

Contribution to the knowledge of the Lepidoptera Fauna of the lower Sangro valley in the Abruzzo region of Central Italy

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Abstract

We report the results of recording Lepidoptera in the lower Sangro valley during a period of 22 years. The investigations were devoted to Macroheterocera and were carried out in the two regional nature reserves *Oasi di Serranella* and *Lecceta di Torino di Sangro*. The listing also includes some Microlepidoptera as non-target species, as well as occasionally observed butterflies. The 401 recorded species are presented in a table indicating both the locality of the records and the observed flight times and periods of activity. Fifteen species are published for the Abruzzo region for the first time; 2 species are new for the Italian peninsula.

Introduction

We investigated the fauna of the lower Sangro valley from 1988, with a particular focus on Macroheterocera. We also aimed to verify occurrence and distribution of the Lepidoptera of Central Italy. The butter-

flies observed and the few Microlepidoptera, collected together with the Macroheterocera are also listed.

Materials and methods

The study was carried out in two regional protected areas: the *Oasi di Serranella* (42°07'35" N, 14°22'40" E) and the *Lecceta di Torino di Sangro* (42°13'50" N, 14°32'20" E). In addition, light catches were carried out twice (July 13th and 15th 2000) on the beach of the Sangro valley (42°14'31" N, 14°31'30" E, at sea level), but with little success.

The *Oasi di Serranella* was investigated at irregular intervals a total of 49 times from 1988 to 2010. The main focus was on observations at night. Rhopalocera were registered only during occasional walks in the protected area. Pheromones, provided by E. Priesner, were used once on June 21st 1991 to look for Sesiidae.

The *Lecceta di Torino di Sangro* was intensively studied with respect to night active Macrolepidoptera for two years (2006-2007), excluding the slope towards the sea. Different investigation times were fixed to facilitate observation of the broadest possible spectrum of species. In 2006, investigations were carried out during the periods from May 16th to June 16th and from September 12th to October 12th. In 2007, they were carried out from July 20th to August 3rd. In total, there were 26 night catches. Occasionally, during daytime selection of light catching sites, some species of butterfly were observed and registered.

Active observation was necessary due to the lighting methods employed. These consisted of a gaze tower with a 250 watt compound light bulb and a black light tube connected to a super actinic tube. A generator served as energy source.

Easily recognizable species were recorded at the illuminated site and samples were collected. Species not determinable with certainty were also sampled. Recordings have been archived in the collection of the author.

Some of the Microlepidoptera were given to A. Werno, who compiled a list of identified species that has been integrated into the list of results (Table 1) and marked in the column footnotes.

The collected specimens were determined by the author. Identification literature (*e.g.*, Fibiger, 1990-2010; Hausmann, 2001, 2004; Mironov, 2003; Weigt, 2009) and comparable collections were consulted where necessary. Dissection was performed on species that were difficult to identify and individual specimens that were anomalous.

All recorded data are stored in an Oracle databank. Specific individual data on certain species are available from the author on request. Informations about the distribution of the species have been found in the literatures (Prola *et al.*, 1978a, 1978b; Prola & Racheli, 1979, 1980; Teobaldelli, 1976; Sciarretta & Zahm, 2002; Parenzan & Porcelli 2005-2006, 2006-2007).

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Table 1. List of results.

Family	Serial no.	Species	I	II	III	Dates of flight time from to	Time of observed activity	Footnote
Tineidae	1	<i>Nemapogon agerjoi</i> G.PETERSEN, 1959		x		27-VII-2007	Night	W)
Psychidae	2	<i>Oiketicoides lutea</i> (STAUDINGER, 1870)		x		20-VII-2007	Night	
Gracillariidae	3	<i>Eucalybites auroguttella</i> (STEPHENS, 1855)		x		24-VII-2007	Night	W)
	4	<i>Calybites phasianipennella</i> (HÜBNER, 1813)		x		20-VII-2007	Night	W)
Oecophoridae	5	<i>Epicallima formosella</i> (DENIS & SCHIFFERMÜLLER, 1775)		x		20-VII-2007	Night	W)
	6	<i>Cephalispheira ferrugella</i> (DENIS & SCHIFFERMÜLLER, 1775)		x		20-VII-2007	Night	W)
Coleophoridae	7	<i>Coleophora onobrychiella</i> ZELLER, 1849		x		24-VII-2007	Night	W)
Blastobasidae	8	<i>Blastobasis phycidella</i> (ZELLER, 1839)		x		20-VII-2007	Night	W)
Autostichidae	9	<i>Oegoconia deauratella</i> (HERRICH-SCHÄFFER, 1854)		x		3-VIII-2007	Night	W)
Gelechiidae	10	<i>Bryotropha senectella</i> (ZELLER, 1839)		x		31-VII-2007	Night	W)
	11	<i>Pseudotelephusa scalella</i> (SCOPOLI, 1763)		x		27-VII-2007	Night	W)
	12	<i>Scrobipalpa ergasima</i> (MEYRICK, 1916)		x		27-VII-2007	Night	W)
Limacodidae	13	<i>Apoda limacodes</i> (HUFNAGEL, 1766)		x		19-V	Night	
Sesiidae	14	<i>Paranthrene tabaniformis</i> (ROTTEMBURG, 1775)	x			21-VI-1991	Day	1)
Cossidae	15	<i>Cossus cossus</i> (LINNAEUS, 1758)	x	x		5-VI	3-VIII	Night
	16	<i>Paralhyopta caestrum</i> (HÜBNER, 1808)	x			8-VII	22-VII	Night
	17	<i>Zeuzera pyrina</i> (LINNAEUS, 1761)	x	x		19-V	3-VIII	Night
Tortricidae	18	<i>Phtheochroa ingradae</i> HUEMER, 1990		x		16-V-2006	Night	4) 8)
	19	<i>Cochylis hybridella</i> (HÜBNER, 1813)			x	15-VII-2000	Night	
	20	<i>Cochylis molliculana</i> ZELLER, 1847	x			27-VIII-1992	Night	
	21	<i>Acleris sparsana</i> (DENIS & SCHIFFERMÜLLER, 1775)		x		24-VII-2007	Night	W)
	22	<i>Clepsis consimilana</i> (HÜBNER, 1817)		x		20-VII-2007	Night	W)
	23	<i>Endothenia oblongana</i> (HAWORTH, 1811)		x		20-VII-2007	Night	W)
	24	<i>Eudemis profundana</i> (DENIS & SCHIFFERMÜLLER, 1775)		x		20-VII	3-VIII	Night
	25	<i>Celypha rufana</i> (SCOPOLI, 1763)		x		20-VII-2007	Night	W)
	26	<i>Lobesia botrana</i> (DENIS & SCHIFFERMÜLLER, 1775)		x		27-VII-2007	Night	W)
	27	<i>Epinotia festivana</i> (HÜBNER, 1799)		x		7-VI-2006	Night	W)
	28	<i>Cydia fagiglandana</i> (ZELLER, 1841)		x		27-VII-2007	Night	W)
Pterophoridae	29	<i>Agdistis heydeni</i> (ZELLER, 1852)			x	15-VII-2000	Night	
	30	<i>Agdistis tamaricis</i> (ZELLER, 1847)	x			30-VII-2001	Night	
	31	<i>Amblyptilia acanthadactyla</i> (HÜBNER, 1813)		x		16-V	15-VII	Night
	32	<i>Cnaemidophorus rhododactyla</i> (DENIS & SCHIFFERMÜLLER, 1775)		x		12-VI-2006	Night	
	33	<i>Oxyptilus distans</i> (ZELLER, 1847)		x		13-IX-2006	Night	
	34	<i>Stangeia siceliotia</i> (ZELLER, 1847)		x		12-IX-2006	Night	
	35	<i>Pterophorus pentadactyla</i> (LINNAEUS, 1758)	x			29-V-2005	Night	
	36	<i>Merrifieldia malacodactylus</i> (ZELLER, 1847)			x	15-VII-2000	Night	
	37	<i>Emmelina monodactyla</i> (LINNAEUS, 1758)	x	x		15-V	30-VII	Night
Pyralidae	38	<i>Lamoria anella</i> (DENIS & SCHIFFERMÜLLER, 1775)		x		20-VII-2007	Night	W)
	39	<i>Galleria melonella</i> (LINNAEUS, 1758)		x		27-IX-2006	Night	
	40	<i>Actenia brunnealis</i> (TREITSCHKE, 1829)		x		27-VII-2007	Night	W)
	41	<i>Herculia fulvocitatis</i> (DUPONCHEL, 1834)		x		31-VII-2007	Night	9)

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Table 1. Continued from previous page.

Family	Serial no.	Species	I	II	III	Dates of flight time from to	Time of observed activity	Footnote
	42	<i>Endotricha flammealis</i> (DENIS & SCHIFFERMÜLLER, 1775)		x		12-IX-2006	Night	
	43	<i>Eitella zinckenella</i> (TRETTSCHKE, 1832)		x		7-VI	20-VII	Night
	44	<i>Oncocera semirubella</i> (SCOPOLI, 1763)	x			8-VII	24-VII	Night
	45	<i>Phycita roborella</i> (DENIS & SCHIFFERMÜLLER, 1775)		x		20-VII	27-VII	Night
	46	<i>Acrobasis obliqua</i> (ZELLER, 1847)		x		27-VII	3-VIII	Night
	47	<i>Apomyelois ceratoniae</i> (ZELLER, 1839)		x		20-VII-2007		Night
	48	<i>Homoeosoma sinuella</i> (FABRICIUS, 1793)		x		27-VII	31-VII	Night
	49	<i>Phycitodes albatella</i> (RAGONOT, 1887)		x		24-VII	3-VIII	Night
	50	<i>Ephestria welsertella</i> (ZELLER, 1848)		x		20-VII-2007		Night
	51	<i>Ephestria elutella</i> (HÜBNER, 1796)		x		27-VII-2007		Night
	52	<i>Ephestria parasitella</i> (STAUDINGER, 1859)		x		20-VII-2007		Night
	53	<i>Ematheudes punctella</i> (TRETTSCHKE, 1833)	x			8-VII-1994		Night
	54	<i>Calamotropha paludella</i> (HÜBNER, 1824)	x			24-VII	6-VIII	Night
	55	<i>Agriphila latistria</i> (HAWORTH, 1811)		x		27-IX-2006		Night
	56	<i>Agriphila geniculea</i> (HAWORTH, 1811)		x		12-IX-2006		Night
	57	<i>Catoptria falsella</i> (DENIS & SCHIFFERMÜLLER, 1775)		x		24-VII-2007		Night
	58	<i>Elaphila rhyphaeata</i> (LINNAEUS, 1758)	x			22-VII-2010		Night
	59	<i>Elaphila riualis</i> (DUPONCHEL, 1834)	x			8-VII	12-IX	Night
	60	<i>Aporodes floralis</i> (HÜBNER, 1809)	x			6-VII	3-VIII	Night
	61	<i>Cynaeda dentalis</i> (DENIS & SCHIFFERMÜLLER, 1775)		x		27-IX-2006		Night
	62	<i>Hydriris ornatalis</i> (DUPONCHEL, 1832)	x			22-VII	27-IX	Night
	63	<i>Pyrausta despicata</i> (SCOPOLI, 1763)	x			28-V-1989		Night
	64	<i>Sitochroa verticalis</i> (LINNAEUS, 1758)	x			15-V-2006		Night
	65	<i>Ostrinia nubilalis</i> (HÜBNER, 1796)	x			28-V-1989		Night
	66	<i>Diasemopsis ramburialis</i> (DUPONCHEL, 1834)		x		27-IX-2006		Night
	67	<i>Palpita untonalis</i> (HÜBNER, 1796)		x		8-X-2006		Night
	68	<i>Dolicharthria punctalis</i> (DENIS & SCHIFFERMÜLLER, 1775)	x			28-V-1989		Night
Lasiocampidae	69	<i>Lasiocampa trifolii</i> (DENIS & SCHIFFERMÜLLER, 1775)	x			15-IX	22-IX	Night
	70	<i>Macrotylactia rubi</i> (LINNAEUS, 1758)	x			29-VII-1990		Day
	71	<i>Odonestis pruni</i> (LINNAEUS, 1758)		x		12-IX-2006		Night
Saturniidae	72	<i>Saturnia pyri</i> (DENIS & SCHIFFERMÜLLER, 1775)		x		16-V-2006		Night
Sphingidae	73	<i>Mimas tiltae</i> (LINNAEUS, 1758)	x			6-VI	30-VII	Night
	74	<i>Smerinthus ocellata</i> (LINNAEUS, 1758)	x			18-V	6-VIII	Night
	75	<i>Laothoe populi</i> (LINNAEUS, 1758)	x			18-V	14-IX	Night
	76	<i>Agrius convolvuli</i> (LINNAEUS, 1758)	x			19-IX-2006		Night
	77	<i>Macroglossum stellatarum</i> (LINNAEUS, 1758)	x			28-V-1989		Day
	78	<i>Hyles livornica</i> (ESPER, 1779)	x			19-V	25-V	Night
	79	<i>Deilephila elpenor</i> (LINNAEUS, 1758)	x			15-V	6-VIII	Night
	80	<i>Deilephila porcellus</i> (LINNAEUS, 1758)	x			24-VII-1989		Night
Hesperiidae	81	<i>Thymelicus acteon</i> (ROTTEMBURG, 1775)	x			28-V	21-VI	Day
	82	<i>Ochlodes venata</i> (BREMER & GREY, 1853)	x			12-IX-2006		Day
	83	<i>Gegenes nostradamus</i> (FABRICIUS, 1793)	x			31-VII-2009		Night
Papilionidae	84	<i>Iphticoides podalirius</i> (LINNAEUS, 1758)	x			29-VII-1990		Day
	85	<i>Papilio machaon</i> LINNAEUS, 1758	x			21-VI	28-VII	Day

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Table 1. Continued from previous page.

Family	Serial no.	Species	I	II	III	Dates of flight time from	to	Time of observed activity	Footnote	
Pieridae	86	<i>Euchloe ausonia</i> (HÜBNER, 1804)	x			24-V	28-V	Day		
	87	<i>Aporia crataegi</i> (LINNAEUS, 1758)	x			28-V-1989		Day		
	88	<i>Pieris brassicae</i> (LINNAEUS, 1758)	x			24-V	16-IX	Day		
	89	<i>Pieris mannii</i> (MAYER, 1851)	x			16-IX-2006		Day		
	90	<i>Pieris rapae</i> (LINNAEUS, 1758)	x			28-V	5-VI	Day		
	91	<i>Pieris napi</i> (LINNAEUS, 1758)	x			28-V	12-IX	By day		
	92	<i>Pontia edusa</i> (FABRICIUS, 1777)	x			5-VI-2006		Day		
	93	<i>Colias croceus</i> (GEOFFROY in FOURCROY, 1785)	x			28-V	12-IX	Day		
	94	<i>Gonepteryx rhamni</i> (LINNAEUS, 1758)	x	x		16-V-2006		Day		
	Lycaenidae	95	<i>Lycæna phlaeas</i> (LINNAEUS, 1761)	x			28-V-1989		Day	
		96	<i>Satyrium ilicis</i> (ESPER, 1779)	x			5-VI-2006		Day	
		97	<i>Cupido argides</i> (PALLAS, 1771)	x			28-VII-1988		Day	
		98	<i>Cupido alcetas</i> (HOFFMANNSEGG, 1804)	x			29-VII-1990		Day	
		99	<i>Celastrina argiolus</i> (LINNAEUS, 1758)	x			5-VI-2006		Day	
100		<i>Glaucopsyche ataxis</i> (PODA, 1761)	x			28-V-1989		Day		
101		<i>Plebeius idas</i> (LINNAEUS, 1761)	x			28-V-1989		Day		
102		<i>Aricia agestis</i> (DENIS & SCHIFFERMÜLLER, 1775)	x			12-IX-2006		Day		
103		<i>Polyommatus thersites</i> (CANTENER, 1835)	x			5-VI	28-VII	Day		
104		<i>Polyommatus icarus</i> (ROTTEMBERG, 1775)	x			24-V	12-IX	Day		
Nymphalidae		105	<i>Brenthis daphne</i> (DENIS & SCHIFFERMÜLLER, 1775)	x			5-VI-2006		Day	
		106	<i>Vanessa atalanta</i> (LINNAEUS, 1758)	x			5-VI-2006		Day	
		107	<i>Vanessa cardui</i> (LINNAEUS, 1758)	x			7-VII	12-IX	Day	
		108	<i>Inachis io</i> (LINNAEUS, 1758)	x			7-VII-2009		Day	
	109	<i>Polygonia c-album</i> (LINNAEUS, 1758)	x			24-V	21-VI	Day		
	110	<i>Polygonia egea</i> (CRAMER, 1775)	x			7-VII-2009		Day		
	111	<i>Melitaea cinxia</i> (LINNAEUS, 1758)	x			24-V-2006		Day		
	112	<i>Melitaea phoebe</i> (DENIS & SCHIFFERMÜLLER, 1775)	x			5-VI	28-VII	Day		
	113	<i>Melitaea althalia</i> (ROTTEMBERG, 1775)	x			5-VI-2006		Day		
	114	<i>Limenitis reducta</i> STAUDINGER, 1901	x			12-IX-2006		Day		
	115	<i>Pararge aegeria</i> (LINNAEUS, 1758)	x	x		16-V	12-IX	Day		
	116	<i>Lastommata megera</i> (LINNAEUS, 1767)	x	x		16-V	16-IX	Day		
	117	<i>Coenonympha arcania</i> (LINNAEUS, 1761)	x			28-V	5-VI	Day		
	118	<i>Coenonympha pamphilus</i> (LINNAEUS, 1758)	x			24-V	29-VII	Day		
119	<i>Pyronia cecilia</i> (VALLANTIN, 1894)	x			7-VII-2009		Day			
120	<i>Maniola jurtina</i> (LINNAEUS, 1758)	x			24-V	12-IX	Day			
121	<i>Melanargia galathea</i> (LINNAEUS, 1758)	x			5-VI	7-VII	Day			
122	<i>Hipparchia fagi</i> (SCOPOLI, 1763)	x			27-IX-2006		Day			
123	<i>Hipparchia statilinus</i> (HUFNAGEL, 1766)	x			28-VII	16-IX	Day			
124	<i>Brintesia circe</i> (FABRICIUS, 1775)	x			5-VI	12-IX	Day			
Drepanidae	125	<i>Thyatira batis</i> (LINNAEUS, 1758)	x	x		18-V	3-X	Night		
	126	<i>Habrosyne pyritoides</i> (HUFNAGEL, 1766)	x	x		16-V	3-X	Night		
	127	<i>Tetthea ocularis</i> (LINNAEUS, 1767)	x	x		18-V	31-VII	Night		
	128	<i>Cymatophorina diluta</i> DENIS & SCHIFFERMÜLLER, 1775)	x	x		12-IX	12-X	Night		
	129	<i>Watsonalla binaria</i> (HUFNAGEL, 1767)	x	x		6-VII	15-IX	Night		

To be continued on next page.

Table 1. Continued from previous page.

Family	Serial no.	Species	I	II	III	Dates of flight time from	to	Time of observed activity	Footnote
Geometridae	130	<i>Watsonalla uncinula</i> (BORKHAUSEN, 1790)		x		16-V	8-X	Night	4)
	131	<i>Citix hispanica</i> PEREZ DE-GREGORIO & al., 2002	x			4-VIII	15-X	Night	
	132	<i>Lomasplitis marginata</i> (LINNAEUS, 1758)	x			18-V	3-VIII	Night	
	133	<i>Ligdia adustata</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		16-V	3-VIII	Night	
	134	<i>Stegania trimaculata</i> (VILLERS, 1789)	x	x		15-V	27-VIII	Night	
	135	<i>Heliomata glarearia</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		15-V	27-VIII	Day	
	136	<i>Macaria alternata</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		18-V	27-VIII	Night	
	137	<i>Macaria artesiaria</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		18-V	27-VIII	Night	
	138	<i>Godonella aestimaria</i> (HÜBNER, 1809)	x	x		8-VII	3-VIII	Night	
	139	<i>Tephрина arenacearia</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		24-VII	6-VIII	Night	
	140	<i>Opisthographis luteolata</i> (LINNAEUS, 1758)	x	x		16-V	3-X	Night	
	141	<i>Epione repandaria</i> (HUFNAGEL, 1767)	x	x		28-V	3-VIII	Night	
	142	<i>Apeira syringaria</i> (LINNAEUS, 1758)	x	x		12-VI	22-VII	Night	
	143	<i>Ennomos quercaria</i> (HÜBNER, 1813)	x	x		5-VI	27-IX	Night	
	144	<i>Selenia dentaria</i> (FABRICIUS, 1775)	x	x		27-VIII	22-IX	Night	
	145	<i>Selenia lunularia</i> (HÜBNER, 1788)	x	x		22-IX-2006		Night	
	146	<i>Crocallis elinguaris</i> (LINNAEUS, 1758)	x	x		22-VII	1-X	Night	
	147	<i>Menophra abruptaria</i> (THUNBERG, 1792)	x	x		16-V	6-X	Night	
	148	<i>Synopsia sociaria</i> (HÜBNER, 1799)	x	x		15-V	17-IX	Night	
	149	<i>Peribatodes rhomboidaria</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		16-V	15-X	Night	
	150	<i>Peribatodes umbraria</i> (HÜBNER, 1809)	x	x		28-V	15-X	Night	
	151	<i>Hypomecis punctulalis</i> (SCOPOLI, 1763)	x	x		18-V	4-VIII	Night	
	152	<i>Ascotis selenaria</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		25-V	3-VIII	Night	
	153	<i>Ematurga atomaria</i> (LINNAEUS, 1758)	x	x		28-V	6-VIII	Night	
	154	<i>Eumantia lepraria</i> (REBEL, 1909)	x	x		22-VII	4-VIII	Night	
	155	<i>Cabera exanthemata</i> (SCOPOLI, 1763)	x	x		18-V	3-X	Night	
	156	<i>Campaea honoraria</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		16-V	8-X	Night	
157	<i>Semispitites ochrearia</i> (ROSSI, 1794)	x	x		14-IX-2006		Night		
158	<i>Comibaena bajularia</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		24-V	6-VI	Night		
159	<i>Hemistola siciliana</i> PROUT, 1935	x	x		29-V	16-VI	Night		
160	<i>Thalera fimbrialis</i> (SCOPOLI, 1763)	x	x		22-VII	4-VIII	Night		
161	<i>Hemitheta aestivaria</i> (HÜBNER, 1789)	x	x		5-VI	21-VI	Night		
162	<i>Chlorissa viridata</i> (LINNAEUS, 1758)	x	x		21-VI	24-VII	Night		
163	<i>Phaetogramma etruscaria</i> (ZELLER, 1849)	x	x		15-V	27-VIII	Night		
164	<i>Idea consanguinaria</i> (LEDERER, 1853)	x	x		6-VII-2008		Day		
165	<i>Idea rusticata</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		6-VII	6-VIII	Night		
166	<i>Idea filicata</i> (HÜBNER, 1799)	x	x		18-V	6-X	Night		
167	<i>Idea elongaria</i> (RAMBUR, 1833)	x	x		18-V	5-VI	Night		
168	<i>Idea obsoletaria</i> (RAMBUR, 1833)	x	x		27-VII	4-VIII	Night		
169	<i>Idea fuscovenosa</i> (GOEZE, 1781)	x	x		6-VII-2008		Night		
170	<i>Idea seriata</i> (SCHRANK, 1802)	x	x		15-V	15-X	Night		
171	<i>Idea subsericeata</i> (HAWORTH, 1809)	x	x		16-V	6-X	Night		
172	<i>Idea dimidiata</i> (HUFNAGEL, 1767)	x	x		13-IX-2006		Night		
173	<i>Idea trigeminata</i> (HAWORTH, 1809)	x	x		19-V	22-IX	Night		
174	<i>Idea infirmaria</i> (RAMBUR, 1833)	x	x		20-VII	30-VII	Night		

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Table 1. Continued from previous page.

Family	Serial no.	Species	I	II	III	Dates of flight time from	to	Time of observed activity	Footnote
	175	<i>Ilaea ostrinaria</i> (HÜBNER, 1813)		x		7-VI	16-VI	Night	10)
	176	<i>Ilaea distinctaria</i> (BOISDUVAL, 1840)		x		7-VI	24-VII	Night	4)
	177	<i>Ilaea rubraria</i> (STAUDINGER, 1901)	x			3-VIII	6-VIII	Night	
	178	<i>Ilaea aversata</i> (LINNAEUS, 1758)	x	x		18-V	27-IX	Night	
	179	<i>Ilaea degeneraria</i> (HÜBNER, 1799)	x	x		16-V	12-X	Night	
	180	<i>Ilaea straminata</i> (BORKHAUSEN, 1794)	x			28-V	27-VIII	Night	10)
	181	<i>Scopula nigropunctata</i> (HUFNAGEL, 1767)	x	x		5-VI	27-IX	Night	
	182	<i>Scopula ornata</i> (SCOPOLI, 1763)	x			18-V	3-X	Night	
	183	<i>Scopula rubiginata</i> (HUFNAGEL, 1767)	x	x		4-VIII	15-X	Night	
	184	<i>Scopula marginipunctata</i> (GOEZE, 1781)	x	x		19-V	15-X	Night	
	185	<i>Scopula initaria</i> (HÜBNER, 1799)	x	x		18-V	15-X	Night	
	186	<i>Scopula emutaria</i> (HÜBNER, 1809)	x			8-VII	24-VII	Night	10)
	187	<i>Scopula minorata</i> (BOISDUVAL, 1833)	x	x		20-VII	15-X	Night	
	188	<i>Rhodostrophia calabra</i> (PETAGNA, 1787)	x	x		18-V	12-VI	Day	
	189	<i>Timandra comae</i> A.SCHMIDT, 1931	x	x		18-V	1-X	Night	
	190	<i>Cyclophora pupillaria</i> (HÜBNER, 1799)	x	x		19-V	27-IX	Night	
	191	<i>Cyclophora ruficiliaria</i> (HERRICH-SCHÄFFER, 1855)	x	x		19-V	24-VII	Night	
	192	<i>Cyclophora porata</i> (LINNAEUS, 1767)	x	x		12-IX	14-IX	Night	
	193	<i>Cyclophora suppunctaria</i> (ZELLER, 1847)		x		20-VII	14-IX	Night	
	194	<i>Rhodometra sacrararia</i> (LINNAEUS, 1767)	x	x		30-VII	15-X	Day	
	195	<i>Lythria purpuraria</i> (LINNAEUS, 1758)	x			8-VII	30-VII	Night	
	196	<i>Orthonama obstipata</i> (FABRICIUS, 1794)	x	x		31-VII	12-X	Night	
	197	<i>Catarhoe rubidata</i> (DENIS & SCHIFFERMÜLLER, 1775)	x			18-V	27-VIII	Night	
	198	<i>Epirrhoe alternata</i> (O.F.MÜLLER, 1764)	x	x		19-V	15-X	Night	
	199	<i>Epirrhoe galata</i> (DENIS & SCHIFFERMÜLLER, 1775)		x		5-VI-2006		Night	
	200	<i>Cosmorhoe ocellata</i> (LINNAEUS, 1758)		x		5-VI-2006		Night	
	201	<i>Nebula ablutaria</i> (BOISDUVAL, 1840)		x		8-X	12-X	Night	
	202	<i>Ecliptopera silaceata</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		16-VII-2009		Night	
	203	<i>Horisme vitalbata</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		16-V	22-VII	Night	
	204	<i>Horisme tersata</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		29-V	7-VI	Night	4)
	205	<i>Euphyia frustata</i> (TREITSCHKE, 1828)	x			8-VIII-2003		Night	
	206	<i>Perizoma bifasciata</i> (HAWORTH, 1809)		x		13-IX-2006		Night	
	207	<i>Gymnoscelis rufifasciata</i> (HAWORTH, 1809)	x	x		25-V	1-X	Night	
	208	<i>Chloroclystis v-ata</i> (HAWORTH, 1809)		x		5-VI	16-VI	Night	
	209	<i>Eupithecia haworthiata</i> DOUBLEDAY, 1856	x	x		18-V	21-VI	Night	
	210	<i>Eupithecia inturbata</i> (HÜBNER, 1817)		x		12-IX-2006		Night	
	211	<i>Eupithecia dodoneata</i> GUENÉE, 1858	x	x		16-V	24-V	Night	4)
	212	<i>Eupithecia centaureata</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		20-VII	14-IX	Night	
	213	<i>Eupithecia pauxillaria</i> BOISDUVAL, 1840	x	x		17-IX-2006		Night	
Notodontidae	214	<i>Thaumetopoea piyocampa</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		31-VII	6-VIII	Night	
	215	<i>Clostera curtula</i> (LINNAEUS, 1758)		x		20-VII-2007		Night	
	216	<i>Clostera pigra</i> (HUFNAGEL, 1766)	x			30-VII-2001		Night	
	217	<i>Cerura vinula</i> (LINNAEUS, 1758)	x			18-V-2006		Night	
	218	<i>Furcula furcula</i> (CLERCK, 1759)	x	x		6-VIII	13-IX	Night	
	219	<i>Notodonta tritophus</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		20-VII-2007		Night	

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Table 1. Continued from previous page.

Family	Serial no.	Species	Locality			Dates of flight time from	to	Time of observed activity	Footnote
			I	II	III				
	220	<i>Notodonta ziczac</i> (LINNAEUS, 1758)	x			31-VII-2009		Night	
	221	<i>Drymonia dodonaea</i> (DENIS & SCHIFFERMÜLLER, 1775)		x		16-V	24-V	Night	
	222	<i>Drymonia velitaris</i> (HUFNAGEL, 1766)		x		16-V-2006		Night	
	223	<i>Pheosia tremula</i> (CLERCK, 1759)	x	x		15-V	27-IX	Night	
	224	<i>Pterostoma palpina</i> (CLERCK, 1759)	x			18-V	27-VIII	Night	
	225	<i>Ptilodon cacullina</i> (DENIS & SCHIFFERMÜLLER, 1775)		x		16-V	12-IX	Night	
	226	<i>Peridea anceps</i> (GOEZE, 1781)		x		16-V-2006		Night	
	227	<i>Stauropus fagi</i> (LINNAEUS, 1758)	x	x		19-V	31-VII	Night	
	228	<i>Harpyia milhauseri</i> (FABRICIUS, 1775)		x		16-VI	3-VIII	Night	
	229	<i>Spatalia argentinna</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		16-V	4-VIII	Night	
Noctuidae	230	<i>Acronicta psi</i> (LINNAEUS, 1758)	x			22-VII-2010		Night	4)
	231	<i>Acronicta megacephala</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		18-V	21-VI	Night	
	232	<i>Acronicta auritoma</i> (DENIS & SCHIFFERMÜLLER, 1775)	x			16-VII	31-VII	Night	
	233	<i>Acronicta rumicis</i> (LINNAEUS, 1758)	x	x		6-VII	8-X	Night	
	234	<i>Crantophora ligustri</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		16-V	22-IX	Night	
	235	<i>Cryphia algae</i> (FABRICIUS, 1775)	x	x		24-VII	17-IX	Night	4)
	236	<i>Cryphia ochsi</i> BOURSIN, 1940	x	x		22-VII	4-VIII	Night	4)
	237	<i>Cryphia raptricula</i> (DENIS & SCHIFFERMÜLLER, 1775)	x			4-VIII-2010		Night	
	238	<i>Cryphia muralis</i> (FORSTER, 1771)	x			22-VII	27-VIII	Night	
	239	<i>Idia calbaria</i> (DENIS & SCHIFFERMÜLLER, 1775)	x			29-V-2005		Night	
	240	<i>Paracolax tristalis</i> (FABRICIUS, 1794)		x		16-VI	14-IX	Night	
	241	<i>Macročhilo cribrumalis</i> (HÜBNER, 1793)	x			28-V	27-VIII	Night	
	242	<i>Herminia grisealis</i> (DENIS & SCHIFFERMÜLLER, 1775)		x		8-X-2006		Night	
	243	<i>Pechipogo plumigeralis</i> (HÜBNER, 1825)	x	x		24-V	27-IX	Night	
	244	<i>Zanclognatha zelleralis</i> (WOCKE, 1850)	x			6-VIII-1988		Night	
	245	<i>Zanclognatha tarsipemalis</i> TREITSCHKE, 1835		x		13-VI-2006		Night	
	246	<i>Catocala nupta</i> (LINNAEUS, 1767)	x	x		17-IX	6-X	Night	
	247	<i>Catocala elocata</i> (ESPER, 1787)	x	x		13-IX	14-IX	Night	
	248	<i>Catocala puerpera</i> (GIORNA, 1791)	x	x		22-VII	27-VIII	Night	5)
	249	<i>Catocala promissa</i> (DENIS & SCHIFFERMÜLLER, 1775)	x			4-VIII-2010		Night	
	250	<i>Catocala electa</i> (VIEWEG, 1790)	x			16-VII	22-VII	Night	
	251	<i>Catocala conjuncta</i> (ESPER, 1787)		x		21-IX-2006		Night	
	252	<i>Catocala lupina</i> HERRICH-SCHÄFFER, 1851	x			22-VII-2010		Night	
	253	<i>Catocala nymphagoga</i> (ESPER, 1787)	x			8-VII-1994		Night	
	254	<i>Catocala nymphaea</i> (ESPER, 1787)	x			16-VII-2009		Night	
	255	<i>Minucia lunaris</i> (DENIS & SCHIFFERMÜLLER, 1775)		x		16-V	25-V	Night	
	256	<i>Clyte illunaris</i> (HÜBNER, 1813)	x			22-VII	8-VIII	Night	
	257	<i>Ophiusa tirhaca</i> (CRAMER, 1773)	x			31-VII-2009		Night	
	258	<i>Dysgonia algira</i> (LINNAEUS, 1767)	x	x	x	18-V	13-IX	Night	
	259	<i>Grammodes bifasciata</i> (PETAGNA, 1787)	x	x	x	13-VII	22-IX	Night	10)
	260	<i>Drasteria caitino</i> (LEFÈVRE, 1827)	x			18-V	3-VIII	Night	
	261	<i>Lygephila cracca</i> (DENIS & SCHIFFERMÜLLER, 1775)		x		5-VI	12-X	Night	
	262	<i>Lygephila proax</i> (HÜBNER, 1813)	x	x		16-V	12-X	Night	
	263	<i>Catephia alchymista</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		5-VI	4-VIII	Night	
	264	<i>Aedia leucomelas</i> (LINNAEUS, 1758)	x	x		19-V	27-IX	Night	

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Table 1. Continued from previous page.

Family	Serial no.	Species	I	II	III	Dates of flight time from	to	Time of observed activity	Footnote
	265	<i>Tyta luctuosa</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x	x	29-V	17-IX	Night	
	266	<i>Euclidia glyphica</i> (LINNAEUS, 1758)	x			28-V-1989		Day	
	267	<i>Laspeyria flexula</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		18-V	27-IX	Night	
	268	<i>Hypena proboscidalis</i> (LINNAEUS, 1758)	x			22-VII	15-X	Night	
	269	<i>Hypena rostralis</i> (LINNAEUS, 1758)	x			2006			6)
	270	<i>Riula sericealis</i> (SCOPOLI, 1763)	x			18-V	6-VIII	Night	
	271	<i>Colobochyla salicalis</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		18-V	3-VIII	Night	
	272	<i>Zebeebe falsalis</i> (HERRICH-SCHÄFFER, 1839)	x	x		19-V	1-X	Night	
	273	<i>Eutelia adalatrix</i> (HÜBNER, 1813)	x			7-VI-2005			
	274	<i>Diachrysis stenochrysis</i> (WARREN, 1913)	x			5-VI	24-VII	Day	4) 10)
	275	<i>Macdunnoughia confusa</i> (STEPHENS, 1850)	x			8-VII	15-X	Night	
	276	<i>Autographa gamma</i> (LINNAEUS, 1758)	x	x		19-V	15-X	Night	
	277	<i>Trichoplusia ni</i> (HÜBNER, 1803)	x	x		25-V	6-VIII	Night	
	278	<i>Chrysodeixis chalcites</i> (ESPER, 1789)	x	x		30-VII	22-IX	Night	
	279	<i>Aprostola triplasia</i> (LINNAEUS, 1758)	x			16-V-2006			
	280	<i>Aprostola agnorista</i> DUFAY, 1956				14-IX-2006			4)
	281	<i>Emmelta trabealis</i> (SCOPOLI, 1763)	x	x	x	6-VII	17-IX	Night	
	282	<i>Acontia lucida</i> (HUFNAGEL, 1766)	x	x	x	7-VI	13-VII	Night	
	283	<i>Phyllophila obliterata</i> (RAMBUR, 1833)	x			3-VIII-2008			10)
	284	<i>Protodeltote pygarga</i> (HUFNAGEL, 1766)	x	x		15-V	27-IX	Night	
	285	<i>Odice suava</i> (HÜBNER, 1813)	x			6-VII-2008			
	286	<i>Eublemma viridula</i> (GUENÉE)	x			22-VII	15-IX	Night	
	287	<i>Xanthodes albago</i> (FABRICIUS, 1794)	x	x		21-IX-2006			
	288	<i>Amphipyra pyramidea</i> (LINNAEUS, 1758)	x	x		22-VII	12-IX	Night	
	289	<i>Amphipyra berbera</i> RUNGS, 1949	x	x		22-VII			4)
	290	<i>Amphipyra tragopoginis</i> (CLERCK, 1759)	x			16-VII-2009			4) 10)
	291	<i>Synthymia fixa</i> (FABRICIUS, 1787)	x	x		12-IX-2006			
	292	<i>Synthymia fixa</i> (FABRICIUS, 1787)	x	x		16-V	24-V	Night	
	293	<i>Heliothis viriplaca</i> (HUFNAGEL, 1766)	x			29-V-2005			
	294	<i>Heliothis peltigera</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		25-V	8-X	Night	
	295	<i>Heliothis nubigera</i> HERRICH-SCHÄFFER, 1851	x	x		24-V	27-IX	Night	10)
	296	<i>Helicoverpa armigera</i> (HÜBNER, 1808)	x	x		5-VI	6-X	Night	
	297	<i>Elaphria venustula</i> (HÜBNER, 1790)	x	x		18-V	27-VIII	Night	
	298	<i>Stilbia faillae</i> PÜNGELER, 1918	x	x		8-X	12-X	Night	
	299	<i>Caradrina selini</i> BOISDUVAL, 1840	x	x		29-V	27-IX	Night	4)
	300	<i>Caradrina clavipalpis</i> (SCOPOLI, 1763)	x	x		8-VII	17-IX	Night	4)
	301	<i>Caradrina flavirena</i> (GUENÉE, 1852)	x	x		19-V	17-IX	Night	4)
	302	<i>Caradrina vicina</i> STAUDINGER, 1870	x			22-VII	8-VIII	Night	10)
	303	<i>Hoplodrina respersa</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		16-VII-2009			
	304	<i>Hoplodrina ambigua</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		28-V	8-X	Night	7)
	305	<i>Charanyca trigrammica</i> (HUFNAGEL, 1766)	x	x		15-V	24-V	Night	
	306	<i>Spodoptera exigua</i> (HÜBNER, 1808)	x	x		22-VII	12-X	Night	
	307	<i>Sesamia nonagrioides</i> (LEFEBVRE, 1827)	x	x	x	18-V	15-X	Night	4)
	308	<i>Sesamia cretica</i> LEDERER, 1857	x			30-VII	6-VIII	Night	
	309	<i>Proxenus hospes</i> (FREYER, 1831)	x	x		15-V	17-IX	Night	
	309	<i>Dypterygia scabriscaula</i> (LINNAEUS, 1758)	x	x		5-VI	24-VII	Night	

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Table 1. Continued from previous page.

Family	Serial no.	Species	I	II	III	Dates of flight time from	to	Time of observed activity	Footnote
	310	<i>Polyphænus sericata</i> (ESPER, 1787)	x			6-VII-2008		Night	
	311	<i>Thalpnophila matura</i> (HUFNAGEL, 1766)	x			17-IX	3-X	Night	
	312	<i>Trachea atriplicis</i> (LINNÆUS, 1758)		x		12-VI-2006		Night	
	313	<i>Euplexia lucipara</i> (LINNÆUS, 1758)		x		24-V	13-VI	Night	
	314	<i>Phlogophora meticalosa</i> (LINNÆUS, 1758)	x			27-VIII-1992		Night	
	315	<i>Calopistria juvenina</i> (STOLL, 1782)		x		12-VI	27-IX	Night	
	316	<i>Methorasa latreillei</i> (DUPONCHEL, 1827)		x		31-VII-2007		Night	
	317	<i>Ipimorpha retusa</i> (LINNÆUS, 1761)	x			8-VII	3-VIII	Night	
	318	<i>Parastichis ypsilon</i> (DENIS & SCHIFFERMÜLLER, 1775)		x		5-VI	12-VI	Night	
	319	<i>Mesogona oxalina</i> (HÜBNER, 1803)	x			3-X-2006		Night	
	320	<i>Cosmia diffinis</i> (LINNÆUS, 1767)	x			22-VII-2010		Night	
	321	<i>Cosmia affinis</i> (LINNÆUS, 1767)	x			8-VII-1994		Night	
	322	<i>Cosmia pyralina</i> (DENIS & SCHIFFERMÜLLER, 1775)	x			16-VII-2009		Night	
	323	<i>Xanthia ocellaris</i> (BORKHAUSEN, 1792)	x			16-VII	12-IX	Night	10)
	324	<i>Consitra rubiginea</i> (DENIS & SCHIFFERMÜLLER, 1775)		x		12-IX-2006		Night	
	325	<i>Episema glaucina</i> (ESPER, 1789)	x			15-X-1989		Night	
	326	<i>Meganephria bimaculosa</i> (LINNÆUS, 1767)		x		8-X-2006		Night	
	327	<i>Dryobotodes monochroma</i> (ESPER, 1790)		x		22-IX-2006		Night	4)
	328	<i>Dryobotodes carbonis</i> (EWAGNER, 1931)		x		6-X-2006		Night	4)
	329	<i>Trigonophora flammea</i> (ESPER, 1785)		x		15-X-1989		Night	
	330	<i>Mniotype solteri</i> (BOISDUVAL, 1840)	x			21-IX	8-X	Night	
	331	<i>Oligia latruncula</i> (DENIS & SCHIFFERMÜLLER, 1775)	x			15-V	7-VI	Night	4)
	332	<i>Mesoligia furuncula</i> (DENIS & SCHIFFERMÜLLER, 1775)	x			30-VII	27-VIII	Night	
	333	<i>Mesapamea secalis</i> (LINNÆUS, 1758)		x		5-VI	22-IX	Night	4)
	334	<i>Mesapamea didyma</i> (ESPER, 1788)		x		8-VII	13-IX	Night	4)
	335	<i>Luperina dumerilii</i> (DUPONCHEL, 1826)		x		17-IX	27-IX	Night	
	336	<i>Nonagra typhae</i> (THUNBERG, 1784)		x		6-VII	30-VII	Night	
	337	<i>Archanaara dissoluta</i> (TREITSCHKE, 1825)		x		20-VII	6-VIII	Night	
	338	<i>Archanaara sparganii</i> (ESPER, 1790)		x		15-V	29-V	Night	
	339	<i>Lacanobia w-latinum</i> (HUFNAGEL, 1766)		x		22-VII	27-VIII	Night	
	340	<i>Lacanobia oleracea</i> (LINNÆUS, 1758)		x		6-VI	31-VII	Night	
	341	<i>Aetheria bicolorata</i> (HUFNAGEL, 1766)		x		29-V-2005		Night	
	342	<i>Hadena luteago</i> (DENIS & SCHIFFERMÜLLER, 1775)		x		13-IX-2006		Night	
	343	<i>Hadena perplexa</i> (DENIS & SCHIFFERMÜLLER, 1775)		x		16-VII	6-X	Night	
	344	<i>Mythimna albipuncta</i> (FABRICIUS, 1787)		x		18-V	15-X	Night	
	345	<i>Mythimna ferrago</i> (FABRICIUS, 1787)		x		18-V	15-X	Night	
	346	<i>Mythimna vitellina</i> (HÜBNER, 1808)		x		28-V	6-VIII	Night	
	347	<i>Mythimna straminea</i> (TREITSCHKE, 1825)		x		15-V	27-VIII	Night	
	348	<i>Mythimna obsoleta</i> (HÜBNER, 1803)		x		28-V	27-VIII	Night	
	349	<i>Mythimna zea</i> (DUPONCHEL, 1827)		x		22-V	26-VII	Night	
	350	<i>Mythimna joannis</i> BOURSIN & RUNGS, 1952		x		22-IX	27-IX	Day	
	351	<i>Mythimna congnata</i> (HÜBNER, 1817)		x		15-V	15-X	Night	
	352	<i>Mythimna l-album</i> (LINNÆUS, 1767)		x		15-V	15-X	Night	10)
	353	<i>Mythimna sicula</i> (TREITSCHKE, 1835)		x		15-V	15-X	Night	
	354	<i>Mythimna riparia</i> (RAMBUR, 1829)		x		15-V	15-X	Night	
	355	<i>Mythimna loreyi</i> (DUPONCHEL, 1827)		x		6-VIII-1988		Night	
	356	<i>Mythimna unipuncta</i> (HAWORTH, 1809)		x		6-VII	15-X	Night	

To be continued on next page.

Table 1. Continued from previous page.

Family	Serial no.	Species	I	II	III	Dates of flight time from to	Time of observed activity	Footnote
	357	<i>Lastionycta calbertai</i> (STAUDINGER, 1883)	x			16-V	22-IX	Night
	358	<i>Axytia putris</i> (LINNAEUS, 1761)	x	x		15-V	27-VIII	Night
	359	<i>Ochropleura plecta</i> (LINNAEUS, 1761)	x	x		15-V	27-VIII	Night
	360	<i>Noctua pronuba</i> LINNAEUS, 1758	x	x		19-V	12-X	Night
	361	<i>Noctua comes</i> HÜBNER, 1813	x	x		21-IX	15-X	Night
	362	<i>Noctua finibrata</i> (SCHREBER, 1759)	x	x		6-VIII	1-X	Night
	363	<i>Noctua tinenica</i> BIBBINGER, SPEIDEL & HANIGK, 1983	x	x		6-VII	3-X	Night
	364	<i>Noctua janthina</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		12-VI	22-IX	Night
	365	<i>Noctua janthe</i> (BORKHAUSEN, 1792)	x	x		13-IX	12-X	Night
	366	<i>Noctua interjecta</i> HÜBNER, 1808	x			6-VII-2008		4)
	367	<i>Epilecta timogrisea</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		24-VII	14-IX	Night
	368	<i>Xestia c-nigrum</i> (LINNAEUS, 1758)	x	x		16-V	15-X	Night
	369	<i>Xestia castanea</i> (ESPER, 1798)	x	x		22-IX	12-X	Night
	370	<i>Xestia xanthographa</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		22-IX	12-X	Night
	371	<i>Peridroma saucia</i> (HÜBNER, 1808)	x			15-X-1989		Night
	372	<i>Agrotis puta</i> (HÜBNER, 1803)	x	x		11-IX	27-IX	Night
	373	<i>Agrotis ipsilon</i> (HUFNAGEL, 1766)	x	x		5-VI	15-X	Night
	374	<i>Agrotis exclamatoris</i> (LINNAEUS, 1758)	x	x		16-V	27-VIII	Night
	375	<i>Agrotis clavis</i> (HUFNAGEL, 1766)	x	x		30-VII-2001		Night
	376	<i>Agrotis segetum</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		14-IX	15-X	Night
Lymantriidae	377	<i>Lymantria dispar</i> (LINNAEUS, 1758)	x	x		8-VII	6-VIII	Night
	378	<i>Ocnertia ledereri</i> (MILLIERE, 1868)	x			6-VII-2008		Night
Nolidae	379	<i>Meganola strigula</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		16-V	1-X	Night
	380	<i>Meganola albula</i> (DENIS & SCHIFFERMÜLLER, 1775)	x	x		29-V	27-VIII	Night
	381	<i>Nola cuculatella</i> (LINNAEUS, 1758)	x	x		6-VIII-1988		Night
	382	<i>Nola aerugula</i> (HÜBNER, 1793)	x			6-VIII-1988		Night
	383	<i>Nycteola revyana</i> (SCOPOLI, 1772)	x	x		13-VI	16-VII	Night
	384	<i>Nycteola sicilana</i> (FUCHS, 1899)	x			3-VIII-2008		Night
	385	<i>Pseudoips prasinana</i> (LINNAEUS, 1758)	x	x		7-VI-2005		Night
	386	<i>Bena bicolorana</i> (FUSSLY, 1775)	x	x		19-V	14-IX	Night
	387	<i>Earias clorana</i> (LINNAEUS, 1761)	x			29-V	27-VIII	Night
	388	<i>Earias vernana</i> (FABRICIUS, 1787)	x	x		18-V	3-VIII	Night
Arctiidae	389	<i>Pelostia muscerda</i> (HUFNAGEL, 1766)	x	x		12-VI	27-VIII	Night
	390	<i>Lithostia quadra</i> (LINNAEUS, 1758)	x	x		5-VI	22-IX	Night
	391	<i>Eilema complana</i> (LINNAEUS, 1758)	x			24-VII-1989		Night
	392	<i>Eilema caniola</i> (HÜBNER, 1808)	x	x		16-V	15-X	Night
	393	<i>Dysauxes famula</i> (FREYER, 1836)	x	x		24-V	12-X	Night
	394	<i>Spiris striata</i> (LINNAEUS, 1758)	x	x		24-V	28-V	Day
	395	<i>Phragmatobia fuliginosa</i> (LINNAEUS, 1758)	x	x		15-V	12-X	Night
	396	<i>Cymbalophora pudica</i> (ESPER, 1784)	x			27-IX-2006		Night
	397	<i>Spilosoma lutea</i> (HUFNAGEL, 1766)	x			29-V-2005		Night
	398	<i>Spilosoma lubricipeda</i> (LINNAEUS, 1758)	x	x		24-V	27-VIII	Night
	399	<i>Rhyparia purpurata</i> (LINNAEUS, 1758)	x			5-VI-2006		Day
	400	<i>Arcia villica</i> (LINNAEUS, 1758)	x	x		15-V	5-VI	Night
	401	<i>Euplagia quadripunctaria</i> (PODA, 1761)	x	x		27-VIII	22-IX	Night

1) Pheromone catch; 2) Another specimen was found dead inside the administration building in 2004; 3) Attracted by light; 4) Genitalia dissected; 5) The specimen of 27th August was found during day time in 1992 posed on the outside wall of the administration building; 6) The record was a specimen found dead inside the administration building; 7) Specimens previously reported as *H. alauda* in 1989 have now been determined as *H. ambigua*; 8) First record for the Apennine Peninsula; 9) First record for the Italian mainland; 10) New for the Abruzzo region; W) Species passed to A. Werno for identification.

The investigation area

The lower Sangro valley is located in the Chieti Province of Abruzzo in Central Italy (Figure 1). It consists of a 20 km long by 2.5 km wide plain, stretching between the estuary of the river Aventino into the river Sangro and the estuary of the river Sangro into the Adriatic Sea. Today, the area is mainly used for agriculture. Extensive industrial and commercial areas have also been developed. Housing developments are only located along the perimeter. Natural areas are only to be found in the immediate vicinity of the river and in the two nature reserves.

The *Oasi di Serranella* has been described by Zahm (1989) (Figure 2). It is an area of 180 ha where the estuary of Aventino river enters the Sangro river. Approximately 90 ha of water surface are dammed up to 90 m above sea level. The protected area essentially consists of extensive wetlands, within which a number of microhabitats with their respective vegetation can be distinguished. *Potamogeton* species are typically present in the areas of flowing water. *Phragmites communis* and several *Typha* species grow in large stands of reeds. Two wide strips of floodplain forests continue along the perimeter of the marshland with *Alnus glutinosa*, a number of *Salix* and *Populus* species, as well as *Quercus robur* in the drier areas. Mediterranean plants grow on a xeric plateau e.g. *Spartium junceum*, *Helichrysum italicum* and *Cistus incanus*.

The *Lecceta di Torino di Sangro* has been described by Di Fabrizio (2004) (Figure 3). The 170 ha of the natural reserve extend from the banks of the Sangro river near its estuary up and across the slopes of the costal hills (2-60 m above sea level) and down the slopes facing the coast. It is one of the last remains of the original Adriatic coast forests. Although called *Lecceta* (forest of *Quercus ilex*) it is actually a mixed deciduous forest with a dominating number of *Quercus ilex*. Co-occurring species

include *Quercus pubescens*, *Q. cerris*, *Carpinus orientalis*, *Coronilla emerus*, *Acer neapolitanum*, *Crataegus monogyna* and *Ligustrum vulgare*. The undergrowth is for the most part very dense, almost impenetrable. *Hedera helix*, *Smilax aspera* and *Ruscus aculeatus* are well represented in the forest and brushwood area. Coastal steppes and Mediterranean *Macchia* spread in open areas with *Cistus creticus* and *Pistacia lentiscus*. Typical riverbank tree species, e.g. *Salix* and *Populus* species, grow along the river Sangro.

Results

The first results of the *Oasi di Serranella* (1988-1989) were published in 1989. They have been integrated in this final study in order to provide a comprehensive overview. It is unknown to the author whether other entomologists have made any recordings or published any reports on the area of investigation and, therefore, no additional data have been included.

A total of 1878 single observations were recorded over many years of investigation. The study recorded 401 species, 15 of which were first recorded for the Abruzzo region, one was new for the Italian mainland and one for the Apennine peninsula. Table 2 shows the distribution of records and species of each of the three groups Microlepidoptera, Rhopalocera and Macroheterocera.

The investigation of the individual areas resulted in the following number of species: *Oasi di Serranella* 287, *Lecceta di Torino di Sangro* 253, Coastal area 12.

The individual recorded species are shown in Table 1. Localities, observed flight times and observed times of activity are reported as well as the associated families.

Presentation of results

Systematics and nomenclature follow Karsholt & Razowski (1996) and with regards to Geometridae (Hausmann, 2001, 2004; Mironov, 2003) as published so far. Results from three localities are presented: I *Oasi di Serranella*; II *Lecceta di Torino di Sangro*; III coastal area of the Sangro valley (Table 1). Only the earliest and latest observations are shown. No year is given since these periods of flight are independent of year of observation. One-off observations are also listed.

For reasons of clarity, author names and publication years are not presented in the text. The following 17 species are also shown in the Appendix.

Phtheochroa ingradae (Figures A1 and A5) was only recognized as an independent species and distinguished from *P. rugosana* in 1990 by Huemer. The species is endemic for Italy. The holotype come from the Kalterer See (Trentino-Alto Adige region), the paratypes come from the same region and from the Veneto region. Trematerra (2003) only mentions these two regions as distribution area. The 3 females from the *Lecceta di Torino di Sangro* match the description and figures of these types in terms of habitus as well as genitalia. Therefore, their discov-

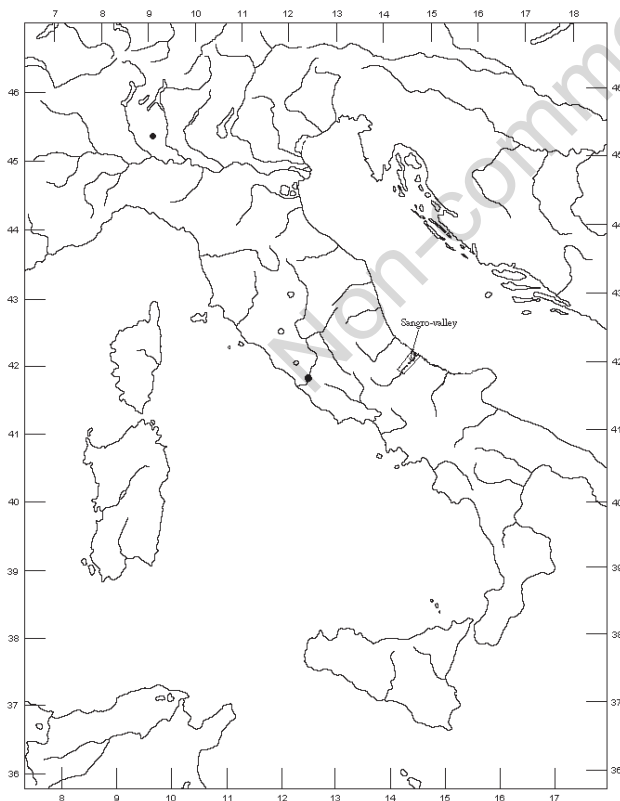


Figure 1. Geographical map of Italy with indication of the lower Sangro valley.

Table 2. Average number of records per species in each of the groups.

Groups	Records	Species	Average
Microlepidoptera	89	63	1.41
Rhopalocera	100	44	2.27
Macroheterocera	1689	294	5.74
Total	1878	401	4.68

ery on 7th May 2006 has been the first and only record of the species on the Apennine Peninsula to date.

Within Italy, *Herculia fulvociliialis* (Figure A2) has only been mentioned in Sicily by Bassi *et al.* (1995), Speidel (1996) and by Slamka (2006). Therefore, the species can be considered new for the Italian mainland.

Gegenes nostradamus (Figures A4, A6) is very similar to *G. pumilio*. Length of forewings and underside of wings, in particular of hindwings, provide enough evidence for a clear determination of the collected specimen. According to Parenzan and Porcelli (2005-2006), the species is also present in all remaining regions of the peninsula.

Idaea ostrinaria (Figure A3), a pretty thermophilic Sterrhinae, was also found by the author on the southeast slope of the Majella mountain, in the Orfento valley, and on the Gran Sasso mountain. This species was also mentioned by Parenzan and Porcelli (2005-2006) for all remaining regions of the peninsula.

Scopula nigropunctata (Figure A3) appears to be more common and more widely distributed in the Abruzzo region than was previously thought considering the fact that to date it has not been mentioned in literature for this region. It has also been found by the author at sever-



Figure 2. Detail of Riserva Naturale Oasi di Serranella (photo M. Pellegrini).



Figure 3. Detail of Riserva Naturale Lecceta di Torino di Sangro (photo M. Pellegrini).

al locations on the Majella mountain and in Francavilla, and by Dell'Agata (Grassi *et al.*, 2003-2005, unpublished data) on the Gran Sasso mountain.

Scopula emutaria (Figure A3) has also been found in Francavilla together with *S. nigropunctata*.

Grammodes bifasciata (Figure A3) is a tropical and subtropical species whose distribution area also includes southern Europe.

Diachrysis stenochrysis (syn. *tutti*) (Figures A3 and A7) and *D. chrysis* often show similarities in forewing drawing, as well as in the genital structure in males, so that a clear determination is not always possible. However, in the case of the 2 available examples the features were unambiguous.

Apart from the single find of *Phyllophila oblitterata* (Figure A3) the author could not obtain any further recordings in the Abruzzo region.

Recordings of *Amphipyra berbera*, *Heliiothis nubigera*, *Caradrina vicina* and *Nycteola siculana* (Figure A3, *A. berbera* also Figure A8) have also been made for the Majella mountain. The latter has also been located on the Gran Sasso mountain by Grassi *et al.* (2003-2005, unpublished data). Nomenclature of *C. vicina* differs from Nowacki & Fibiger (1996) who used the genus *Eremodrina* that has subsequently been down-graded to subgenus level by Hacker (2004).

Xanthia ocellaris (Figure A3), a very variable species, is one of the less frequent autumn species of the genus *Xanthia*. Apart from the 2 examples from the investigation area, the author could not obtain any further recordings from the Abruzzo region.

Archanara dissoluta (Figure A3) lives in wet habitats with stands of reeds where its caterpillars develop in the stems of *Phragmites* species. The author obtained one further recording for the Abruzzo region on the lower slopes of the Majella mountain on the banks of the river Aventino near Pianimarini.

Mythimna joannisi (Figure A3) is a species of Pan-African distribution that is also found on the major western Mediterranean islands, reaching continental Europe on the southern and eastern coast of Iberia and in southern Italy. While it was discovered in Lazio on the Tyrrhenian side of the Apennine Peninsula, the species has not previously been detected on the Adriatic side beyond Apulia. Its habitat is the reed areas near the coast where its feeding plant *Phragmites* species grows.

Ocneria ledereri (Figure A3) appears to be a rare species in the Abruzzo region. Apart from this single specimen, the author could not obtain any further recordings.

Conclusions

This study contributes valuable information to widen our knowledge of the occurrence and distribution of the Lepidoptera of central Italy. Fifteen species are published for the Abruzzo region for the first time; 2 species are new for the Italian peninsula.

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Contribution to the knowledge
of the Lepidoptera Fauna
of the lower Sangro valley
in the Abruzzo region of Central Italy

Appendix



Figure A1. *Phtheochroa ingradae* (photo Hinsberger).



Figure A3. 1st row from left: *Idaea ostrinaria*, *Scopula nigropunctata*, *Scopula emutaria*. 2nd row from left: *Grammodes bifasciata*, *Diachrysis stenochrysis*, *Phyllophila obliterata*. 3rd row from left: *Amphipyra berbera*, *Heliothis nubigera*, *Caradrina vicina*. 4th row from left: *Xanthia ocellaris*, *Archanara dissoluta*, *Mythimna joannisi*. 5th row from left: *Ocneria ledereri*, *Nycteola siculana* (photo Hinsberger).



Figure A2. *Herculia fulvociliaris* (photo Hinsberger).



Figure A4. *Gegenes nostradamus* (photo Hinsberger).



Figure A5. *Phtheochbroa ingridae* female genitalia (photo Müller).



Figure A7. *Diachrysia stenobrysis* male genitalia (photo Müller).



Figure A6. *Gegeles nostradamus* male genitalia (photo Müller).

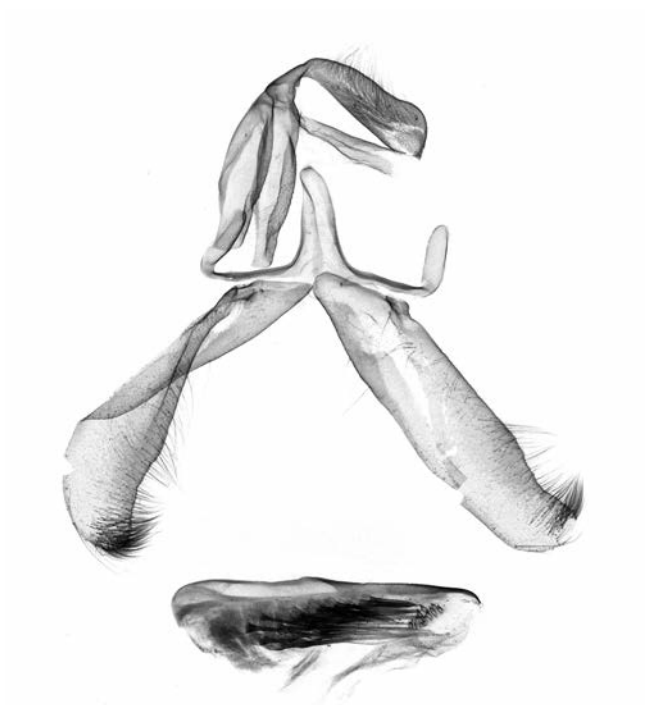


Figure A8. *Amphipyra berbera* male genitalia (photo Müller).