painted on the cliffs with his wife to help him. It was a wonderfully interesting experience ; to my father, a naturalist and lover of birds, especially.

At the time I am writing of the little community on the Island were very much cut off from the world. Most of the modern means of communicating intelligence to a distance were then unthought of. Even flag-signalling was not much developed or practised. If the people on the Island wanted the "Ranger" to come over for some urgent reason they lighted a bonfire. If a doctor was to be brought, they lighted two, then the doctor would drive eleven miles from Bideford to Clovelly, and as soon as possible the "Ranger" would take him across.

At that time, as for many years afterwards, the Heaven family were the owners of the Island, and made their home on it. They treated my father and mother with the hospitality they always showed, so that they and the newcomers were soon friends. With the work at Lundy finished, my father and mother were soon back at Hambledon, and there was time to think of the inland subjects that were so ready to hand, and two were painted which appeared in the Academy Exhibition of 1858 : "Children's children are the crown of old men, and the glory of children are their fathers," and "A Pastoral". Along with these was the fruit of the Lundy expedition "The Coast-boy gathering eggs".'

A REPORT ON THE ENDOPARASITES FOUND ON LUNDY, 1956-57

By Barbara Cole (*nee* Morris)

This is a short account of some of the results of the work done on parasites on Lundy from September 1956 to September 1957. Collection of material over this period was continuous except for the months of December and January.

Parasites from vertebrate hosts, mainly birds, comprised fourteen species of fluke, fourteen species of tapeworm and nineteen species of roundworm. In addition, one or two examples of spiny-headed worms were found, but not identified. None of these parasites was a new discovery, but there were several new records made, both of the occurrence of a parasite in a particular host and its occurrence in this country. Most of these records were made among the flukes.

Invertebrate hosts, the great majority of them marine molluscs, were examined in far greater numbers, since they were much more easily obtainable. In the collection and examination of these hosts, several projects were borne in mind. First there was the identification of the various larval parasites found in these hosts, but besides this

it was attempted to find possible correlations between the locality of the host on the island, its size, its sex, and the time of year at which it was collected, and the percentage infection of the population.

Fifteen species of larval trematodes were collected in all, mainly from molluscs, but also from two species of crab.

In the case of almost every species of host, there was a definite correlation between the percentage infection and the locality from which the hosts were collected. In most cases the percentage infection was lowest in molluscs from the landing beach, slightly higher in those from the North Light, followed by Brazen Ward, with the highest percentage of all from Jenny's Cove. This result bears out the findings of the American worker, Hoff, that the rate of infection of the secondary hosts is directly connected with the habits of the final hosts, which are mainly sea-birds. These are found to breed and roost in colonies near both Jenny's Cove and Brazen Ward, but suffer more disturbance at North Light and especially in the neighbourhood of the Landing Beach.

There was another clear correlation between the size of the host and the percentage infection. In all species except the top-shells the rate of infection increased steadily with the size group. This has been attributed in the past to several factors, with a strong bias towards the theory that parasitic infection causes an increase in the growth rate of the host and may lead to gigantism. In some cases it was noted that a heavy infection by some species of cercaria led to a reduction of the external genital apparatus, but this was not a constant feature.

It was interesting that with every species of mollusc the percentage of females infected was greatly higher than that of the males. This is in direct opposition to the findings of previous workers in this field, and at the moment no explanation can be offered.

There was, rather surprisingly, no constant relation between the percentage infection and the time of year at which the sample was taken.

With regard to the parasites themselves, the tapeworms and roundworms showed no features of particular interest. Among the adult flukes, several interesting points occurred. A fluke was found in the liver of the cuckoo which set up two new records ; the fluke itself, though known on the Continent, had not been found previously in this country, and this is the first occasion on which any trematode has been recorded from the cuckoo. Perhaps the most interesting individual fluke was *Renicola sloanei* from the kidney of the guillemot, which was first discovered and described only a few years ago, and has a peculiarly undeveloped internal structure.

Among the larval trematodes the most noteworthy feature was the appearance of *Cercaria strigata* in the limpet. This parasite has previously been found exclusively in sand-dwelling molluscs. In the absence of these from the littoral fauna of Lundy the fluke has apparently adapted itself to a rock-dwelling host.

APPENDIX

A LIST OF THE PARASITES COLLECTED AND THEIR HOSTS

New records for this country are marked †, new host records *.

TREMATODA

Adults	
Helicometra fasciata	**Lepadogaster bimaculatus* (Two-spotted Sucker)
Plagioporus sp.	**Nerophis lumbriciformis* (Worm Pipe-fish)
Dicrocoelium dendriticum	*Ovis aries* (Sheep)
	Oryctolagus cuniculus (Rabbit)
†*Lyperosomum olssoni*	**Turdus merula* (Blackbird)
	**Cuculus canorus* (Cuckoo)
†*Cotylurus cornutus*	**Calidris alpina* (Dunlin)
†*Brachylaemus arcuatus*	**Turdus merula* (Blackbird)
	**T. ericetorum* (Song Thrush)
	**Sturnus vulgaris* (Starling)
†*Brachylaemus recurvus*	*Rattus rattus* (Black Rat)
	R. norvegicus (Brown Rat)
Spelotrema simile	*Larus argentatus* (Herring Gull)
	Rattus norvegicus (Brown Rat)
Cryptocotyle lingua	**Uria aalge* (Guillemot)
	Rissa tridactyla (Kittiwake)
	Larus marinus (Great Black-backed Gull)
	L. argentatus (Herring Gull)
†*Galactosomum lacteum*	*Phalacrocorax aristotelis* (Shag)
Renicola sloanei	*Uria aalge* (Guillemot)
†*Plagiorchis fastuosus*	*Calidris alpina* (Dunlin)
Echinostoma sp.	**Calidris alpina* (Dunlin)
Larval Forms	
Cercaria margaritae	*Mytilus edulis* (Common Mussel)
Cercaria strigata	**Patella vulgata* (Limpet)
Gymnophallus sp.	**Nucella lapillus* (Dog Whelk)
Cercaria ubiquitoides	*Littorina neritoides* (Small Periwinkle)
	L. rudis (Rough Periwinkle)
Cercaria roscovita	*L. neritoides* (Small Periwinkle)
	L. rudis (Rough Periwinkle)
Cercaria littorinae-rudis	*L. rudis* (Rough Periwinkle)
Cercaria minor	*Carcinus maenas* (Shore Crab)
	Xantho incisus
Cercaria linearis	*Gibbula* spp. (Top Shells)
	Osolinus lineatus (Thick Top Shells)
Cercaria purpurae	*Nucella lapillus* (Dog Whelk)
Cercaria lophocerca	*Littorina littorea* (Edible Periwinkle)
Cercaria Fasciolidae hepaticae	*Limnaea truncutula*
Metacercaria A.	*Littorina* spp. (Periwinkles)
Metacercaria B.	*L. neritoides* (Small Periwinkle)
	L. rudis (Rough Periwinkle)
Metacercaria N.	*Nucella lapillus* (Dog Whelk)

CESTODA

Cittotaenia denticulata	*Oryctolagus cuniculus* (Rabbit)
Anomotaenia nymphaea	*Numenius arquata* (Curlew)
Anomotaenia constricta	*Corvus corone* (Carrion Crow)
Dilepis undula	*Turdus merula* (Blackbird)
	T. ericetorum (Song Thrush)
	T. musicus (Redwing)

Anonchotaenia globata	*Sylvia communis* (Whitethroat)
	S. curruca (Lesser Whitethroat)
Echinocotyle nitidulans	*Calidris alpina* (Dunlin)
Haploparaxis dujardini	*Turdus ericetorum* (Song Thrush)
Hymenolepis intermedia	*Cuculus canorus* (Cuckoo)
Hymenolepis diminuta	*Rattus norvegicus* (Brown Rat)
Hymenolepis farciminosa	*Carduelis cannabina* (Linnet)
Tetrabothrium erostre	*Larus argentatus* (Herring Gull)
	L. marinus (Great Black-backed Gull)
Tetrabothrium heterosomum	*Phalacrocorax aristotelis* (Shag)
Tetrabothrium jagerskioldi	*Alca torda* (Razorbill)

NEMATODA

Contracaecum spiculigerum	*Uria aalge* (Guillemot)
	Alca torda (Razorbill)
	Phalacrocorax aristotelis (Shag)
	Rissa tridactyla (Kittiwake)
Contracaecum auctum	*Blennius pholis* (Blenny)
Porrocaecum ensicaudatum	*Turdus ericetorum* (Song Thrush)
	T. merula (Blackbird)
	T. musicus (Redwing)
Syngamus trachealis	*Corvus corone* (Carrion Crow)
Trichostrongylus retortaeformis	*Oryctolagus cuniculus* (Rabbit)
Graphidium strigosum	*Oryctolagus cuniculus* (Rabbit)
Capillaria columbae	*Columba livia* (Rock Dove)
†*Capillaria ovopunctata*	*Sturnus vulgaris* (Starling)
Capillaria sp. (prob. *C. carbonis*)	*Larus argentatus* (Herring Gull)
	Phalacrocorax aristotelis (Shag)
Capillaria sp.	*Oenanthe oenanthe* (Wheatear)
Seuratia shipleyi	*Larus argentatus* (Herring Gull)
	L. marinus (Great Black-backed Gull)
Acuaria squamata	*Phalacocorax aristotelis* (Shag)
Echinuria squamata	*Larus argentatus* (Herring Gull)
Rusguniella elongata	*Phalacrocorax aristotelis* (Shag)
Cosmocephalus s.p.	*P. aristotelis* (Shag)
	Larus marinus (Great Black-backed Gull)
	L. argentatus (Herring Gull)
Diplotriaenia bargusinica	*Oenanthe oenanthe* (Wheatear)
Chandlerella sp.	*Sturnus vulgaris* (Starling)
Aspicularis sp.	*Oryctolagus cuniculus* (Rabbit)
Unidentified specimen	*Turdus ericetorum* (Song Thrush)

Unparasitise Hosts

Cancer pagurus (Edible Crab)
Porcellana platycheles (Porcelain Crab)
Portunus puber (Fiddler Crab)
Xantho hydrophilus
Blennius montagui (Montagu's Blenny)
Calidris maritima (Purple Sandpiper)
Larus fuscus (Lesser Black-backed Gull)
Delichon urbica (House Martin)
Corvus corax (Raven)
Phylloscopus trochilus (Willow Warbler)
P. collybita (Chiffchaff)
Regulus regulus (Goldcrest)
Anthus pratensis (Meadow Pipit)
Chloris chloris (Greenfinch)
Fringilla coelebs (Chaffinch)
Sorex minutus (Pygmy Shrew)