

SOME OF THE WILD LIFE PROBLEMS OF CEYLON

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Topographically Ceylon is a detached portion of the South Indian peninsula. It divides into two climatic regions, known as the Dry and Wet Zones; the latter occupies approximately the south-western quarter of the island. By African standards, dry and wet are relative terms and there may be over 80 inches of rain in the Dry Zone. Even so, rainfall tends to be concentrated and long periods without rain occur. The Wet Zone receives rain during both monsoons, the Dry Zone during the north-east monsoon only. Monsoons sometimes fail and serious droughts are not uncommon.

The hill country (where the best tea is grown) occupies about one-sixth of the island, in the south-central section. In fact most of it is in the Wet Zone, which comprises nearly all the hills and the coastal belt to their west. To the east the low-lying dry country spreads round the hills to the southern plains. The main faunal division is thus between wet hill country and dry plains. As in Africa the dry plains country carries most of the wild life and it is here that the problems of preservation have to be tackled.

The land area of Ceylon is 25,332 square miles, with a human population of about 9,000,000 increasing at the rate of 2·8 per cent per annum, a figure slightly higher than East Africa. There is an advanced and ancient system of irrigation, without which most of the Dry Zone would be uninhabitable. It depends on large man-made dams, or tanks as they are called. Until very recently many of the old tanks were in disrepair and habitation throughout much of the northern half of the island, where there are splendid indications of ancient civilization, was sparse and concentrated. Among several reasons for this was a particularly virulent form of malaria, now brought under control by spraying. Old tanks have been repaired and new tanks are being made; so that the empty lands are becoming repopulated at a rapid rate. As a result, room for wild animals is growing less: an all too familiar picture. The mosquito has played much the same part in game preservation as has the tsetse fly in Africa, making large tracts of country uninhabitable by human beings.

The most important large animals in Ceylon are the Ceylon elephant (*Elephas maximus ceylanicus*), buffalo (*Bubalus bubalis*), spotted deer (*Axis axis ceylonensis*), sambar (*Cervus unicolor*),

barking deer (*Muntiacus muntjak malabaricus*), mouse deer (*Tragulus meminna*), the Ceylon sloth-bear (*Melursus ursinus inornatus*), leopard (*Panthera pardus fusca*) and wild boar (*Sus scrofa cristatus*). There are also monkeys, small mammals and birds, including the magnificent pea fowl (*Pavo cristatus*) of peculiar interest and diversity.

Ceylon is part of the Indian faunal zone, but its separation from the South Indian peninsula has produced a number of individual species and sub-species. Geologically, the hill country and the land to its south appears to have been severed from the parent continent much earlier than the northern half of the island. A majority of the animal forms peculiar to Ceylon (there are twenty-one such bird *species* alone) are those concentrated in this region. There is a great deal worth preserving.

It is not possible in an article of this sort to discuss animal numbers or distribution, except in relation to the elephant, a special problem. In his 1956 Annual Report the then Warden of the Wild Life Department wrote: "At present there is no plant or animal, except the elephant, whose survival is in imminent danger." In view of the rapid development of agriculture in the erstwhile game areas, one must hope that this view is not over-optimistic. The history of the hog-deer (*Axis porcinus*) could be a fateful pointer. This Indian deer may have been indigenous to Ceylon or may have been imported by early Dutch or Portuguese settlers in the seventeenth century. However this may be, in 1935 W. W. A. Phillips wrote that it is entitled to rank as a Ceylon animal. He added that, although local in their distribution, hog deer were fairly numerous within their limited range. In his 1957 Report, the Warden mentions that the hog-deer is now probably extinct. Even if the species is relatively unimportant, the interval is only twenty-two years.

THE CEYLON ELEPHANT

The continued existence of wild elephants in Ceylon is a matter of very general conservation interest. It is also the first concern of the Wild Life Department and its most difficult task. It is not a problem which anyone can look upon with equanimity. There are three main elephant concentrations in the island, in and near the main reserves (using this expression in its widest sense): Wilpattu in the north-west, Gal-oya in the east and Ruhona-Yala in the south-west.

I have not got distribution figures, but these are of little importance except to those who have to wrestle with the problem on the ground. As elsewhere, Ceylon elephants wander a good

deal and Mr. C. E. Norris is at present organizing a systematic study of seasonal distribution, with the help of a team of observers from the Wild Life Protection Society. In the past, there was complete freedom of movement between the main elephant areas and the sparsely inhabited jungle to the north-east, an elephant route 250 miles long. Some years ago the opportunity to establish reserves along this route was lost. The remaining wild elephants of Ceylon seem doomed to be contained in three isolated pockets, making the problem of perpetuation of the race much more acute.

In 1951 the elephant population of Ceylon was reckoned as 1,000. The breeding rate is between 6 and 7 per cent. The average annual wastage for the years 1951-57 is given as eighty-five, so that there has been a steady loss; and although the wastage is decreasing it still seems to be above the natural breeding rate. In 1957, elephant casualties amounted to seventy-four (the lowest recorded figure), as follows: captured on licence, 10 (including two found isolated and sent to the zoo); killed in alleged defence of crops, 21; killed in alleged self-defence, 1; killed by wanton shooting and gunshot injuries, 19; killed by accident, 2; found dead apparently of natural causes, 21. In this particular year no elephants were proclaimed as rogues. Clearly amongst those found dead there may have been some which died from wounds. Records of natural deaths may have been short.

For many years now there has been no licensed shooting of elephants and to-day tuskers are very rare. Tuskliness is known to be a hereditary trait in elephants as also probably the tendency to carry large tusks. Tusks do not increase in size beyond a certain age, and in Ceylon it is reckoned that the systematic killing of large tuskers for the ivory has allowed the tuskliness strain to predominate. The tusked males have not been allowed to live long enough to reproduce many of their kind. If this reasoning is correct, it points to a possible future danger amongst African elephants.

It is certainly possible that the wastage could be considerably reduced if a different system of control could be adopted, a fact which is readily apparent to the Wild Life Department. At present, the department is not responsible for dealing with dangerous or destructive animals. Any dangerous elephant is declared a rogue by the Government Agent, and anyone with a rifle of .375 calibre or over may get permission to shoot it. In effect this means a recreational approach to what elsewhere is considered a professional task.

The number of guns and rifles in Ceylon must be enormous; over 40,000 have been imported during the last ten years. Almost every villager has a firearm and is allowed to use it in defence of crops. In addition, when elephants damage food crops compensation is paid, provided the plots are well fenced and watched—the payment being calculated according to short-fall in production. Even so, about £1,000 is paid out annually, and the villagers get it both ways. As the warden has put it: “That they should have such compensation, as well as the right to destroy the elephant causing it, may not be all that reasonable . . . man is the real intruder.”

The Fauna Advisory Committee has recommended the prohibition of shooting in the protection of crops and, instead, payment of full compensation based on market value. Meanwhile it will be a long and difficult task to educate the villagers to use more humane methods of crop protection. And it may prove even more difficult to persuade a government to adopt a policy (in defence of elephants) which could prove to be unpopular with the villagers whose votes keep that government in power. Incidentally, also, the presence of all these weapons gives an opportunity for widespread poaching of other animals, which indeed is taking place throughout Ceylon.

Eventually it is inevitable that the wild elephants will have to be contained in the reserves and this will mean that the small population will become split up into three independent groups. The alarming speed of village development in the Dry Zone means that this position will come about quite soon. The minimum elephant population needed to perpetuate the species is unknown, but clearly the point of no return cannot be far away. And this is probably also true of animals other than the elephant.

Members of the Wild Life Department are much concerned about in-breeding of elephants, but in fact the danger here is perhaps not particularly great, as has been shown by, for example, Péré David's deer. Meanwhile, the position is aggravated by the fact that the reserves are not really sacrosanct, as will be explained shortly. There is clearly a very real need for a full and detailed ecological study of the wild elephant population of Ceylon and for this the data now being collected by the Wild Life Protection Society should prove invaluable. Not only is it necessary to know the number, distribution and movements of the elephants but also the holding capacity of the reserves in terms of other animals. No one species can be considered in isolation.

It is probable that outside expert advice will have to be sought, at least to survey the problem and plan the research. It is much hoped that the Government will face the cost of this, for it is difficult to see any future for the Ceylon elephant, unless it is done. If the co-operation of the University of Ceylon could be assured, local staff could do the detailed work.

Some other points emerge from this discussion and the position could be improved in various relatively minor ways. The wastage could be reduced by making the Wild Life Department responsible for all control of dangerous and marauding animals. At present, elephants which are found isolated are captured and sold or sent to the zoo; marauding elephants are also sometimes dealt with by capture. I know that there are practical difficulties, but the wastage would be further reduced if these captured elephants, when not wanted by the zoo, could be released in one or other of the reserves, instead of reducing the wild population and increasing the number of captive elephants, already large.

WILD LIFE ADMINISTRATION

With the exception of one special area all the reserves, including the national parks, are administered by the Wild Life Department, which also handles other game matters. Until very recently the department was responsible to the Minister of Lands and Land Development, as also were the Forestry Department and the departments responsible for irrigation and village development. This arrangement should have assured that, in land-use planning, wild life reserves got equal consideration with more mundane projects. In fact it did not always work out that way; the Minister only had to persuade himself that, say, an agricultural project was more important than a nature reserve, for the latter to give way. As the result of a recent Cabinet reshuffle, wild life now comes within the portfolio of the Minister for Commerce and Trade, who is responsible also for tourism. Tourism is certainly not the final object of game preservation but in this present age it is probably the best means of producing an economic justification. But tourism must not be allowed to take full charge to the detriment of the animals and of intelligent management of the reserves. This is a real danger, particularly perhaps where staff is concerned. It is very necessary that game rangers and park wardens should not have to devote too much of their time to the visitors and their interests. Even so, this change of portfolio is a major advance.

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Originally the preservation of wild life was an incidental function of the Forestry Department. About ten years ago (after self-government) a separate department was formed. At its head is the Warden, with headquarters in Colombo. The country is divided into five divisions, with a Divisional Game Ranger responsible for each. Two of the divisions include in the Ranger's most important charge administration of the national parks. Under the Divisional Ranger there is the usual staff of guards, watchmen and subordinate game rangers. There is now opportunity for promotion to the higher grade of game ranger, previously filled only by direct recruitment. This arrangement is good in principle, although it could prevent, or at least discourage, the entry of first quality recruits: men of sufficient education to understand intricate faunal problems and capable ultimately of filling the senior posts. It is possible also that such an arrangement encourages the use of junior grade staff in positions of responsibility, deserving perhaps higher pay than the holder receives. The present staff includes some first-class men, possessing both knowledge and ideas. The warden himself had recently retired from the position of Chief Conservator of Forests, having been a member of the forestry service for over twenty-five years.

Except that they have no control duties, members of the department have much the same function and responsibilities as those of African game departments and national parks staff. Game licences (to shoot birds and deer) are issued by the administration as in Africa. The Government Agents have wide discretionary powers, used under the advice of the Wild Life Department. There is no Board of Trustees, or other comparable body, responsible for administration of the national parks. There is a Fauna and Flora Protection Advisory Committee, but this in no way replaces such a Board. This committee meets about twice a year and discusses important matters of game policy. Its basic function is to advise the warden, under whose chairmanship it sits. There is no direct impact on the Minister and, of course, no executive power. In addition to the Warden, members of the committee are: Land Commissioner, Conservator of Forests, Government Analyst, Director of Museums, Professor of Zoology (University of Ceylon), two representatives of the Wild Life Protection Society, one each of the Natural History Society and the Orchid Society, and one member nominated by the Minister.

The Wild Life Protection Society (established 1894) is probably more important than this committee of *ex officio* members

and more effective. It has about 1,000 members of all races, with Ceylonese in the great majority. Many are persons of distinction and substance; they include members of the Senate. A formidable body of opinion can be brought to bear, when needed. In the last resort it is political pressure that counts.

THE RESERVES

In Ceylon there are Sanctuaries and three kinds of reserve: Strict Natural Reserves, Intermediate Zones and National Parks. Ultimately the larger animals will be entirely contained within them. In the Sanctuaries all types of human land use and occupation, other than hunting, are permitted. Outside the special development area there are twenty-two such sanctuaries, covering an area of 314 square miles. The objective is not so much game preservation as protection of the lesser mammals and birds, with their breeding grounds. Most of the larger tanks and their surroundings are Sanctuaries and their protective function in relation to Ceylon's splendid collection of water birds is indeed a valuable one. Most of the more important historical sites, the remains of an ancient Buddhist civilization, have also been so declared, as indeed is only fitting. Buddhism, the religion of three-quarters of the inhabitants of Ceylon, extends the qualities of human kindness and mercy to the animals. Regrettably a large section of the population prefers its own interpretation.

The Strict Natural Reserves are left completely undisturbed, so far as that is possible. Entry is prohibited except under special permit or for research. The present area of strict Natural Reserve is 234.4 square miles, but of this 112.5 square miles (Wasgamawna) is due for excision, for it is of little interest and has been poached out of existence. Of the balance there are two small, but important, reserves which are principally of flora interest, Hakgala and Ritigala. This leaves the Yala Strict Natural Reserve (111.6 square miles) valuable game country adjoining the Ruhuna National Park.

This area, with about 40 square miles of beautiful parkland which has recently been included in the park, was originally closed over fifty years ago with the idea of making it a reservoir for the adjoining shooting blocks. It was declared a Strict Natural Reserve during the middle thirties. Although the game rangers are now systematically exploring the area, no research was carried out at the time of closure, and no study made of the animal populations and plant communities. The opportunity, therefore, of observing the effect of excluding man from

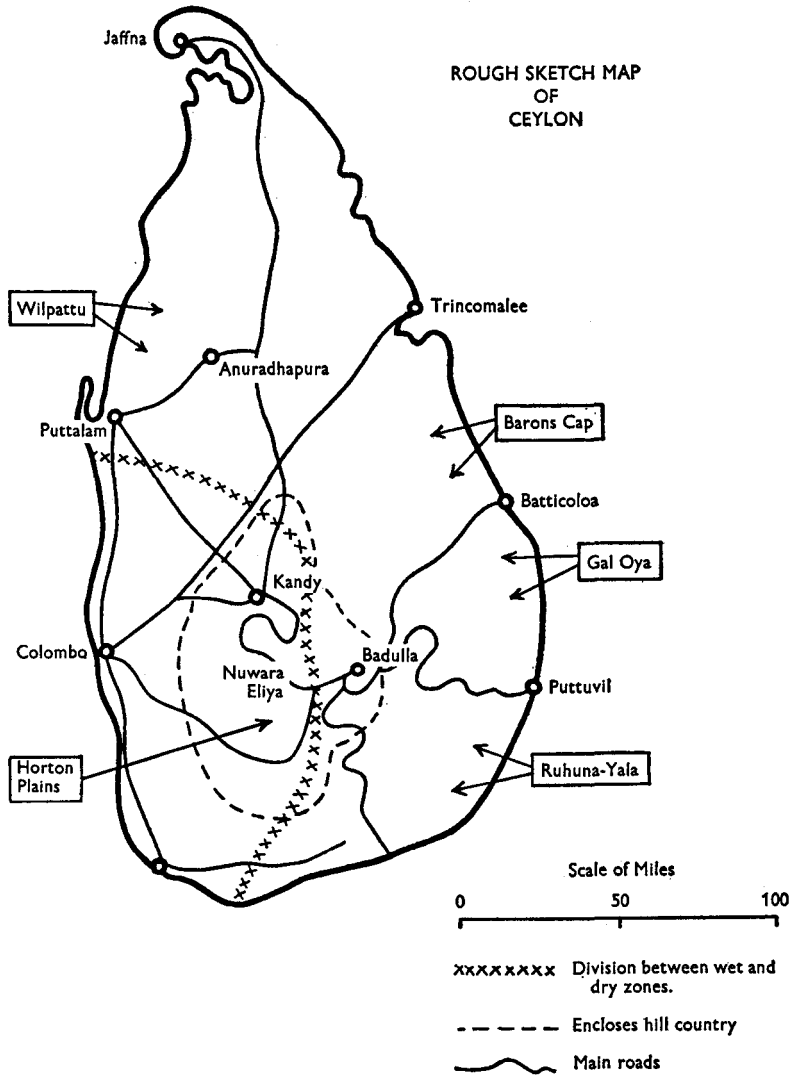
a substantial stretch of tropical game country over this long period of time has been lost. The present authorities are fully conscious of the need for, and importance of, research. Some thought is also being given to the possibility of reserving the Horton plains, a unique stretch of high stunted forest country (7,000 feet) with a remarkable collection of birds and lesser mammals, including many of the species peculiar to Ceylon.

The Intermediate Zones are the equivalent of the controlled hunting areas of Africa and are for the most part adjacent to the national parks and strict reserves ; thus they serve as buffer zones. Restricted hunting is allowed in the open season (October to April) and entry to each zone is limited to a specified number of parties at a time. In fact, an increasing number of those that enter these zones now hunt with camera rather than rifle, a healthy sign of the times. The ranger responsible for the two Yala Intermediate Zones (226·3 square miles) told me that only forty deer had been shot throughout the 1958–59 season. There are no living facilities, so that all parties have to camp.

The present area of the Intermediate Zones is 487·2 square miles but of this 139·5 are scheduled for early excision. These are in two blocks required for village development and irrigation which, in any case, no longer carry any appreciable quantity of game. The Yala Intermediate Zones just mentioned adjoin the Ruhuna National Park and Yala Strict Natural Reserve. The two remaining Intermediate Zones, Wilpattu south and east (jointly 121·4 square miles), adjoin the Wilpattu National Park.

The National Parks are opened for public access to the maximum extent possible. They are well supplied with tracks and there are two bungalows in each park. The bungalows are fully equipped and furnished but visitors have to take their own food and bedding. Accommodation is limited to one party at a time (up to eight persons) and, except for the excellent Maradanmadaw bungalow in Wilpattu, is rather out of date. The Tourist Board is about to build a new bungalow just outside the Ruhuna Park and near the sea—excellent bathing—following the pattern of the African safari lodges with their cottages.

In addition to this bungalow accommodation, aluminium huts are available at a nominal charge, chiefly for large parties such as school children. The number of persons visiting the parks is increasing rapidly and that this should be so is of vital value to the future of the island's wild life ; to succeed, preservation must command public support. At present many of these parties simply drive into the park for a picnic and then drive



out again, paying little attention to the animals, and one fears that a good deal of litter is sometimes left behind. The authorities appreciate the need to make visits to the national parks of educative and instructional value, but there has not yet been much opportunity to develop this important side of the work.

These two national parks, Ruhuna (91·2 square miles) and

Wilpattu (212 square miles), were originally declared (about 1906) as Resident Sportsmen's Reserves, administered by the Wild Life Society as hunting blocks for its members. The older bungalows, in fact, were built simply as hunting boxes. These reserves were re-established as national parks in 1935, although Government, through the Forestry Department, took over control from the Society in the nineteen-twenties. The national parks were declared without special legislation, but simply by notice under the Flora and Fauna Ordinance, another typical failure of the period, for they lack any permanent charter in their creation. Well protected on three sides, by the Intermediate Zones, Ruhuna is threatened with an artillery range along its western border. The target area includes part of the regular migration route of elephants and one of the few permanent water points in the area. The importance of adequate buffer zones is now well understood, if seldom achieved. Additional to the two parks, a new area of good game country, already partially opened up, will shortly be declared a national park. This is the Barons Cap Proposed Reserve (218.4 square miles) on the east coast.

Besides Ruhuna and Wilpattu there is the Gal Oya National Park, which is not as yet administered by the Wild Life Department. A special Development Board is developing the Gal Oya area, of about 700 square miles in the eastern part of Ceylon, the object being irrigation, rice and sugar planting and resettlement generally. Of the land under the Board's control 98.4 square miles is being developed as a national park and, of the balance, 416 square miles have been declared as Sanctuaries. When development is complete the Board's operations will close down and the national park will come under Wild Life Department administration. In the meanwhile, the Warden sits on the managing committee to assure conformity with general wild life policy. While there are certain obvious weaknesses in having one national park under independent administration, it is an act of extreme enlightenment (which could well be copied elsewhere) to create a national park as an integral part of a high-pressure development area.

If we include Barons Cap, these reserves amount to fractionally less than 4 per cent of the land area of Ceylon. This figure is by no means unreasonable, particularly when the extensive sanctuaries are also taken into account. In the Ruhuna-Yala region there is a classical picture of planned reservation, with strict nature reserve, national park and limited shooting areas in a single unit of 429.1 square miles. Similarly the national

park and intermediate zones of Wilpattu cover 333.4 square miles. There is a chance, perhaps remote, of adding about 200 square miles of uninhabited game country to the Ruhuna-Yala group and, if this could be achieved, it would be worth while to accept the loss of other areas elsewhere. Clearly all three types of reserve are an integral part of the conservation picture and should control of animal numbers become a necessity in the future, the intermediate zones could be used without offending any principles or susceptibilities.

By African standards these areas may seem small, but it is probable that the carrying capacity of the game lands is higher in Ceylon. What this actually is, is a matter that needs careful investigation. Rainfall is over 60 inches and there is much heavily wooded country providing almost unlimited browse and fruit. The commonest ungulate, the spotted deer, both grazes and browses. Even so there are some signs of early overgrazing, particularly near those tanks that contain permanent water. And there are one or two indications of scrub and thorn-bush overtaking grass. There is a very clear need for some careful research into animal populations and population trends, as well as vegetation change.

Spotted deer must number many thousands throughout these areas and in Ruhuna, in particular, there are several hundred buffalo. The number of wild pigs is large (I counted one sounder of twenty-seven) but it is difficult to estimate the number of sambar which are entirely forest animals. There are only two predators of importance, the leopard and the Ceylon jackal (*Canis aureus lanka*). Leopards are present in considerable numbers (I saw five in five days) and are reckoned to account for about fifty deer each per year, so that they can probably keep the spotted deer population in check, but a population estimate of both leopard and deer would be useful. In certain circumstances jackals take to hunting in packs and this has been happening recently in Yala. On balance the effect is probably beneficial and a natural reaction to the high ungulate population, even if some people may find it distressing. All these factors are inter-related to the elephant problem, discussed earlier.

It is a general, though not doctrinal, principle that there should be as little interference with nature as possible. In the parks, however, some bush clearing is permitted to give visitors an open view to tanks and to provide clear vistas. This is probably all to the good, provided that the cut trees and bush are cleared away or burnt (which is not always done); good

also is the incidental result of encouraging the growth of grass rather than scrub. But over-much clearing near the tanks could be harmful, robbing elephants of the shade they so enjoy near water.

The other positive act of interference (and it is very much more important) is the augmentation of water supplies for the welfare of the animals by building new tanks and improving old. Such works are given priority and in a country like Ceylon, with its peculiar rainfall distribution, are probably very necessary. This is particularly so perhaps as few of the dry-weather jungle pools are really natural, having been made by human hands long years ago. However, there is a definite natural relationship between grazing, water supply and animal populations. Elsewhere it has come about that the provision of man-made water supplies has allowed animal population to expand abnormally, the result being increasing pressure upon the available food supply, particularly grass. This, in turn, means that the animals cannot get enough to eat and the resulting starvation is infinitely worse than a seasonal lack of water, to which most animals (but not elephant, buffalo and sambar) can easily adjust themselves. This is not meant to suggest that this will necessarily be the result in Ceylon, but the best way of dealing with such problems is exercising the minds of national park authorities the world over.

The single most important factor in the wild life administration of Ceylon seems to me to be the lack of permanence in the constitution of the reserves. Some of the changes now taking place have been mentioned. The point is that the boundaries of these reserves are not sacrosanct and can be changed by simple ministerial order ; this remains true even with the change of Ministries mentioned at the beginning of this paper. If two ministers agree (or possibly if a Prime Minister directs) it is still possible for part of a national park or strict nature reserve to be developed for, say, human settlement. Parliamentary process is not required and there is no independent body, such as a Board of Trustees, empowered by law to guard the interests of the game areas and, if needs must, argue the case with the Government. No head of a department is in the position to do this. In this respect, though certainly not in practical administration, the Ceylon National Parks fall below the standards of the London Convention of 1933.

While this is not a point that I have been able to discuss with any responsible official in the Ministry, I understand that the Ceylon government is opposed to the idea of a Board of

Trustees, unless financially independent ; and wild life preservation must always be a public service, largely financed from public funds. There does not seem to be the same objection to a public corporation, which could act in much the same way. The answer would thus seem to be that a Ceylon Wild Life Corporation should be legally established and empowered to exercise control over all the reserves, including intermediate zones. The important thing is that some such body or National Trust should be established and it does not much matter what it is called. Ultimately, most conservationists hope that the world's game areas will be brought under the control of an international authority.

This article has been written chiefly for people who do not know Ceylon and the intention has been to make it reasonably objective. A few criticisms have been made, and a few suggestions as to the way I feel that certain problems should be approached. I have not included any formal recommendations and it would be out of place to make these ; nor have I made any specific suggestions for developing and improving the amenities of the national parks. As this paper will be read by a few interested persons in Ceylon, it is to be hoped that they will understand and appreciate this approach.

I cannot end without expressing my very sincere thanks for the kindness and hospitality that I have received from those concerned with wild life administration, both within and without the national parks. Coming to Ceylon simply as a private visitor, I was given every possible help and would particularly mention Mr. de Silva (the Warden), Mr. Packeer (Assistant Warden), Mr. Norris (President of the Wild Life Protection Society), Dr. Spittel and the several Divisional Game Rangers with whom I went out in the parks.