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New locality records of aberrant moth butterfly (*Liphyra brassolis* Westwood, 1864) in Thailand (Lepidoptera: Lycaenidae)

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ABSTRAC.- The rarely-found moth butterfly is one of the largest lycaenid occurring in Thailand. Its very peculiar moth-like appearance and its life cycle of close association with the green tree ant make it an interesting study object of most entomologists and nature enthusiasts. Former and recent records in this country demonstrating its local distribution in 6 provinces, except in the Northeast. Its confinement only to open disturbed habitats where naturally live the ubiquitous green tree ants, its only host, may indicate its potential distribution throughout the country.

KEY WORDS.- Moth butterfly, *Liphyra brassolis*, green tree ant, Thailand.

INTRODUCTION

The exceedingly-rare moth butterfly (*Liphyra brassolis* Westwood, 1864), a very peculiar moth-like butterfly, belongs to the family Lycaenidae. Its strange appearance and unique life cycle depending on just one species of tree ant as a host make it an interesting study object of most entomologists and butterfly enthusiasts. As a lycaenid, this butterfly is very much out of size with a wingspan of about 60 - 90 mm. Upperside the wings are yellowish orange with irregular broad black borders, which in some individuals the whole forewings are almost black; each wings with more or less distinct cell streaks and large spots at the end of the cell; in females the black wing borders are narrower. On the underside, the ground colour becoming paler and the dark markings less distinct. The slug-like larva spends the whole larval and pupal stages in the leafy

nests of green tree ant, *Oecophylla smaragdina* (Fabricius, 1775), and predates upon the ant brood. This fact has been repeatedly documented in most butterfly books dealing with the Oriental and Australian species (Bernard, 1986; Carter, 1992) and many technical articles devoted to review its taxonomic status (Ehrlich, 1960) and its association with the ants (Dejean and Beugnon, 1996; Eastwood and Fraser, 1999; Herbison-Evans and Crossley, 2002).

This butterfly has a wide range throughout the whole Oriental Region to the northernmost part of the Australian Region; where it is divided into 3 allotypic subspecies: the nominotypical one, *L. brassolis brassolis* Westwood (Figures 2 - 5), distributing from India, through Southeast Asian mainland to Peninsular Thailand; *L. brassolis abbreviata* Strand (Figure 6) is found further southwards in Peninsular Malaysia, Sumatra, Borneo and other Indonesian islands; and lastly, *L. brassolis major* Rothschild (Figure 7) confined to northern Australia.

Dealing with the interesting details on its development, its flat, slug-like cater-

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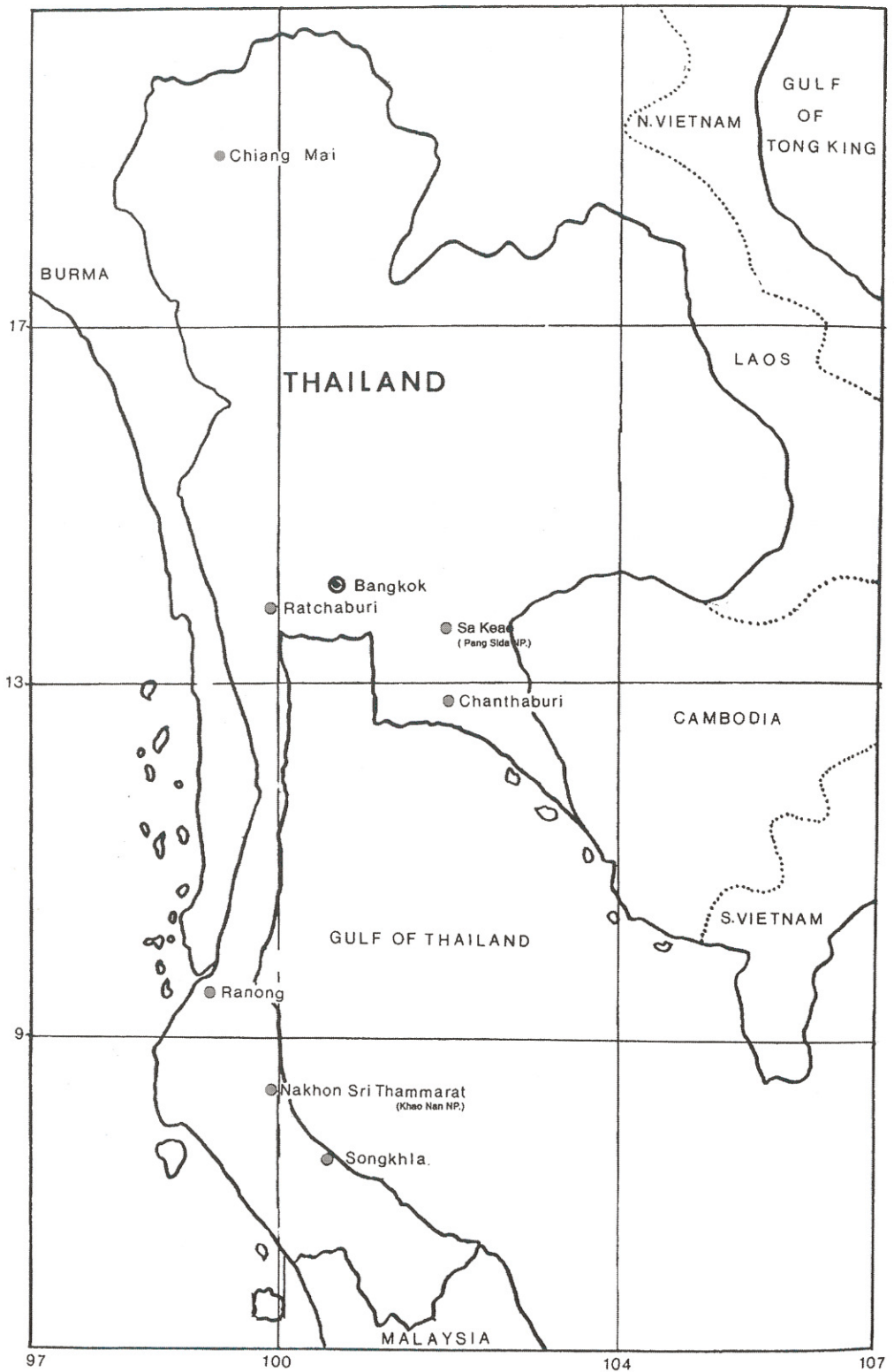


Figure 1 Distribution of Moth Butterfly in Thailand

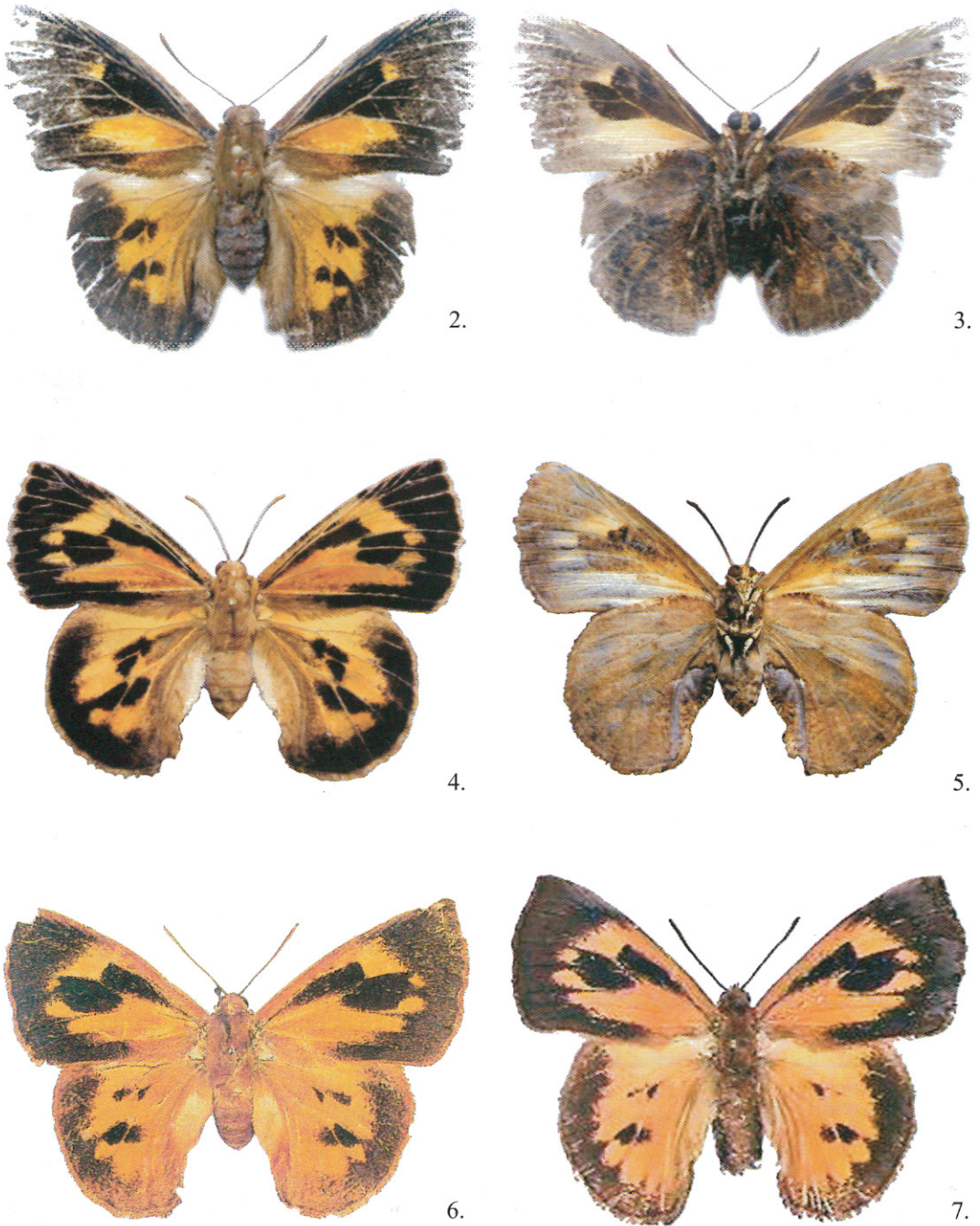


Figure 2-7 *Liphyra brassolis*. 2. *L. b. brassolis* from Khao Nan NP Thailand (male, upperside), 3: *L. b. brassolis* from Khao Nan NP Thailand (male, underside), 4. *L. b. brassolis* from Pang Sida NP Thailand (female, upperside), 5. *L. b. brassolis* from Pang Sida NP Thailand (female, underside), 6. *L. b. abbreviata* from Malay Peninsula (female, upperside) (picture from Eliot, 1991), 7. *L. b. major* from Australia (female, upperside) (picture from Herbison-Evans and Crossley, 2002).

pillars are wholly protected by a very tough, shield-like skin which can resist the attacks of the ants. When they get hungry they simply drag the ant larvae underneath their thick skin for a meal. When fully-grown, they pupate inside the last larval skin, which continues to save them as a protective shield. The newly emerged adult still has another form of protection by being covered with loose scales which will be torn off easily by the bites of attacking ants (Ehrlich, 1960).

KNOWN THAI COLLECTING LOCALITIES

For Thailand, this butterfly has been seldom recorded from a few localities in many parts of the country. As far as we can ascertain from reliable printed articles and/or actual specimens examined prior to this present work, there are only 6 records for the country. The first collecting locality was in Bangkok (Godfrey, 1916, 1932); then three more additional ones in Chiang Mai, Ratchaburi and Songkhla (Pinratana, 1981). Quite recently, Ek-Amnuay (2006) gave another two localities in Chanthaburi and Ranong. It is unfortunate that neither recorders provided more ecological notes on its collecting sites.

We want here to make known our very recent two new locality records for this aberrant butterfly species, caught during our survey works; together with field notes on its habitats and observed behaviours. It is our purpose to correlate the butterfly's collecting localities to the known habitats of the green tree ants.

The first new locality was in Pang Sida National Park in Sa Kaeo province in the Southeastern corner which is closed to Chanthaburi of Ek-Amnuay (2006). It was attracted to the light in house on the night of June 3, 2005 at 7.45 p.m. flying in quick-beating posture very similar to that of a large fussy moth. The area is an open space in front of the Park's Headquarter, surrounded by disturbed vegetation type dominated by scattered small trees of *Pterocarpus macrocarpus* Kurz, *Dalbergia*

cochinchinensis Pierre, *Lagerstoemia speciosa* (L.) Pers., *Afzelia xylocarpa* (Kurz) Craib. and *Phyllanthus emblica* Linn. This one was collected Mr. T. Jeenthong, National Science Museum staff.

Second record came from the upper part of the Peninsula in Khao Nan National Park in Nakhon Si Thammarat province; this site is about the middle point between Ek-Amnuay's Ranong and Pinratana's Songkhla, latitudes and longitudes. It was caught at a white-sheet trap set for sampling moth fauna of that national park in January, 21, 2007 by Dr. N. Pinkhao of Kasetsart University, Kamphaengsaen Campus at about 7.30 p.m. The locality is a wide clearing surrounded by slightly disturbed forests in the Headquarter area of the park with a small stream passing along the southern side.

RELATIONSHIP WITH GREEN TREE ANTS

As most moth butterflies are known to start flying in late evening in the open areas surrounded by disturbed forests; and both of our specimens were caught at light at night in similar habitat types. It is highly probable that its preferred habitats may coincide with those of the ubiquitous green tree ants, its only known host species. The ants have never been recorded living in the primary forest (Jaitrong and Ting-Nga, 2005), though they are known inhabitants of all provinces (Jaitrong and Nabhitabhata, 2005). So we assume that the moth butterfly is a denizen of the open disturbed forests or rural fruit gardens which is also the only preferred habitat of the green tree ants in Thailand. Its distribution should extend to cover all provinces, but strangely enough, until now, there is no definite records from the Northeast of the country. For the sake of comparison, its related African counterpart, the genus *Euliphyra* with its two included species, *E. mirifica* Holland and *E. leucyana* (Hewitson) are also associated with the weaver ants, *Oecophylla longinoda* (Latreille, 1802) (Dejean and Beugnon, 1996). It seems that the latter two moth butterflies will distribute

in the same pattern in the African continent too.

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LITERATURE CITED

- Bernard, D.A. 1986. *Butterflies of the Oriental Region* Part III. Kyodo-Shing Looug Ltd., Singapore.
- Carter, D. 1992. *Butterflies and moths*. Dorling Kindersley press, London.
- Dejean, A and G. Beugnon. 1996. Host-ant trail following by myrmecophilous larvae of Liphyrinae (Lepidoptera, Lycaenidae). *Oecologia* 106 (1): 1432-1939.
- Eastwood, R. and A. M. Fraser. 1999. Associations between lycaenid butterflies ant ants in Australia. *Australian Journal of Ecology* 24: 503-537.
- Ehrlich, P.R. 1960. A note on the systematic position of the giant lycaenid butterfly *Liphyra brassolis* Westwood (Lepidoptera: Papilionoidea). *The Pan-Pacific Entomologist* 36 (3): 33 -25.
- Ek-Amnuay, P. 2006. *Butterflies of Thailand*. Baan Lae Suan, Bangkok, Thailand.
- Eliot L.C.J.N. 1991. *The butterflies of the Malay Peninsula*. Malayan Nature Society, Kuala Lumpur, Malaysia.
- Godfrey, E.I. 1916. The butterflies of Siam. *Natural History Bulletin Siam Society* 2: 106-147.
- . 1932. A supplementary list of the butterflies of Siam. *Natural History Bulletin Siam Society* 2: 106-147.
- Herbison-Evans, D. and S. Crossley. 2002. *Liphyra brassolis*. Data obtained from <http://www-staff.it.uts.edu.au/~don/larvae/lyca/brassol.html> on 29 January 2008.
- Jaitrong, W. and J. Nabhitabhata. 2005. A list of know ant species of Thailand (Formicidae: Hymenoptera). *The Thailand Natural History Museum Journal* 1(1):9-54.
- Jaitrong, W. and T. Ting-nga. Ant fauna of Peninsular Botanical Garden (Khao Chong), Trang Province, Southern Thailand (Hymenoptera: Formicidae). *The Thailand Natural History Museum Journal* 1(2): 137-147.
- Latreille, P.A. 1802. *Histoire Naturelle des Fourmis*, et recueil de memoires et d' observations sur les abeilles, les araignees, les faucheurs, et autres insectes: Paris.
- Pinratana, B.A. 1981. *Butterflies in Thailand: Vol. Four Lycaenidae*. Viratham press, Bangkok, Thailand.

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