The Reading Naturalist

No. 28

Published by the Reading and District
Natural History Society
1976

Price to Non-Members 25p

THE READING NATURALIST

No. 28 for the year 1974-75

The Journal of

The Reading and District Natural History

Society

Contents

Meetings and Excursions 1974-75

The first of the winter evening meetings was the Annual General Meeting on October 17th, at which the President delivered his Presidential Address on Flies (attendance 43). Other lectures given during the winter were 'Primroses, Cowslips and Oxlips', by Dr. M. Keith-Lucas (42); 'Insect Flight related to Weather', by Mr. P. A. Davey (37); 'Toadstools, Lime and Fire', by Dr. F. B. Hora (45); 'Rabies', by Professor C. Kaplan (30); 'Birds of the Reading Area', by Mr. C. B. Cole (51); and 'Agriculture in the Himalayan Kingdom of Nepal', by Mr. A. B. Shrestha (34). The BBC Horizon film 'The Wood' was shown by Dr. J. Philips at another meeting (64) and there were two Members' Evenings of Films, Talks and Exhibits (53 and 55). There were also a joint meeting with the Berkshire, Buckinghamshire and Oxfordshire Naturalists' Trust (56) and a Berkshire, Buckinghamshire and Oxfordshire meeting at Pangbourne.

Winter walks were taken in the Pangbourne area on November 16th (17); in Englefield Park, for trees and birds, on December 14th; at Reading gravel pits, for birds, on February 8th (20); and in the Mortimer and Aldermaston area for mosses on March 8th (23). A microscopical afternoon was held at 6 Mansfield Road, Reading, on January 11th (11).

The summer field excursions were to Mongewell Heath for Helleborus viridis on April 19th (31+); Stratfield Saye, an evening excursion for fritillaries and bats, on April 30th (28); Wargrave Marsh Reserve on May 3rd (47); Wytham Wood, Oxon., on May 10th (23); Sulham Woods, an evening excursion, on May 21st (c. 20); Aston Upthorpe Reserve, for Orchis ustulata, on May 31st (28); Buttlers Hangings Reserve, West Wycombe, for chalk flora and butterflies, on June 14th (20); Burghfield to Tile Mill, an evening excursion, on June 18th (c. 18); Snelsmore Common, a joint meeting with Newbury Field Club, on June 28th (3? + 9); Wicken Fen and Devils's Dyke, a coach Excursion, on July 5th (30); Wittenham Clumps, a joint meeting with Abingdon Natural History Society, on July 12th (16 + ?8); Hungerford Meads, an ancient field system with a rich natural flora, on July 26th (20); Moor Copse Reserve, a late evening meeting for moths, on August 1st (18); Cock Marsh, Marlow, on August 9th (14); South Hill Park nature trail and woodland at Caesar's Camp, Bracknell, with Crowthorne Natural History Society, on August 23rd (7); Pangbourne Heath, an evening excursion on August 27th (16); Hook Common, on September 6th (21); Thatcham Marsh, on September 20th (c. 30); Windsor Forest, a fungus foray, on October 4th (18 members and 9 others); and Wasing Wood, a fungus foray, on October 18th (c. 40).

Flies

The Presidential Address

to the Reading and District Natural History Society

17th October 1974

by H. H. Carter

The Diptera are a group more highly specialised for flight than any other order of insects, so much so that whereas these other orders may contain dragonflies, mayflies, stoneflies, caddis flies, butterflies and the like, the simple name 'Flies' has been appropriated to the Diptera alone.

Reduction in weight, always a matter of the first importance for flight, has been achieved in two ways. The insect as a whole is frail and lightly sclerotised, not relying on its exoskeleton for protection, although the profuse development of spiny bristles in some higher Diptera may have a protective function. Secondly there has been reduction or loss of certain organs throughout the order. Most obviously, the hind wings have been converted into halteres, organs which detect any movement of the body in three dimensions. This sensitivity to movement has enabled the flies to develop great agility and precision in flight, including ability to hover, to a degree not found in other orders.

The antennae, thread-like and trailing in the primitive and relatively slow-flying Nematocera, have become compact, with short broad basal segments and a hair-like arista in the higher flies, without any loss of sensitivity to odours. The power of scent is acute and of prime importance for locating food (as can be seen from the rapidity with which flies come to an odoriferous bait), mates, and suitable sites for oviposition. Flies also have good sight, but no special organs of hearing.

The mouthparts are also reduced throughout the order. Biting jaws, necessarily massive in themselves and requiring equally massive musculature and points of attachment have given way to suctorial apparatus. Only in a few bloodsucking families with a partly aquatic life cycle are the mandibles retained, and here they are reduced to extremely slender piercing stylets. Generally the maxillae are also reduced, and all that remains of the original insect mouthparts are the labial palps, organs of touch and taste which remain indispensable because of the inability of an insect to see what it is eating by reason of the position and structure of the eyes.

Fly larvae are also highly specialised in structure although not always in feeding habits. All are without legs, and only the more primitive forms retain a head with sensory organs and biting mouthparts. The larvae of higher flies are headless maggots with hardly any obvious external structure apart from the possession of a front and back end. As in the adults, any mouthparts present are secondary developments.

The basic larval habitat, and the one to which the majority

of species have remained faithful, is wet decaying vegetation. From this, adaptive radiation has proceeded along several paths; through mud to a fully aquatic life; through living plants to leaf-mining and gall making; through rotting animal remains to animal dung, scavenging (from which probably brood parasitism has evolved), predation and internal parasitism. Fully free-living larvae are very uncommon, being found mainly among the aphid-eating members of the Syrphidae.

Brood parasitism and internal parasitism have been evolved independently by many different families of Diptera, and the host range is even wider than in the parasitic Hymenoptera. The hosts include mammals, birds, amphibians, all the larger orders of terrestrial insects, Arachnida, centipedes, crustaceans (only the terrestrial woodlice), worms and land Mollusca. The only major limitation is the inability of adult flies to penetrate the aquatic habitat in search of hosts on which to lay eggs. Probably only the nematodes, which are free from this limitation, have a wider host range.

Although small in size, the Diptera are often conspicuous by their brilliant colouring. Sometimes this serves an obvious function, as when it mimics aposematic bees and wasps, but in many families iridescent or metallic colouring is frequent and serves no obvious purpose, but nevertheless adds interest and pleasure to the study of the group.

Variation in a mixed population of banded snails (*Cepaea* spp.) on Swyncombe Down, near Reading

by R. H. Smith

Genetic polymorphisms are of great interest to evolutionary biologists as they represent situations where the forces of natural selection have reached a balance such that two or more distinct forms (morphs) are maintained together in a population. The banded snails *Cepaea nemoralis* (L.) and *C. hortensis* (Müller) are well-known for the variation they show in shell-colour (basically yellow, pink or brown, but with many intermediates) and the pattern of the dark brown or black longitudinal bands (up to five on each whorl which, if present, may sometimes be fused). Most populations consist of at least two colour and banding classes (Cain and Sheppard, 1954), although there are some localities such as parts of the Marlborough Downs where large areas contain only one form (Cain and Currey, 1963).

There are many reasons why a balanced polymorphism may be maintained (Maynard Smith, 1970) although it is still not clear which factors are responsible in the case of *Cepaea*. However, it is known that selection by visual predation modifies the proportions of different forms (Cain and Sheppard, 1950) and the impact of the thrush (*Turdus philomelos* (L.)) is relatively easy to assess because of the bird's habit of smashing the shells on a stone or some other suitable "anvil". Comparison of the broken shells with a representative sample of snails from the live population will reveal whether the birds find proportionally more of the morphs that are conspicuous in that particular habitat. Cain and Sheppard (1950, 1954) showed that, in general, pink, unbanded snails were at an advantage in beech-wood leaf litter whereas yellow, banded snails were least conspicuous to thrushes in downland grass and hedgerows.

The colony chosen for study was in an area of rough herbage flanked by a beech-wood on Swyncombe Down to the north of Reading (grid reference SU 670917), just off the Icknield Way. On 3/5/1974 the anvils (found mainly under bushes) were cleared of broken shells and a number of living snails were collected by second year Zoology students from Reading University. Because the broken shells could have accumulated over several years, a second collection was made on 25/4/1975 so that the second sample represented snails that had been killed during the year. No attempt was made to distinguish between the two species of *Cepaea* since identification without dissection is often doubtful (Quick, 1952). Several different banding patterns were present, but no brown shells. The data are summarised in the table; banding patterns have been classified as either effectively unbanded (top two bands on each whorl missing) or banded.

	Living				Dead				
	YB	PB	YU	PU	YB	PB	YU	PU	Total
1974	67	10	6	5	301	159	5	7	560
1975	101	23	4	6	267	123	2	1	527
Total	168	33	10	11	568	282	7	8	1087

Y - yellow, P - pink, B - banded, U - effectively unbanded

The data were sub-classified in various ways, and chi-squared tests were used to discover whether the observed frequencies differed significantly from those expected under different null hypotheses. The results of the analysis can be briefly summarised as follows:-

1. The data for the two years are significantly different because in 1975, there were more living YB and PB and less dead PU and PB than in 1974. Despite these differnces, the rest of the conclusions are qualitatively the same for both years' data.

2. Snails with pink shells are more likely to be preyed upon than those with yellow (averaging over banding patterns).

3. Snails with unbanded shells are more likely to be preyed upon than those with banded (averaging over colour).

4. In addition to the separate effects of 2. and 3., there is selective predation against PB (PU may be maintained by migration from the adjacent beech-wood where it is probably less conspicuous).

5. In the "anvil population" of shells, there is no association between colour and banding whereas the living snails include more YB and PU than would be expected if colour and banding were independent. These results are in agreement with those of Cain and Sheppard for a similar area nearby (Christmas Common).

Yellow snails with bands are certainly less obvious than other forms on short turf, so it is not surprising that YB is the commonest morph. The continued maintenance of the other forms is not explained, however. The presence of pink, unbanded snails is probably a result of migration from the beech-wood but, since the genes controlling colour and banding are known to be closely linked (Cain et al, 1968), there are clearly unknown selective forces involved maintaining YU and PB in the population. There are many other predators besides thrushes, for instance rabbits, which are common in the area. I have observed slow-worms (Anguis fragilis L.) investigating a moving Cepaea nemoralis with their tongues and then retiring, even though a snail extended from its shell looks as inviting as the small slugs that slow-worms devour so voraciously, so some of the snails may exude a noxious substance which could be related to the visible polymorphism, possibly indirectly through their food-plant. Coloration will also have secondary effects on heat gain and loss through radiation, but whether or not this is a biologically significant factor still has to be assessed.

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A Study of the Vocalization of the Tawny Owl (Strix aluco L.)

by S. Martin Brown

One of our more common owls is the Tawny Owl, Strix aluco L., a nocturnal bird more often heard than seen, but how much do we really know about the vocabulary of this beautiful owl ? It seems not very much. Even Shakespeare who was often thought to be a good naturalist mis-interpreted the song of the Tawny Owl as, "Tu-whit, tu whoo". In fact what he heard were probably two Tawny Owls calling, a male singing, "Hoooooo-hooo hoohoooooo " and a female probably replying with a sharp, "Kewick". When combined this gives us a, "Hoooooo-kewick-hooohoohooooooo" which is very similar in auditory effect to, "Tu-whit, tu-whoo " if exaggerated by a not too careful listener.

Tawny Owls are drab in colour compared to other birds and because they are nocturnal they have no need for elaborate colourful plumage for territorial threats and displays. Obviously this is because they would not be visible clearly. However other faculties have been elaborated to make up for this lack of colour and to assist in communication. These include the broad development of the owl's vocabulary thus helping it to distinguish between the sexes, and a well developed sense of hearing. Not only has the Tawny Owl to make up for the lack of expression through a colourful plumage and to communicate physical expressions through the darkness of the night, they must also be able to penetrate the night with their calls, so that they may converse with other owls and hopefully find a suitable companion.

To enable the Tawny Owl to penetrate the night and communicate over long distances without the calls being absorbed by the trees and other obstacles, the owls have utilised calls and songs in the lower sound-frequency spectrum. Sounds of higher frequencies are more quickly absorbed by trees and other obstacles and therefore their audible range is much shorter.

Within a single year Tawny Owl vocalizations may be divided up into two subsequent periods, both of which correlate very well with the beginning and end of the breeding season. The first period of song builds up to a peak in mid-January when the owls are establishing territories and mating. This precedes the peak of the breeding season which is from the second week of March to the second week of April. Once the eggs are laid and the young are hatching there is a decline in the amount of calling. The second period builds up to a peak after the fledging of the young. This peak is about September when the young owls are very vocal and trying to establish themselves with their own territories against the other well established owls.

In the evening Tawny Owls generally begin calling just after sunset until it is dark. After dark they have begun hunting for their prey, and the amount of vocal activity it seems decreases somewhat. But quite frequently there are sudden outbursts when the owls in a large area all begin calling in chorus or you may have a pair of owls that begin calling furiously at each other as a scuffle breaks out.

When Tawny Owls do have reason to call during the day it is usually because they have been disturbed or are being mobbed by smaller birds, in which case there will be a lot of clatter from these smaller birds.

The weather has a very marked effect upon the vocal activity of Tawny Owls. Vocal activity is greatest, amounting to over sixty per cent, on clear nights with little or no cloud, and in these situations it is usually calm and sound carries very well and is audible over great distances. Over thirty per cent of the calls are made on overcast nights, and the remaining percentage accounts for bad weather including fog, mist, drizzle, rain and snow.

The Tawny Owl has as wide a vocabulary as any other bird, if not much wider. There are two very common calls which are known to most people. These are the sharp "kewicking" and the eerie "hooting" calls. Of these two calls the "hooting" has the greater number of variations. There are also many other calls which are far from well-known and the number of variations of these calls are mainly undocumented.

Describing calls on paper is a very difficult process but the "hooting" calls are fairly easy. The most common of these is the "Hooooooooooo-Hoochoochoochoochoo", and the "Hooooooooooo". There is also a shorter version of "Hoooooo". These three calls form the basis for other "hooting" calls. These are just some of

the variations: "Hoooooo-Hooohooohooooooo", "Hooohooohooooooo", "Hooooooooooohoohoohooooooo", "Hoooooo-oo", "Hooooooo-oo-o", and a "Hoooohooooooo", which sounds like the cat-call whistle of "Whit-wheeoo". If you hear an owl calling this, you begin to wonder who taught it!

Some of the "hooting" calls end in a quiet warbling. However it is possible that all hoots end with this as it may depend on how near you are to the owl as to whether you can hear the terminal warbling. Calls of this description include: "Hooooooooo-Hooooooooooooooo", "Hooooooooo-oo", "Hoooooooooo", "Hooooooooo-oooo" and a "Hoooo-Hooohoooohooooooooo", The underlining represents the warbling phrase. And finally there are the warbling "oooo's", whining "hoots", and a "milk bottle hoot", which sounds as if you were blowing over the lip of a milk bottle at a much lower frequency.

Of the "kewick" calls there are two common variations, a "kew", and a "wick" call. Other calls heard are whining-like calls and the following rarely heard calls of "twink", a barking "woick", a "weeoo", a "woorak", a "cuck-cuck-cuckoo", a "quorking" and some screeching noises. Bill snapping is hardly vocal but is, I think, relevant as it is used in communication by young owls at rest as a threat to possible intruders. It is also used by angry owls.

The most difficult part of studying bird vocalization is the interpretation of the calls and songs, and this part is still far from complete. However, I shall attempt to translate the meaning of these calls and songs based on that which I have learnt so far.

The well-known "Hooooooooooooo-Hooohooohooohooooo" occurs throughout the year and is, I think, the song of the territorial male. It is frequently heard as "Hooooooooooooo" which is also probably of territorial significance. The shorter "Hoooooo" although not so frequently heard is also heard throughout the year, and its meaning is probably similar to the longer version. All the other "hoots" apart from the warbling hoot are not very common and I am unsure of their interpretation. This also applies to the warbling "hoots" and most versions are uncommon except "Hooooooooooo" which occurs throughout the year.

Of these "hoots" one can soon deduce that there are several basic "hoots" which are common and many variations which are infrequently heard.

The "whining" calls and "hoots" occur primarily in the months of February, March and April and are associated with the breeding season. From this I would assume that they have definitely something to do with breeding and I have heard these calls made by two owls each getting closer to each other. As they get closer together there is more whining and some clattering in the branches, so possibly the calls are made prior to mating. The calls probably serve as some form of appeasement to each partner as both sexes are naturally aggressive towards each other.

The "woick" barking call, the "twink", the "woorak", the

"cuck-cuck-cuckoo", the "kew", the "wick" and the "screeching" calls are all fairly rare calls to be heard and their meaning is unknown to me. The "weeoo" call is also uncommon but has been recorded throughout the year and the common "kewick" call is also heard throughout the year. The "kewick" call could possibly be a contact call as it is short and sharp, whereas most song is of a long duration.

This paper, I hope, has given some idea of the types and meanings of the Tawny Owl songs and calls. I hope soon to carry out more extensive studies, when, firstly, I have obtained a better understanding of the Tawny Owl's behaviour from the other researchers, and secondly, when I have obtained some suitable playback equipment. With a better understanding of their behaviour and the ability to record the behavioural reactions due to playbacks, I should be able to decipher more easily the meanings of songs and calls. In addition, I would like to make spectrographs of each vocalization and use this method to identify each owl individually, and to use it for comparisons. Any help from those working in similar fields would be gratefully received.

I wish to acknowledge the help of the following persons: Mr. Ron Kettle of the British Library of Wildlife Sound, the late A. G. Field, R. W. Greener and Douglas Bower, all of whom supplied copies of their tapes on Tawny Owls.

I am also grateful for the assistance of Peter Holden and the Young Ornithologists' Club, who ran a survey on Tawny Owls, and all those who took part. I also wish to thank Ruth Murray, Graham Hirons and David Glue.

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Vocalization of the Tawny Owl - a note

My owl, WOL, frequently uttered a low warbling note without hooting and would sometimes reply when I imitated this. I took it to be conversational sounds between two birds close together.

C. J. Leeke

A Visit to Malaysia 1975

by C. J. Leeke

It all began in the summer of 1974 when my friend and ex-colleague Ted Bicknell came home on leave from Malaysia, and stayed a while with us. He said, "Why don't you come out to us next summer?" We tossed this rather daring, hitherto unthinkable, notion about more in fun than resolution, until February when we consulted British Airways and bought tickets. Then a nail-biting wait for the reply to our query, "Did you really mean it?"

After a combined course of passive and active immunisation against a variety of tropical pathogens, some useful briefing from our friends on clothing and armed with difficult-to-come-by items as gifts, we boarded flight B.A. 930, four hours delayed by a strike of caterers, and were airborne at 23.30 on July 12th.

The flight was technically uneventful, but aesthetically sheer delight. Illuminated London fell away rapidly in an awe-inspiring climb; then the electric filigree of some European towns passed slowly by six miles below.

The dawn came towards us from Asia Minor. First, a light streak in the eastern sky rapidly extending in a long, shallow curve as the horizon marked the silhouette of a round Earth. Then this widened to an enormous crescent as far as the eye could see. Finally the huge blood red orb appeared - below the dark silhouette! It was cloud cover following the more solid curvature beneath. In minutes the fierce sun was above the clouds and the rarified atmosphere offered insufficient protection; so regretfully the blind was lowered and we slept until the only landfall at Bahrein.

An hour later we followed Concorde into a brilliant sky over the Persian Gulf with its toy ships and white-tipped waves. I slept as Bombay slid slowly by and awoke to see a large, brown river carrying monsoon water towards Madras. The broken clouds followed exactly the shape of the sub-continent, the golden strand forming a narrow border as India too was left behind. The sun was setting over the densely wooded Nicobars and it was dark when fourteen hours from London we touched down at Kuala Lumpur in the rain.

With the temperature and humidity both above 80, the hand baggage seemed twice as heavy as it had in London. A furlong and a lot of sweat later, we entered the immigration lounge, with a hundred others, to find we should have filled in forms on the plane. Soon the room was littered with perspiring travellers concentrating on questions like nationality?, from?, to?, why?, and many of a more personal nature. We sat on our baggage; only the first score had room at the tables, many sat on the floor.

Then the queueing to be interviewed by humourless young men, who had seen it all before. As I pushed our documents forward, the young man gave me a distinctly boot-faced look, which was depressing; had we forgotten something? As I mentally checked off the items, my eye caught a notice, on the wall, which stated clearly and simply that visitors without visas could stay for

seven days and this period was not extendable. Who had told us we did not need visas? Then the young man asked "How long do you intend to stay?" I felt rather foolish as I said that our return flight was booked for August 31st. He then stamped our passport and wrote August 31st on the certificate and actually smiled as he said "Enjoy your stay".

Knowing the worst was over we waited, with a feeling of elation, for our luggage to arrive at the carousel. The humidity and heat which had become so oppressive in the throng now meant nothing because, somewhere among the thousands of faces looking for relatives and friends, we knew two faces were looking for us.

I picked up our two heavy cases and said to an official by the door "I will come back for the hand luggage" and stepped through. Immediately, I was relieved of the load by our friends and went back for the rest; the man at the door politely said goodnight to us and we were whisked away. It was a marvellous feeling as we drove off in the night. "Of course", said my friend, "you know you just walked right past the customs?"

The house was full of surprises. The fish pool and fountain beneath the open stairway was put to practical use by Suki, the Malay dog that looked like a short-haired terrier that did not quite make Crufts. A three-inch tadpole swam with the goldfish.

A loud ticking from one of Muriel's tooled copper pictures heralded the appearance of one of the several "lounge lizards" in the house. These geckos were usually active from dusk onwards catching unsuspecting moths, sometimes laying their eggs down the backs of armchairs and one gecko was found by Suki in an advanced state of decomposition under the carpet.

Clive, the youngest of the boys, caught a large flying ant for me and put it on the side while we had tea. When we looked for it later it was being carried down the vertical edge of the cupboard by a multitude of minute black ants. It was like a light aircraft being manhandled by a crowd of people. We watched fascinated as it rounded the moulded overhang before proceeding more rapidly across the floor, out of the door, and down a crack between the flags of the patio.

There was a larger species of black ant which also scavenged crumbs from the dining area but the two species never met. I think they deliberately avoided each other. Pheromones must be quite important to their survival, not only guiding them safely home but also enabling them to avoid the disaster of being carried off.

In the garden there was another species of ant, even bigger, living in a nest made of leaves in a tree. These brown tree ants were quite arrogant, and with good reason; they had a most painful way with them but fortunately much of their travelling was along the overhead electricity cables.

On wet evenings the lawn, composed of a peculiar, coarse, creeping grass would be visited by many large spiral snails, up to four inches long, seeking the tender shoots of cherished plants

and retiring before dawn to the base of the hedge or the compost heap.

Dawn came about 6 a.m. and within a few minutes the 'scribbling' song of the yellow-vented bul-bul could be heard; this was an extremely common bird everywhere we went. Usually the first birds to call were the local fowls, not far removed in appearance from the red jungle fowl, some of which still exist on the outskirts of the city. It would not be long before the loud calls f common mynahs could be heard as they swaggered about in the brash fashion of the starling tribe. The pleasant whistling of the magpie robin soon followed and the day was properly launched. This bird is a thrush, as is our robin, but its nearest relative is the shy, melodious shama, several times heard but never seen.

Other birds seen in and around the garden were black-naped orioles, fairly common and a splendid sight whether in flight or feeding on some fruiting tree; but since all trees at all times have some yellow leaves, there being no marked seasons, they were remarkably inconspicuous when at rest. Common ioras regularly fed on insects in the willow trees. These sparrow-sized yellow and black birds were a delight to watch as they poked into cracks in the bark and searched behind leaves. Tree-sparrows thought they were house-sparrows as they squabbled over scraps thrown on the lawn, while a hen sunbird of unknown identity busily sucked from the blue flowers of the creeper in the hedge. House-swifts screamed about their nest under the eaves as they rushed about the business of feeding their two offspring.

Always where there were suitable thickets not too close to houses there were jungle crows and the smaller, sleeker house-crows, comparable to our carrion crows and jackdaws. Near lakes there was often to oe seen the magnificent white-throated kingfisher, a large bird, eleven inches long with contrasting chocolate-coloured head and belly and dazzling white throat and with gleaming blue back, wings and tail. It seems its diet includes large insects and small reptiles as well as fish because it would often perch away from the water edge to cast an eye over the adjacent vegetation.

If we could get along the road to some secondary jungle before dawn it was possible to see many other birds; an old dead tree was of absorbing interest to a golden-backed woodpecker and the brilliant copper-smith barbet could be seen on a high perch giving out its monotonous tonking call. A harsh cry attracted attention to a racket-tailed drongo, a wonderful sight as it flew by, and a loud scolding chatter (which might have been made by a large magpie) came surprisingly from a small squirrel.

A little further down the road was a spot favoured by a troupe of long-tailed macaques. These belong to the crab-eating group but were a long way from the sea. The adults were light gingery-brown on the back shading to grey but the new babies were black.

Barely a mile from the house stands the National Museum, a pleasant building with a strongly eastern aura, which houses a fascinating collection of many interests. Under its wide eaves a

noisy colony of green glossy starlings had suspended their nests after the fashion of swifts.

For me the visit to Malaysia was full of high lights but perhaps the visit to Taman Negara, the National Park, must shine above the rest. Seventeen of us, led by a young Chinese called John, set off by minibus from the Majestic Hotel forecourt at 7 a.m. By about mid-day we had reached Kuala Lipis, very near the centre of the peninsula, for lunch at the rest house. On the way we had seen two siamangs climbing a strangling fig near the roadside and a smart-looking cinnamon bittern hunting in a paddy field. The most spectacular sight was a rhinoceros hornbill which flew low across the road just in front of us. This splendid bird is four feet long.

The minor road from Kuala Lipis soon became a dusty single-track and then petered out on the banks of the brown Pahang river. From here our movement was to be by boat or on foot; at one time the boats would have been paddled, now, powerful outboard motors drive the forty-foot craft along at fifteen knots. We unloaded the minibus and there, about fifty feet below, were the two boats, their tin roofs gleaming in the sun. We descended the irregular steps, cut in the slippery clay bank and held up by old logs and boards, with some difficulty. My impedimenta consisted of a grip, a leather hold-all containing camera, lenses and meter, a cine camera, a pair of 10 x 50 binoculars, a cassette recorder and a Chinese frying pan. It was this last item that caused a lot of amusement, to some because they recognised it and wondered what I was going to cook, to others because it was unfamiliar. When I told these people it was a parabolic reflector, there was a baffled silence on all sides.

After the jolting of the minibus over miles of less than desirable road surface, the smooth progress by river was a pleasure in spite of the roar of the engine echoing back from the primeval rain forest and the drizzle that had begun to slant into our faces. The thirty miles were full of interest. Bamboo fish-traps could be seen at each kampong and canoes of various sizes to suit children or adults, water buffalo grazed with the hump-backed dwarf cattle, and countless bee-eaters hawked insects from favoured perches. The white-throated kingfishers each had their beat and a huge stork-billed kingfisher eyed us warily from a fallen tree. Three southern pied hornbills flapped and glided across the river to a lofty perch and watched curiously as we roared by. A grey-headed fish eagle prepared for a nap in a big tree, ignoring the noise completely. Red-rumped swallows and the big fork-tailed swifts skimmed over the water at twice our speed.

After two and a half hours we disembarked at Kuala Tahan and carried our gear up a hundred-foot bank and were directed to self-contained chalets designed for two or four persons. This was unexpected luxury, electric light from a large diesel generator, showers, and a pleasant dining hall; but there was little time to admire the mod. cons. There was time only for a quick sortie, in the rain, which had become heavier, to view prospects for the next day. Then it was dinner time and soon became dark.

After dinner I (with Brian Leonard from Singapore) collected

insects. Large flying ants, ephemerids, cicadas, praying mantids, venomous night-flying bees were among the hordes that came to the verandah lights. The ubiquitous geckos were there too and so was a large spider that could hide in the joints between bricks or in the rebates between boards by stretching the first two pairs of legs forwards and the last two backwards, in a seemingly unnatural pose; but it did achieve the spider's narrowest shape this way.

At midnight the generator was switched off and having lit the insect-repellent coil I went to bed leaving the light switch on so that the generator would wake me at five. This worked well and I was able to get to a suitable place in time for the dawn activity at 6 a.m. After breakfast at 8 a.m. we walked along a jungle track to a suitable place for swimming and on the way, in a clearing around an Orang Asli Kampong, we saw a tiny rufous-backed kingfisher - which shone like burnished gold in the sunlight as it winged away.

The Orang Asli are nomadic aborigines but they had left this fairly new settlement a few days earlier because a tiger was hunting wild pig too near for comfort. These people lead a primitive existence and are the only ones allowed to hunt in the National Park. They collect fruits and other parts of plants for their various needs and hunt birds, monkeys, deer and other small animals for the pot with blowpipes. The shelters they erect are woven coconut leaves on bamboo frames which are then fixed to make triangular huts about four feet high. It was not surprising that they had moved on with such poor protection.

That evening the camp was visited by a pair of sambar which had learned of pickings to be had behind the cookhouse. They had become tame enough for children to stroke them but lived in the forest nearby where presumably the activity at the Park headquarters and the noise of people and machines would keep tigers away. Again after dinner some more insects were collected and three large ants seemed to be having a gossip on a light globe; for a long time they stroked each others' antennae. Again bedtime came with lights out and I awoke just before the lights came on at 5 a.m. This was a good morning for birds. A pair of southern pied hornbills watched with mild interest while I manoeuvred the camera, three black magpies noisily sorted out a domestic triangle and a delightful pair of blue-rumped parrots were biting the leaves from a tree to clear a way to the fruits which they tore open. The sticky pulp was dripping from their beaks, but they ate only the seeds. Several green pigeons were moving through the trees to a nearby fruiting tree and a shama filled the forest with its powerful melodious song, as the usual half hour of condensation dripped from the trees.

After breakfast we travelled by boat upstream to Kuala Kenyam, which was an exciting two hours as there were seven sets of rapids to negotiate. The sound of baling was often heard. It was prudent to have a plastic mac back to front across the knees so that it could be jerked right over one's head, when white water came splashing in, to protect the cameras and recorder. Just as we approached the tail of one set of rapids the engine cut out; the boatmen reacted quickly to paddle and pole us into the lee of some large boulders, where the fault was remedied.

At the top of the steps where we disembarked at Kuala Kenyam was a tulip tree covered in red flowers that were crinkled as if made of paper. There were about three dozen spider hunters feeding and squabbling about the tree. These birds are speckled, predominantly brown, about the size of a thrush and with a long curved, probing beak. For about an hour we watched them and suddenly they were gone. A young southern pied hornbill sat in a tree waiting for its mother but she was disturbed and did not come. Eventually she called from a tree about a hundred yards away and the young bird flew to join her.

The loud "chee-ong" call of a hill mynah echoed about the settlement but it was impossible to get the direction accurately enough for any hope of seeing the bird. It was an excitingly vigorous sound. On one of my excursions across a clearing, which some Malays had been fencing for their animals, a pair of quail exploded in my face as I nearly stepped on them. Later, when a party which had walked to see some caves returned, they fed the local fowls with the leeches which were adhering to their jungle boots and trousers. Only one person was bitten by a leech, which found its way inside her shirt and attached itself to her navel. Fortunately, these injuries bleed well and so clear out possible infection. It can take up to three or four hours to stop.

After a light evening meal a flock of about ten male fairy blue-birds appeared around the hut. They seemed to be catching some insects as they chased about uttering sharp calls for about five minutes. Then they too disappeared as quickly as they came. A pair of green broadbills were seeking a roost and just when it seemed all diurnal birds would have gone to bed a huge rhinoceros hornbill flew over at tree-top level. This must rank as my best bird-watching half-hour.

Four of us sat up for another hour or so and watched the tropical rain pelt down from a cloud that had obliterated the sunset. Then, as there were no lights here, we retired early. This was probably a mistake, as I was geared to about five hours' sleep. When I awoke I was sure that it was coming light so I climbed out of the mosquito net and dressed quietly, trying not to disturb anyone else. Then, stealthily, I crept out with my camera, recorder, Chinese frying-pan sound-reflector and binoculars; but John, the Chinese guide, was a light sleeper and quietly said "It is only quarter past two, you know". Then I made my second mistake by going back to bed, where the late nights and early mornings caught up with me and I had to be wakened to catch the boat back to the main camp for breakfast.

As though to provide a grand finale to this marvellous visit to Taman Negara, the "cherry" tree behind the dining room was visited, not only by the usual collection of birds, but also a group of fairy blue-birds which gleamed like porcelain figures in the bright sun. The cocks are like blackbirds, but with a stunning blue crown, nape, back and rump. Best of all was a family of rhinoceros hornbills, huge, black and white, with yellow and red casque above their large yellow bills. The cock flew off but the hen remained to feed the single young bird with the ridiculously small fruits.

The journey back to Kuala Lumpur seemed much shorter than the journey out and we soon joined the federal highway which carried us into the city centre where for several miles, the primeval forest had been replaced by secondary growth, largely composed of steel and concrete of great height and indeterminate culture.

Given the chance, the plants of Malaysia grow luxuriously, being favoured by near optimum conditions all the year. No part of the peninsula is more than about seventy miles from either the Indian or Pacific Ocean, so rainfall is always adequate and temperature does not vary much from 30°C. The climax vegetation is largely tropical rain forest, even on the highest hills, except in some coastal regions where coconut palms or mangroves flourish. Because high winds are rare, trees can grow tall, straight and fairly slender. Many forest trees have trunks which tower smoothly and elegantly above their buttresses for one hundred and fifty feet or more before producing any branches.

Everywhere there are epiphytes, ferns, pitcher plants, orchids and mosses. The lethal strangling figs may be seen in the cities as well as in the forests sending down their lianas from even the highest trees; eventually killing off the host, its rotting trunk replaced with a multiplicity of roots. A wealth of climbing plants, such as we struggle to keep alive as house plants, grow rampantly.

Forest clearings soon become populated with tall lalang grass and a variety of other herbs, as well as small shrubs and the inevitable tree seedlings that would take over if grazing and nibbling animals did not keep them down. Roadside verges are cut at irregular intervals and become a habitat for delightful creeping ferns, sensitive plants and a tangle of many others.

Malacca, a day trip from Kuala Lumpur, is an ancient town with a turbulent history, reflected in the variety of architecture that has accumulated over the centuries. A glance over the sea wall anywhere along the esplanade shows some other changes that have occurred. The yellowy-brown, muddy water and the thousands of mudskippers are probably remnants of a one-time mangrove swamp, long since drained and burned off. A hundred miles to the north at Kuala Selangor the mangrove swamps are being burned and drained today. It is called progress.

The east coast is famous for its turtles. Green turtles and the great Pacific leatherbacks may be seen burying their eggs on selected beaches, from April to September. Young men and boys keep a look-out for them, careful not to turn them back. As soon as a female has hauled up far enough and begun to dig, she reaches the point of no return; then it is safe to collect a small fee from tourists and to gather close to watch.

We arrived at such a beach at about 10.30 p.m. and prepared for a wait of unknown duration. The beach consisted of coarse sand and extended for a couple of miles in each direction, then outcrops of rocks separated it from the next beaches. I had been up and about since 5 a.m. and was glad that a small lad was doing the leg work for us. So we settled on the warm sand and watched the full moon rising high over the South China Sea and

listened to the soughing of the waves as the tide approached its peak. The warm breeze that ruffled the palms combined with everything else to make me feel very drowsy. I was vaguely aware that two of the Bicknell boys had asked for the car keys to get a drink and some time later there seemed to be a bit of bother. After some "to-ing and fro-ing", I became aware that they had locked the keys in the car and the spares were ten miles away in the chalet. Fortunately, a combination of a slightly open window and a piece of wire enabled the situation to be remedied just as news of a turtle arrived.

It was a green turtle a quarter of a mile wway. We walked along the narrow strip of wet sand as the tide receded; the dry sand was too mobile for comfort. When we came to the tracks, about three feet wide, as though a miniature tank had emerged from the sea, we followed them, marvelling at the effort these animals make to propogate their species.

The turtle was lying in a saucer-shaped hollow about five feet in diameter and eighteen inches deep, with a deeper trough in the centre in which the eggs lay, round, white and dented. She began filling in almost at once and was oblivious of several people quite close, one with a flash gun. With considerable power she made great sweeping motions with her flippers, shooting the dry sand backwards and sometimes, if she hit a root, high over our heads. Every two or three strokes, she would rest with a loud sigh; continuing she not only moved slowly round but also slowly forward. In this way she moved a vast amount of sand and left a disturbed area about twelve or more feet in diameter. This would normally have entailed a great deal of digging to find the eggs, but the wily lads had marked them with a stick, replaced several times as she knocked it down. They began digging them out as soon as she began to move back to the sea.

The whole process takes two or three hours and it must be very exhausting for an animal so adapted for locomotion in water. I felt relief and genuine pleasure as she regained her natural element. She must have felt much the same as the warm water buoyed her up and removed the sand from every scale and groove, especially to have the sand-plastered, gelatinous "tears" washed from her eyes.

Most of the eggs laid find their way at dawn to the food markets, but it is not all in vain. The Government has restricted beaches from which the eggs are collected only by officials who re-inter them in batches of fifty. Each batch is labelled on a stick with a record of the female, if tagged, and the date. In this way, one hundred thousand eggs are protected each year. If there are not enough collected, some are bought with the aid of the World Wildlife Fund. The eggs take fifty-four days to hatch and, two days before they are due, the batch is surrounded by a barrier of half-inch-mesh wire netting about one foot in diameter. The young usually emerge at night; collections are made at midnight and at dawn. Each collection is immediately taken out by boat and dispersed widely to make it more difficult for predators to catch them.

Swimming in Malaysia is superb for people as well as for

turtles. Every hotel of note and many houses have splendid outdoor pools. The rivers near their sources are clean enough for swimming and are especially good fun at waterfalls. That is, if you do not object to swimming in water the colour of freshly brewed tea. For me, the sea was in a special class, warm, buoyant, salty and with frequent patches of stagshorn coral among which brilliantly coloured wrasses, striped angel fish, yellow-tailed fish, abudefdufs (portly and pompous looking) and small spotted groupers could be seen nervously inspecting one's feet. At any sudden movement they would all vanish into the sharp coral forest to appear again when their curiosity overcame their fear.

It was on the way home from Penang that we saw lotus "lilies" growing in a roadside drain. I was looking for these in a reachable position, having seen about half an acre of them in the lake gardens at Taiping. I hoped to obtain a fruit, like a squat ice-cream cornet with small holes in the top. These capsules were held on individual stems about two feet above the water and presumably disperse seeds by a censer mechanism. We stopped the car and I walked back to see whether I could get one. The plants were in a broad drain, but there was a narrow ditch and a small bank covered in dry, dusty grass on my side. So, choosing a place where I could step over the narrow ditch, I did that. What a surprise. The bank proved to be non-existent, the dry, dusty grass gave way and I was sprawling on a heaving mass of very wet vegetation. I could feel nothing solid at all and was in water up to my knees and elbows. Since every force has an equal and opposite one, I was unable to get out. Every time I tried to stand the vegetation sank deeper. However, by this time Ted had overcome his laughter enough to render me assistance, but I did not reach the lotus.

Arriving back in Kuala Lumpur, a city of interesting contrasts, we saw:- blocks of high rise flats and dingy rooms over small shops which themselves contrast with giant Emporia, dubious looking hotels and luxurious towers like the Kuala Lumpur Hilton or the ultra modern eighteen storey Federal Hotel topped by its revolving restaurant. The quaint old mosque which sits at the geographical centre of the city where the two rivers meet - the name Kuala Lumpur means muddy river mouth and they both are - has a timeless dignity in common with the magnificent new National Mosque of which the Muslims are justly proud.

The fine National Museum, like the new National Mosque, although modern has retained the Moorish influence and looks right in Malaysia. So too do the City Offices, the General Post Office, the Secretariat offices and the fine railway station, all built during the Victorian era by the British, and I felt a flicker of pride that we had done something well. But, in case we should become too carried away by our pride, I should like to leave you with this quote from the Guide to Malaysia, "Before construction of a new building could begin, the plans had to be submitted to the U.K. for approval. The plans for the Railway Station were rejected until another design of the roof was made, capable of holding three feet of snow".

Supplement to the list of the Lepidoptera of Moor Copse Nature Reserve

by B. R. Baker

Nomenclature as per Kloet and Hincks, Check List of British Insects, Second Edition (Revised), December, 1972.

Eulithis prunata (L.)	The Phoenix
Perizoma bifaciata (Haw.)	Barred Rivulet
Eupithecia centaureata (D. & S.)	Lime-speck Pug
E. icterata (Vill.)	Tawny Speckled Pug
Aplocera efformata (Guenée)	Lesser Treble-bar
Ennomos quercinaria (Hufn.)	August Thorn
Lymantria monacha (L.)	Black Arches
Noctua interjecta (Hübn.)	Least Yellow Underwing
Xestia sexstrigata (Haw.)	Six-striped Rustic
Hadena rivularis (Fabr.)	The Campion
Tholera cespitis (D. & S.)	Hedge Rustic
Cryphia domestica (Hufn.)	Marbled Beauty
Mormo maura (L.)	Old Lady
Ipimorpha subtusa (D. & S.)	The Olive
Apamea scolopacina (Esp.)	Slender Brindle
Mesoligia furuncula (D. & S.)	Cloaked Minor
Eremobia ochroleuca (D. & S.)	Dusky Sallow
Hoplodrina ambigua (D. & S.)	Vine's Rustic
Catocala nupta (L.)	Red Underwing
Schrankia costaestrigalis (Stephens)	Pinion-streaked Snout

This brings the species total for the Reserve to 306.

Butterflies in a Suburban Garden

Members who have seen the study of insects in a suburban garden by D. F. & J. Owen in Environmental Conservation 2 (1) or the notice of it in the part of Habitat for June 1975 will have noted that fifteen species of butterfly were recently caught in a suburban garden in Leicester and that this represents about two-fifths of the species recorded at Monks Wood since 1960 and about a quarter of the British list. Reading this prompted me to get out my notebooks and see how many species I have noted in my garden in south Reading over the years. I find that, including a queried but I think almost certainly correct record of a Painted Lady in 1949, the total is exactly fifteen. Even if that record is incorrect, a Painted Lady that I saw this summer a few gardens away may well have visited me while I was out. My visitors have included both the Orange Tip and the Comma, which the Owens were particularly encouraged to see as they associate them with the countryside, though I must say that I have always regarded the Comma as a garden butterfly. The other species I noted were the Large, Small and Green-veined Whites, Brimstone, Speckled Wood, Gatekeeper, Wall, Small Tortoiseshell, Red Admiral, Peacock, Small Copper and Holly Blue.

L. E. Cobb

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Rhynchodemus terrestris (A land planarian)

Rhynchodemus terrestris was found beneath a stone in an area of permanent pasture in Whiteknights Park, Reading, on 6th March, 1975. Records of land planarians are very few, probably because they are not even known to exist by most zoologists and when seen the superficial appearance is not unlike that of a slug. This may well be the first record for Berkshire.

D. C. F. Cotton

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