Snails and Bivalves
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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

Shell height

Shell length
### 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.
23 Jul. 2010  Near Wat Phou, Champasak, Laos

Cyclophorus spp.

14 Sep. 2011  Kok Market, Khammouane, Laos

Cyclophorus sp. 3

14 Sep. 2011  Kok Market, Khammouane, Laos

Cyclophorus sp. 2

14 Sep. 2011  Kok Market, Khammouane, Laos

Cyclophorus sp. 2

14 Sep. 2011  Kok Market, 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

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 sanails. 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.
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Viviparidae spp.

Order: Architaenioglossa
Family: Viviparidae

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**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.
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15 Sep. 2007  Tonle Sap, Siem Reap, Cambodia

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
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 trochoidea
25 Jun. 2010  Dong Makkai, Vientiane Capital, Laos
Thiaridae spp.

**Order:** Mesogastoropoda  
**Family:** Thiaridae

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. In 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.

Remarks

- LA: Hoy lekchan
- KH: Cha chraing
- TH: Hoy chedi
- VN: Oc len
- JP: Tougata kawanina

*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

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 acabra
May 2009  Vangvieng, Vientiane Province, Laos
**Hemiplecta sp. (cf. distincta)**

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**Order:** Stylommatophora  
**Family:** Ariophantidae

### 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.

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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

**Camaena sp.**
11 Oct. 2011  Laos

**Hemiplecta sp. (cf. distincta)**
19 Feb. 2010  Thakhek, Khammouane, Laos

**Hemiplecta sp.**
20 Jan. 2013  Noun Market, Champasak, Laos

**Hemiplecta sp.**
23 Jul. 2010  Near Wat Phou, Champasak, Laos

**Hemiplecta sp.**
20 Jan. 2013  Noun Market, Champasak, Laos

**Hemiplecta sp.**
23 Jul. 2010  Near Wat Phou, Champasak, Laos
## Unionidae spp.

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### 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.
24 Nov. 2009  Phonekeo, Vientiane Province, Laos

18 Feb. 2010  Lak14 Market, Champasak, Laos

26 Feb. 2009  Kampong Thom, Cambodia

18 Feb. 2010  Lak14 Market, Champasak, Laos

May 2009  Nalao, Vientiane Province, Laos

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

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

29 Jun. 2009  Dong Makkai Market, Vientiane Capital, Laos
Scabios 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
**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.

**Remarks**

*N. fluminensis*

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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