

The Moths (Lepidoptera) of Mt. Duryunsan and its Neighboring Area, Haenam-gun, Jeollanam-do, Korea

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Abstract - Moth diversity of Mt. Duryunsan and its neighboring area, Haenam, Jeonnam, collected from 2001 to 2004 is presented. A total of 498 species were identified and a logarithmic equation to the species accumulation data provided a good fit ($R^2=0.98$; $y=218.52 \text{ LN}(x) + 161.88$), predicting that 665 moth species are expected after ten years of collecting. Yearly species accumulation data showed that the moth faunal composition was changing by the appearance and disappearance of species: 94~119 species were newly collected in the following years; and 32~90 species were not collected in the following years. The fourth year was the most species-rich with 250 species. The need of long-term research of speciose insect taxa is briefly discussed.

Key words : Lepidoptera, entomofauna, subtropical forest, long-term research

INTRODUCTION

Mt. Duryunsan ($34^{\circ} 9' \text{ N}$, $126^{\circ} 8' \text{ E}$, maximum altitude 703 m) and its neighboring area is a part of mountain chains located in the southwestern coast of Jeollanam-do, Korea. The floral composition is characterized by the mild subtropical forest by mixture of evergreen and deciduous broad leaved trees (Kim *et al.* 1994).

Moths (Insecta: Lepidoptera) constitute a significant proportion of terrestrial herbivores, and their larvae, pupae, and adults are abundant food source of other trophic levels such as predators and parasites (Price 1997). The moth fauna of Mt. Duryunsan and its neighboring area has received quite low attention. List of regional lepidopteran species counted a total of 144 species (Lee *et al.* 1994). Since 2001, we had surveyed the moth fauna of Mt. Duryunsan and its neighboring area to study their diversity from the place where the lepidopteran fauna were poorly known. As a result, faunal changes during the last four years

showed the highest peak during summer in the number of species and individuals (Choi and Na 2005). Here we present the list of moth species collected by four year surveys of Mt. Duryunsan and its neighboring area with the flight time and year (s) captured.

MATERIALS AND METHODS

Field collecting was conducted at three localities of Mt. Duryunsan and its neighboring area from 2001 to 2004 (Fig. 1; Table 1). Adults were mainly collected at light, mostly using portable light traps (a 12 Watt UV lamp operated by 12 V battery; BioQuip Products, U.S.A.). Most specimens were identified to the species level and stored in the collection of the Environmental Education Department, Mokpo National University, Korea. The taxonomy and nomenclature followed Inoue *et al.* (1982), Kononenko *et al.* (1998), Park (2000), and Kim *et al.* (2001).

Coleman *et al.* (2004) applied a logarithmic regression ($y=A \text{ Ln}(x)+B$, where y is the cumulative number of species and x is the year of collection) to estimate the number

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of species anticipated after several years of sampling. We calculate the number of moth species anticipated after ten

years of sampling based on the logarithmic regression to give a preliminary number of species of Mt. Duryunsan and its neighboring area.

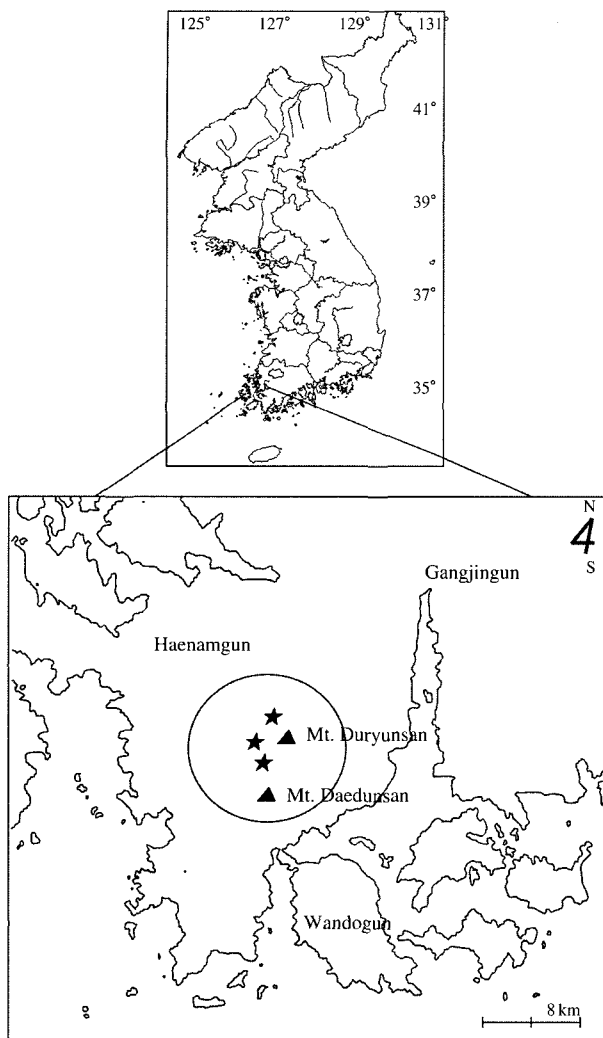


Fig. 1. A map showing the surveyed mountain area in the south-western part of the Korean peninsula. Dark circle of the lower box indicates Mt. Duryunsan and its neighboring area, Jeonnam, Korea and stars (★) indicates the collecting sites.

RESULTS AND DISCUSSION

We collected 3,821 moths representing 489 species from 18 families and listed these species with the flight time and year (s) captured in Table 2. Noctuidae was the most species-rich family collected with 181 species, followed by Geometridae (129), Pyralidae (72) and Notodontidae (25). Combined, those four families represent 83.2% of the total species taken. All other families were represented by 1 to 15 species (Choi and Na 2005).

Yearly species accumulation data show that 94 species (59%) in 2002, 119 species (48%) in 2003 and 94 species (38%) in 2004, respectively, were newly collected compared to the moth list of the preceding year. Meanwhile the proportion of moth species which were not collected in the following year was fluctuating: 71 species (44%) in 2002; 32 species (13%) in 2003; and 90 species (36%) in 2004. The fourth year of collecting was the most species-rich with 250 (Table 3). The causal factors of the compositional differences of moth species could be variable from sampling effect (artificial) to micro-ecological changes (natural) in different scales. Unfortunately, we don't have enough data to reveal this differences. It should be noted that the causal factors of faunal composition need a more thorough investigation considering several variables such as artificial and natural factors.

Applying a logarithmic equation to the species accumulation data provided a good fit ($R^2=0.98$; $y=218.52 \ln(x) + 161.88$), and gives an estimate that 665 moth species are expected after ten years of collecting. This suggests that

Table 1. Data of collecting trips of moths in Mt. Duryunsan and its neighboring area, Haenam-gun, Jeonnam

Year	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Total collecting times
2001		3/23	4/17	5/24	6/11 6/23 6/29	7/13 7/19	8/22	9/13		11/13	11
2002		3/19	4/23	5/31 5/13	6/22		8/24		10/4	11/25	8
2003	2/28		4/28	5/22	6/10 6/26		8/8 8/29	9/29	10/3 10/24	11/29	11
2004	2/24	3/30	4/14	5/23		7/12	8/9	9/9	10/6		8

Table 2. List of moths collected by light trap in Mt. Duryunsan and its neighboring area, Haenam, Jeonnam, Korea. Species name with the Korean vernacular name followed by the months collected, the total number of catches and year (s) trapped from 2001 to 2004

Family, Species	Korean name	Flight period	Total counts	Years trapped
Cossidae	굴벌레나방과			
Zeuzerinae	알락굴벌레나방亞科			
<i>Zeuzera multistrigata</i> Moore	알락굴벌레나방	July, August	3	2004
Zygaenidae	알락나방과			
Chalcosiinae	띠알락나방亞科			
<i>Pidorus glaucopis</i> (Drury)	흰띠알락나방	June	1	2003
Limacodidae	췌기나방과			
<i>Belippa horrida</i> Walker	끝검은췌기나방	July	1	2004
<i>Narosa fulgens</i> (Leech)	꼬마얼룩무늬췌기나방	July, September	20	2004
<i>Latoia sinica</i> (Moore)	뒷검은푸른췌기나방	June ~ August	13	2001, 2003, 2004
<i>Rhmnosa angulata</i> Fixsen	참췌기나방	July ~ September	10	2001, 2003, 2004
<i>Thosea sinensis coreana</i> Okano et Pak	극동췌기나방	July	2	2001
Thyrididae	창나방과			
<i>Rhodoneura vittula</i> Guenée	상수리창나방	May ~ July	14	2003, 2004
Pyralidae	명나방과			
Scopariinae	산명나방亞科			
<i>Scoparia isochroalis</i> Hampson	애기산명나방	August	2	2002
Crambinae	포충나방亞科			
<i>Pareromene</i> sp.		August	1	2003
<i>Pseudargyria interruptella</i> (Walker)	줄은빛포충나방	June	1	2002
Pyraustinae	들명나방亞科			
<i>Bradina geminalis</i> Caradja	외줄들명나방	July, August	17	2001, 2003, 2004
<i>Chabula telphusalis</i> (Walker)	팔무늬들명나방	August, September	2	2001, 2002
<i>Cnaphalocrocis medinalis</i> (Guenée)	흑명나방	July ~ October	33	2003, 2004
<i>Conogethes punctiferalis</i> (Guenée)	복숭아명나방	July	1	2004
<i>Cotachena alysoni</i> Whalley	울릉노랑들명나방	June	1	2003
<i>Cotachena pubescens</i> (Warren)	흰무늬노랑들명나방	June	1	2002
<i>Eurrhparodes accessalis</i> (Walker)	애기무늬들명나방	October	1	2002
<i>Eurrhparodes contortalis</i> Hampson	말굽무늬들명나방	August	5	2001, 2004
<i>Glyphodes duplicalia</i> Inoue	띠무늬들명나방	May	1	2002
<i>Glyphodes pryeri</i> Butler	닥나무들명나방	July	1	2004
<i>Herpetogramma fuscescens</i> (Warren)	줄점들명나방	August	2	2001
<i>Herpetogramma luctuosalis</i> (Guenée)	포도들명나방	June ~ September	18	2001 ~ 2004
<i>Herpetogramma magna</i> (Butler)	노랑줄무늬들명나방	August	2	2003
<i>Hymenia recurvalis</i> (Fabricius)	흰띠명나방	October	1	2004
<i>Maruca testulalis</i> Geyer	콩명나방	July, September, October	17	2003, 2004
<i>Microstega jessica</i> (Butler)	줄노랑들명나방	June, July	3	2003, 2004
<i>Nacoleia commixta</i> (Butler)	얼룩애기들명나방	August	2	2001, 2003
<i>Nacoleia maculalis</i> South	가루뿌린들명나방	May	2	2002
<i>Nacoleia</i> sp.		August	3	2004
<i>Omiodes indicata</i> (Fabricius)	새줄콩들명나방	July	1	2004
<i>Omiodes noctescens</i> Moore	노랑다리들명나방	June, August, October	6	2003
<i>Omiodes misera</i> (Butler)	새줄꼬마들명나방	July, September	3	2001, 2003, 2004
<i>Ostrinia palustralis memnialis</i> (Walker)	분홍무늬들명나방	May	1	2001
<i>Pagyda quadrilineata</i> Butler	몸긴네줄들명나방	June	2	2002
<i>Pagyda quinquelineata</i> Hering	네줄들명나방	August	3	2003
<i>Pionea minnehaha</i> (Preyer)	앞붉은들명나방	June	1	2002
<i>Paliga</i> sp.		June, July	2	2001
<i>Palpita inusitata</i> (Butler)	애기흰들명나방	July ~ October	8	2001 ~ 2003
<i>Palpita nigropunctalis</i> (Bremer)	수수꽃다리들명나방	March, May, August, September	11	2001 ~ 2004
<i>Pleuroptya balteata</i> (Fabricius)	갈참나무명나방	September	1	2004
<i>Pleuroptya chlorophanta</i> (Butler)	몸노랑들명나방	August, September	2	2003
<i>Pleuroptya harutai</i> (Inoue)	장미색들명나방	June	1	2003
<i>Polythlipta liquidalis</i> Leech	선비들명나방	May, October	2	2002, 2004
<i>Pseudebulea fentoni</i> (Butler)	흰얼룩들명나방	July	1	2004
<i>Pycnarmon tylostegalis</i> (Hampson)	구름무늬들명나방	July	1	2004
<i>Sinibotys evenoralis</i> (Walker)	줄허리들명나방	June	2	2003
<i>Syllepta fuscomarginalis</i> (Leech)	깃검은들명나방	June, July, August, October	15	2001, 2003, 2004
<i>Tyspanodes hypsalis</i> Warren	줄검은들명나방	June ~ September	21	2001, 2003, 2004
<i>Urespita luteofluvalis</i> (Mutuura)	노랑들명나방	June	35	2002, 2003
<i>Yezobotys</i> sp.		June	1	2001

Table 2. To be continued

Family, Species	Korean name	Flight period	Total counts	Years trapped
Nymphulinae				
<i>Cataclysta midas</i> Butler	물명나방亞科 네점노랑물명나방	June	2	2003
<i>Nymphula interruptalis</i> (Pryer)	연물명나방	August	3	2003
<i>Nymphula responsalis</i> (Walker)	얼룩애기물명나방	September	1	2003
<i>Parthenodes prodigalis</i> Leech	흰물결물명나방	August	3	2002, 2003
Galleriinae				
<i>Aphomia zelleri</i> (Joannis)	부채명나방亞科 큰부채명나방	July	4	2001
<i>amoria glaucalis</i> Caradja	앞붉은부채명나방	July	12	2001, 2004
Epipaschiinae				
<i>Lepidogma atribasalis</i> (Hampson)	집명나방亞科 타이형집명나방	July	6	2004
<i>Orthaga achatina</i> Butler	갈색집명나방	August	2	2001, 2003
<i>Orthaga olivacea</i> (Warren)	제주집명나방	July, August	5	2003, 2004
<i>Teliphasa amica</i> (Butler)	흰무리집명나방	July	1	2004
<i>Teliphasa elegans</i> (Butler)	푸른빛집명나방	July, August	12	2003, 2004
<i>Trichotophysa</i> sp.		October, November	2	2003, 2004
Pyralinae				
<i>Arippe indicator</i> Walker	비단명나방亞科 굵은띠비단명나방	June	1	2003
<i>Herculia pelasgalis</i> (Walker)	귀뿔비단명나방	August	1	2004
<i>Orthopygia glaucinalis</i> (Linnaeus)	곶은띠비단명나방	July ~ October	7	2001, 2003
<i>Orthopygia nannodes</i> (Butler)	갈색띠비단명나방	June ~ September	8	2001 ~ 2004
<i>Orybina regalis</i> (Leech)	노랑눈비단명나방	July	1	2001
<i>Pyralis regalis</i> Denis et Schiffermüller	은무리줄명나방	May ~ July, September, November	6	2001 ~ 2004
<i>Stemmatophora tsushimensis</i> Inoue	두줄명나방	July	4	2004
<i>Stemmatophora valida</i> (Butler)	검은날개비단명나방	June ~ August	8	2001, 2003, 2004
<i>Tamraca torridalis</i> (Lederer)	쌍줄비단명나방	June, July	19	2001, 2004
<i>Endotricha consocia</i> (Butler)	큰홍색뾰족명나방	June, July	28	2001 ~ 2003
<i>Endotricha kuznetzovi</i> Whalley	흰띠뾰족명나방	June	4	2001, 2003
Phycitinae				
<i>Acrobasis tokiella</i> (Ragonot)	알락명나방亞科 통알락명나방	July	1	2004
<i>Conobathra</i> sp.		July	2	2004
<i>Dioryctria abietella</i> (Denis et Schiffermüller)	솔알락명나방	July	13	2004
<i>Etilelloides</i> sp.		July	3	2004
<i>Oncocera semirubella</i> (Scopoli)	앞붉은명나방	July	1	2004
Drepanidae				
Drepaninae				
<i>Agnidra scabiosa</i> (Butler)	갈고리나방亞科 참나무갈고리나방	May, June, August, September	17	2001 ~ 2004
<i>Pseudalbara parvula</i> (Leech)	새줄꼬마갈고리나방	May, August, September	9	2002 ~ 2004
<i>Nordstroemia japonica</i> (Moore)	황줄점갈고리나방	May, July, September	3	2004
<i>Nordstroemia grisearia</i> (Staudinger)	황줄갈고리나방	May, August	3	2003
<i>Drepana curvatula</i> (Borkhausen)	밤색갈고리나방	June	1	2003
<i>Callidrepana patrana</i> (Moore)	금빛갈고리나방	June	1	2003
<i>Deroca inconclusa</i> (Walker)	납방흰갈고리나방	June, August, October	12	2001 ~ 2004
<i>Macrotilix mysticata</i> (Walker)	민갈고리나방	April ~ June, August, October	213	2001 ~ 2004
<i>Macrauzata maxima</i> Inoue	유리창갈고리나방	May, August, October	6	2001, 2003, 2004
Oretinae				
<i>Oreta pulchripes</i> Butler	노랑갈고리나방亞科 노랑갈고리나방	May	1	2004
<i>Oreta loochooana</i> Swinhoe	멧쟁이갈고리나방	April, May, October	12	2002, 2003
<i>Hypsomadius insignis</i> Butler	큰갈고리나방	May, July ~ October	30	2001 ~ 2004
Cyclidiidae				
<i>Cyclidia substigmata</i> (Hübner)	왕갈고리나방亞科 왕갈고리나방	May, August	4	2004
Thyatiridae				
<i>Euparyphasma maxima</i> (Leech)	뾰족날개나방亞科 왕뾰족날개나방	June ~ August	9	2001 ~ 2004
<i>Thyatira batis</i> (Linnaeus)	무늬뾰족날개나방	August	1	2001
<i>Horithyatira kawamurae</i> (Matsumura)	흰오뚜기무늬뾰족날개나방	April	8	2001 ~ 2004
<i>Habrosyne aurorina</i> (Butler)	애기담홍뾰족날개나방	May, August, September	4	2001, 2003, 2004
<i>Tethea ampliata</i> (Butler)	넓은뾰족날개나방	May ~ July	15	2001 ~ 2004
<i>Tethea octogesima</i> (Butler)	좁은뾰족날개나방	June ~ August	9	2001 ~ 2002
<i>Tethea consimilis</i> (Warren)	홍백띠뾰족날개나방	June, August	3	2001, 2003
<i>Epipsestis ornata</i> (Leech)	가을뾰족날개나방	October	6	2002 ~ 2004
Geometridae				
Oenochrominae				
<i>Inurois punctigeta</i> (Christoph)	별박이자나방亞科 검은점겨울자나방	November	2	2002

Table 2. To be continued

Family, Species	Korean name	Flight period	Total counts	Years trapped
<i>Pingasa aigneri</i> Prout	각시툼무늬자나방	May	1	2004
<i>Dindica virescens</i> (Butler)	각시자나방	April ~ June, August, September	8	2001 ~ 2004
<i>Agathia carissima</i> Butler	검띠푸른자나방	May, September	2	2004
<i>Agathia visenda</i> Butler	검띠발푸른자나방	September	1	2001
<i>Timandromorpha enervata</i> Inoue	툼날푸른자나방	May, July, August	25	2001, 2003, 2004
<i>Tanaorhinus reciprocata</i> (Walker)	갈고리왕푸른자나방	June, September	2	2001, 2002
<i>Geometra sponsaria</i> (Bremer)	흰띠푸른자나방	June	2	2001
<i>Geometra dieckmanni</i> Graeser	흰줄푸른자나방	May, June, August	7	2001 ~ 2004
<i>Chloromachia infracta</i> (Wileman)	흰애기푸른자나방	August	1	2004
<i>Jodis angulata</i> Inoue	애기기생푸른자나방	June	1	2002
<i>Gelasma albistrigata</i> Warren	실무늬제비푸른자나방	May	1	2004
<i>Gelasma illitirata</i> (Walker)	빛나무푸른자나방	September	1	2004
<i>Hemithea tritonaria</i> (Walker)	녹색푸른자나방	May, August	2	2002
<i>Chlorissa macrotyro</i> Inoue	강원애기푸른자나방	August	2	2002
<i>Comibaena amoenaria</i> (Oberthür)	네점푸른자나방	September	1	2004
<i>Comibaena subdelicata</i> Inoue	갈색무늬푸른자나방	October	1	2004
<i>Hemistola dijuncta</i> (Walker)	흰줄연푸른자나방	April, May	2	2002
<i>Hemistola cinctigutta</i> Prout	네점박이연푸른자나방	July	1	2004
<i>Hemistola tenuilinea</i> (Alphéraky)	줄물결푸른자나방	July	1	2004
Sterrhinae	애기자나방亞科			
<i>Pylargosceles steganioides</i> (Butler)	끝무늬애기자나방	May	1	2001
<i>Timandra reompta</i> (Prout)	붉은날개애기자나방	May	1	2003
<i>Timandra comptaria</i> Walker	홍띠애기자나방	May, June	7	2001 ~ 2003
<i>Problepsis minuta</i> Inoue	꼬마네눈애기자나방	August	1	2001
<i>Scopula luridata</i> (Zeller)	깃검은애기자나방	September	1	2001
<i>Scopula nigropunctata</i> (Hufnagel)	알노랑애기자나방	May, September	3	2001, 2004
<i>Scopula modicaria</i> (Leech)	각시에기자나방	May, September	55	2003, 2004
<i>Scopula apicipunctata</i> (Christoph)	점무늬흰애기자나방	May, June, August	21	2002, 2003
<i>Scopula impersonata</i> (Walker)	회색애기자나방	August	1	2001
<i>Scopula floslactata</i> (Haworth)	물결큰애기자나방	May, September, October	7	2001 ~ 2003
<i>Scopula superciliata</i> (Prout)	물결애기자나방	May, August	4	2002, 2003
<i>Scopula epiorrhoe</i> Prout	남방회색애기자나방	June, August, October	22	2002 ~ 2004
<i>Scopula ignobilis</i> (Warren)	넉점물결애기자나방	June	2	2002
<i>Idaea nitidata</i> (Herrich-Schaffer)	연노랑애기자나방	August	5	2004
<i>Idaea biselata</i> (Hufnagel)	연노랑물결애기자나방	June, October	8	2002, 2003
<i>Idaea invalida</i> (Butler)	남방애기자나방	October	2	2003
Larentiinae	물결자나방亞科			
<i>Xanthorhoe saturata</i> (Guenée)	물결자나방	May, August	2	2002
<i>Xanthorhoe muscipata</i> (Christoph)	가흰물결자나방	September	1	2004
<i>Orthonama obstipata</i> (Fabricius)	갈색각시물결자나방	May, October	3	2002, 2004
<i>Microcalcarifera obscura</i> (Butler)	쌍무늬물결자나방	June	1	2003
<i>Idiotephria evanescens</i> (Staudinger)	황갈물결자나방	March	2	2002
<i>Idiotephria amelia</i> (Butler)	노랑무늬물결자나방	April	1	2004
<i>Idiotephria debilitata</i> (Leech)	줄점물결자나방	April	1	2002
<i>Philereme corrugata</i> (Butler)	줄많은물결자나방	June, June	3	2002
<i>Calleulype whitelyi</i> (Butler)	뿔노랑흰물결자나방	May	1	2002
<i>Callygris compositata</i> (Guenée)	배노랑물결자나방	June, September, October	16	2002 ~ 2004
<i>Eulithis ledereri</i> (Bremer)	솔개빛물결자나방	June	1	2002
<i>Eulithis fabiolaria</i> (Oberthür)	무늬박이흰물결자나방	June, September, October	6	2003, 2004
<i>Gandaritis fixseni</i> (Bremer)	큰노랑물결자나방	September, October	15	2003, 2004
<i>Gandaritis agnes</i> (Butler)	회색물결자나방	June	2	2003
<i>Evecliptopera decurrens</i> (Moore)	흰그물물결자나방	October	1	2004
<i>Eustroma aerosum</i> (Butler)	노랑그물물결자나방	April, May, September	3	2002, 2003
<i>Microlygris complicata</i> (Butler)	큰애기물결자나방	May, October	3	2001, 2002
<i>Sibatania mactata</i> (Felder et Rogenhofer)	왕그물물결자나방	June	1	2001
<i>Dysstroma cinereata</i> (Moore)	두점박이물결자나방	October	1	2004
<i>Heterothera postalbida</i> (Wileman)	밀무늬물결자나방	May	3	2001, 2002
<i>Venusia megaspilata</i> (Warren)	굵은외횡선물결자나방	March	60	2002
<i>Venusia semistrigata</i> (Christoph)	다갈색띠물결자나방	March, April, September	17	2002 ~ 2004
<i>Hydrelia nisaria</i> (Christoph)	고운물결자나방	June ~ September	12	2001 ~ 2004
<i>Hydrelia flammeolaria</i> (Hufnagel)	노랑꼬마물결자나방	August	1	2003
<i>Perizoma parvaria</i> (Leech)	철성물결자나방	September	1	2001

Table 2. To be continued

Family, Species	Korean name	Flight period	Total counts	Years trapped
<i>Eupithecia proterva</i> Butler	고로쇠물결자나방	March	70	2002
<i>Eupithecia clavifera</i> Inoue	이른봄애기물결자나방	March	2	2004
<i>Chloroclystis v-ata</i> (Haworth)	먹줄초록물결자나방	August	1	2003
Ennominae	가 지나방亞科			
<i>Abraxas nipponibia</i> Wehrli	각시얼룩가 지나방	September	2	2004
<i>Abraxas latifasciata</i> Warren	참빛살얼룩가 지나방	June, August	3	2001, 2003
<i>Heterostegane hyriaria</i> Warren	네무늬가 지나방	June	4	2001, 2002
<i>Ninodes splendens</i> (Butler)	보라애기가 지나방	June, August	4	2002, 2003
<i>Myrteta angelica</i> Butler	먹세줄흰가 지나방	October	40	2003
<i>Orthocabera sericea</i> Butler	노랑줄흰가 지나방	May, June, August	6	2002, 2003
<i>Orthocabera tinagmaria</i> (Guenée)	가는줄흰가 지나방	April ~ July, September, October	10	2001 ~ 2004
<i>Parabapta clarissa</i> (Butler)	연푸른가 지나방	May ~ July	7	2001, 2003, 2004
<i>Rhynchobapta cervinaria</i> Moore	두줄갈고리가 지나방	May, July, September	7	2002, 2004
<i>Syngia hadassa</i> (Butler)	톱니무늬가 지나방	June, July	42	2002 ~ 2004
<i>Syngia limitatoides</i> Inoue	녹두빛가 지나방	June, July	17	2001, 2003, 2004
<i>Ecpetelia albifrontaria</i> (Leech)	네눈박이가 지나방	April	2	2002, 2003
<i>Oxymacaria normata</i> (Alphéraky)	고운날개가 지나방	May, September	2	2003
<i>Oxymacaria temeraria</i> (Swinhoe)	회색무늬가 지나방	May	1	2004
<i>Godonela defixaria</i> (Walker)	두줄점가 지나방	May ~ September	14	2001, 2003, 2004
<i>Godonela hebesata</i> (Walker)	세줄점가 지나방	June, August	2	2001, 2003
<i>Krananda semihyalina</i> Moore	유리창가 지나방	May, August, September	9	2001 ~ 2004
<i>Euryobedia languidata</i> (Walker)	깃노랑가 지나방	June	37	2002, 2003
<i>Culcula panterinaria</i> (Bremer et Grey)	노랑띠알락가 지나방	July	1	2004
<i>Jankowskia fuscaria</i> (Leech)	줄구름무늬가 지나방	June ~ October	13	2001 ~ 2004
<i>Jankowskia ahleta</i> Oberthür	구름무늬가 지나방	July	1	2004
<i>Cleora insolita</i> (Butler)	그늘가 지나방	May, June	42	2001, 2002
<i>Protoboarmia simplicitaria</i> (Leech)	팽나무가 지나방	May, August	9	2001, 2003, 2004
<i>Alcis angulifera</i> (Butler)	털뿔가 지나방	May, June, September, October	210	2002 ~ 2004
<i>Alcis jubata</i> (Thunberg)	이끼가 지나방	August	4	2003
<i>Rikiosatoa grisea</i> (Butler)	두줄가 지나방	June, October	2	2003, 2004
<i>Deileptenia ribeata</i> (Clerck)	솔검은가 지나방	March, April	9	2004
<i>Polymixinia appositaria</i> (Leech)	담혹가 지나방	June, October	2	2002, 2003
<i>Hypomecis roboraria</i> (Denis et Schiffermüller)	세줄날개가 지나방	May ~ September	46	2001 ~ 2003
<i>Hypomecis punctinalis</i> (Scopoli)	네눈가 지나방	March, May, August	46	2002, 2004
<i>Microcalicha sordida</i> (Butler)	구름가 지나방	August	1	2002
<i>Calicha ornataria</i> (Leech)	긴띠가 지나방	August	1	2001
<i>Calicha nooraria</i> (Bremer)	먹줄굴빛가 지나방	August	1	2003
<i>Phthonosema tendinosaria</i> (Bremer)	뿔무늬큰가 지나방	June, July	3	2003, 2004
<i>Ophthalmitis albosignaria</i> (Bremer et Grey)	큰눈노랑가 지나방	May ~ August	17	2001, 2003, 2004
<i>Ectropis crepuscularia</i> (Denis et Schiffermüller)	날개물결가 지나방	June, August	8	2001, 2003
<i>Ectropis excellens</i> (Butler)	줄고운가 지나방	May	1	2002
<i>Ectropis aigneri</i> Prout	연회색가 지나방	May	2	2004
<i>Parectropis nigrosparsa</i> (Wileman et South)	가랑잎가 지나방	July	4	2004
<i>Aethalura ignobilis</i> (Butler)	아지랑이물결가 지나방	May, July	6	2004
<i>Aethalura nanaria</i> (Staudinger)	꼬마아지랑이물결가 지나방	June	2	2002, 2003
<i>Satoblephara parvularia</i> (Leech)	배털가 지나방	April, June, August	4	2001, 2003, 2004
<i>Duliophyle agitata</i> (Butler)	넓은띠큰가 지나방	May, June, August ~ October	123	2001 ~ 2003
<i>Duliophyle majuscularia</i> (Leech)	누런큰가 지나방	August ~ October	6	2001, 2003, 2004
<i>Thinopteryx crocoptera</i> (Kollar)	알락제비가 지나방	May	6	2003
<i>Thinopteryx delectans</i> (Butler)	노랑제비가 지나방	May	2	2003
<i>Biston robustus</i> Butler	몸큰가 지나방	March	2	2001
<i>Amraica superans</i> (Butler)	노박덩굴가 지나방	June	1	2003
<i>Pachyligia dolosa</i> Butler	뿔흰가 지나방	March	78	2002
<i>Descoreba simplex</i> Butler	큰뿔줄가 지나방	March	3	2002
<i>Angerona prunaria</i> (Linnaeus)	오얏나무가 지나방	June, August	4	2003
<i>Menopha senilis</i> (Butler)	먹그림가 지나방	April, May, July, August	13	2002 ~ 2004
<i>Nothomiza aureolaria</i> Inoue	앞노랑가 지나방	April ~ June, August ~ October	14	2001 ~ 2003
<i>Acrodontis kotshubeji</i> Sheljuzhko	뿔죽가 지나방	October	7	2003, 2004
<i>Odontopera arida</i> (Butler)	남방갈고리가 지나방	March, May, October	4	2002 ~ 2004
<i>Xerodes rufescentaria</i> Motschulsky	솔밭가 지나방	April	1	2003

Table 2. To be continued

Family, Species	Korean name	Flight period	Total counts	Years trapped
<i>Pareclipsis gracilis</i> (Butler)	끝팔록노랑가진나방	April ~ October	34	2001 ~ 2004
<i>Fascellina chromataria</i> Walker	갈고리가지나방	June ~ August	5	2001, 2003, 2004
<i>Endropiodes indictinarius</i> (Bremer)	두줄팔록가진나방	May	2	2004
<i>Plagodis pulveraria</i> (Linnaeus)	미넓은가진나방	April, August, September	3	2001, 2002, 2004
<i>Heterolocha aristonaria</i> (Walker)	뒷분홍가진나방	April, September	4	2001, 2003
<i>Spilopera debilis</i> (Butler)	끝갈색흰가진나방	April, June	2	2002, 2003
<i>Corymica pryeri</i> Butler	큰노랑애기가진나방	August	1	2002
<i>Ourapteryx nivea</i> Butler	연노랑제비가지나방	June ~ August, October	79	2001 ~ 2004
<i>Ourapteryx koreana</i> Inoue	굵은줄제비가지나방	June, September, October	63	2001 ~ 2003
Epiplemaeidae	쌍꼬리나방과			
Epipleminae	쌍꼬리나방亞科			
<i>Epiplema moza</i> (Butler)	흑점쌍꼬리나방	May, July ~ September	10	2001, 2003, 2004
<i>Epiplema plagifera</i> (Butler)	검은띠쌍꼬리나방	June, September	3	2003
Lasiocampidae	솔나방과			
<i>Euthrix albomaculata</i> (Bremer)	대나방	August	1	2001
<i>Paralebeda plagiata</i> (Ménétrières)	대만나방	August, September, November	10	2001 ~ 2004
Brahmaeidae	왕물결나방과			
<i>Brahmaea certhia</i> (Fabricius)	왕물결나방	July	1	2001
Saturniidae	산누에나방과			
<i>Actias artemis</i> (Butler et Grey)	긴꼬리산누에나방	May, June	2	2001, 2004
<i>Antheraea yamamai</i> (Guérin-Méneville)	참나무산누에나방	August, September	2	2003, 2004
Sphingidae	박각시과			
Sphinginae	박각시亞科			
<i>Ambulyx japonica</i> (Rothschild)	갈고리박각시	April ~ June	10	2001, 2002, 2004
<i>Callambulyx tatarinovii</i> (Bremer et Grey)	녹색박각시	July	1	2004
<i>Dolbina tancrei</i> Staudinger	물결박각시	July, August	3	2001, 2004
<i>Clanis bilineata</i> (Walker)	콩박각시	July	1	2004
<i>Marumba gaschkewitschii</i> (Bremer et Grey)	분홍등줄박각시	August	1	2004
<i>Marumba spectabilis</i> (Butler)	제주등줄박각시	July, August	2	2001, 2004
<i>Marumba sperchius</i> (Ménétrières)	등줄박각시	August	2	2004
<i>Philosphingia dissimilis</i> (Bremer)	벗나무박각시	May	1	2004
<i>Langia zenzeroides</i> Moore	대왕박각시	April	1	2004
Macroglossinae	꼬리박각시亞科			
<i>Ampelophaga rubiginosa</i> Bremer et Grey	머루박각시	July	1	2004
<i>Acosmeryx naga</i> (Moore)	포도박각시	April, May	2	2004
<i>Aspledon himachala</i> (Butler)	애벌꼬리박각시	October	1	2004
<i>Macroglossum omblyans</i> Boisduval	작은검은꼬리박각시	August	1	2003
<i>Macroglossum pyrrhosticta</i> Butler	벌꼬리박각시	August, October	6	2003, 2004
<i>Rhagastis mongoliana</i> (Butler)	우단박각시	July	8	2004
Notodontidae	재주나방과			
<i>Dudusa sphigiformis</i> Moore	꽃솔재주나방	August	4	2001, 2004
<i>Cnethodonta grisescens</i> Staudinger	뒷검은재주나방	June ~ September, November	44	2003, 2004
<i>Quadricalcarifera pryeri</i> (Leech)	회색재주나방	May	1	2001
<i>Quadricalcarifera subgeneris</i> (Strand)	연갈색재주나방	June, August	4	2003
<i>Rabatala cristata</i> (Butler)	곱추재주나방	June	1	2001
<i>Uropygia meticulodina</i> (Oberthur)	기생재주나방	May	1	2002
<i>Fentonia ocypete</i> (Bremer)	밤나무재주나방	June ~ August	24	2001 ~ 2004
<i>Phalera flavescens</i> (Bremer et Grey)	떡무늬재주나방	August	1	2001
<i>Peridea lativitta</i> (Wileman)	긴날개재주나방	August	3	2004
<i>Peridea elzet</i> Kiriakoff	노고지리재주나방	August	1	2003
<i>Peridea gigantea</i> Butler	곧은줄재주나방	May, June, August	13	2001, 2003, 2004
<i>Peridea oberthueri</i> (Staudinger)	오리나무재주나방	August	1	2003
<i>Semidonta biloba</i> (Oberthür)	접날개재주나방	June ~ August	7	2002 ~ 2004
<i>Lophocosma atriplaga</i> (Staudinger)	검은줄재주나방	June ~ August	12	2003, 2004
<i>Urodonta branickii</i> (Oberthür)	먹점재주나방	May, July	2	2003, 2004
<i>Mesophalera sigmata</i> (Butler)	동백나무재주나방	June ~ August	3	2001, 2003, 2004
<i>Norracoides basinotata</i> (Wileman)	점무늬재주나방	June	1	2003
<i>Pterostoma sinicum</i> Moore	주름재주나방	June	1	2001
<i>Lophontesia pryeri</i> (Butler)	밤색띠재주나방	August	1	2003
<i>Hiradonta takaonis</i> (Matsumura)	굴뚝재주나방	June	1	2003
<i>Hexafrenum leucodera</i> (Staudinger)	끝흰재주나방	June, August	3	2003
<i>Spatalia doerriesi</i> Graeser	은무늬재주나방	June ~ August	3	2001, 2004

Table 2. To be continued

Family, Species	Korean name	Flight period	Total counts	Years trapped
<i>Eguria ornata</i> (Oberthür)	각시재주나방	July	1	2004
<i>Phalera angustipennis</i> Matsumura	좁은날개재주나방	July	1	2001
Lymantridae	독나방과			
<i>Arctornis album</i> (Bremer)	상재독나방	May, June, August, September	17	2001 ~ 2003
<i>Arctornis kumatai</i> Inoue	점흰독나방	June, August, September	14	2003, 2004
<i>Calliteara lunulata</i> (Butler)	붉은수염독나방	May, August	5	2001, 2003, 2004
<i>Calliteara pseudabiensis</i> (Butler)	사과독나방	April, May	8	2003, 2004
<i>Cifuna locuples</i> Walker	콩독나방	August	1	2003
<i>Euproctis piperita</i> Oberthür	무늬독나방	July, August	4	2003, 2004
<i>Euproctis pulverea</i> (Leech)	꼬마독나방	May, August	5	2003, 2004
<i>Euproctis similis</i> (Fuessly)	흰독나방	August	1	2003
<i>Euproctis taiwana</i> (Shiraki)	노랑독나방	August	1	2003
<i>Ivela auripes</i> (Butler)	황다리독나방	August, September	4	2001
<i>Lymantria dispar</i> (Linnaeus)	매미나방	June	1	2003
<i>Lymantria lucescens</i> (Butler)	물결매미나방	July	1	2004
<i>Lymantria monacha</i> (Linnaeus)	얼룩매미나방	August, September	16	2001, 2003, 2004
<i>Numenes albofascia</i> (Leech)	큰흰띠독나방	August	6	2003, 2004
<i>Numenes disparilis</i> Staudinger	흰띠독나방	June ~ August	21	2003, 2004
<i>Parocneria furva</i> (Leech)	향나무독나방	September	2	2001
<i>Pida nipponis</i> (Butler)	검정무늬독나방	August	15	2003, 2004
Arctiidae	불나방과			
<i>Cyana hamata</i> Walker	붉은줄불나방	June, August, September	22	2001 ~ 2004
<i>Eilema japonica</i> (Leech)	각시불나방	August	4	2003
<i>Eilema minor</i> Okano	회색불나방	June	2	2003
<i>Lithosia quadra</i> (Linnaeus)	너접박이불나방	July	2	2004
<i>Miltochrista aberrans</i> Butler	교차무늬주홍테불나방	May, June	2	2001, 2002
<i>Miltochrista pulchra</i> Butler	알락주홍불나방	June	1	2003
<i>Miltochrista striata</i> (Bremer et Grey)	홍줄불나방	June ~ August	54	2001, 2003, 2004
<i>Miltochrista ziczac</i> (Walker)	톱날무늬노랑불나방	July	1	2001
<i>Paraona staudingeri</i> Alphéraky	목도리불나방	June	1	2001
<i>Lemyra boghaika</i> Tsistjakov et Kishida	등붉은뿔흰불나방	August	1	2001
<i>Lemyra inaequalis</i> (Butler)	꼬마줄점불나방	August	5	2003
<i>Spilarctia luteum</i> (Hufnagel)	외줄점불나방	May, July, August	9	2003, 2004
<i>Spilarctia subcarnea</i> Walker	배붉은흰불나방	August	1	2003
<i>Spilosoma imparilis</i> (Butler)	수검은줄점불나방	September	1	2004
Noctuidae	밤나방과			
Herminiinae	줄수염나방亞科			
<i>Edessena hamada</i> (Felder & Rogenhofer)	쌍복판눈수염나방	May ~ July	31	2001 ~ 2004
<i>Hademnia incongruens</i> (Butler)	검은띠수염나방	June, September	3	2002 ~ 2004
<i>Cidaripura gladiata</i> Butler	흰점뿔수염나방	August, September	2	2001
<i>Paracolax contigua</i> (Leech)	노랑무늬수염나방	June	1	2002
<i>Paracolax sugii</i> Owada	외접박이수염나방	May, June	2	2002
<i>Paracolax tristalis</i> (Fabricius)	등근줄수염나방	April, June, August	9	2003
<i>Paracolax trilinealis</i> (Bremer)	줄수염나방	April, June, August	5	2003
<i>Paracolax pryeri</i> (Butler)	흰점보라수염나방	May, August, August	11	2001 ~ 2003
<i>Paracolax fascialis</i> (Leech)	왕수염나방	May, June, August	26	2003, 2004
<i>Paracolax fentoni</i> (Butler)	잔물결수염나방	August	1	2003
<i>Idia curvipalpis</i> (Butler)	복판눈밤나방	August	1	2003
<i>Hydrillodes morosa</i> (Buter)	넓은띠담혹수염나방	May ~ July, September, October	18	2001 ~ 2004
<i>Simplicia xanthoma</i> Prout	흰줄꽃은띠수염나방	May, June, August	3	2001, 2002
<i>Zanclognatha griselda</i> (Butler)	줄회색밤나방	June, September	4	2002, 2003
<i>Zanclognatha curvilinea</i> (Wileman & South)	굵은줄수염나방	June	3	2001, 2002
<i>Zanclognatha tarsipennalis</i> (Treitschke)	꼬마혹수염나방	May	1	2004
<i>Zanclognatha triplex</i> (Leech)	끝점혹수염나방	June, August	6	2002, 2004
<i>Zanclognatha helva</i> (Butler)	노랑수염나방	May	2	2003, 2004
<i>Zanclognatha umbrosalis</i> Staudinger	리치수염나방	April, October	5	2003
<i>Herminia tarsicrinalis</i> (Knoch)	갈색줄수염나방	May ~ July	4	2001, 2002
<i>Herminia arenosa</i> Butler	세줄무늬수염나방	May	3	2001, 2002
<i>Herminia dolosa</i> Butler	마른잎수염나방	August	1	2003
<i>Herminia innocens</i> Butler	물결수염나방	May	2	2001, 2002
<i>Hipoepa fractalis</i> (Guenée)	꽃날개수염나방	May, September	2	2001, 2002
Rivulinae				

Table 2. To be continued

Family, Species	Korean name	Flight period	Total counts	Years trapped
<i>Rivula inconspicua</i> (Butler)	두점짚름나방	September	1	2001
Hypeninae				
<i>Hypena nigrobasalis</i> (Herz)	별보라수염나방	June	1	2003
<i>Hypena squalida</i> (Butler)	흰줄수염나방	May	1	2004
<i>Hypena sagitta</i> (Fabricius)	검정무늬뿔노랑수염나방	September	1	2004
<i>Rhynchina cramboides</i> (Butler)	줄꼬마수염나방	April	1	2002
Catocalinae				
<i>Catocala dula</i> Bremer	붉은뿔날개나방	July, August	2	2001, 2004
<i>Catocala jonasii</i> Butler	뿔족노랑뿔날개나방	October	1	2004
<i>Catocala doerriesi</i> Staudinger	굵은줄노랑뿔날개나방	June, July	2	2001
<i>Catocala duplicata</i> Butler	꼬마노랑뿔날개나방	September	1	2001
<i>Dysgonia mandshuriana</i> (Staudinger)	복방수중다리밤나방	August	1	2003
<i>Dysgonia arcuata</i> (Moore)	물결수중다리밤나방	June	1	2003
<i>Dysgonia arcotaenia</i> (Guenée)	흰띠수중다리밤나방	October	1	2004
<i>Ercheia umbrosa</i> Butler	보라무늬밤나방	June	1	2001
<i>Ercheia niveostrigata</i> Warren	청백무늬밤나방	July	1	2004
<i>Thyas junio</i> (Dalman)	무궁화밤나방	July, August, October	5	2001, 2002, 2004
<i>Arcte coerulea</i> (Guenée)	암청색줄무늬밤나방	October	1	2003
<i>Hypopyra vespertilio</i> (Fabricius)	큰갈색띠밤나방	July	1	2001
<i>Erebus ephesperis</i> (Hübner)	왕흰줄태극나방	May, August	3	2004
<i>Spirama retorta</i> (Clerck)	태극나방	May	1	2004
<i>Metopta rectifasciata</i> (Ménétrières)	흰줄태극나방	July	1	2004
Ophiderinae				
<i>Lygephila maxima</i> (Bremer)	큰목검은밤나방	August, September	3	2001, 2004
<i>Lygephila vulcanea</i> (Butler)	갈색목검은밤나방	August, September	11	2001, 2003, 2004
<i>Anomis mesogona</i> (Walker)	무궁화잎밤나방	August	1	2001
<i>Anomis longipennis</i> Sugi	붉은잎밤나방	August	1	2001
<i>Calyptra gruesa</i> (Draudt)	큰갈고리밤나방	August, September	3	2003, 2004
<i>Erygia apicalis</i> Guenée	구름잎밤나방	May	2	2002, 2003
<i>Daddala lucilla</i> (Butler)	툭날무늬잎밤나방	August	2	2001
<i>Aedia leucomelas</i> (Linnaeus)	뒤흰날개밤나방	October	3	2004
<i>Dinumma deponens</i> Walker	검은띠밤나방	April, July, August	6	2001 ~ 2004
<i>Hyposemansis albipuncta</i> (Wileman)	날개물결무늬밤나방	June ~ September	15	2001, 2003, 2004
<i>Mecodina nubiferalis</i> (Leech)	남방구리밤나방	May, June, August	6	2002 ~ 2004
<i>Tamba corealis</i> (Leech)	참짚름나방	June, August, September	28	2001, 2003, 2004
<i>Atunsea kogii</i> (Sugii)	검은줄짚름나방	August	1	2001
<i>Pangrapta perturbans</i> (Walker)	산그물무늬짚름나방	August	3	2002, 2003
<i>Pangrapta trilineata</i> (Leech)	새줄끝무늬짚름나방	June, August, September	4	2001, 2002
<i>Pangrapta lunulata</i> (Sterz)	별박이짚름나방	May ~ August	9	2001, 2003, 2004
<i>Pangrapta obscurata</i> (Butler)	검은끝짚름나방	June, August	6	2001, 2003
<i>Amphitrogia amphidecta</i> (Butler)	툭날개짚름나방	July	1	2004
<i>Lophomilia polybapta</i> (Butler)	얼룩짚름나방	June	13	2002, 2003
<i>Lophomilia flaviplaga</i> (Warren)	주황얼룩무늬밤나방	May	2	2003
<i>Euwilemania angulata</i> (Wileman)	우묵날개짚름나방	August	1	2002
<i>Stenbergmania albomaculalis</i> (Bremer)	앞검노랑짚름나방	August	1	2003
<i>Gonepatica opalina</i> (Butler)	붉은띠짚름나방	July, August	23	2003, 2004
<i>Diomea discisigna</i> Sugi	네눈검정잎밤나방	June, August	13	2001 ~ 2004
<i>Scedopla diffusa</i> Sugi	알타무늬수염나방	April, May	2	2002, 2004
<i>Leostola mollis</i> (Butler)	쌍줄짚름나방	June, August	8	2002, 2003
<i>Naganoella timandra</i> (Alphéraky)	신부짚름나방	May, June	2	2001, 2003
<i>Corsa petrina</i> (Butler)	잔줄밤나방	May, June	2	2002, 2003
<i>Paragona inchoata</i> (Wileman)	담혹꼬마짚름나방	August, September	3	2003, 2004
<i>Hemipsestra fallax</i> (Butler)	외별짚름나방	June	1	2003
<i>Micreremites pyraloides</i> Sugi	뿔무늬꼬마짚름나방	July	1	2004
<i>Ectogonia butleri</i> (Leech)	볼룩짚름나방	June	1	2002
Plusiinae				
<i>Chrysodeixis eriosoma</i> (Doubleday)	붉은금무늬밤나방	August, October	2	2001, 2002
<i>Thysanoplusia intermixta</i> (Warren)	국화금무늬밤나방	August	1	2002
<i>Ctenoplusia albostrigata</i> (Bremer & Grey)	긴금무늬밤나방	August ~ October	6	2003, 2004
<i>Ctenoplusia agnata</i> (Staudinger)	굵은무늬밤나방	June, October, October	6	2001, 2003, 2004
<i>Macdunnoughia crassisigna</i> (Warren)	큰국화은무늬밤나방	October	1	2004
<i>Macdunnoughia purissima</i> (Butler)	은무늬밤나방	June	1	2003

Table 3. To be continued

Family, Species	Korean name	Flight period	Total counts	Years trapped
Sarothripinae	껌질밤나방亞科			
<i>Negritothripa hamptoni</i> (Wileman)	흰무늬껌질밤나방	June, August	2	2002, 2003
<i>Iscadia uniformis</i> (Inoue & Sugi)	남방껌질밤나방	April ~ June, August, October	8	2003, 2004
<i>Blenina senex</i> (Butler)	나무껌질밤나방	October	1	2004
Chloephorinae	푸른밤나방亞科			
<i>Iragades nobilis</i> (Staudinger)	앞노랑모밤나방	June ~ August	45	2001, 2003, 2004
<i>Earias pudicana</i> Staudinger	붉은가밤나방	July, September	2	2004
<i>Gelastocera eminentissima</i> Bryk	황토얼룩애기밤나방	July	3	2004
<i>Clethrophora distincta</i> (Leech)	푸른밤나방	August ~ October	21	2001, 2003, 2004
<i>Pseudoips faganus</i> (Fabricius)	쌍줄푸른밤나방	May, July, August	4	2001, 2003
<i>Siglophora ferreilutea</i> Hampson	다갈색밤나방	August	3	2003, 2004
<i>Siglophora sanguinolenta</i> (Moore)	붉은무늬갈색밤나방	September	1	2004
<i>Gabala argentata</i> Butler	은무늬모진애기밤나방	May	2	2002, 2004
Acontiinae	꼬마밤나방亞科			
<i>Autoba tristalis</i> (Leech)	사랑꼬마밤나방	June	5	2002, 2003
<i>Sophita subrosea</i> (Butler)	점분홍꼬마밤나방	August	1	2003
<i>Sophita ruficeps</i> (Walker)	팔흑점꼬마밤나방	August	1	2003
<i>Lophoruzza pulcherrima</i> (Butler)	꽃꼬마밤나방	June, September	2	2002, 2004
<i>Oruza glaucotorna</i> Hampson	흰무늬꼬마밤나방	May, September	2	2002, 2003
<i>Oruza mira</i> (Butler)	노랑줄꼬마밤나방	June, October	5	2002, 2004
<i>Protodeltote pygarga</i> (Hufnagel)	띠꼬마밤나방	June	1	2001
<i>Maliattha signifera</i> (Walker)	넓은띠흰꼬마밤나방	September	1	2004
<i>Bryophilina mollicula</i> (Graeser)	연푸른꼬마밤나방	May, June, August, September	20	2003, 2004
<i>Naranga aenesces</i> Moore	벼애나방	August	4	2003
<i>Amyna stellata</i> Butler	쌍흰점꼬마밤나방	September	1	2004
Pantheinae	버짐나방亞科			
<i>Xanthomantis contaminata</i> (Draudt)	탐시버짐밤나방	June, July	4	2003, 2004
Acroniinae	저녁나방亞科			
<i>Cymatophoropsis unca</i> (Houlbert)	남방세무늬저녁나방	June	2	2001
<i>Euromioia subpulchra</i> (Alphéraky)	주홍흰무늬저녁나방	June, July	28	2001, 2003, 2004
<i>Moma alpium</i> (Osbeck)	높은산저녁나방	June, July, September	4	2001, 2003, 2004
<i>Gerbathodes paupera</i> (Staudinger)	흰무늬애저녁나방	May, June, August	30	2003
<i>Acronicta rumicis</i> (Linnaeus)	배저녁나방	May, June, August	4	2001, 2003, 2004
<i>Cranionycta jankowskii</i> (Oberthür)	지옥저녁나방	July, August	44	2003, 2004
<i>Narcotica niveosparsa</i> (Matsumura)	꼬마저녁나방	June ~ September	18	2001, 2003, 2004
<i>Bryophila granitalis</i> (Butler)	이끼밤나방	September	1	2003
<i>Stenoloba clara</i> (Leech)	꼬마이끼밤나방	June	1	2002
Agaristinae	얼룩나방亞科			
<i>Sarbanissa subflava</i> (Moore)	뒷노랑얼룩나방	August	1	2003
Amphipyridae	흰무늬밤나방亞科			
<i>Apamea aquila</i> Donzel	붉은나무결밤나방	June, August, September	13	2001, 2003, 2004
<i>Atrachea nitens</i> (Butler)	소루쟁이밤나방	May	1	2002
<i>Parastichtis suspecta</i> (Hübner)	버들회색밤나방	March	2	2002
<i>Anapamea cuneatoides</i> Poole	주황얼룩밤나방	August	1	2003
<i>Triphaenopsis lucilla</i> Butler	흰점뒷노랑나방	August	1	2003
<i>Triphaenopsis jezoensis</i> Sugi	북방뒷노랑밤나방	August	1	2001
<i>Olivenebula oberthueri</i> (Staudinger)	큰뒷노랑밤나방	September	2	2001, 2004
<i>Polyphaenis subviridis</i> (Butler)	회색밤나방	June	1	2002
<i>Trachea atriplicis</i> (Linnaeus)	메밀거세미나방	July	1	2001
<i>Dipterygina cupreotincta</i> Sugi	끝무늬밤나방	May	3	2002, 2004
<i>Pygopteryx suava</i> Staudinger	네줄붉은밤나방	October	1	2004
<i>Spodoptera litura</i> (Fabricius)	담배거세미나방	September, October	5	2003, 2004
<i>Athetis cinerascens</i> (Motschulsky)	흑점밤나방	April	4	2003, 2004
<i>Athetis dissimilis</i> (Hampson)	뒷흰날개담색밤나방	August	1	2004
<i>Athetis albisignata</i> (Oberthür)	흰점국화밤나방	August	1	2003
<i>Athetis pallidipennis</i> Sugi	노랑날개흰점밤나방	February	2	2004
<i>Athetis stellata</i> (Moore)	국화밤나방	August	4	2001
<i>Athetis lineosa</i> (Moore)	흰무늬띠밤나방	August, September	3	2001, 2004
<i>Hoplodrina euryptera</i> Boursin	주올밤나방	October	1	2004
<i>Amphipyra pyramidea</i> (Linnaeus)	피라미까마귀밤나방	September, October	5	2004
<i>Amphipyra monolitha</i> (Guenée)	흰눈까마귀밤나방	August ~ October	11	2001 ~ 2003
<i>Cosmia affinis</i> (Linnaeus)	느릅밤나방	September, October	2	2001, 2004

Table 2. To be continued

Family, Species	Korean name	Flight period	Total counts	Years trapped
<i>Cosmia achatina</i> Butler	재주꼬마밤나방	June	2	2002, 2003
<i>Niphonyx segregata</i> (Butler)	영경귀밤나방	June, August, September	7	2001~2004
<i>Oligonyx vulnerata</i> (Butler)	끝갈색밤나방	July, August	4	2001, 2002
<i>Pyrrhivalva sordida</i> (Butler)	구리빛밤나방	August	6	2001
<i>Eucarta fasciata</i> (Butler)	밀검은밤나방	June	1	2001
<i>Dysmilichia gemella</i> (Leech)	점띠애기밤나방	September	1	2001
<i>Condica illecta</i> (Walker)	희미무늬밤나방	August	1	2001
<i>Condica fuliginosa</i> (Leech)	검은희미무늬밤나방	August	1	2002
<i>Calloplistria repleta</i> Walker	얼룩어린밤나방	August	1	2003
<i>Calloplistria albolineola</i> (Graeser)	흰줄어린밤나방	August, October	2	2003, 2004
<i>Sphragifera sigillata</i> (Ménétriès)	봉인밤나방	June, July	4	2003, 2004
<i>Sphragifera biplagiata</i> (Walker)	꼬마봉인밤나방	June~September	29	2001, 2003, 2004
Cuculliinae	곱추밤나방亞科			
<i>Daseochaeta viridis</i> (Leech)	가을녹색밤나방	October	77	2003
<i>Eupsilia quadrilinea</i> (Leech)	네줄무지개밤나방	February, March	3	2002, 2004
<i>Eupsilia strigifera</i> Butler	툽니무지개밤나방	October	1	2003
<i>Antivaleria viridimacula</i> (Graeser)	풀색툽날무늬밤나방	October	1	2003
<i>Conistra ardescens</i> (Butler)	떡갈나무밤나방	February, April	2	2001, 2003
<i>Conistra fletcheri</i> Sugi	점줄밤나방	April	1	2001
<i>Conistra grisescens</i> Draudt	점줄무늬밤나방	February	6	2004
<i>Conistra albipuncta</i> (Leech)	날개점밤나방	February, April	14	2001, 2004
<i>Telorta edentata</i> (Leech)	꼬마복숭아밤나방	October	1	2003
Hadeninae	줄무늬밤나방亞科			
<i>Lacanobia splendens</i> (Hübner)	붉은갈색밤나방	May, October	2	2002, 2004
<i>Sideridis unica</i> (Leech)	각시보라밤나방	October	1	2004
<i>Mythimna bani</i> (Sugi)	긴날개검은밤나방	August	2	2003, 2004
<i>Mythimna separata</i> (Walker)	멸강나방	October	2	2002
<i>Protomiselia bilinea</i> (Hampson)	일본두줄밤나방	September	1	2001
<i>Clavipalpula aurariae</i> (Oberthür)	얼룩무늬밤나방	April	1	2002
<i>Perigrapha munda</i> (Denis & Schiffermüller)	북극선녀밤나방	March	4	2001, 2002, 2004
<i>Perigrapha hoenei</i> Püngeler	선녀밤나방	March	3	2001, 2002
<i>Orthosia evanida</i> (Butler)	주홍띠밤나방	March, April	30	2001, 2002, 2004
<i>Orthosia paromoea</i> (Hampson)	곧은띠밤나방	March, April, July, October	31	2002, 2004
<i>Orthosia angustipennis</i> (Matsumura)	가는띠밤나방	February	2	2004
<i>Orthosia odiosa</i> (Butler)	고동색밤나방	March, April	29	2002, 2004
<i>Panolis japonica</i> Draudt	소나무붉은밤나방	April	4	2004
Noctuinae	밤나방亞科			
<i>Axylia putris</i> (Linnaeus)	썩은밤나방	August	1	2003
<i>Albocosta triangularis</i> (Moore)	앞노랑검은밤나방	September, October	3	2004
<i>Diarsia canescens</i> (Butler)	물결밤나방	October	4	2002, 2004
<i>Sineugraphe oceanica</i> (Kardakoff)	물결쌍검은밤나방	July	8	2004
<i>Hermonassa cecilia</i> Butler	점박이밤나방	May, October	6	2001~2004
<i>Xestia kollari</i> (Lederer)	멋쟁이밤나방	October	2	2004
<i>Cerastis pallescens</i> (Butler)	엘자무늬밤나방	March	2	2001, 2002
<i>Naenia contaminata</i> (Walker)	더러운밤나방	May, June	2	2002, 2004
<i>Agrotis ipsilon</i> (Hufnagel)	검거세미밤나방	August	10	2001~2003
Heliothinae	담배나방亞科			
<i>Helicoverpa armigera</i> (Hübner)	왕담배나방	August, September	2	2002, 2004

Table 3. Numbers of moth specimens collected, total species, cumulative number of species, and the species newly collected during four year survey of Mt. Duryunsan and its neighboring area

Year	No. specimens	No. of spp.	Cumulative spp.	No. new spp.
2001	430	182	182	-
2002	730	159	276	94
2003	1568	246	395	119
2004	1093	250	489	94

four years of effort have obtained about 3/4 of the moth species from the surveyed mountains.

It was expected that four years of data collection provided about two-thirds of the moth species anticipated after ten years of effort. Similarly Coleman *et al.* (2004) found that three years of moth species produced two-thirds of the moth species anticipated after ten years. However, it was noted that surveys of the entomofauna of a given area

are hampered by rare taxa that may not be captured without long-term efforts and these results underscore the need for long-term survey work when dealing with speciose insect taxa including moths (Coleman *et al.* 2004).

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