

FRUIT-FEEDING BUTTERFLIES RECORDED BY TRAPS

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The study of habitat distribution of fruit-feeding butterflies in the tropical rainforest is important for understanding their diversity in the tropics and for determining responses of butterflies to forest disturbance. Some previously works demonstrate the construction and methods of using the portable bait traps for collecting and taxonomical and ecological studies of tropical butterflies (De Vries, 1988; Austin, Riley, 1995; Tangah *et al.*, 2004; Hamer *et al.*, 2006; Hayes *et al.*, 2009). The current work is the first to describe the bait trap use in Vietnam.

I. MATERIAL AND METHOD

The standard fruit-baited traps used to sample butterfly individuals have been set in the lower canopy. Butterflies were collected by portable traps suspended 1–2 m above the ground (Figure 1).

Traps were 30 cm in diameter and 40 cm in height, and were baited with fresh mashed bananas. Following some time-proved methods traps were baited with fresh bananas on the first day of trapping and were re-baited every second day with a small piece of fresh fruit. Thus all traps contained a mixture of fresh and well-rotten bait. Traps were checked daily. Butterfly traps were operated throughout the year in different sites of Vietnam and the list of species collected is shown below (Table 1).

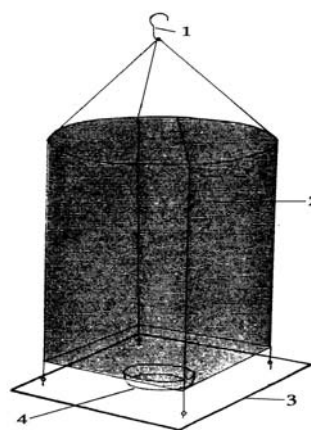


Figure 1: Construction of standard portable bait trap: 1 - hanger; 2 - nylon netting; 3 - base; 4 - bait container

II. RESULT

A total 77 butterfly species belonging to three families have been recorded in some sites of northern, central and southern Vietnam. Most species are representatives of Nymphalidae family belonging to subfamilies Satyrinae (28 species), Amathusiinae (13 species) and Limenitidinae (14 species). Satyrines representing genera *Elymnias*, *Melanitis*, *Coelites*, *Mycalasis*, *Neorina*, *Ypthima* and amathusiins of the genera *Amathusia*, *Amathuxidia*, *Zeuxidia* and *Discophora* are well known as "fruit-feeding" butterfly species and have been already collected in adjacent areas (Tangah *et al.*, 2004; Veddeler *et al.*, 2005). Representatives of similar genera (*Tanaecia*, *Euthalia* and *Lexias*) belonging to subfamily Limenitidinae were recorded in tropical forest habitats in Borneo (Hamer *et al.*, 2006). *Charaxes bernardus* and *Polyura athamas* (Nymphalinae, Charaxinae) are also well known species previously trapped in Southeast Asia (Tangah *et al.*, 2004).

Some species belonging to genera *Penthema*, *Neope*, *Zipaetis*, *Aemona*, *Stichophthalma*, *Thauria*, *Thaumantis* and *Enispe* were trapped in Vietnam for the first time. All them are well known as rotting fruit-feeding species (Monastyrskii, 2005; Novotny *et al.*, 1993) and collecting

them by fruit bait trap is not a surprise. On the contrary such nymphalids as *Euploea mulciber*, *Neptis hylas*, *Pantoporia hordonia* and riodinid *Zemerus flegyas* usually feed on flowering plants and their trapping is possibly to consider as a pure chance.

Regarding representatives of Lycaenidae family food preference for many of them is poor known. From seven species collected within tropical forest in Vietnam only *Cheritra freja* and *Prosotas nora* were trapped in Borneo (Hamer *et al.*, 2006). Other blues have not been previously mentioned as species attracted by the fruit bait. For example, both sexes of *Anthene emolus* are well attracted by the human sweat however their fruit-feeding behaviour was unknown so far. The first experience shows that the portable bait traps can effectively be used for ecological and faunistic studies in Vietnam.

Table 1

Butterfly species collected by fruit-baited traps in Vietnam

Family/subfamily, genus, species	N. Vietnam	C. Vietnam	S. Vietnam
NYMPHALIDAE: Danainae			
<i>Euploea mulciber</i> (Cramer)	*		
NYMPHALIDAE: Satyrinae			
<i>Melanitis leda</i> (Linnaeus)	*		*
<i>Melanitis phedima</i> (Cramer)	*		*
<i>Melanitis zitenius</i> (Herbst)		*	*
<i>Elymnias patna</i> (Westwood)	*		
<i>Elymnias hypermnestra</i> (Linnaeus)	*		
<i>Elymnias malelas</i> (Hewitson)	*		
<i>PentHEMA michallati</i> Janet	*		
<i>PentHEMA darlisa</i> (Moore)			*
<i>Coelites nothis</i> (Westwood)		*	*
<i>Lethe confusa</i> Aurivillius	*		
<i>Neope muirheadi</i> (C. & R. Felder)	*		
<i>Orsotriaena medus</i> (Fabricius)	*		
<i>Mycalesis inopia</i> Fruhstorfer	*		
<i>Mycalesis anaxias</i> Hewitson	*		*
<i>Mycalesis gotama</i> Moore	*		
<i>Mycalesis perseus</i> (Fabricius)	*		
<i>Mycalesis mineus</i> (Linnaeus)	*		
<i>Mycalesis perseoides</i> (Moore)	*		*
<i>Mycalesis perseus</i> (Fabricius)			*
<i>Mycalesis intermedia</i> (Moore)	*		
<i>Mycalesis mucianus</i> Fruhstorfer	*		
<i>Mycalesis sangaica</i> Butler	*		*
<i>Mycalesis malsara</i> Moore	*		
<i>Mycalesis mnasicles</i> Hewitson		*	*
<i>Mycalesis annamitica</i> Fruhstorfer	*		
<i>Ypthima baldus</i> (Fabricius)	*		

HỘI NGHỊ KHOA HỌC TOÀN QUỐC VỀ SINH THÁI VÀ TÀI NGUYÊN SINH VẬT LẦN THỨ 4

Family/subfamily, genus, species	N. Vietnam	C. Vietnam	S. Vietnam
<i>Ypthima huebneri</i> (Kirby)	*		
<i>Zipaetis unipupillata</i> Lee	*		
<i>Neomyrina neosinica</i> Lee		*	
NYMPHALIDAE: Amathusiinae			
<i>Aemona falcata</i> Dev. & Mon.		*	
<i>Stichophthalama suffusa</i> Leech	*		
<i>Stichophthalama fruhstorferi</i> Röber	*		
<i>Stichophthalma uemurai</i> Nishimura		*	
<i>Amathusia phidippus</i> (Linnaeus)			*
<i>Amathuxidia amythaon</i> (Doubleday)			*
<i>Zeuxidia masoni</i> Moore			*
<i>Thauria lathyi</i> Fruhstorfer	*		*
<i>Thaumantis diores</i> Doubleday		*	*
<i>Discophora sondaica</i> Biosduval	*	*	*
<i>Discophora deo</i> de Niceville	*		
<i>Enispe cycnus</i> Westwood		*	
<i>Enispe euthymius</i> (Doubleday)	*		
NYMPHALIDAE: Biblidinae			
<i>Ariadne ariadne</i> (Linnaeus)			
NYMPHALIDAE: Nymphalinae			
<i>Junonia almana</i> (Linnaeus)	*		
<i>Junonia lemonias</i> (Linnaeus)	*		
<i>Hypolimnas bolina</i> (Linnaeus)	*		*
<i>Kallima inachus</i> (Doyere)	*	*	
<i>Kallima albofasciata</i> Moore			*
<i>Kaniska canace</i> (Linnaeus)		*	
NYMPHALIDAE: Limenitidinae			
<i>Neptis hylas</i> (Linnaeus)	*		
<i>Pantoporia hordonia</i> (Stoll)	*		
<i>Tanaecia niepelti</i> (Strand)	*		
<i>Tanaecia julii</i> (Lesson)			*
<i>Tanaecia lepidea</i> (Butler)			*
<i>Tanaecia jahnu</i> (Moore)			*
<i>Tanaecia cocytus</i> (Fabricius)			*
<i>Euthalia phemius</i> (Doubleday)	*		
<i>Euthalia recta</i> (de Niceville)			*
<i>Euthalia teuta</i> (Doubleday)			*
<i>Euthalia evelina</i> (Stoll)			*
<i>Lexias albopunctata</i> (Crowley)			*
<i>Lexias pardalis</i> (Moore)	*		*
<i>Lexias dirtea</i> (Fabricius)			*
NYMPHALIDAE: Charaxinae			
<i>Polyura athamas</i> (Drury)	*		
<i>Charaxes bernardus</i> (Walker)			*

Family/subfamily, genus, species	N. Vietnam	C. Vietnam	S. Vietnam
NYMPHALIDAE: Apaturinae			
<i>Herona marathus</i> Doubleday	*		
<i>Rohana tonkiniana</i> (Fruhstorfer)	*		
NYMPHALIDAE: Cyrestinae			
<i>Stibochiona nicea</i> (G.R. Gray)	*		
RIODINIDAE			
<i>Zemerus flegyas</i> (Cramer)	*		
LYCAENIDAE			
<i>Prosotas nora</i> C.& R. Felder	*		
<i>Anthene emolus</i> (Godart)	*		
<i>Arhopala</i> sp.			*
<i>Loxura athymnus</i> (Stoll)	*		
<i>Yasoda tripunctata</i> (Hewitson)	*		
<i>Rapala dieneces</i> (Hewitson)			*
<i>Cheritra freja</i> (Fabricius)			*

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SỬ DỤNG BÃY CÓ MÔI BẢ THU MẪU NHÓM BƯỚM NGÀY ĂN QUẢ

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TÓM TẮT

Kiểu bẫy treo tiêu chuẩn có môi là chuỗi chín được đặt dưới tán cây rừng để thu bắt các loài bướm ngày thuộc nhóm ăn quả. Bẫy được đặt trong thời gian một năm tại các điểm nghiên cứu. Kết quả đã thu thập được 77 loài bướm ngày, trong số đó phần lớn những đại diện tập trung trong 3 họ: Satyrinae (28 loài), Amathusiinae (13 loài) và Limenitidinae (14 loài). Kết quả nghiên cứu này cho thấy có thể sử dụng loại bẫy này để nghiên cứu khu hệ và sinh thái học của nhóm bướm ngày ăn quả ở Việt Nam.