

hung down the overhanging wall to enable us to climb down into the entrance just beyond the reach of the waves which broke among boulders.

Following this passage, which was the only one in the complex requiring a light, a little way along dim light ahead showed that the passage passed right through the headland to the other side. Traversing a pool of water part way through the passage led us out into daylight at the other end. In contrast with the remainder of the complex, apart from the sea flowing in at either end, the whole of the passage could be traversed on foot.

With regard to the Virgin's Spring or the freshwater spring supposed to exist in the complex, no sign of this was seen in the passage traversed on foot, and as to the remainder it could obviously hardly be detected in view of the tide and depth of water present. Mr. Gade suggests that the Spring is a romantic invention, and although many references report the feature, none appear to have in fact seen the spring which tends to confirm Mr. Gade's suggestion.

As mentioned in last year's article, there would appear to be considerable variation in the quoted length of passage (i.e. not open to the sky) to be about 740 ft. In view of our findings and survey, perhaps the Ordnance Survey notation of this feature should be amended to the plural, i.e. Virgins Spring and Subterranean Passages.

## EARLY-JULY ON LUNDY: BUTTERFLIES AND MOTHS RECORDED

By C. GARRETT-JONES

The writer spent three nights at a cottage near the South Lighthouse, Lundy, from 6-9 July 1968. He sought and recorded the Macrolepidoptera intensively, except on 7 July when activity was largely prevented by bad weather. The methods used included day-time and evening collecting with a net and by inspection of Veronica and other flowers; one all-night catch (6 July) with a "Heath" black-light trap (Heath 1965), set up on the sloping moorland outside the cottage; and one evening of sugaring (8 July) in the wooded gully of Lundy House. (An attempt to run the light-trap again on 8 July was a failure, owing perhaps to the weakness of the battery used).

A total of 64 species was recorded (see table below).\* As many as 40 of these were taken in the light-trap. The sugaring added only two extra species (*A. segetum* and *P. meticulosa*), while the nine butterflies and 12 of the moths were recorded by net (or by eye). The last species—the *Convolvulus* Hawk—occurred under special circumstances, to be described.

Before considering individual species it is worth comparing the Lundy catch with that made in North Devon the week before. The writer stayed at Lee from 29 June to 6 July, collecting by the same methods (except that no sugaring was done). Daytime excursions were made to Woolacombe, Croyde and Braunton Burrows. The light-trap was run on four nights, but in less-open situations than the one on Lundy. The resulting records from North Devon amounted to 81 species and included only 10 butterflies. For the first three days (29 June to 1 July) the total was 50 species, 33 of which occurred in the trap in the course of two nights of successful operation. Later in the week 10 moths were added to the list by inspection of the flower heads of bush-Veronica.

The results suggest that the fauna of Lundy was richer than that of the mainland. This is supported by the fact that no fewer than 25 species, as signified in the Table of the Lundy record, were not found in North Devon in the seven days and nights of observation carried out there. Any such inference should only be drawn with caution, however: the degree of disparity due to chance, between any pair of samples from the same fauna, may be expected to increase in proportion to the square of the incompleteness of sampling. And of course these short periods of collection could give nothing approaching a complete representation of either fauna, even of the species actually flying at the time.

There is also a time-factor involved, since collection was not possible in areas at once and certain species in each area must have been at the extreme

start or finish of their flight-period. Of the 25 "Lundy-only" records, the following species were perhaps just starting their flight: Greyling (*E. semele*), Ringlet (*A. hyperanthus*), Antler (*C. graminis*), Northern Rustic (*A. lucernea*), Lesser Yellow Underwing (*E. comes*), Bordered Straw (*H. peltigera*), Brussels Lace (*C. lichenaria*), and Small Blood-vein (*S. imitaria*). But against these must be set some 10 species which should (according to Newmand and Leeds, 1913—a very useful source-book for this purpose) have been *ending* their flight in early-July, so that one might have expected they would be found more readily during the collecting at Lee, rather than during that on Lundy. Their detection on Lundy but not in North Devon may thus reflect a real difference in the two faunas. At any rate it seems to indicate a greater prevalence of certain species on Lundy, notably of the Red Admiral (*V. atalanta*), Painted Lady (*V. cardui*), Knot Grass (*A. rumicis*), Broom (*C. pisi*), Shears (*H. nana*), Spectacle (*V. triplasia*), and Little Emerald (*J. lactearia*).

The Red Admiral and Painted Lady were congregated on Veronica bushes in the garden of Lundy Hotel, but were also seen elsewhere on the island. It is remarkable that the migratory Painted Lady should be recorded there so easily but not have been found in similar situations on the mainland. One wonders if the scent of a small landfall may have the effect of attracting and concentrating the migrating insects. Almost as surprising was the failure to observe the Small Tortoiseshell (*Aglais urticae*) on Lundy—and its rarity in North Devon (where three or four were observed at one spot only). Likewise the Speckled Wood (*Pararge aegeria*) and Wall (*P. megaera*), occasional in North Devon, were not found on Lundy, perhaps because my visit fell between their broods.

To sum up concerning the butterflies, there was an unexpected degree of disparity between the prevalent species in the two areas, even allowing for the brevity of the observations. The following is a list of the species that appeared to be significantly more prevalent in one area than in the other (since one cannot assume that any species unrecorded was absent from either area):

#### Species more prevalent:

<i>on Lundy</i>	<i>in North Devon</i>
Red Admiral	Large White
Painted Lady	Small Tortoiseshell
Greyling	Speckled Wood
Ringlet	Small Heath
Meadow Brown	Common Blue
	Large Skipper

Among the moths found commonly on the mainland, but not among the Lundy records, were the Marbled Coronet (*Hadena conspersa*), Green Arches (*Anaplectoides prasina*), and Five-spot Burnet (*Zygaena trifolii*). The most notable difference in the opposite sense was the prevalence on Lundy of the Knot Grass (*Apatele rumicis*).

Finally, the Convolvulus Hawk (*H. convolvuli*) I have recorded from Lundy was a specimen picked up on a lawn on 8 July, dead and decaying, by one of the residents. It was identified only with difficulty, and I cannot say whether it had been dead for days, weeks, or perhaps months before it was found.

#### REFERENCES

- Heath, J. (1965). A genuinely portable MV light trap. *Ent. Record*, 77, 236.  
 Heath, J. (1967). Lepidoptera distribution maps scheme. *Bull. Amat. Ent. Soc.*, 26, 79.  
 Newman, L. W. & Leeds, H. A. (1913). *Textbook of British Butterflies and Moths*. St. Albans.  
 South R. (ed. Edelman and Fletcher, 1961). *The Moths of the British Isles*. London and New York.

\*The nomenclature used is that of South (1961). The species are arranged by families, and alphabetically in each family, to facilitate cross-reference to the record cards of the Biological Records Centre (see Heath, 1967), to which these records have been communicated.

TABLE  
LEPIDOPTERA RECORDED ON LUNDY ISLAND, 6-9 JULY 1968

<i>Species</i>	<i>British Name</i>	<i>Frequency</i>
<b>PIERIDAE</b>		
<i>Pieris brassicae</i>	Large White	Uncommon
<i>P. rapae</i>	Small White	Uncommon
<b>LYCAENIDAE</b>		
<i>Polyommatus icarus</i>	Common Blue	Uncommon
<b>NYMPHALIDAE</b>		
<i>Vanessa atalanta</i>	Red Admiral	Common*
<i>V. cardui</i>	Painted Lady	Common*
<b>SATYRIDAE</b>		
<i>Aphantopus hyperantus</i>	Ringlet	Localised*
<i>Coenonympha pamphilus</i>	Small Heath	Uncommon
<i>Eumenis semele</i>	Greyling	Common*
<i>Maniola jurtina</i>	Meadow Brown	Very common
<b>SPHINGIDAE</b>		
<i>Herse convolvuli</i>	Convolvulus Hawk	(one)
<b>NOTODONTIDAE</b>		
<i>Phalera bucephala</i>	Buff-tip	One
<b>ARCTIIDAE</b>		
<i>Arctia villica</i>	Cream-spot Tiger	One* <sup>1</sup>
<i>Spilosoma lubricipeda</i>	White Ermine	Uncommon
<i>S. lutea</i>	Buff Ermine	Uncommon
<b>NOCTUIDAE</b>		
<i>Agrotis exclamationis</i>	Heart and Dart	Common
<i>A. ipsilon</i>	Dark Sword Grass	Uncommon
<i>A. ipsilon</i>	Dark Sword Grass	Uncommon
<i>A. segetum</i>	Turnip	One
<i>A. trux</i>	Crescent Dart	Common
<i>Ammogrotis lucernea</i>	Northern Rustic	Common*
<i>Apamea crenata</i>	Clouded-bordered Brindle	One
<i>A. lithoxylea</i>	Light Arches	Uncommon
<i>A. monoglypha</i>	Dark Arches	Common
<i>A. remissa</i>	Dusky Brocade	One
<i>Apatele rumicis</i>	Knot Grass	Common*
<i>Axylia putris</i>	Flame	Uncommon
<i>Caradrina blanda</i>	Rustic	Uncommon*
<i>Ceramica pisi</i>	Broom	Uncommon*
<i>Cerapteryx graminis</i>	Antler	One*
<i>Diarsia mendica</i>	Ingrailed Clay	Common
<i>Diatarazia oleracea</i>	Bright-line Brown-eye	Very Common
<i>Euplexia lucipara</i>	Small Angle Shades	Common
<i>Euschesia comes</i>	Lesser Yellow Underwing	One <sup>2*</sup>
<i>Hada nana</i>	Shears	Uncommon*
<i>Heliothis peltigera</i>	Bordered Straw	One*
<i>Hypena proboscidalis</i>	Snout	Uncommon
<i>Leucania lythargyria</i>	Clay	Uncommon
<i>Mamestra brassicae</i>	Cabbage	Uncommon
<i>Noctua pronuba</i>	Large Yellow Underwing	Common
<i>Ochropleura plecta</i>	Flame Shoulder	Uncommon
<i>Phlogophora meticulosa</i>	Angle Shades	One
<i>Plusia gamma</i>	Silver Y	Very Common
<i>Procus fasciuncula</i>	Middle-barred Minor	Uncommon
<i>P. strigilis(?)</i>	Marbled Minor	Common
<i>Rusina ferruginea</i>	Brown Rustic	Uncommon
<i>Unca triplasia</i>	Spectacle	Uncommon*

Species	British Name	Frequency
<b>GEOMETRIDAE</b>		
<i>Alcis repandata</i>	Mottled Beauty	Common
<i>Bapta temerata</i>	Clouded Silver	Uncommon
<i>Cleora rhomboidaria</i>	Willow Beauty	Uncommon
<i>Cleorodes lichenaria</i>	Brussels Lace	One*
<i>Euphyia bilineata</i>	Yellow Shell	Common
<i>Euphithecia abbreviata</i> (?)	Brindled Pug	Common*
<i>E. distinctaria</i>	Thyme Pug	Common*
<i>E. pulchellata</i>	Foxglove Pug	Common
<i>Jodis lactearia</i>	Little Emerald	Uncommon*
<i>Opisthograptus luteolata</i>	Brimstone	One
<i>Ortholitha plumbaria</i> (?)	July Belle	One*
<i>Perizoma alchemillata</i>	Small Rivulet	Uncommon*
<i>Scopula conjugata</i>	Mullein Wave	One*
<i>S. imitaria</i>	Small Blood-vein	One*
<i>S. immutata</i>	Lesser Cream Wave	One*
<i>Sterrha aversata</i>	Riband Wave	Uncommon
<i>S. dimidiata</i>	Single Dotted Wave	One*
<i>S. subsericiata</i>	Satin Wave	One*
<i>Xanthorhoe montanata</i>	Silver-ground Carpet	One

\*Species not found during the preceding week (29 June to 5 July inclusive) of similar collecting at Lee, North Devon, with daytime collecting also at Woolacombe and Saunton.

<sup>1</sup>Identified in light-trap at evening inspection, but gone when trap was cleared at 7 a.m.

<sup>2</sup>An extremely blackish specimen, resembling the Shetland race.

## A REPORT ON THE ARACHNIDS OF LUNDY

(The results of the B.Y.N.A. Expedition, 1966)

From the 30th August to the 14th September 1966 a group of six senior members of the British Young Naturalists Association visited Lundy. The expedition was comprised of the following members:—C. A. Howes, c/o R.A.M. Museum, Exeter (Leader and Zoologist); J. Ginnever, Acombe, York (Ornithologist); J. Jaggard, Little Paxton, Huntingdon (Geologist) & G. Wilkinson, Huddersfield, Yorkshire (Botanist); D. Letheren, Exeter, Devon (Field assistant); C. Gregg, Exeter, Devon (Photographer).

The aims of the expedition were: firstly to enable this group of young biologists to carry out schemes of fieldwork of their own choosing with a view to publishing the results and becoming established as active scientific workers; and secondly to produce an educational film outlining the natural history and geology of Lundy, showing the equipment and field methods used in studying each particular subject. The film, entitled 'Portrait of an Island', has been made and is being used in schools, colleges, and Natural History societies throughout the country to encourage field work and the study of Ecology among young people.

The following report outlines the results of the Arachnid survey carried out by C. A. Howe (A paper on the survey is being prepared and will eventually be available from the secretary or the L.F.S.)

## SYSTEMATIC LIST

(Spiders)

### DYCTYNIDAE

*Ciniflo ferox*, Walk. A common and widespread species occurring in cliff faces, banks, walls, and under stones.

*Ciniflo similis*, Bl. Another common and widespread species occurring as *C. ferox*.