FIELD WORK CARRIED OUT DURING 1968

By the Staff of the Department of Military Medicine

Mr. N. R. H. BURGESS, F.R.E.S.

Royal Army Medical College, Millbank

DURING July, August and September of 1968, considerable practical field work was undertaken by Entomology Staff of the Department of Military Medicine, Royal Army Medical College.

The aims of this work were primarily to give the staff practical experience of capturing insects and other arthropods of medical importance in their natural habitat, of identifying the catches, and also to train the entomological staff to live "in the wild" and to be virtually self-reliant under conditions which might well be encountered during survey and control work. Relevant information was passed to the Epidemiology Section at the Microbiological Research Establishment, Porton, about mosquito species, their breeding places, habitat etc., and their potential as disease vectors.

During the first period of two weeks, the team consisted of the Entomologist and 2 technicians on the permanent staff of the Department (a corporal and a civilian), and 2 hygiene assistants under training. Equipment for camping was either provided by the team or borrowed from the Army School of Health. Permission was given by the owner to camp in a field at Milton Street, a hamlet in the Cuckmere Valley in Sussex. Accommodation was one 160 lb tent and four smaller tents. Meals (in part a survival diet provided by Horlicks Limited, which was reported on) were cooked on butagas stoves; water was drawn from the nearby farm. The team travelled to and from the working sites in private transport.

The weather was on the whole very poor, with rain for at least part of every day, and an occasional period of sunshine. Humidity was high, and temperatures below average for the time of the year, with winds medium to strong at times.

The areas investigated were Abbot's Wood and Og's Wood; Pevensey Marsh; Burlow Farm and Friston Forest. Collecting was confined mainly to blood-sucking insects, namely mosquitoes and Tabanidae, *Culicoides* and *Lyperosia*, although a general collection of insects was made by one hygiene assistant who was returning to the Army School of Health after his course. Human bait was used, each member of the team collecting with a pooter or net from the other members.

Abbot's Wood is a large area of mixed woodland belonging to the Forestry Commission. Much of it is mature coniferous (spruce, pine) and soft-wood (beech especially) with stands of oak, and open stretches of bracken and heather. Several traverses were made on different days, and the following species of biting Diptera were collected:—*Aedes cantans*: *Anopheles plumbeus*: *Aedes annulipes*: *Chrysops caecutiens*: *Haematopota pluvialis*: (and *Culex pipiens*).

The breeding sites of *Aedes cantans* were found, after a period of heavy rain, in the puddles along a forest ride, where there were first and second stage larvae. These were collected and bred through to adults at the camp. Adult flies were taken back to base, pinned and identified. They were stored, some of them now being used for teaching purposes in demonstrations at the College.

Og's Wood is a smaller area of deciduous woodland, very overgrown in parts, bordered

by Forestry Commission land and the main London—Eastbourne road (A22). A preliminary survey showed the presence of fair numbers of *Aedes cantans* during the day, in spite of the poor weather. It was decided to do a twenty-four hour count here, and permission was obtained from the forestry warden to drive a vehicle through Abbot's Wood so as to approach Og's Wood from the back.

The count was started at midday, 15 July and continued through to midday, 16 July. Results, which were somewhat disappointing due to climatic conditions, are shown in Fig. 1. Mosquitoes captured were almost entirely *Aedes cantans*, with three *Anopheles plumbeus* during the peak biting period around 1700 hours.

Fig. 1. Pattern of mosquito catches (per hour) Og's Wood 15-16 July 1968

One morning was spent on the west and south sides of Pevensey March. *Haematopota pluvialis* was collected, but no other biting flies.

Burlow Farm, a few hundred yards from the camp, produced *Chrysops relictus*, *Lyperosia irritans* and *Anopheles plumbeus*. *Culex pipiens* was found in barns and out-houses, probably beginning to hibernate, and larvae were found in several horse-troughs and rain-butts.

A traverse was made of the mainly coniferous Friston Wood, but no biting flies of any group were found.

The second period in Sussex, at the beginning of September, will be dealt with next, since it was useful as a comparison with the earlier period in July. Administrative details were much as before; this time, however, there were only three members in the team, the two hygiene assistants having returned to their units. The weather was again

The team at Abbot's wood.

very poor and becoming considerably colder, especially at night. Abbot's Wood, Og's Wood and Burlow Farm were again investigated, and a further twenty-four hour count was undertaken at Og's Wood. It was of interest that no *Tabanidae* at all were found nor any *Aedes cantans*, even in the larval stages. The twenty-four hour count proved absolutely negative, rather as was expected, due to the time of the year. However, larvae of *Anopheles claviger* were found in a trough on Burlow Farm (these mosquitoes often hibernate as larvae).

Field work was also undertaken towards the end of August, on Epsom Common. On a preliminary visit a police patrol had been encountered which expressed interest (and at first complete disbelief!) in the activities of the team; thus it was thought advisable to inform the local station before setting out on a longer period of collecting.

The team again consisted of only three men, and since a motorised caravan was available, it was unnecessary to set up camp under canvas. Again the weather was unsettled with periods of heavy rain and sunny intervals. Several traverses were made across Epsom Common and the Forest nearby, and a twenty-four hour catch was also undertaken. The terrain was of mixed woodland, with dense undergrowth in places, and a lake in the centre, near which the twenty-four hour catch was made. Data on catches and climatic conditions are shown in Table I.

From the three periods of field work much useful information and particularly experience was obtained. This was the first time for a number of years that prolonged field work had been undertaken by the Department; thus techniques had to be tried out and mistakes were made. Certain items of equipment were found to be lacking, for example, adequate lighting for night-work during the first period. In some instances, routine was not ideal; specimens must be caught singly in a pooter tube, and must be

Table I
Details of climatic conditions and mosquito catches per hour. Epsom Common 27-28 August

Time		Climatic conditions	Temperature °F	Humidity %	<i>Anopheles plumbeus</i>	<i>Theobaldia annulata</i>	<i>Aedes cantans</i>	<i>Aedes annulipes</i>	<i>Aedes geniculatus</i>	<i>Aedes punctator</i>	<i>Aedes flavescens</i>	<i>Aedes spp. unidentified</i>	Total
From	To												
1300	1400	Sunny, but becoming overcast	69	77	0	0	1	2	1	2	0	0	6
1400	1500	Wind light; spots of heavy rain	68	81	0	0	1	0	0	0	1	0	2
1500	1600	Heavy shower; sunny later	67	85	0	0	1	0	1	2	0	0	4
1600	1700	Cloudy, with sunny periods	69	86	0	0	1	0	1	2	0	0	4
1700	1800	Sunny and warm	71	77	16	0	2	0	2	1	0	11	32
1800	1900	Sunny	68	76	10	0	0	0	1	0	0	16	27
1900	2000	Light, half-strength	66	90	1	0	0	0	1	0	0	9	11
2000	2100	Light, fading rapidly	65	90	1	1	0	0	0	0	0	3	5
2100	2200	Dark	64	92	0	0	0	0	0	0	0	0	0
2200	2300	"	62	95	0	0	0	0	0	0	0	0	0
2300	2400	"	62	95	1	0	1	0	0	0	0	0	2
2400	0100	"	62	95	0	0	0	0	0	0	0	0	0
0100	0200	"	61	90	0	0	0	0	0	0	0	0	0
0200	0300	"	60	88	0	0	0	0	0	0	0	0	0
0300	0400	"	60	88	0	0	0	0	0	0	0	0	0
0400	0500	"	59	88	0	0	0	0	0	0	0	0	0
0500	0600	First light	59	89	0	0	0	0	0	0	0	0	0
0600	0700	Beginning to get light	60	90	3	0	0	0	2	0	0	0	5
0700	0800	Becoming lighter	60	90	0	0	0	0	0	0	0	0	0
0800	0900	Overcast; wind light	60	90	2	0	1	1	0	3	0	0	7
0900	1000	Overcast; dry	61	89	0	0	0	0	0	2	2	15	19
1000	1100	Overcast; some wind	61	85	1	0	0	0	1	0	0	0	2
1100	1200	Overcast	62	80	1	0	1	0	0	0	0	0	2
1200	1300	Overcast	63	80	0	0	1	0	0	0	0	0	1
Totals					36	1	10	3	10	12	*3	54	129

* From available records, this appears to be a new locality for *Aedes flavescens* which is typically a brackish water breeder.