	
TH	<u>Miang</u>	<u>เมี่ยง</u>
VN	<u>Tra</u>	<u>Trà</u>
JP	<u>Cha-no-ki</u>	<u>チャノキ</u>

Remarks

Distribution: From India to Indochina and south China.

Life form: Shrub. Up to 15m tall.

Use: Cultivated for conventional tea and fermented tea. Fermented tea leaves are eaten. Fresh leaves occasionally are seen in a local market.

Ref. No.: 14, 26, 27, 46



Nov. 2011 Vang Vieng, Laos

Gardenia obtusifolia

Order: Gentianales

Family: Rubiaceae

LA	<u>See dar par</u>	<u>ໝາກສີດາປ່າ</u>
KH	<u>Bai remeas , Plae oul</u>	<u>បាយរមាស</u>
TH	<u>Kramop</u>	<u>กระมอป</u>
VN	<u>Danh danh la ta</u>	<u>Dành dành lá tà</u>
JP		



Life form: Shrub. Up to 4m tall.

Use: Fruits are eaten raw. It has not been seen in markets but found growing in an empty lot near by a village.

Ref. No.: 12

Jul. 2008 Dong Makkai, Vientiane, Laos

Morinda citrifolia

Order: Gentianales

Family: Rubiaceae

LA	<u>Nvor barn</u>	
KH	<u>Nho srok</u>	
TH	<u>Yo ban</u>	
VN	<u>Nhao, Nhau</u>	<u>Nhào, Nhàu</u>
JP	<u>Yaevama-aoki</u>	<u>ヤエヤマアオキ</u>

Remarks

Distribution: Native of Queensland. Widespread throughout Southeast Asia.

Life form: Shrub. 4-10m tall. Often cultivated near houses.

Use: Leaves often eaten as vegetables in a special dish, "amok" in Cambodia. Ripe fruits eaten with some salt.

In traditional, the roots are used as a hypotensive medicine.

Know as "Noni" in Hawaii; the white ripe fruit is picked, washed, put in a container, and kept in a cool dark place to produce a clear liquid that is consume for medicinal purposes.

Ref. No.: 12, 27, 45, 46, 47



Aug. 2013 Battambang, Cambodia

Aganonerion polymorphum

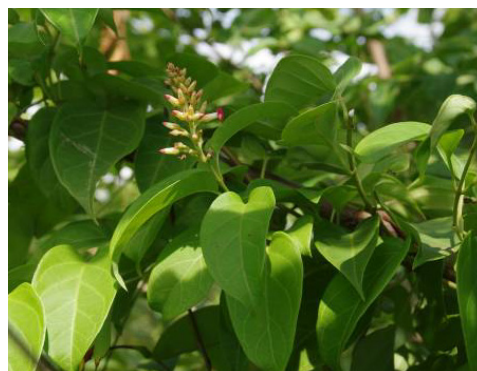
Order: Gentianales
Family: Apocynaceae

LA	<u>Khea som lom</u>	ເຄືອສົມລົມ
KH	<u>Thnong, Kaot prum</u>	កាតព្រី, ថ្មង(វិល្លី)
TH	<u>Som lom</u>	ส้มลอม
VN	<u>Day dang, Day la giang</u>	Dây dang, Dây lá Giang
JP		

Remarks

Distribution: Vietnam, Cambodia, Laos.

Life form: Climber. It is grown at a common of village.



Jul. 2010 Kratie, Cambodia

Use: The leaves and fruits are used fresh in cooking as a substitute for lemon. At the local market in Cambodia, this plant is often seen. Acid ingredient.

Elastic stem used as a string.

Ref. No.: 14, 27

Telosma cordata

Order: Gentianales
Family: Apocynaceae

LA	<u>Xar deua</u>	
KH	<u>Sralot</u>	ស្រឡិត
TH	<u>Salit</u>	สลิด
VN	<u>Thien ly</u>	Thiên lý
JP	<u>Yalaikou</u>	ヤライコウ

Remarks

Distribution: Origin unknown. Cultivated in India and Southeast Asia.

Life form: Climber.

Use: Young leaves and flowers eaten as vegetables in the Cambodia dish "Samla".

The juice of leaves would have curative properties against uterine ptosis.

Ref. No.: 27, 42, 46



Aug. 2013 Ho Chi minh, Vietnam

Limnophila aromatic

Order: Lamiales
Family: Plantaginaceae

LA	<u>Kha yang</u>	ผักขาม (ผักชะแฉง)
KH	<u>M'orm</u>	
TH	<u>Ka phrao vai, Khayaeng</u>	กะเพราใหญ่
VN	<u>Rau om, Ngo om</u>	Rau Om, Ngò om
JP	<u>Shiso-kusa</u>	シソクサ

Remarks

Distribution: From India and Sri Lanka to Indochina, southern China, Japan, Taiwan, throughout Southeast Asia and northern Australia.



Jul. 2008 Vientiane province, Laos

Life form: Annual herb, 30-100cm tall. Emergent plant.

Use: The young shoots are used to flavor some dishes, in particular "samla" in Cambodia and "Somtam" Papaya salad in Thailand and Laos.

In traditional medicine, stems and leaves are components of an antispasmodic remedy. The sap of leaves is used to clean wounds, and a decoction of the leaves is given for fever. It is used as a purgative. It is supposed that pregnant woman must not eat.

In external use, stalks and leaves mixed with wood ash and common salt make a cosmetic for face-care.

Ref. No.: 5, 14, 18, 27, 46, 47, 52

Ocimum tenuiflorum

Order: Lamiales
Family: Lamiaceae

LA	<u>Ee too</u>	
KH	<u>Mrua prau</u>	
TH	<u>Ka phrao</u>	กะเพรา
VN	<u>Huong nhu</u>	Hương nhu
JP	<u>Kami-mebouk</u>	カミメボウキ

Remarks

Distribution: Native to tropical Asia. Introduced to the tropics.

Life form: Herbaceous plant. 30-60cm tall.

Use: The leaves are used for flavoring "Chan kdao" in Cambodia. It is cultivated especially for the mucilaginous seeds, which is soaked in water to make a soft drink.

In traditional medicine, the seeds would facilitate delivery.

Ref. No.: 12, 27, 46, 47



Jul. 2010 Phnom Penh, Cambodia

Markhamia stipulate

Order: Lamiales
Family: Bignoniaceae

LA	Khæ , Khæ paa	ດອກແຄ່ປ່າ, ໝາກດອກແຄ່ປ່າ
KH	Dak po, Chroluf	ដក់ព
TH	Khæ, Khæ pa, Khæ hang khang	แก
VN	Thiet dinh, Dinh	Thiết định, Đinh
JP		

Remarks

Distribution: From south China to Indochina.

Life form: Small tree. Up to 15m tall.

Use: Flowers and young fruits are edible. Young fruits are boiled after burning the hair of the surface. It is eaten with Laap. This plant is a bitter ingredient. Since flesh corollas are collected in the early morning, the flowers are seen only in the morning market.

Bark is used as a medicine in Laos.

General info.: The meaning of “khæ hang khang” in Thai is a tail of guenon.

Ref. No.: 14, 41, 51, 52



Feb. 2010 Thakhek, Laos



Feb. 2010 Savannakhet, Laos

Oroxylum indicum

Order: Lamiales
Family: Bignoniaceae

LA	Linmai	ໝາກລົມໄມ້
KH	Pika, Sroum dau	ផ្លែឈាមជ័រ
TH	Pheka, Linmai, Ma linmai	เพกา
VN	Nuc nac	Núc nác
JP	Sorizaya-no-ki	ソリザヤノキ

Remarks

Distribution: From Nepal and Bhutan to Java, Sumatra and Pilippines through Indochina.

Life form: Small tree. Up to 12m. Length of fruit is 60-100cm. When fruit is ripe, a sheath rolls back open. Seeds with a thin wing are launched gliding.?

Use: After roasting young sheath, the burnt skin is stripped, it is then washed with warm water and sliced thinly. It is eaten with fermented shrimp paste, Laap, or soup. Young leaves and flowers are boiled and eaten with chili paste in oil.

Flavonoid is contained in a leaf and a seed. It has inflammation, allergy, a free radical, and oncostasis effect. A seed is the material of a Chinese medicine which serves to cure an ulcer.

In traditional medicine of Cambodia, they are used to treat diarrhoea and dysentery. In Thailand, decoction of seeds are used as a cough medicine.

General info.: Locally cultivated near human settlements or home gardens.

Ref. No.: 5, 14, 15, 18, 21, 23, 26, 27, 47, 48, 49



Feb. 2010 Thakhek, Laos



Feb. 2010 Savannakhet, Laos



Jan. 2009 Mae Hong Son, Thailand

Radermachera ignea

Order: Lamiales
Family: Bignoniaceae

LA	Peeb	ດອກປັບ
KH	Jeik krium	
TH	Ang kial bo, Kaki, Kasalong kham	
VN	Ra det lua	Rà det lửa
JP		

Remarks

Distribution: South China, Burma, Laos, and Vietnam.

Life form: Evergreen tree, 6-15 m high. Corolla orange, tubular-funnel-shape.

Use: Flowers are used as an ingredient in soup.

Ref. No.: 14, 17



Feb. 2010 Thakhek, Laos

Hydrolea zeylanica

Order: Solanales
Family: Hydroleaceae

LA	Saieing, Bee ian	ຜັກໄຊອ່ງນ
KH	Krapen tuk, Tien, Kon deang	ក្រព្រើន
TH	Po phi	ปอผี
VN	Thuy le, La nuoc	Thủy lê, Lá nước
JP	Seiron-hakobe	セイロンハコベ

Remarks

Distribution: S. China, Burma, Laos, and Vietnam.

Life form: Annual herb. Emergent plant. 10-60cm tall.

Use: The young shoots are consumed as vegetables and sometimes sold at markets. In the traditional medicine of Cambodia, leaves are prescribed for intestinal tumors.

Ref. No.: 14, 27, 46



Jul. 2008 Vientiane province Laos

Solanum capsicoides

Order: Solanales
Family: Solanaceae

LA	<u>Kheua kheun</u>	ໝາກເຂື່ອຂຶ້ນ
KH	<u>Trap lung, Trap khaa</u>	ត្រប់លុ, ត្រប់
TH	<u>Kheua kheun</u>	
VN	<u>Ca trai vang</u>	Cà trái vàng
JP	<u>Kingin-nasubi</u>	キンギンナスビ

Remarks

Distribution: Originally from coastal Brazil. Now commonly naturalized in the tropics and the subtropics.

Life form: Perennial herb. 1.2m tall.



Jul. 2008 Vientiane province Laos

Use: Fruits are eaten with papaya salad. It is used to make pickles in Thailand.

This fruit softens an astringent taste.

Root is used as an antitussive and is effective in controlling blood fat.

General info.: The meaning of “Kheun” in Lao is a strong smell. It is planted in the home garden or the circumference of a settlement.

Ref. No.: 7, 12, 46, 47, 52

Solanum torvum

Order: Solanales
Family: Solanaceae

LA	<u>Kheng</u>	ໝາກແຄງ
KH	<u>Trap put raw nyong</u>	ត្រប់ពត់រំពង
TH	<u>Ma khuea phuang, Kheng</u>	มะเขือพวง
VN	<u>Ca nut ao, Ca dai hoa trang</u>	Cà nút áo, Cà đại hoa trắng
JP	<u>Suzume-nasubi</u>	スズメナスビ

Remarks

Distribution: Originally from South America. Now commonly naturalized in the tropics.

Life form: Perennial herb. 2-3m tall. A fruit is 8-10mm in diameter. Flower is white.

Use: It is an essential ingredient in Thai curry and many dishes in Indochina. It also eaten raw with paste. It has a subtle bitter taste.

In the traditional medicine of Thailand, the fruit is used as an emulgent, antitussive, and digestant. Squeezed leaves are used to stop bleeding.

General info.: It is planted in home gardens. Plants that grow on the wayside or a common are used.

Ref. No.: 18, 26, 27, 46, 49, 52



Feb. 2010, Savannakhet, Laos

Solanum stramonifolium

Order: Solanales
Family: Solanaceae

LA	<u>Eak</u>	<u>ໝາກເອິກ</u>
KH		
TH	<u>Ma uek</u>	<u>มะอึ๊ก</u>
VN	<u>Ca phao</u>	<u>Cà pháo</u>
JP	<u>Coconiya, Ke-nasu</u>	<u>ココニージャ、ケナス</u>

Remarks

Distribution: Originally from Amazon. Commonly in Indochina.

Life form: Perennial herb. Up to 2m tall. Fruit 2-3cm in diameter, covered by densely hairs. Flower is white or purple.

Use: The ripe fruits are used for papaya salad. The fruits are used as juice that has a flavor similar to peach and tomato. It is also eaten raw. In Laos, it is a ingredient in Cheo dip sauce. It contains vitamin C.

General info.: Sometimes, the hair removed fruits are sold in the market.

Ref. No.: 7, 49



Jun. 2007 Vientiane province, Laos

Solanum violaceum

Order: Solanales
Family: Solanaceae

LA	<u>Kheng khom</u>	<u>ໝາກແຄງຂົມ</u>
KH	<u>Traup put raw nyong pray,</u> <u>Trab put lumnhong</u>	<u>ត្រាប់ពត់ឈ្មួញ</u>
TH	<u>Ma kae khom, Ma waeng, Ma</u> <u>khwaeng dam</u>	
VN	<u>Ca An</u>	<u>Cà Ân</u>
JP	<u>Tenjiku-nasubi</u>	<u>テンジクナスビ</u>

Remarks

Distribution: Widely cultivated in tropical Asia.

Life form: Perennial herb. 1.5m tall. The Color of flower is purple. The fruit is 6mm in diameter.

Use: Young fruit is eaten with fermented fish paste, Laap, and Coi. It contains vitamin B.

In the traditional medicine of Thailand, it has effect against diabetes, food poisoning, and fever.

General info.: This fruit looks like *S. torvum*. An identifying point in a market is the purple color of flower, the small size of fruit and arrangement of fruits. The fruits are attached equals right and left of the scape lengthwise. The meaning of “khom” in Lao and Thai is bitter.

Ref. No.: 7, 46, 48, 49



Jul. 2010 Pakse, Laos

Ipomoea aquatic

Order: Solanales
Family: Convolvulaceae

LA	Bong	ឆ័កប្លា
KH	Trow kun sor	ត្រកួន
TH	Phak bung	ผักบุ้ง
VN	Rau muong	Rau muống
JP	You-sai, Kuu-shin-sai	ヨウサイ、空心菜

Remarks

Distribution: Native of tropical Asia. Cultivated in the tropical and sub-tropical region.

Life form: A perennial or sometimes annual. It roots in the ground at the shallow end or banks of a pond or canal. Hollow stems become elongated on the water surface or ground.

Use: Young shoots are eaten raw or cooked. It is a very popular daily vegetable in Asia. There are various recipes. There is commercial cultivation for urban communities. In the local area, plants growing in village canals or ponds are used.

In the traditional medicine of Cambodia, shoots are the component of a remedy against Delirium and its associated high fever. The buds are used to make a paste for herpes.

General info.: There is a legend that forgetfulness will occur if taken too much.

Ref. No.: 5, 10, 18, 46, 49



Jul. 2010 Kampong Cham, Cambodia

Ipomoea batatas

Order: Solanales
Family: Convolvulaceae

LA	Man darng, Man thet	
KH	Domlong, Damloong chhie	ដំឡូងជ្វា
TH	Man thet, Mak oi	มันเทศ
VN	Rau lang, Khoai lang	Rau lang, Khoai lang
JP	Satsuma-imo	サツマイモ

Remarks

Distribution: Originated from South America.

Life form: Annual herb.

Use: A root tuber known as Sweet potato. Not only the root tuber but also young shoot is eaten in Indochina.

General info.: It was the vegetable of which it replaced Yam and Taro in Indochina in the 16th century.

Ref. No.: 14, 27, 42, 46



Jul. 2011 Ratanakiri, Cambodia

Acmella paniculata

Order: Asterales
Family: Asteraceae

LA	<u>Khaat</u>	<u>ຜັກຄາດ</u>
KH		
TH	<u>Khrat, Khrat phawen</u>	<u>ผักคราด</u>
VN	<u>Cúc ao</u>	<u>Cúc áo</u>
JP	<u>Sennichi-modoki</u>	<u>センニチモドキ</u>

Remarks

Distribution: Originated from America. Naturalized to the Asia tropics.

Life form: Annual plant. 50-100cm tall. It grows in the wayside, fields, and village commons.

Use: Young leaves and flowers are eaten raw with paste as a salad. It is used for curry or Laap. It contains rich minerals, calcium, iron, and vitamins A, B, and C.

Medicinal component are also rich in the flower, leaf, and root. Since spilanthol is contained in a flower, it has a paralysis action. In the traditional medicine of Thailand, the root is used as a purgative and flesh leaves have an anti-inflammatory effect.

Ref. No.: 5, 12, 22, 26, 40, 46, 48, 49



Sep 2009 Chiang Rai, Thailand

Gnaphalium sp.

Order: Asterales
Family: Asteraceae

LA	<u>Kath khao, Kev</u>	<u>ດອກຜັກກາດຂາວ</u>
KH		
TH		
VN	<u>Khuc vang, Khuc te</u>	<u>Khúc vàng, Khúc tè</u>
JP	<u>Hahako-gusa</u>	<u>ハハコグサの仲間</u>

Remarks

Life form: Annual plant. 10-20cm tall.

General info.: It is seen rarely at a local market in Laos.



Feb. 2010 Vientiane province, Laos

There is a new year custom of using this plant in Japan. "Nanakusa-Gayu" is the porridge which uses seven ingredients of wild herbs and is eaten by the Japanese on the 7th of January. The seven bitter plants used are; *Oenanthe javanica*, *Capsella bursa-pastoris*, *Stellaria media*, *Lapsanastrum apogonoides*, *Brassica rapa*, *Raphanus sativus*, and *Gnaphalium affine*.

Ref. No.: 12, 18

Hydrocotyle verticillata

Order: Apiales
Family: Araliaceae

LA	Boua bok, Nok	
KH		
TH	Waen kaeo	
VN	Rau ma la sen, Rau ma nhat	Rau má lá sen, Rau má Nhật
JP	Uchiwa-zenikusa	ウチワゼニクサ

Remarks

Distribution: Originated from north America.

Life form: Perennial. Emergent plant. Leaf stem attached center of leaf.

Use: Leaves are eaten as a vegetable. Since Lao name of this plant is same as *Centella asiatica*, this plant is probably used similarly.

Ref. No.: 12, 46



Feb. 2010 Savanaket, Laos

Trevesia palmate

Order: Apiales
Family: Araliaceae

LA	Deua	ໝາກເດືອ
KH		
TH	Tang luang	
VN	Nhat phien, Thoi hoang, Du du rung	Nhật phiến, Thôi hoàng, đu đủ rừng
JP	Ally of Nanyou-yatsude	Ally of ナンヨウヤツデ

Remarks

Distribution: From India and South China, Myanmar to Indochina.

Life form: Small tree. Up to 5m.

Use: Young flowers are eaten at the end of the rainy season. It is used as bitter ingredient for spicy curry.

It is known as the popular ornamental plant named "snow flake"

General info.: There is no record of cultivation of this plant.

Ref. No.: 15, 17, 48, 49



Feb. 2010 Louang Phrabang, Laos

Anethum graveolens

Order: Apiales
Family: Apiaceae

LA	Sii	ຜັກຊີ
KH		
TH	Thian khao plueak, Thian ta takkataen	
VN	Rau thi la, Thia la	Rau Thì là, Thì là
JP	Inondo, Dyl	イノンド、デイル

Remarks

Distribution: Europe, Mediterranean area, SW. Asia.

Life form: Annual herb. 50-100cm tall.



Aug 2013 Ho Chi Minh City, Vietnam

Use: Leaves are used as a vegetable. It is an ingredient in the hot and strong flavored curry named “Kaeng Lao”. It is popular in the local market.

Ref. No.: 14, 42, 46, 47

Centella asiatica

Order: Apiales
Family: Apiaceae

LA	Nok	ຜັກໝອກ
KH	Trachiek, Tranh, Chi, Mlu	ត្រចៀកត្រាញ់
TH	Boua bok, Nok, Wengkork	บัวบก
VN	Rau ma	Rau Má
JP	Tsubokusa	ツボクサ

Remarks

Distribution: Tropical and subtropical regions of the world.

Life form: Perennial creeping herb.



Sep. 2009 Chiang Rai, Thailand

Use: Leaves are consumed as vegetables. Raw leaves are used as salad with fermented shrimp paste. It is eaten with noodles, curry, Laap, and Coi. Extracted leaves are used to make a fresh juice. It has the invigorating scent peculiar to Apiaceae.

It has been known as a medicinal plant since early times. Sap of leaves has a antimicrobial property. It clarifies the blood and is well known also for treating cough and tuberculosis. It is known to have both sedative and moral stable actions.

Ref. No.: 5, 14, 18, 27, 40, 45, 46, 47

Coriandrum sativum

Order: Apiales
Family: Apiaceae

LA	Horm parn, Horm porm	ຜັກຂະແຍະ
KH	Chi van soy	កិន់ស៊ីយ (ជី)
TH	Chi, Hom pom, Hom noi	ผักชี
VN	Ngo ri, Rau mui, Ngo ta	Ngò rí, Rau Mùi, Ngò ta
JP	Koendoro, Kousau, Koliandaa, Phak-chi	コエンドロ、香菜、コリアンダー、パクチー

Remarks

Distribution: Europe, Mediterranean, Asia. Cultivated in the tropics and sub-tropics.

Life form: Annual herb. 50-100cm tall.

Use: The fruit is commonly used as a condiment and the leaves as a garnish or salad. The leaves or the entire young plants are popular as a culinary herb and vegetable in Southeast Asia.

The oil extracted from the seeds can be efficient against cough and invigorating.

Ref. No.: 7, 14, 27, 45, 46, 47



Nov. 2008 Louang Phrabang Laos

Eryngium foetidum

Order: Apiales
Family: Apiaceae

LA	Hom pae	ຫອມປາຍ
KH	Chi rona	ជីបាភីង, ជីបន្ទា
TH	Chi farang, Hom pom kula, Chi doi	ผักชีฝรั่ง
VN	Ngo tay, Ngo gai	Ngò tây, Ngò gai
JP	Ooba-Koendoro, Togeba-koliandaa	オオバコエンドロ、トゲバコリアンダー

Remarks

Distribution: Tropical America, introduced to East and Southeast Asia.

Life form: Perennial herb. 6-35cm tall.

Use: Leaves and flower buds are aromatic and smell like coriander. It is used as a condiment in soups, noodle, and fish dishes.

General info.: It is popular in the local market. It is grown in a home-garden and a village common.

Ref. No.: 7, 14, 27, 45, 46, 47



Sep. 2007 Vientiane province, Laos

Spirogyra spp.

Order: Zygnematales
Family: Zygnemataceae

LA	Thao	ເຖົ້າ
KH		
TH	Thao, Phak kai	
VN	Tao xoan, Rong nhot	Tảo xoắn, Rong nhót
JP	Aomidoro	アオミドロ

Remarks

Life form: Algae in the fresh water. Fine green line has no branch and it feels slimy, the possibility of spirogyra is high.

Use: It is eaten in soup, as well as with Kaeng and Laap. It is also eaten raw or boiled with Thai salad. It is slimy like seaweed in texture when put into soup.

It contains vitamin A and calcium. It is used as a medicine to reduce cholesterol, as an iodine supplement, and as a laxative. In traditional medicine, it is supposed that it should not be eaten since it is thought to cause internal bleeding in elderly people.

General info.: It grows in canals, ditches, and pools. It is used as a cooking ingredient only when grown in clean water. In the Xaythany district of Vientian prefecture, Tao taken from a village pond was sold to the market. There are some villagers who cultivate it in a small pond for self-consumption during the dry season.

Tao is a plant which photosynthesizes although there are no leaves, stems and roots.

Ref. No.: 1, 7, 24, 49, 50



Jul. 2008 Vientiane pref., Laos



Jun. 2010 Vientiane pref., Laos



Nov. 2008 Louang Phrabang, Laos

Cladophora spp.

Order: Cladophorales
Family: Cladophoraceae

LA	<u>Khai phane</u>	<u>ໄຄແຜ່ນ</u>
KH		
TH		
VN	<u>Rong mem</u>	<u>Rong mềm</u>
JP	<u>Kamoji-shiogusa</u>	<u>カモジシオグサ</u>

Remarks

Distribution: All over the world.

Life form: Algae. 0.1mm in diameter and 1m in length.

Use: Mixed Khai phane and seasonings are extended like a sheet and dried. The dried Khai phane sheets are fried quickly in oil. It has a crispy texture and flavor and is well matched with boiled rice.

General info.: It starts to elongate in the dry season when the river water level is down and water becomes clear. Khai phane is a main food source for the Mekong giant catfish (*Pangasianodon gigas*) which is an indigenous and endangered species of Mekong river. Khai phane belongs to the plant group which photosynthesizes.

Ref. No.: 1, 2, 3, 24, 50



Feb. 2010 Louang Phrabang, Laos



Feb. 2010 Louang Phrabang, Laos



Feb. 2010 Thin Hong, Louang Phrabang, Laos



Feb. 2010 Louang Phrabang, Laos



Feb. 2010 Louang Phrabang, Laos

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Fungus

Fungus

In general, mushrooms are a product from the mountains. It is not typically included as Mizube no Sachi; however, we often came across wild mushrooms during the research at markets. When considering products that are traded at markets, mushrooms are harvested from nearby villages and neighborhoods. Therefore, we decided they can be added to Mizube no Sachi.

Identification of fungi could be difficult. Ideally, detailed observation and testing of color reaction using chemicals of spores are necessary. However, in this research, most of the species were identified through referring field guides and information from the internet. We ask for the reader's understanding on this approach.

There are some routes of supplying mushrooms in Mekong river basin markets. One is factory-produced ones which are often packed in plastic containers. The packaged mushrooms are only found in supermarkets that have refrigerators. Dried mushrooms such as *Auricularia auricular*, *A. polytricha*, *Lentinus edodes* are often sighted in dried goods specialty shops. Those are fungi that are produced in China and Thailand and have been imported.

Another route is local farm-raised mushrooms. These mushrooms such as *Pleurotus ostreatus*, *Volvariella volcacea*, *Lentinus polychrous* are produced at farms near markets and often sold fresh. *Lentinus edodes* is not widely produced currently, but a few farms make it. *Pleurotus ostreatus* production method has recently gained more popularity, and it is said to be contributing in bringing income to the farms. Shapes, sizes, and colors appear different. This may be due to a difference in breed and culture media.

The other route is the wild collection, which is the most appropriate as to be Mizube no Sachi. There are certain people who prefer wild mushrooms over cultivated ones. Depending on the season, especially beginning of the dry season which is September through March, various mushrooms are seen at markets. Most popular ones are *Termitomyces* spp., Boletaceae spp., *Russula* spp., Tricholomataceae sp.. Other than those, *Schizophyllum commune* is used for making broth, *Astraeus hygrometricus* is put in soup to enjoy the texture of its springy outer skin, and many other mushrooms are used.

On the other hand, there are many cases of food poisoning by mushroom. Some varieties of *Russula* spp. have a poison that can be fatal. Therefore, use of mushrooms should be done with caution, but despite the fact, people continue to enjoy the flavorful mushrooms.



30 Jun. 2011 Pakse, Laos

Pleurotus ostreatus

Order: Agaricales
Family: Pleurotaceae

LA		
KH	<u>Psat, Psat mayura</u>	
TH	<u>Het paohu</u>	
VN	<u>Nam so (nam bao ngu)</u>	<u>Nấm sò (nấm bào ngư)</u>
JP	<u>Hira-take</u>	<u>ヒラタケ</u>

Remarks

Basic Information

It is one of cultivated mushrooms that are commonly traded in markets in Indo-China. Only farm-raised ones are found in markets. It has become a popular produce for farmers since it is grown easily by using hay to make the breeding bed. The fruitbody appears different depending on the variety as well as the structure of the breeding bed. Its Cambodian name, “Psat”, means mushroom. It was called “Psat mayura”, in Ratanakiri, Cambodia.



10 Jun. 2007 Vientiane, Laos



17 Feb. 2010 Pakse New Market, Pakse, Laos



17 Feb. 2010 Pakse New Market, Pakse, Laos



17 Feb. 2010 Pakse New Market, Pakse, Laos

Lentinus polychrous

Order: Agaricales
Family: Pleurotaceae

LA	Het bot, Het kadang, Het khao	
KH	Psat chhu, Psat sway, Psat ta woa	
TH	Het lom	
VN	Nam so(nam bao ngu)	Nấm sò (nấm bào ngư)
JP	Kegawa-take	ケガワタケ類

Remarks

Basic Information

This type of mushroom is grown widely around Indo-China region, and some species are often found in markets. However, it is difficult to identify those species. A few wild mushrooms can be found at markets, but in this listing, we put cultivated variety of *L. polychrous* as a typical type. In Laos the, following species are grown:

L. squarrosulus (Laos; Het khon khao, Thai; Het khon khao),
L. strigosus (Laos; Het phai, Het hou khuang), *L. sajor-caju*
(= *Pleurotus sajor-caju*) (Laos; Het tin pok, Thai; Het nan fa),

L. volemus (Laos; Het phan). Its Cambodian name, “Psat chhu”, means a mushroom growing on a tree. “Psat sway”, means a mushroom growing on a Mango tree.

Use

Both wild and cultivated mushrooms of this type become very hard when grown too big. It is too hard to eat this way, but people still use it because of its good taste, by chopping it finely. It is used in variety of dishes such as stir-fry or soup.



14 Feb. 2010 Lamsaktay Market,
Champasak, Laos



15 Feb. 2010 Savan Sai Market,
Savannakhet, Laos



15 Feb. 2010 Savan Sai Market, Savannakhet,
Laos



15 Feb. 2010 Savan Sai Market, Savannakhet,
Laos



17 Feb. 2010 Pakse New Market, Champasak,
Laos



20 Feb. 2010 Dong Makai Market, Vientiane,
Laos



20 Feb. 2010 Thakhek, Laos



10 Jun. 2007 Vientiane, Laos



20 Feb. 2010 Thakhek, Laos



Lentinus sp.

Lentinus edodes

Order: Agaricales
Family: Pleurotaceae

LA	<u>Het hom</u>	
KH	<u>Psat kliem, Psat kumau</u>	
TH	<u>Het hom, Hed horm, Hed hom sot</u>	
VN	<u>Nam huong(nam dong co)</u>	<u>Nấm hương (nấm đông cô)</u>
JP	<u>Shii-take</u>	<u>シイタケ</u>

Remarks

Basic Information

It is sighted occasionally in markets in Indo-China. It does not look very appealing due to its small size. This is believed because of a lack of nutrients in its breeding bed. Although it is said to be native and distributed in Southeast Asia, we have not been able to find wild *Lentinus edodes* in the markets. Most of this mushroom sold in Cambodia is dried. Fresh ones appear occasionally in markets in Phnom Penh, but these are grown in China and imported via Vietnam.



20 Sep. 2009 Mae Sai Market, Chiang Rai, Thai



20 Sep. 2009 Mae Sai Market, Chiang Rai, Thai

Schizophyllum commune

Order: Agaricales
Family: Pleurotaceae

LA	<u>Het kab kae, Het tin kab kae,</u> <u>Het bee, Het khao tok</u>	
KH		
TH	<u>Het hu</u>	
VN		
JP	<u>Suehiro-take</u>	<u>スエヒロタケ</u>

Remarks

Use

It is used as making soup stock. This mushroom is very hard, so it is not eaten as it is. Its Lao name, “Het kab kae”, means gecko (kab kae) mushroom (het), and “Het tin kab kae” means, “mushroom that gecko eats”.



09 Sep. 2007 Vientiane, Laos



10 Jun. 2007 Vientiane, Laos



10 Jun. 2007 Vientiane, Laos



08 Nov. 2008 Tha Heua Market, Louang Phabang,
Laos

Tricholomataceae Gen. sp.

Order: Agaricales

Family: Tricholomataceae

LA	_____	_____
KH	<u>Psat kanchoun</u>	_____
TH	_____	_____
VN	<u>Nam dui ga</u>	<u>Nấm đùi gà</u>
JP	<u>Shimeji</u>	<u>シメジの1種</u>

Remarks

Basic Information

There are records from Laos that says *Trichostoma crissum* is called Het tin het, Het chan, Het tab tao khao, and Het tin pha. In Cambodia, this mushroom is said to taste good but is expensive.



25 Jul. 2010 Warin Chamrap Market,
Ubon Ratchathani, Thailand

Termitomyces spp.

Order: Agaricales

Family: Tricholomataceae

LA	Het pouak, Het pouk, Het tab, Het pouak tab	
KH	Psat dambouk	
TH	Het kon	
VN	Nam moi	Nấm mối
JP	Shiroari-take	シロアリタケ類

Remarks

Basic Information

Its fruiting body appears from mycelium which is developed inside termite mounds. In Laos, twelve species

of *Termitomyces* spp. are known. Each species has a different appearance. Many of them are edible while there are some that people avoid because they are supposed to be poisonous. *Termitomyces* spp. is one of most popular among wild mushrooms, along with *Boletaceae* Gen. spp., and *Russula* spp..

T. arbiceps (Thai; Het kon), *T. aurantiacus* (Thai; Het kon), *T. microcarpus* (Laos; Het tab kai noi) , *T. robustus* (Laos; Het pouak lao, Het pouak chik, Het pouak phane) , *T. albuminosus* (Laos; Het kone) , *T. clypeatus* (Laos; Het tab chik, Thai; Het kon) , *T. eurrhisus* (Het tab) , *T. fuliginosus* (Thai; Het kon) , *T. globules* (Laos; Het tab, Het pouak) , *T. schimperi* (Laos; Het pouak tab nhai) , *T. striatus* (Laos; Het tab dong, Thai; Het kon) , *T. tyleranus* (Laos; Het pouak khao) .



24 Jul. 2010 Pakse New Market, Pakse, Laos



24 Jul. 2010 Lomsak Tay Market, Pakse, Laos



24 Jul. 2010 Lomsak Tay Market, Pakse, Laos
Termitomyces microcarpus

Amanita spp.

Order: Agaricales
Family: Amanitaceae

LA	Het la ngok, Het la ngak, Het meuak	
KH	Psat kompingdoug	
TH		
VN	Mot dang nam doc (nguy hiem)	Một dạng nấm độc (nguy hiem)
JP	Tamago-take	タマゴタケ類

Remarks

Basic Information

Many of the mushrooms of *Amanita* spp. are fatally poisonous and only a few species are collected as food. Examples of edible ones are: *A. caesarea* (Laos; Het la ngok daeng) , *A. hemibapha* (Laos; Het la ngok leuang) , *A. princeps* (Laos; Het la ngok khao) *A. vaginata* (Laos; Het khi ka deuane, Thai; Het kai) . Its Cambodian name, “Psat kompingdoug”, means buds of coconut palm tree.



19 Sep. 2009 Thung Yao, Lamphun, Thai



19 Sep. 2009 Thung Yao, Lamphun, Thai



10 Jun. 2007 Vientiane, Laos



10 Jun. 2007 Vientiane, Laos

Volvariella volcacea

Order: Agaricales
Family: Pluteaceae

LA	<u>Het fang</u>	
KH	<u>Psat chombaung</u>	
TH	<u>Het fang</u>	
VN	<u>Nam rom</u>	<u>Nấm Rơm</u>
JP	<u>Fukuro-take</u>	<u>フクロタケ</u>

Remarks

Basic Information

It is cultivated widely by making a mushroom bed with

straw. This mushroom and *Pleurotus ostreatus*, *Panus* spp. can be called three most grown fungi in Indo-China, because they are seen at almost any market in the region. Therefore, it is naturally assumed that these mushrooms are important ingredients of most popular dishes. Its Cambodian name, “Psat chombaung”, means “mushroom of straw mounds”. English name: Straw mushroom.



10 Jun. 2007 Vientiane, Laos



15 Feb. 2010 Savan Sai Market, Savannakhet, Laos



20 Sep. 2009 Mae Sai Market, Chiang Rai, Thailand



20 Sep. 2009 Mae Sai Market, Chiang Rai, Thailand

Boletus edulis

Order: Boletales
Family: Boletaceae

LA	<u>Het pheung dam, Het tab tao</u>	
KH		
TH	<u>Het taitaodam</u>	
VN		
JP	<u>Yamadori-take</u>	<u>ヤマドリタケ</u>

Remarks

Basic Information

It is often seen during the dry season in Thailand and Laos. It looks like a few different species are mixed in one basket because they have a slightly different appearance. It is not clear how many species are mixed together.



14 Feb. 2010 Luk2 Market, Thakhek,
Laos

Boletus sp.1

Order: Boletales
Family: Boletaceae

LA		
KH		
TH	Het hou	
VN		
JP	Amiashi-iguchi	アミアシイグチ(仮称)

Remarks

Basic Information

This mushroom was observed in Southern Laos in September. It is one of *Boletus* sp.. It turns dark when cooked, and is often stir-fried with pork to be served.



19 Feb. 2010 Thakhek , Laos



19 Feb. 2010 Thakhek , Laos



20 Feb. 2010 Thakhek , Laos



19 Feb. 2010 Thakhek , Laos

Boletus sp.2

Order: Boletales
Family: Boletaceae

LA	<u>Het nam ma</u>	
KH	<u>Psat chombo</u>	
TH		
VN		
JP	<u>Tsuchi-iguchi</u>	ツチイグチ(仮称)

Remarks

Basic Information

It has thick and crisp flesh, but also a earthy flavor. It is preferred for stewing. Its Lao name, “Het nam ma”, means “Areca palm mushroom”. Its Cambodian name, “Psat chombo”, is the name of a tree, and they use this mushroom as medicinal and aphrodisiac.



14 Feb. 2010 Luk2 Market, Thakhek, Laos



23 Sep. 2009 Mouang Keo Market, Houay Xai, Laos



24 Jul. 2010 Lomsak Tay Market, Pakse, Laos



19 Sep. 2009 Thung Yao, Lamphun, Thai

Boletaceae Gen. spp.

Order: Boletales
Family: Boletaceae

LA	_____	_____
KH	_____	_____
TH	<u>Het phaen</u>	_____
VN	_____	_____
JP	<u>Iguchi</u>	<u>イグチ類</u>

Remarks

Basic Information

Boletaceae Gen. spp. are important edible wild mushrooms in Indo-China peninsula. Many seasonable varieties are found in markets around the region. There are records from Laos about *Boletus edulis*, *Boletus chrysenteroides* (Laos; Het pheung leuang), and *Boletus chromape* (Laos; Het pheung tin leuang). Many other species are being sold.



14 Feb. 2010 Luk2 Market, Thakhek, Laos



14 Feb. 2010 Luk2 Market, Thakhek, Laos



14 Feb. 2010 Luk2 Market, Thakhek, Laos



10 Jun. 2007 Vientiane, Laos

Russula delica

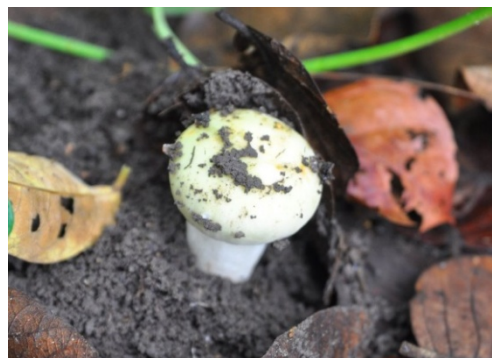
Order: Russulales
Family: Russulaceae

LA	<u>Het khai khao, Het lom khao</u>	
KH		
TH	<u>Het lom, Het takai</u>	
VN		
JP	<u>Shirohatsu</u>	<u>シロハツ</u>

Remarks

Basic Information

The peak season of this mushroom is September in Northern Thailand, and many people go to the mountains to pick it. It is often stir-fried with meat or put in soup. It is called, “Het khao khai”, in Attapeu region in Laos, which means “egg white mushroom”.



19 Sep. 2009 Thung Yao, Lamphun, Thailand



19 Sep. 2009 Thung Yao, Lamphun, Thailand



10 Jun. 2007 Vientiane, Laos



19 Sep. 2009 Thung Yao, Lamphun, Thailand

Russula spp.

Order: Russulales
Family: Russulaceae

LA	<u>Het din</u>	
KH		
TH		
VN		
JP	<u>Benitake</u>	<u>ベニタケ類</u>

Remarks

Basic Information

Within *Russula* spp., a few more species are used as food other than *Russula delica*. However, many of them have similar appearance and it is difficult to confirm if a designated name and a fruiting body matches. Depending on the country, some species are regarded as poisonous. Therefore, identification of *Russula* spp. needs to be organized by a specialist. There are some species that are fatally poisonous, so its consumption without proper identification should be avoided. There are many cases of serious poisoning from this mushroom. *R. lepida* (Laos; Het daeng, Het nam mak), *R. densifolia*

(Laos; Het than noi, poisonous in Taiwan), *R. alboareolata* (Laos; Het khao peng), *R. a cyanoxantha* (Laos; Het na mouang), *R. emetic* (poisonous in Japan and Taiwan, Laos; Het khai lang khiou), *R. foetens* (poisonous in Japan and Taiwan, Laos; Het khai), *R. nigricans* (Thai; Het taan), *R. virescens* (Laos; Het na ngoua).



19 Sep. 2009 Thung Yao, Lamphun,
Thailand



08 Nov. 2008 Tha Heua Market, Louang
Phabang, Laos



19 Sep. 2009 Thung Yao, Lamphun, Thai



19 Sep. 2009 Thung Yao, Lamphun, Thai



19 Sep. 2009 Thung Yao, Lamphun, Thai



19 Sep. 2009 Thung Yao, Lamphun, Thai



19 Sep. 2009 Thung Yao, Lamphun, Thai



19 Sep. 2009 Thung Yao, Lamphun, Thai

Russula aeruginea

Order: Russulales
Family: Russulaceae

LA

KH

TH

VN

JP

Remarks

Basic Information

It is popular in Northern Thailand because of its taste. It was washed and sold on a big plate.



19 Sep. 2009 Thung Yao, Lamphun, Thailand



19 Sep. 2009 Thung Yao, Lamphun, Thailand

Lactarius volemus

Order: Russulales
Family: Russulaceae

LA	_____	_____
KH	_____	_____
TH	<u>Het hart</u>	_____
VN	_____	_____
JP	<u>Chichitake</u>	<u>チチタケ</u>

Remarks

Basic Information

It was spotted only in Northern Thailand.



19 Sep. 2009 Thung Yao, Lamphun,
Thailand



19 Sep. 2009 Thung Yao, Lamphun,
Thailand

Gomphaceae Gen. sp.

Order: Gomphales
Family: Gomphaceae

LA	<u>Het nouath</u>	
KH		
TH		
VN		
JP	<u>Houkitake</u>	<u>ハウキタケの1種</u>

Remarks

Basic Information

This type of mushroom is rarely seen in Indo-China Peninsula. It was found only once in Northern Thailand in September. Its Lao name, “Het nouath”, means “beard mushroom”.



19 Sep. 2009 Thung Yao, Lamphun,
Thailand

Auricularia polytricha

Order: Auriculariales
Family: Auriculariaceae

LA	<u>Het hou nou dam, Het hou ling, Katan,</u>	
KH	<u>Psat trouchea kondol</u>	
TH		
VN	<u>Nam meo</u>	<u>Nấm mèo</u>
JP	<u>Arage-kikurage</u>	<u>アラゲキクラゲ</u>

Remarks

Basic Information

It is less often seen than *A. auricular* in markets.

It is said to be bred in beds, but we could not confirm details on that method. We also heard that it is cultivated by inoculating logs with mycelium. In the wild, it is found growing on fallen or semi-dead trees. Its Lao name, “Het hou nou dam”, means “black rat’s ear mushroom”, and “Het hou ling” means “monkey’s ear mushroom”. Its Cambodian name, “Psat trouchea kondol”, also means “rat’s ear mushroom”.



10 Jun. 2007 Vientiane, Laos



20 Feb. 2010 Thakhek, Laos



20 Feb. 2010 Thakhek, Laos

Auricularia auricula

Order: Auriculariales
Family: Auriculariaceae

LA	<u>Het hou nou daeng.</u>	
KH	<u>Psat trouchea kondol</u>	
TH	<u>Het hu nu</u>	
VN	<u>Nam meo</u>	<u>Nấm mèo</u>
JP	<u>Kikurage</u>	<u>キクラゲ</u>

Remarks

Basic Information

It is commonly found in markets since it is a popular ingredient of stir-fry and soup dishes. Both cultivated and wild ones are sold, but cultivated ones are seen more often. In Laos, similar types of *Auricularia auricular* are collectively called, “Het sanoum (hou nou)”. Other than the term, and depending on the varieties, they call it as following: *A. delicate* (Het hou nou hang pheung), *A. fuscusuccinia* (Het hou ling), *A. tennus* (Het hou nou khao). Its Lao name means “Red rat’s ear mushroom”. In Cambodia, it is not differentiated from *A. polytricha*. English name: Mouse-ear mushroom.



10 Jun. 2007 Vientiane, Laos



08.Nov. 2008 Louang Phabang, Laos



26, Sep., 2009 Vientiane, Laos

Astraeus hygrometricus

Order: Sclerodermatales
Family: Astraeaceae

LA	<u>Het pho, Het tob, Het poh</u> <u>faai, Het poh nang</u>	
KH		
TH	<u>Het toup</u>	
VN		
JP	<u>Tsuchi-guri</u>	<u>ツチグリ</u>

Remarks

Basic Information

There are two types of *Astraeus hygrometricus*; one has a darker outer layer and the other has a lighter layer. In Laos, darker ones are called, “Het pho faai”, meaning “cotton”, and the lighter ones are called, “Het pho nang”, which means “skin”. Even after its inside had turned into spores, it is put in stir-fry or soup to be eaten. It becomes available in June through September.



30 Jun. 2011 Attapeu, Laos



11 Jun. 2007 Vientiane, Laos

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「ランナー・タイ、北タイのキノコ」 <http://lannathai.nomaki.jp/kinoko/kinoko.htm>

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