

IMPERIAL COLLEGE
OF SCIENCE & TECHNOLOGY

CEYLON 1963

THE EXPLORATION BOARD

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CEYLON
EXPEDITION
July - October 1932

Report
Nov. '63

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CEYLON

EXPEDITION

July - October 1963

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Re-typed and bound,
May, 1965.

INTRODUCTION

This summer five students from the University of London participated in an Expedition to Ceylon. They were,

P.A. SOUTHORN	Dept. of Physiology, University College.
J.A. BETTS	Dept. of Anatomy, University College.
A.W. PRATHALINGAM	Dept. of Anatomy, University College.
M.C.D. SPEIGHT	Dept. of Zoology, Imperial College.
R. WINNEY	Dept. of Zoology, Imperial College.

All members of the Expedition had graduated in June, 1963.

We had been brought together as a group of friends interested in performing various research projects. A. Prathalingam wanted to study the social anthropology of the Veddhas, the aborigines of Ceylon; whilst I myself hoped to investigate what effect various environmental factors, especially climate, had on the way of life of these people. J.A. Betts having specialised in neuroanatomy wanted to collect specimens of the Ceylonese scaly anteater, and then to study its olfactory system. M.C.D. Speight and R. Winney as entomologists wanted to make collections of various Ceylonese insect groups and arachnids.

The following report contains a brief account of the Expedition and a preliminary survey of the obtained results. These findings are to be published more fully in papers to be submitted by the individual members of the Expedition.

I would like to take this opportunity, on behalf of the Expedition, to thank all those who have assisted us. Without

their help, not only would it have been from the outset quite unsuccessful; it would in fact have been impossible even to begin.

P.A. SOUTHORN
Leader.
November, 1963.

CONCEPTION

The original intention of the Expedition members was to organise an Expedition to Malaya, and it was with this concept in mind that the team came together and the projects originated. It soon became apparent however that the difficulties involved would prevent us from producing a Preliminary Report soon enough to enable us justifiably to apply to different bodies for financial aid. After working on this problem through October until the middle of November (1962), it was decided to cancel the Expedition since so little progress had been made. Meanwhile however it had become obvious that to go to Ceylon was a much more feasible proposition, and that this country offered equal scope for expedition projects. After a short interim period during which the situation was assessed, it was decided to go ahead with arrangements; our energies now being devoted entirely to reaching Ceylon.

The personnel from University College had known each other for three years when the idea of this Expedition came into being, and similarly the Imperial College personnel; while the link between the two Colleges was formed by a friendship of much longer standing. Since the members of the Expedition were not just strangers thrown together by a common desire to go on an Expedition, the Expedition

CEYLON

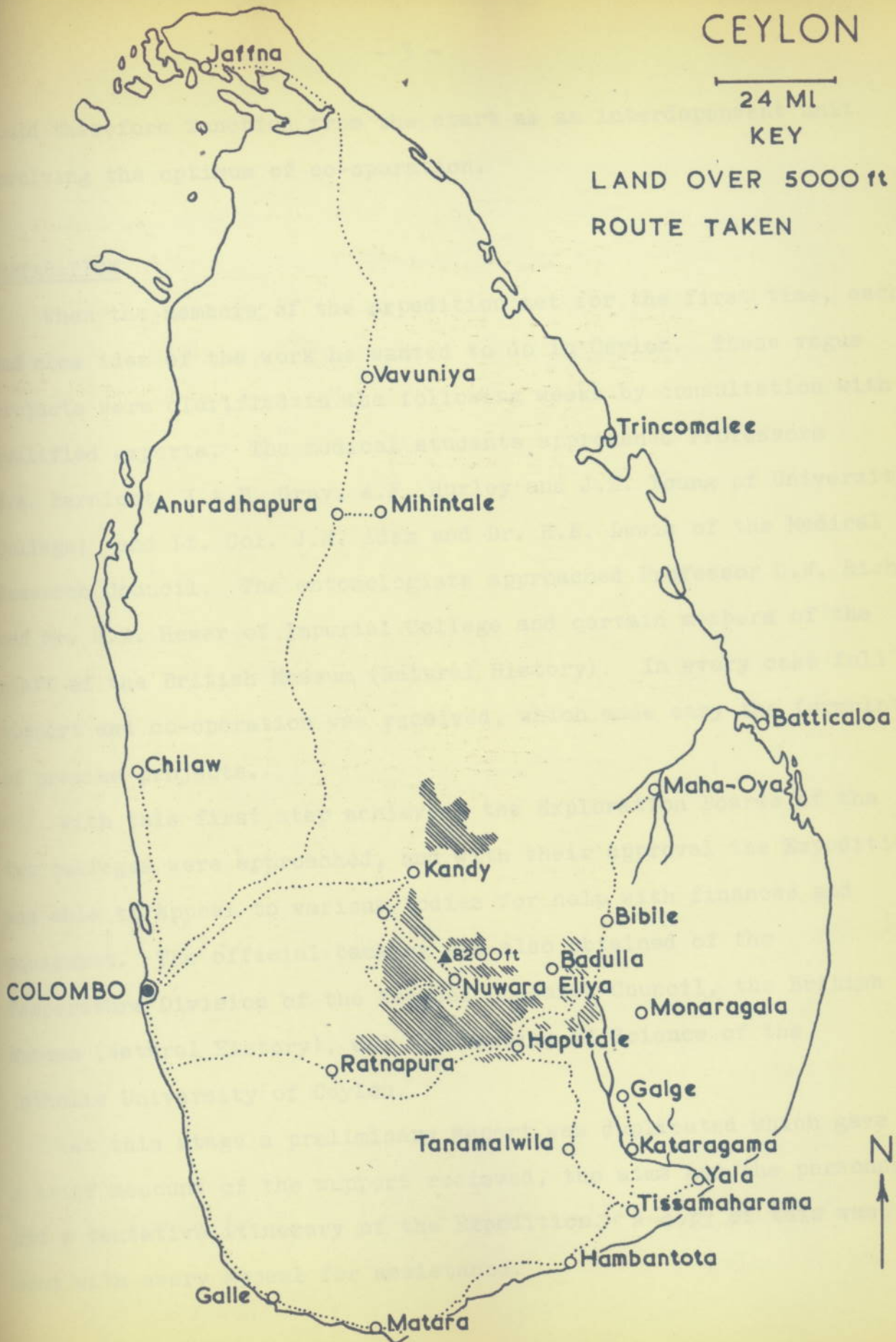
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could therefore function from the start as an interdependent unit involving the optimum of co-operation.

PREPARATION

When the members of the Expedition met for the first time, each had some idea of the work he wanted to do in Ceylon. These vague projects were clarified in the following weeks by consultation with qualified experts. The medical students approached Professors N.A. Barnicot, J.A.B. Gray, A.F. Huxley and J.Z. Young of University College; and Lt. Col. J.M. Adam and Dr. H.E. Lewis of the Medical Research Council. The entomologists approached Professor C.W. Richards and Mr. H.R. Hewer of Imperial College and certain members of the staff of the British Museum (Natural History). In every case full support and co-operation was received, which made easy the formulation of precise projects.

With this first step achieved, the Exploration Boards of the two colleges were approached, and with their approval the Expedition was able to appeal to various bodies for help with finances and equipment. The official backing was also obtained of the Temperature Division of the Medical Research Council, the British Museum (Natural History), and the Faculty of Science of the Catholic University of Ceylon.

At this stage a preliminary Report was duplicated which gave a brief account of the support received, the aims and the personnel, and a tentative itinerary of the Expedition. A copy of this was sent with every appeal for assistance.

In all, some fifteen Trusts were approached for financial backing, and although most regretted that their funds were already committed, those that did provide support did so admirably. The Royal Geographical Society, the Ford (Dagenham) Trust, the British Medical Students Association, the Frederick Soddy Trust and the two College Exploration Boards provided the bulk of the capital required to mount the Expedition. At the same time some forty manufacturing and pharmaceutical firms were asked for financial or material support. Of these five failed even to reply, twenty-six said they could not, or would not, help, and nine kindly offered their assistance. Boots Pure Drug Co. Ltd., provided a large quantity of medical supplies which were augmented by more specialised items from Abbott Laboratories Ltd., Evans Medical Ltd., and Parke, Davis and Co. Joseph Lucas Ltd. provided a welcome £10 in cash; while Gillette Industries Ltd. supplied shaving sets and razor blades. The Bata Shoe Company of Ceylon later showed four members of the Expedition over their factory and fitted them out with sandals. The Metal Box Company Ltd. very kindly donated a large quantity of packaging materials which proved extremely useful throughout the duration of the Expedition. A large supply of film was provided at wholesale rates by Kodak Ltd. - purchase tax exemption by courtesy of H.M. Customs - while a similar offer from Ilford Ltd. had to be declined.

Meanwhile, a number of contacts were made in Ceylon. The Hon. the Prime Minister, Mrs. Sirimavo Bandaranaike was approached, and she expressed her interest in the Expedition. The Ceylon Meteorological

Office was contacted and relevant information regarding the climate of Ceylon during the Expedition's stay there was promised. The Department of Rural Development was asked for information concerning the Veddhas; and the Yala Bungalow in the National Park was booked through the Wild Life Department. Mr. and Mrs. K. Sathchithananda were generous enough to offer the members of the Expedition accommodation for as long as they stayed in Colombo. Mr. J.W. Piyatissa offered to lend the Expedition a Land Rover and Professor Kirtisinghe of the Catholic University of Ceylon was approached for assistance with the projects.

The Commonwealth Relations Office in London was informed of the aims of the Expedition, and they suggested that the members should visit the British High Commission on their arrival in Ceylon.

During May, June and early July, equipment was collected from the various bodies who had promised it; meteorological instruments from the Meteorological Office and the Department of Physiology, University College; and entomological equipment from the British Museum (Natural History), and Imperial College Zoology Department.

TRANSPORT

A number of routes were investigated. It had been hoped that a Student Charter Flight might be run to Bombay by the National Union of Students, but this did not materialise. To save time in travelling it was originally proposed that the members should travel by air in one direction and by sea in the other. However it soon became apparent that the expense involved would be prohibitive. Various shipping lines were checked, and it was found

that many ships had ceased to call at Colombo - the Italian lines and half of the P. & O. liners. Consequently those that did call at Colombo were fully booked some six months in advance.

The time available was limited by the College terms, and the only convenient ships proved to be the Messageries Maritimes' "Cambodge" for the outward journey and a P. & O. liner for the return journey. This latter proved to be already fully booked, and the next ship to call at Colombo was the Messageries Maritimes' liner "Laos". Unfortunately this left Ceylon after the University term had begun, and U.C.H. Medical School insisted on the medical students returning by the beginning of term. Consequently they had to arrange to fly back, leaving the entomologists to follow on the "Laos". This was a serious drain on the resources of the Expedition, but left a just sufficient margin for solvency.

While these arrangements were only partially resolved, a deposit of £140 had to be paid during March 1963 to secure the bookings, this money being loaned for the purpose by the Imperial College Exploration Board. The balance of the fares was paid out of the Expedition account in June 1963.

FURTHER PREPARATION IN CEYLON

The Expedition's first week in Ceylon was spent in Colombo and was occupied in making further arrangements. The day after landing the four British Students signed the Visitors Book at the British High Commission. The Hon. the Prime Minister of Ceylon, Mrs. Sirimavo Bandaranaike, was gracious enough to grant the Expedition an audience, and showed great interest in the projects.

Permission was obtained from the Hon. Mr. C.P. de Silva, Minister of Agriculture, Lands and Land Development, to collect insects in the Yala Sanctuary; and Dr. Packeer, head of the Department of Wild Life, was most helpful with the arrangements for the visit of the Expedition to the National Park. The Medical Research Institute of Ceylon provided the Expedition with alcohol for preserving insects; and the staff of the National Museum, in particular the Director, Dr. P.E.P. Deraniyagala, and Mr. P.H.D.H. de Silva, Mrs. W.T.P. Gunawardene and Mr. Karunaratne, did all they could to assist. Professor Kirtisinghe, of the Department of Zoology, Catholic University of Ceylon, was most helpful with advice and with the offer of laboratory space, in particular for the project concerning Manis sp.

ITINERARY

The first week after our arrival in Ceylon was spent in Colombo, during which time the various necessary formalities were completed, contact made with the Universities and Museum, and our arrangements for the next weeks finalised. It was also during this period that we witnessed the Kandy perahera, and fire-walking at Uddappuwa. The following three weeks were spent in the East of the Island, at Maha Oya, where the work on the Veddhas was carried out. Here also we hoped to find the scaly anteater, Manis. The entomologists alternated between Maha Oya and Bibile during this time, sampling both areas. After a return to Colombo where results and specimens gathered were deposited, we re-stocked with necessary materials and started out for the South of the Island, to the Ruhunu National

Park. So far as the Expedition projects were concerned this venture was mainly for the entomologists, though all Expedition members were anxious to see what they could in the way of big game, of which this Reserve has a variety.

After a short stay in this area we again drove back to Colombo, although slightly more hurried than expected for it was now that one of the group, J.A. Betts, developed appendicitis. After about a week we once more got on the move, this time however splitting up, with P.A. Southorn going back to Maha Oya alone to continue work on the Veddhas. It was at this time that a number of attempts were made to find Ichthyophis, journeys being made to its location at Kandy.

This period was followed by a stay in the hill region, on a tea estate some ten miles from Nuwara Eliya and at an altitude of about 5,000'. This gave the entomologists a chance to sample an upland fauna.

We now had little time remaining to us, but had yet to see the North of the Island. After travelling northwards by train we stopped at Anuradhapura to see the ancient city, and then continued on to Vavuniya. A short time at Vavuniya, where P.A. Southorn rejoined the other members of the Expedition, preceded a brief visit to Jaffna in the very North of the Island.

On our arrival again in Colombo, three days remained before the departure of the plane to take the medical students back to Britain; while but a week remained before the boat left, taking the entomologists and the equipment.

REPORT OF P.A. SOUTHORN

It has often been suggested that the various climatic factors recorded by meteorological stations do not necessarily represent the climate to which the local inhabitants expose themselves. Thus the climatic conditions of two closely adjacent areas may vary markedly. Also, Man, being a mobile animal, is continually exposing himself to new climatic environments as he moves around.

Various attempts have been made in order to investigate the climatic environment to which men expose themselves throughout the course of their daily activities. Notable in this field are the measurements made by Underwood and Ward during Army Hear Acclimat-isation Trials in Aden (Army Personnel Research Committee, 61/4 July, 1961). However, to the investigators' knowledge, no such work has yet been carried out on a native indigenous population in a tropical, equatorial type climate. Such a people would be naturally acclimatised to a hot climate. The present work was carried out on the Veddhas, the aborigines of Ceylon, who are typical of this type of population. Although being rapidly developed by the Ceylon Government, the Veddhas continue to lead a primitive existence fairly divorced from the remainder of the Ceylonese community, and are thus well suited for this type of research.

The environmental climatic measurements obtained in the field were compared with the records of the Ceylon Meteorological Office to check any variations occurring. In the present work the health and general activities of the Veddhas were investigated also to see what effect, if any, these factors had on the way of life of these people.

The Veddhas upon whom the work was conducted live in the village of Pollebedda, near Maha Oya in the Eastern Region of Ceylon. The measurements were made during the daylight hours although on several occasions readings were also taken throughout the night. The work was carried out in the dry season during the months of August and September. The measurements noted below were taken at hourly intervals in close proximity to individual Veddhas as they carried out their normal daily activities.

It should perhaps be noted here that unlike the Army Trials at Aden where the subjects were a disciplined group of men showing a high degree of co-operation, the Veddhas obviously lacked this regimentation and obedience to instructions. Consequently it proved initially very difficult to dissuade them from continually stopping their activities completely having sighted a member of the Expedition.

This, during the early stages of the work, represented an important potential source of inaccuracy. Again, individuals had to be used as subjects since these people were rather scattered. By using a number of subjects - men, women and children - it is hoped that the average results obtained will be representative of the Veddha population as a whole.

The measurements taken were:

1. Shade temperature.
2. Relative Humidity. This was measured with a wet and dry bulb thermometer.
3. Radiant Temperature. This was measured by a black globe thermometer placed at the average chest height of the

Veddha above the ground - approximately four feet.

4. Wind Speed. Measured in metres per second using a portable anemometer.
5. Cloud Cover. An arbitrary scale of eighths was used for this, 8/8 representing complete overcast.

The following factors were also noted at hourly intervals:

1. Clothing of the subject.
2. Local Environment. For example, whether jungle or scrub.
3. Index of Activity. The activity of the Veddha subject as he carried out his normal duties was classified into one of the following seven arbitrary categories at ten minute intervals throughout the hour:
 - a) Hard work, e.g. chopping wood.
 - b) Light work, e.g. winnowing rice.
 - c) Walking.
 - d) Standing.
 - e) Sitting.
 - f) Lying.
 - g) Sleeping.

To assess the stress imposed by the climate the 'Wet Bulb-Globe Temperature' (W.B.G.T.) Heat Stress Index of Yaglou was used. This was calculated from the following equation:

$$\text{W.B.G.T.} = 0.7t_w - 0.1t_d - 0.2t_g$$

(where t_w is wet bulb temperature,
 t_d is dry bulb temperature,
and t_g is globe temperature.)

This index takes into account all phenomena associated with heat exchange. The wet bulb temperature relates to humidity and hence to evaporative heat loss; and the reading of the globe thermometer depends upon the radiant temperature and wind speed. Minard, (J.Amer.Med.Ass. 165, 1957), showed that when the Index had a value of above 88 degrees there resulted a large increase in the incidence of heat illness in those persons not naturally acclimatised.

The results obtained from this climatic study have not as yet been analysed in detail. Preliminary study however indicates that the climate does impose a large stress factor on the lives of the Veddhas.

The days were consistent in their climatic pattern. The shade temperature regularly rose from 80°F. in the morning to above 90°F. by midday. The relative humidity fell from approximately 88% in the early morning to about 56% by midday. Wind and cloud cover were almost negligible, except after 1 p.m. when it occasionally clouded over to a small extent. In fact the value of 88 degrees on the W.B.G.T. Heat Stress Index above which Minard states that heat illness increases markedly was usually exceeded by the early afternoon. Only six inches of rain fell in the vicinity of Pollebedda during the months of August and September whilst the records were obtained. There was in fact an acute shortage of water in the region.

These climatic conditions have produced their effect on the vegetation of the region, and have influenced the actual land utilisation of the Veddhas themselves. The natural vegetation of the Maha Oya district in which the Veddhas live consists of jungle,

which due to the prevailing dryness (in the dry season) is very arid in nature. It provides little cover from the intense sun overhead. Both the Veddhas and the Sinhalese in the neighbourhood employ a system of agriculture known as chena cultivation. This consists of clearing a stretch of virgin jungle, this being done in the dry season which lasts from April to October. During the wet season lasting the remainder of the year, the cleared patch is planted with various crops, maize being the most important of these. After two or three years the soil loses its fertility and a new stretch of jungle has to be cleared. Crop rotation is not practised.

There can be little doubt that the relative harshness of the climatic conditions has its effect on the growth and development of planted crops. The intensely hot, dry conditions found in the dry season alternate abruptly with the continuous heavy monsoon rains characteristic of the wet season. Variation from the expected in either of these two seasons can result in ruination of a crop with the consequent risk of shortage of food for the population. The combination of factors such as this, with the fact that only a bare level of subsistence can be expected anyway from this method of agriculture, is borne out in data collected by the local hospital. This data shows that 66% of the Veddha population suffer from malnutrition. The diet is mainly carbohydrate; little protein, vitamins or minerals being obtainable. Malnutrition is evident, especially in women where constant childbirth leads to calcium deficiency; and in children who suffer mainly from vitamin A and B deficiencies, leading to general

laziness and night blindness. The health of these people is not satisfactory. Again, hospital data shows that 30% of the Veddhas have worms, mostly Ascaris and to a lesser extent, threadworms. Up to 10% of the adults suffer from some form of syphilitic disease also. Malaria used to be endemic in the Maha Oya district, although it has now been eradicated. Members of the Expedition frequently observed large, deep, ulcerative skin lesions which had failed to heal owing to the prevailing bad conditions. With suitable medical treatment these did in fact later heal.

The Activity Index compiled showed the Veddhas to lead a very lethargic and lazy existence. This is perhaps not surprising considering the large stresses imposed upon them by their climatic environment and the other contributory factors mentioned above. It might also explain why the Veddhas have not advanced much in their way of life. Those who worked on the chenas began at dawn and continued until 10 am by which time the sun was high overhead. They then ceased working until about 4 pm when they would begin to work again until dusk - which occurred at about 6.30 pm - finally going to bed at 7 pm. The work on the chena was never carried out in a really strenuous fashion, it, in fact, being halted every few minutes in order to carry on a conversation or to chew betel.

The above is a summary of the work carried out. The detailed results obtained are to be published shortly. It is hoped that they will throw further light on how Man's climatic environment, combined with other relevant factors, can affect his existence.

I wish to acknowledge the help given by Lt.Col. J.M. Adam and Dr. H.E. Lewis, both of the Medical Research Council, who originally

suggested the above project and have subsequently helped me greatly in the planning of the research programme. Also, I would like to thank Professors J.A.B. Gray and A.F. Huxley of the Department of Physiology, University College London; the Meteorological Offices of Great Britain and Ceylon; and the Ceylon Police, Uva Division, who very kindly gave me accommodation whilst carrying out the project.

P.A. SOUTHORN.

REPORT OF A. J. PRATHALINGAM

Introduction

In this paper an attempt will be made to discuss the anthropological results obtained by the University of London Expedition to Ceylon. The results are based mainly on the work done on the Veddhas, but in certain instances comparison is made with the equivalent customs of the Sinhalese and Tamils.

Population of Ceylon and the Ethnic Types present in the Island

Ceylon has a population of approximately 10.5 million people divided into five major ethnic groups. The largest single group are the Sinhalese, (5.6 million), who are the descendants of the Indian Prince Vijaya. The Sinhalese are reputed to have arrived in Ceylon in approximately 600 B.C. The second largest indigenous group are the Ceylon Tamils (1 million) and the Indian Tamils (1.2 million). The former came to Ceylon during the early Sinhalese era, while the latter were brought in as indentured labour by the British during the last century. The other three groups are the Ceylon Moors (468,000) the Burghers, (400,000) and the Veddhas (7,000). The Moors are the descendants of Arab traders who visited Ceylon in the early years of Islam. The descendants of the children of Portuguese and Dutch fathers and either Sinhalese or Tamil mothers are the Burghers of today. The Veddhas lived in Ceylon before the Sinhalese came; reference is made to them in the Mahavansa as being one of the tribes inhabiting the Island when Prince Vijaya landed. The other tribes referred to are the Yakkhas and the Nagas. Their

later history is not known. There are other minority communities living in Ceylon today but their numbers are insignificant.

The Veddha District

The Veddhas are found mainly in the Uva and the western part of the Eastern Provinces. The Veddha studied for the purpose of this paper were living in the Bintenne Pattu of the Maha Oya District in the Eastern Province. The actual village studied was Pollebedda, about eight miles from the village of Maha Oya.

The village of Pollebedda

This village consists of about thirty or forty wattle and daub huts inhabited by about two hundred and fifty people. The village has been in existence for only the past ten to twelve years. It was constructed by the Ceylon Government in order that the Veddhas evacuated by the rising waters of the Senanayake Samudraya could be settled. Until this time the majority of them were nomadic, having semi-permanent dwellings in the Embillene area. This has caused the traditional life of the Veddhas to change from that of a hunter to that of a quasi-agriculturalist.

This change in the mode of life of the Veddhas has affected their day to day living but they still keep many of their ancient customs and practices. While their main source of food has now, by necessity, become agricultural, their customs are still based on hunting and the nomadic way of life.

Child-birth among the Veddhas

In the Veddha community child-birth is thought of as being unclean. The pregnant woman leaves her hut when she feels the labour pains starting, and together with an elder woman of the clan goes into the surrounding jungle. In the jungle the elder woman digs a shallow pit over which the parturient woman squats. The child is delivered by the elder into the pit, and the umbilical cord is cut with an arrow head or a sharp stone. After the placenta has been delivered the new mother is escorted back to the village by the 'midwife' and enters her hut with the new born child. The child is now kept within the hut for a period of three lunar months, and under no circumstance is it taken out of the hut.

This method of birth causes a number of babies to die either at birth, or within the first month of life. While this system of 'midwifery' was ideal under nomadic conditions they are not suited to a settled form of living. The region of the birth pit is not taboo and hence could be dangerous from a public health point of view. The Veddhas refuse to go to hospital for their confinements and refuse to take the infants there for post-natal care. The children are breast fed up to the age of one to one and a half years. If the mother is incapable of feeding the child the mother's sister acts as a wet nurse. Pregnancies are permitted during lactation and if the subsequent birth is not a still birth, that child is fed in lieu of the older one.

Among the Tamils, by comparison, there is a similar custom of uncleanliness after the birth of a child. The Tamils however regard

the house as unclean for only one month after the date of birth, and have a ceremony at the end of this period for the purpose of cleansing the mother and child. The Veddhas do not, at the end of their three months isolation, have this ritual cleansing. The Sinhalese do not have such a rigid system of isolation.

The Rites of Puberty

Among the Veddhas the first flow of menstrual blood in a young girl is considered to be a sign that she is now of a marriageable age. The village is told of the event by the girl's maternal uncle. It is now generally accepted by the villagers that suitors for the hand of the girl will be entertained. There is no ritual as such at this stage. Among the Veddhas the puberty of a girl is closely linked with her marriage.

The Sinhalese and Tamils both treat puberty as a major event in the child's life. In both these communities the adolescent girl is separated from the rest of the family and allowed to see only her mother and elder sisters. After a variable period of time she is purified and then allowed to take her place in the community again. The neighbours are informed of the event by being sent a gift of kiri-bath (milk rice).

The boys do not have to undergo any hardships or other trials at this time. This contrasts with the customs found in most 'primitive' societies. The Veddha boys however do not get married until they are much older, in fact not until they are in their middle twenties. This is dictated by the fact that they have to be able to support a family before they can marry.

Marriage among the Veddhas

Among the Veddhas a man considers marriage at twenty-five to twenty-six years old; he is in fact considered capable of supporting a wife and family at this time and no earlier. The young man looks around for a suitable partner, usually a girl about fifteen or sixteen years of age. When he has found someone suitable he approaches the girl's maternal uncle and asks whether his suit would be considered. The uncle goes to the girl's father and tells him of the proposal. The father now makes his wishes known, and if they are in the affirmative the young man is told accordingly. The suitor now sets about the task of building himself a house, which is usually built in the neighbourhood of that of his parents. Having built the house he sets off on a hunting expedition during which he catches enough meat and collects sufficient money for both his wedding feast and as a gift for his bride's family. The usual meats hunted are that of deer, monkey, sambhur, boar and water monitor (kabargoya). He takes them also a small offering of millet, (kurakkan) maize and some dried chillies. Having collected these together he goes to the bride's uncle's house. The uncle now accompanies him to the bride's house where he gives to her parents his gifts. The parents then give the girl to her suitor, having first given her advice as to her position in her new role; and she is led to her new home by the bridegroom.

After their settlement in Pollebedda these customs have changed slightly, and today the Veddha boy is expected to give the girl's parents cloth as well as the traditional gifts. The boy

may take also a gift of betel nut and leaf with him. Today too the hut built by the boy is expected to be slightly longer lasting than was previously required. This is but a natural change as more permanent dwellings are needed for a settled community.

The Veddhas do not have the intermediary so often found among the stricter Sinhalese and Tamils. Among these two communities a person was 'employed' to make contact with the two families. The person concerned was not necessarily related to either party. The Sinhalese always have a religious ceremony to solemnise the event; and the Tamils also have a religious rite. Among the Sinhalese this rite usually takes the form of a poruwa (lit. canopy) ceremony, while among the Tamils it takes the form of the Hindu rite. The Christians in both communities however are married by the rite of their respective Churches. The Veddhas, as indicated above, have no religious rite attached to their marriage.

Death among the Veddhas

The Veddhas are phlegmatic in their attitude towards death. To them, death is one of the inevitable aspects of life and is accepted as such. When a person dies the body is wrapped in the bark of the Wild Fig tree and carried into the jungle. Here a shallow grave is dug and the body lowered into it. The grave is filled in and the people return to their village. The region of the grave is not taboo, but is generally avoided for fear of ghosts. This fear is especially prevalent if the person either died suddenly or under particularly tragic circumstances. Here again no religious ritual is observed, but in recent times however a gun has been fired

over the grave. (The first record of this is by Dr. R.L. Spittel in his book 'Savage Sanctuary'.) The ghost of the dead person is supposed to wander about for some time after death, after which time it goes away.

Among the Sinhalese and Tamils death is accompanied by ritual and religious observances. Cremation is usually found with the richer people, while the poorer may bury. The Veddhas never cremate. Both the Buddhists and the Hindus believe in rebirth and karma. The Veddhas hold neither of these beliefs, and apparently have no philosophical explanation of death.

Religion of the Veddhas

The Veddhas believe in a system of parethayas - semi-theistic beings of awful nature, and yakkas - a similar group of beings but slightly less malevolent. The yakkas are characterised according to their malevolence, the most malevolent being Pathini (whom the Hindus call Kali), and the most beneficent being Kataragama Deviyo (the Ganesha of the Hindus and the God Kataragama of the Buddhists of Ceylon). The parethayas are given the names of the various evils they inflict on the people; thus the one responsible for small-pox is called the Hori parethaya (lit. rash).

The yakkas and the parethayas are appeased during adverse times by a ceremony called the 'Boiling of the Milk'. For this ceremony a number of altars made of coconut leaves are constructed, each altar being dedicated to a different yakka or parethaya. A member of the clan now directs the cooking of certain traditional foods, kavun, kiribath and a cake called athi-raha by the Sinhalese, (the

Veddhas refused to give me their name for this - although kavun and kiribath are pure Sinhala they used their own name for the athi-raha). This member of the clan, usually an elder, then selects one of the younger men to dance the ceremony. The chosen person puts on a set of bells around each ankle and carries a bunch of leaves in his hand. Set in the centre of the circle of altars is a bowl of water. The 'priest' now dips his bunch of leaves in the bowl of water and sprinkles it on all the altars. He then starts a frantic dance during which he chants. At the climax of the ceremony he dances into the altar of the Kataragama Deviyo (the largest of the altars) and then starts with another member of the tribe what can best be described as a two part chant. At the end of this part of the ceremony he goes around the male members of the tribe, blessing each of them in turn. The ceremony concludes by offering a part of the cooked food, bananas and rice to each of the yakkas and parethayas involved, and then partaking of the remains themselves.

The inner meaning of this ritual is not obvious, but its economic advantages in bringing together the members of the clan are. The Veddhas themselves were very reluctant to tell me about their religion and beliefs.

I have before been allowed to take part in this particular rite, but when I questioned them as to its significance I was never enlightened.

Future of the Veddhas

Under the present schemes imposed on them by the Ceylon Government the Veddhas have been settled in villages which has, to

a certain extent, affected their traditional way of life. They have had to make adjustments to suit a settled existence, and this has taken the form of a semi-agricultural economy. They grow manioc and bananas and take these to the weekly Fair at Maha Oya. This provides them with a certain amount of money which is supplemented by the Government in the form of money and clothing.

The health services in the Veddha district are not as good as one might hope for. The nearest Hospital is that at Maha Oya, which is about eight miles away. The track leading to the village can only be used by Jeeps and Tractors; hence the Veddhas have either to wait for one of these vehicles or else walk. The general standards of health among them are not high; the principle diseases being open ulcerative sores caused by the infection of normally lesions, and general malnutrition.

The village of Pollebedda is under the medical jurisdiction of the District Medical Officer, Maha Oya, who is supposed to visit the village at certain regular intervals. It is regrettable to note that during the whole of my stay in this village the D.M.O. did not visit it once. My colleagues and I used to dress the wounds of the Veddhas and do a certain amount of elementary First Aid, but we had neither the finances nor the facilities to do more than this. Due to the birth rituals the infant mortality is very high, and we were informed that approximately two thirds of all infants born died either at birth or in the first month post partum.

The Veddhas are now marrying into the families of the Sinhalese villagers and their racial 'purity' is fast dying out. This

admixture has been going on for some generations past, but is now increasing rapidly. The children are being educated at the school in Pollebedda, where Buddhism is being taught. This has resulted in most of them accepting this philosophy in lieu of their ancestral religion. Education is also making the Veddha language die out; this process has, however, been going on for a long time, and I could find only one man in the community who could speak it with any degree of fluency. Most of the Veddhas in the age group of 20-40 did know a few words in their language.

The future of the Veddhas as a 'discrete' ethnic group appears to be very bleak indeed, but solace may be obtained from the fact that even people with the minimum of Veddha ancestry are proud to call themselves Veddhas.

Acknowledgements

I would like to record my grateful thanks to my many friends and relations in Ceylon who made this work possible. In particular I would like to thank the Frederick Soddy Trust for financial support, Professor J.Z. Young for his encouragement and advice, and Poramalsakka and the other Veddhas of Pollebedda for so patiently answering all my questions.

A.W. PRATHALINGAM

REPORT OF J.A. BETTS

Two projects were worked. The first was to attempt a general neurological examination of the brain of the pangolin, Manis sp., with particular reference to the olfactory system. The second was to collect specimens of the limbless Amphibian, Ichthyophis, in order to study its nervous system and embryology.

Manis was known to be rare, but having a scattered distribution in the East-central and South east regions of the Island. It was therefore decided to spend the first two-thirds of the available time in these two districts.

From information collected in Colombo at the beginning of the Expedition, the location of Ichthyophis was given as a small region on the banks of a side stream of the river Mahaveli, just outside the town of Kandy, and situated in the West-central part of the Island about 70 miles North east of Colombo. The final part of the time was to be spent in this locality.

No results were returned for either project. This was due to a number of factors, as below.

1. The Expedition was in the Eastern Region throughout the dry season. The temperature was then in the nineties Fahrenheit, which was considered by local people to be too hot for the animal to show itself.
2. No rain fell during this time, making the jungle very dry and arid. Manis could be found, it was said, immediately after short, light showers of rain. There were none of these showers. Towards the end of the time the monsoon

- rains set in making it very difficult to penetrate into the interior. This continuous rain was apparently too heavy for the subsequent appearance of the animal.
3. Due to the noise both of vehicles and of the cultivation of chenas, Manis, in common with the other forms of wild life, had migrated deeper into the jungle than ever before; thus it could live undisturbed and free from constant interruptions. One game ranger put this migration distance at about twelve miles into the interior.
 4. The animal is strictly nocturnal, rolling up into a protective ball and sleeping, often underground, during the hours of daylight. This meant that all forays in search of it had to be mounted at night. This in itself presented a number of difficulties:
 - a) The presence of trackers with expert local knowledge of the jungle was essential. They were not always available.
 - b) The activity of wild animals is greater at night than during the day. This being so, it was necessary to go into the jungle armed with a gun and ammunition, neither of which was always obtainable.
 - c) Owing to the migration deep into the jungle, long periods of time were necessarily wasted in walking through the jungle to reach the area wherein the animal was known to be found - it being impossible to camp in the interior.

5. The sudden development of acute appendicitis in the jungle necessitating my immediate return to Colombo for an emergency appendectomy put an end to all further field work. No personal attempt could therefore be made towards the collection of Ichthyophis.

In view of the lack of success with both these projects, in particular that on Manis sp., negotiations were opened with Dehiwela Zoo, Colombo, and with Aquinas University College Colombo, for the supply and subsequent shipment to London of the relevant parts of the animal necessary so that work could be begun at some future date. These negotiations are continuing.

In retrospect it is considered, in spite of the lack of results, that the projects were not unreasonably in their formulation. Manis sp. was as rare as preliminary information had indicated; but the number of reports collected from the local people who had either just seen it, or even in many cases had eaten it, lead me to believe that had conditions been more optimum a number of specimens could have been collected. In fact the lack of rain had considerably diminished the amount of wild life, as was observed during the many nocturnal trips into the jungle made both personally and by a number of trackers who very kindly offered me their services over this period.

No comments can be made by me personally on any aspect of the project concerning Ichthyophis, since I was unavoidably unable even to visit the location where they were to be found. However, M.C.D. Speight and R. Winney made numerous journeys to the area

near Kandy where, we were informed, the animal had been found on previous occasions. Although the location was searched thoroughly they were rewarded only by the sight of many large earthworms and a single burrowing snake.

Acknowledgements

My acknowledgements and sincere thanks for much helpful advice and assistance are due to the following: the Departments of Anatomy and Physiology, University College London, for the loan of equipment; the Rector of Aquinas University College, and Professor Kirtisinghe, for facilities; Dr. Packeer, Director of Wild Life Department, and his staff, for much assistance in the field; Mr. L. de Alwis, Director of Dehiwela Zoo, Colombo, for future arrangements; and Mr. P.H.D.H. de Silva and Mr. Karunaratne of the National Museum of Ceylon for the great help afforded both to myself and to M.C.D. Speight and R. Winney in our abortive attempts to find Ichthyophis.

J.A. BETTS.

REPORT OF M.C.D. SPEIGHT

DIPTERA AND ARACHNIDA

The aims of this project were as follows:

1. To make a comprehensive collection of various Dipterous groups for the British Museum (Natural History).
2. To make an extensive collection of Syrphidae.
3. To make a spirit collection of certain Diptera for research purposes.
4. To collect Salticidae (Aranea) for the British Museum.

Very little systematic collection of Diptera has been carried out in Ceylon in the past, and apart from work included in the series 'Fauna of British India' and due to persons such as Yerbury and Brunetti, almost nothing has appeared until very recently. It is hoped that the collections made by this Expedition will fill some of the gaps existing in the present knowledge of the Ceylon insect fauna.

In his 1958 paper, Keiser lists fifty species of Syrphidae (hover-flies) from Ceylon. Some twenty species were collected by this Expedition, of which some half dozen are of particular interest, one possibly being new to science. These are listed below.

Among the other Diptera, representatives of some endemic Ceylonese genera have been brought back, as have species and genera hitherto unrecorded from Ceylon. Some new species have been collected and in one case - Tabanidae - the undescribed male of a species known only by a solitary female from Japan has probably appeared. Perhaps the most interesting capture is that of a long series of a new species of Formicosepsis, this genus belonging to

a family - Cypselosomatidae - of flies hitherto unknown from the Indian sub-continent.

A preliminary examination of the Arachnids has shown that of the hundred or so Salticids collected, a number of new species of Myrmarachne have been taken. Other new species will doubtless turn up after further examination.

In all some 750 specimens have been brought back to Britain. With the exception of the Syrphidae, these are to be deposited in the collections of the British Museum, and may be located there under the B.M. number 1963 - 651. The staff at the Museum have indicated that they are very pleased with the material and consider it to be in excellent condition. The colours have faded little, and virtually no setae have been knocked off.

The parts of the Island visited by the Expedition may be seen on the map at the front of the Report. We were able to collect in the wet South-west of the Island, the hills, and also in the dry South-east; thus sampling the Island's main faunal regions.

SYRPHIDAE

SYRPHINAE

Paragus crenulatus Thoms.

P. suratus Stuck.

P. auratus var. (?)

Baccha umnrosa Brun.

B. amphithoe Walk.

Melanostoma orientale Wied.

M. orientale v. *ceylonese* de M.

Ischiodon scutellaris Fabr.

Xanthogramma citrinum Brun.

Asarcina aegrota Fabr.

A. ericetorum Fabr.

Syrphus balteatus Deg.

S. serarius Wied.

CHRYSOTOXINAE

Chrysotoxum baphyrus Walk.

ERISTALINAE

Mallota malayana Curran.

Eristalius multifarius Walk.

E. multifarius v. minutus Hull.

E. arvorum Fabr.

E. quinquestriatus Fabr.

E. obliquus Wied. (?)

XYLOTINAE

Syritta orientalis Wied.

EUMERINAE

Eumerus aurifrons Wied.

Sweeping was found to be the most successful collecting method. Coarse ground vegetation in the shade of large trees, bushes under a reasonably dense vegetational canopy, stream margins and damp places in general were the most rewarding areas. 'Direct observation proved about the only way of taking Stratiomyids and Syrphids. Flowers were few, and only occasional specimens were taken at them. Small streams, drainage ditches, and temporary streams formed by the dirty water draining from places where people washed clothes by

wells yielded a variety of species, prominent among them being Eristaline hover-flies. Syrphid and Muscid larvae and puparia were found on one occasion in about two inches of rain water and rotting vegetable debris in the bottom of a dug-out canoe. Tree trunks were also found to be good hunting grounds, especially for Salticidae. Piles of coconut husks in the wet zone attracted large numbers of Neriidae and Micropezidae.

An array of ant-mimicking spiders was found, not infrequently running with, or close to, the ant species they resembled - their mimicry being on occasions embarrassingly realistic. Ants' nests yielded one or two Myrmecophiles; termites' nests were less productive and also very much more difficult to examine.

Although we were in Ceylon for the dry season, lights in the evening produced a variety of insects. Most impressive were some huge Ascalaphids, which were encountered at Maha Oya. When we were at Vavuniya, the area had its first rain for some months and the volume of insects attracted to lights was quite phenomenal. The light was left on from sunset - 6.15 pm - until near midnight, and then an aerosol insecticide used to knock down the room's content of insects. After sweeping, a dustpan was filled three times with the corpses - very few individuals in this catch being more than three-quarters of an inch long. On this occasion numbers of winged termites were taken, these being absent from other such catches. Embiid males not infrequently came to light, as did male Tabanidae.

Dung - Usually buffalo dung - proved surprisingly sterile and only a few Sepsids were taken either over or upon it. A Hippoboscid was found to be very numerous on cattle, and another was taken on dogs

One small fly of peculiar habit that was found to be very common and a great nuisance in the dry zone was the 'eye fly'. This insect congregates in clouds and hovers just in front of the eyes if one remains stationary; and if left alone settles in the eyelashes. It was found in great numbers in the Veddha village of Pollebedda, where it clustered in hundreds under the roof of a shelter on one or two of the many dangling wisps of straw or banana leaf and ignoring entirely the others. This fly has since been identified as a Chloropid.

Specimens were killed in the field - a battery of cyanide bottles being used for this purpose - and mounted and labelled the same day. Six-inch by three-inch 'peat-lined' boxes were used for storage, these being kept in metal biscuit tins, well sprinkled with naphthalene. Spiders were kept alive until they could be dealt with in the evening. They were preserved in a mixture of 70% alcohol and glycerine in poly-capped two-inch by half-inch glass tubes, one spider to a tube. These small tubes were put together in polythene bags, with a pad of alcohol-moistened cotton wool. The bags were closed with rubber bands and kept in biscuit tins, suitably padded.

There are a number of peculiarities to collecting in the tropics which we came across, some of which proved a serious hindrance to collecting.

Although we visited Ceylon during the dry season and spent much of our time in the dry zones of the Island, we had to store all our equipment and our collections in Colombo. At this time of the year

Colombo was receiving the tail end of monsoon weather from India and experienced two weeks of very wet weather. During this period our collections suffered from mould, which was kept down by using pure Donsithorpes Reagent. However, had we had a quantity of silica gel with us we would have had no trouble from this quarter. High temperature gave us trouble in storing alcohol, for, since we had long, jolting journeys to make in a Land-Rover, much of the alcohol was lost by evaporation as it slopped about in its bottle, despite the necessary precautions taken.

The wild areas of Ceylon are much restricted at the present day, and apart from the areas preserved in the National Parks, are fast disappearing. However we spent much of our time in these areas, and here we found our collecting activities restricted by wild animals. When we were at Pollebedda, for instance, it was not prudent to move far from the track into the jungle whilst collecting. One member of the Expedition did in fact get 'tree-ed' for half an hour by wild buffalo in this area. Despite permits, one's activities are even more confined in the National Parks, for similar reasons.

We saw few snakes while in Ceylon, but enough to exercise caution when in areas liable to harbour them. Ticks were more of a problem and in long-grass areas in the dry zone were occasionally quite a nuisance. Here we were usually warned of their presence by finding them in our nets whilst sweeping. There was little trouble from mosquitos or other biting flies. The real curse of collecting was the land leech. Much of my collecting was carried out in the dampest parts of any area, e.g. roadside culverts and ditches, which nearly always had their complement of leeches. In the dry

zone they were mostly aestivating in such places and only became active after about half an hour. In the hills and wet parts of the Island however one had to be constantly on the alert for leeches whenever one left a path. It was found to be impossible to stand for any longer than two minutes away from paths in the hill districts, especially after rain, without collecting some on one's person. This was often a serious handicap, since they were frequently present in such numbers as to make prolonged concentration on collection impossible. Wearing long trousers and tucking the turn-ups into socks helped to prevent leech attacks.

Ants were an occasional nuisance. While sweeping and beating bushes one had to be cautious lest this resulted in dislodgement of swarms of the half-inch long Fire ant (*Cecophila*) which has a painful bite.

A further obstacle to systematic collecting is provided by the religious beliefs of the Ceylonese. To a majority of the population all life is sacred and it is most difficult for a conscientious collector to avoid offending these beliefs. In the Ruhunu National Park, which contains the only remaining original low-land forest, we were allowed to take insects only from certain areas because the region is a Sacred Reserve; and only then if we were well away from any religious building. We were entirely unable to collect in many of the most interesting places.

M.C.D. SPEIGHT.

REPORT OF R. WINNEY

HYMENOPTERA: FORMICIDAE

Introduction

No major work has been published on the ants of the Indian sub-continent since that of Bingham (1903). For his Ceylonese specimens he relied on those sent to him by workers in Ceylon, and from the localities given it appears that they collected in relatively few areas. Many of Bingham's descriptions are incomplete, and only a third include descriptions of the sexuales. Since then a number of the omissions have been corrected separately, but there are still many gaps. It seems that there has been no previous systematic collection of ants from Ceylon, and it is hoped that this present work will fill some of the gaps.

Method

Ants were collected at every opportunity. Whenever possible they were followed to their nests, which were then excavated in an attempt to collect the sexuales. However, in the dry zone the ground proved too hard to allow the deeper chambers to be exposed, so that although males and queens were presnet in a large proportion of the nests, they were collected more frequently in the wetter parts of the Island. No deliberated attempt was made to use a light trap, but those ants which came to light were taken. Some sweeping and beating was carried out, but most of the ants were collected as a result of direct observation. Some of the larger specimens were mounted on pins, and at the same

time, series from nests were preserved in Donisthorpes fluid - a mixture of alcohol, acetic acid and mercuric chloride.

Localities

Collections were made in the following areas, mainly in central and South-eastern Ceylon: Balangoda (Sab.P.), Belihul Oya (Sab.P.), Bibile (Uva P.), Boragas (C.P.), Colombo (W.P.), Galge (Uva P.), Jaffna (N.P.), Kandy (C.P.), Kosland (Uva P.), Maha Oya (E.P.), Peradeniya (C.P.), Ruhunu National Park, Tissamaharama (S.P.), and Vavuniya (N.P.).

Results

Some four thousand specimens of about eighty species of ants were collected. Of these, one thousand - mainly the larger ones - were brought back mounted, and the remainder were preserved for mounting at a later date.

The mounted specimens have been partially identified, and include species of the following genera:

DORYLINAE

Aenictus Schuck

PCNERINAE

Anochetus Mayr

Bothroponera Mayr (?)

Brachyponera Emery

Diacemma Mayr

Depanognathus Smith

Lioponera Mayr (?)

Lobopelta Mayr

Odontomachus Latr

Ponera Latr

<u>MYRMECINAE</u>	<u>Cataulacus</u>	Smith	
	<u>Crematogaster</u>	Lund	
	<u>Holcomymex</u>	Mayr	
	<u>Lophomyrmex</u>	Emery	
	<u>Meranoplus</u>	Smith	
	<u>Monomorium</u>	Mayr	
	<u>Myrmecaria</u>	Saunders	
	<u>Pheidole</u>	Westw	(8 + spp.)
	<u>Sima</u>	Roger	
	<u>Solenopsis</u>	Westw	
	<u>Tetramorium</u>	Mayr	
<u>DOLICHODERINAE</u>	<u>Aneuretus</u>	Emery (?)	
	<u>Technomyrmex</u>	Mayr	
<u>FORMICINAE</u>	<u>Camponotus</u>	Mayr	(10 + spp.)
	<u>Hemioptica</u>	Roger	
	<u>Oecophila</u>	Smith	
	<u>Plagiolepsis</u>	Mayr	
	<u>Polyrachis</u>	Swins & Schuck	(8 spp.)
	<u>Prenolepsis</u>	Mayr	

It is intended eventually to publish a complete list of species, and at the same time to combine information from all available sources into a comprehensive review of Ceylonese ants. If possible, this will include full descriptions, notes on habits, and keys for identification. However, this will take some years to produce, as the work involved includes,

1. Mounting 3,000 ants.
2. Searching Donisthorpes references and the Zoological Record for all literature bearing on the subject.
3. Identifying the collected ants by reference to the literature, and by direct comparison with named specimens.

R. WINNEY

Acknowledgements

In conclusion, we would like to thank Professor Richards and Mr. Hewer of the Zoology Department, Imperial College, for their help and advice; Mr. Oldroyd, Dr. Yarrow, Mr. Clarke, Mr. Coe, Mr. Deeming and Mr. Hollis of the British Museum (Natural History) for their assistance; and Mr. W.T.P. Gunawardene, Assistant in Entomology at the National Museum of Ceylon, for access to that Museum's collection of ants and Diptera. We would also like to express our gratitude to Professor Kirtisinghe of the Catholic University of Ceylon, and to the Medical Research Institute of Ceylon for providing alcohol, so essential in the preservation of insects. We are indebted to the British Museum (Natural History), and the Zoology Department, Imperial College, for providing collecting equipment, and to the Hon. Mr. C.P. de Silva, Minister for Agriculture, Lands and Land Development, for permission to collect insect in Yala Sanctuary.

M.C.D. SPEIGHT and R. WINNEY

CULTURAL ASPECTS OF THE EXPEDITION

The intention of the members of the Expedition was to encompass as many of the unique national events and places of historical interest as possible, and in fact when time and opportunity permitted this aim was fulfilled.

During the first week in Ceylon the members of the Expedition made a trip to see the perahera. This procession is held in August during the week preceding the Full Moon in that month. The word 'perahera' is the Sinhala for a procession and every year this procession of special religious significance is held in Kandy. It is based in Kandy at the present time as the Sacred Tooth of the Buddha is now in that city. During this time the Sacred Relic is taken in its casket around the city on the back of an elephant. It was after dark, and the flickering light from the coconut flares carried in the procession afforded an impressive setting to the many other elephants and dancers also taking part. On the last four days not only is the Sacred Relic carried around the city but also the Holy Instruments of the attached Devales. ('Devale' being the Sinhala for the 'House of Residence of God' according to Carter's Sinhala-English Dict). During these four days it is termed the Randoli Perahera.

Later that week another evening excursion was made, this time to Uddappuwa, a village on the coast to the north of Colombo, to see the Fire-Walking Ceremony. This is a traditionally Hindu ceremony but is now practised by the Buddhists as well. The basic idea behind this ceremony is one of purification and repentance. The devotee repents for all the evil committed by him in the past,

and purifies himself by walking over the red-hot embers of the fire. Before actually walking, the devotee cleanses his body by having a ritual bath in either the river or the sea. It is a point to note that nobody will walk across the fire unless he feels that he has genuinely repented for his sins.

Recollections of the Kandy perahera were strengthened when the Expedition returned from the Ruhunu National Park to Colombo to find that it was the time of the Vel Festival. This is a Hindu festival held during the Kataragama Festival, which usually falls in August. (The Hindus and Buddhists both use a lunar calendar). In this ceremony, as in the Kandy perahera, an object of religious significance is taken in procession around the city of Colombo. The purpose of this is that the blessings of God may be showered around the city, as well as the humanitarian one of enabling the sick and the infirm to worship at a shrine.

Our return from the Ruhunu National Park was punctuated by a stop at Kataragama, a village situated in the heart of the jungle and on the edge of the National Park. At Kataragama is a shrine of much veneration to Hindus, Buddhists and Muslims alike. This shrine was originally a place of worship sacred to the Veddhas, who according to legend, helped God Incarnate. Subsequent to this over the years it has become a place of pilgrimage of the devotees of Ganesha, or Pillayar (God in the aspect of Patience), and Kataragama (God in the aspect of Forgiveness). (The English language does not unfortunately permit an exact interpretation of these words). Annually during August - the Sinhalese month of

Esala - a festival is held at this shrine to which devotees from as far afield as North India make a pilgrimage to perform penitence.

Towards the end of our stay in Ceylon we travelled to Jaffna in the North of the Island, making a short stop at Anuradhapura. This city, situated about 150 miles north of Colombo, was the capital of Ceylon from about 500 B.C. to 900 A.D. The city was founded by Dutugemunu, who defeated the Tamil King Elara at this place. In order to atone for his crimes in war he built a number of dagobas (Buddhist shrines) and viharas (monasteries of the Buddhish faith). It was during this time that Sanghamitta Bikkhuni - the daughter of King Asoka of India - brought a branch of the Sacred Bo Tree (Ficus religioses) from Buddha Gaya. This sapling was planted near the Brazen Palace (Love Maha Prasadaya), a highly ornamented Vihara. The city was sacked by the invading Pandians and Cholans from India, and the capital then moved to Polonnaruwa. Today the ruined city is regarded as of great religious importance, being recently declared a 'Sacred City' by the Ceylon Government.

The Expedition account was closed on November 21st 1963.

J.A. BOTTIS
Treasurer.

FINANCES

A total sum of £1,237.10.0. was collected; this being deposited in the Expedition account which was opened on January 14th 1963 at a branch of the National Provincial Bank in London. Of this sum, £350.0.0. was contributed by the members themselves. The remaining figure of £887.10.0. was obtained from other sources, as indicated on page 4 of this report, and shown in detail on Account sheet 'A'.

Account sheet 'A' represents the full statement of receipts and payments of the Expedition.

The item named 'Other Expenses' on Account sheet 'A' is the subject of Account sheet 'B'. Here is shown, broken down, the expenditure incurred whilst the Expedition was actually in Ceylon, the account beginning on August 3rd 1963 and terminating on September 29th 1963. Account sheet 'B' was audited in Ceylon and certified correct. For this I wish to thank Mr. M. Pasupati, F.C.A., of the firm of Satchithananda, Schokman, Wijeyeratne & Co., chartered accountants, Colombo.

The Expedition account was closed on November 21st 1963.

J.A. BETTS
Treasurer.

UNIVERSITY OF LONDON EXPEDITION TO CEYLON 1963
STATEMENT OF RECEIPTS AND PAYMENTS

ACCOUNT SHEET 'A'

<u>G r a n t s:</u>	£	s	d	£	s	d
Royal Geographical Society	125.	0.	0.	Cheque Book		4. 0.
Ford (Dagenham) Trust	150.	0.	0.	150 Ceylon Rupees	7.	11. 6.
British Medical Students Association	100.	0.	0.	Stamp Duty on Travellers' Cheques	1.	5. 0.
Frederick Soddy Trust	100.	0.	0.	I. Christie - Entomological Supplies	3.	4. 9.
University College Exploration Board	150.	0.	0.	Kodak Ltd. - Films	32.	11. 2
Imperial College Exploration Board	60.	0.	0.	Return fares London-Colombo	880.	1. 0.
Joseph Lucas Ltd.	10.	0.	0.	Other expenses as per Account Sheet 'B'	149.	4. 5.
Bournemouth City Council	25.	0.	0.	Difference in Exchange		4. 5.
University College Union	25.	0.	0.	To I.C. Exploration Board	152.	0. 3.
Contribution of Personnel				Towards cost and postage of Report	11.	3. 6.
Loan Imperial College Exploration Board						
					142.	10. 0.
					<u>£1,237.10. 0.</u>	
					<u>£1,237.10. 0.</u>	

UNIVERSITY OF LONDONEXPEDITION TO CEYLON - 1963.STATEMENT OF "OTHER EXPENSES"

Rs. Cts.

Food and Accomodation	..		1,013.27
T i p s	..		84.50
Travelling :-			
Petrol and Oil	..	243.42.	
Public Transport	..	<u>236.55</u>	479.97
Luggage and Storage Charges	..		37.25
Repair of Land Rover	..		294.50
Drugs, etc.,	..		19.55
Hire of Tent	..		10.00
Permit for visit to Sanctuary	..		10.00
Stationery	..		6.50
Presents	..		15.50
Miscellaneous	..		18.62
			<u>Rs-1,989.66</u>

Equivalent £. 149. 4. 5.

CERTIFIED CORRECT.

*Satchithananda, Schokman, Wijeyeratne*SATCHITHANANDA, SCHOKMAN, WIJEYERATNE & CO.
Chartered Accountants.

COLOMBO, 15TH OCTOBER, 1963.

ACKNOWLEDGEMENTS

We would like to thank the Hon. the Prime Minister of Ceylon, Mrs. Sirimavo Bandaranaike, for her concern in the Expedition.

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Bata Shoe Company of Ceylon
Boots Pure Drug Co., Ltd.
L. Christie
Evans Medical Ltd.
Gillette Industries Ltd.
Kodak Ltd.
Joseph Lucas Ltd.
Metal Box Company Ltd.
Parke, Davis and Co.

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| Mr. and Mrs. Chelvadurai | Mr. and Mrs. Thiagalasingam |
| Mr. and Mrs. Pasupati | Dr. and Mrs. Wickremasinghe and family |
| Mr. J.W. Piyatissa | Mr. and Mrs. Yoganandan |
| Mr. and Mrs. Raja Rayan | The Divisional Revenue Officer,
Maha Oya |
| Mr. and Mrs. Sathyalasingam | The Ceylon Police, Maha Oya |
| Mr. *A. de Silva and family | The villagers of Udadappuwa |

EPILOGUE

On Thursday 7th November, 1963, two members of the Expedition, P.A. Southern and J.A. Betts, participated in a broadcast transmitted by the B.B.C. in its Overseas Service and entitled 'University Expeditions'. Also taking part were Mr. T.P. Kirwan, Director of the Royal Geographical Society, and the leaders of two expeditions from Oxford University.

P.A.S., J.A.B., A.M.P., M.C.S., R.M.
November, 1963.

