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A JOURNAL OF CEYLON WILD LIFE Vol. VII No.—3

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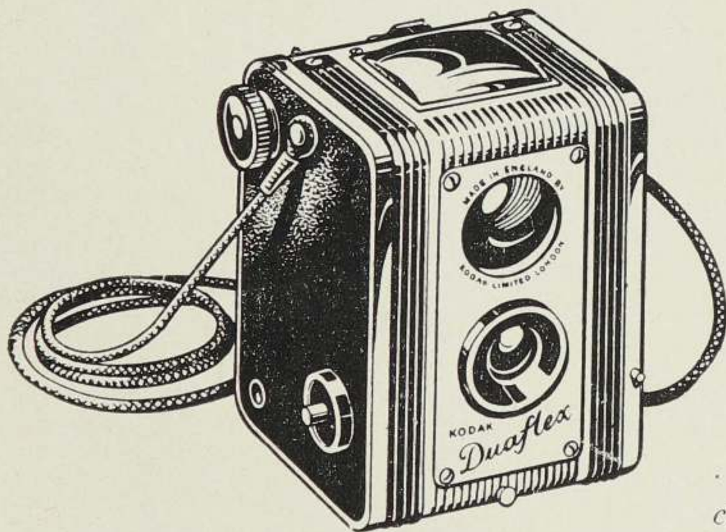

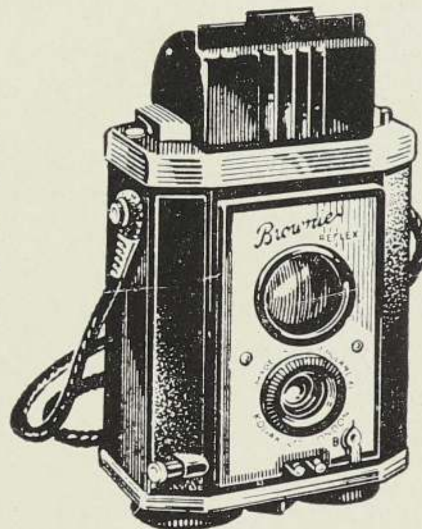

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LORIS

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Wild Life Protection Society of Ceylon

FOUNDED 1894

The objects for which the Society was formed were—

"To prevent the elimination of game in Ceylon by destruction of animals for trading purposes, to further the interests of legitimate sport, and to conserve one of the food supplies of the inhabitants."

At the Annual General Meeting held on 30th November, 1945, the Rules were revised, and the objects of the Society now are—

(1) To prevent the progressive destruction of species of wild animals and wherever possible to preserve wild life intact in natural conditions in Ceylon.

(2) To continue the tradition of the Society in furthering the interests of legitimate sport.

(3) To promote an interest in the life histories of all forms of animal life and to co-operate with other Societies and Institutions which have similar aims and objects.

The Subscription to the Society is Rs. 10 annually, payable on the 1st October.

All members, whose subscriptions are not in arrears, receive a copy of each number of the Society's Magazine, "LORIS," which is issued bi-annually in June and December. Further copies may be had at Rs. 3-50 each, at which price copies are also available to the general public.

Persons wishing to join the Society, or desirous of obtaining further particulars, should apply to the Hony. Secretary, Mr. C. E. Norris, Pingarawa Estate, Namunukula.

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Articles are invited not only from members of the Society but also from the general public interested in Wild Life.

All manuscripts should be typed with double spacing and on one side of the paper only.

Matters relating to *Memberships* and *Subscriptions* should be addressed to MR. C. E. NORRIS, PINGARAWA ESTATE, NAMUNUKULA.

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National Park and Wild Life Sanctuaries in the Gal Oya Valley

By R. W. SZECHOWYCZ, M.Sc. (Eng.)

HYDRO-ELECTRICITY combined with irrigation is a tool of modern progress. At the same time this progress is responsible for the destruction of the natural association of plants and animals which has established itself during centuries past. Effects of such schemes on nature vary according to locality, and although irrigation means more agriculture and hence bigger forest clearings, the effect on the balance of nature is estimated nearly always to be favourable. Such schemes benefit human economy, diminish floods, create beautiful artificial reservoirs, improve the microclima, provide suitable conditions for aquatic birds and the angler, and help tourism. They promote aquatic sports and provide water—without which plant and animal life would be impossible. Scientific research is, however, the basis of all progress. Hence, before planning, a strict and careful examination of conditions in areas, by the landscape architect, the fauna and flora protectionist, the forester, the agronomist and the hydraulic engineer, is required. In the majority of cases, the dam builder, all over the world, is prepared to co-operate with the naturalist in order to avoid, as far as possible, the destruction of the fauna and flora. Nature, however, is not merely a collection of plants and animals. It is a " living organism," where the rules of interdependency have to be strictly observed. When the balance, established through centuries, is destroyed, it takes time for a new climate to be established, due to the changed conditions brought about by clearing of large forest areas, by submerging large areas under reservoirs and by colonisation.

An ecological law states that every species in a community must have some effect on other members of this community. The " destroyer " of wild life " man " is one species of such a community and when this " species " increases, wild life decreases ; and at this time the demand for wild life—sport, food, furs, etc.—increases. To meet human needs, the available wild life is not sufficient, and only proper wild life management can bring about an increase of wild life and prevent its total extinction.

Except for biological and social factors which make wild life important and interesting, the economic reasons cannot be overlooked. Wild life is the biggest attraction to the tourist, and " the tourist " means money ; it means foreign currency and employment for hundreds. In the U.S.A., in states such as Minnesota, for instance, wild life has long been recognised for its monetary value. Revenue realised, by the U.S.A., by the sale of ammunition, guns, camp equipment, and the issue of licences for shooting and fishing, runs into

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millions of dollars. Remove the attraction, and this inflow of money ceases. Show a tourist the tail of a wild elephant, and he starts counting the time from this event.

Wild life management is a science, which reaches its target by providing better conditions for undomesticated vertebrate animals, and protection against man. Any attempt to check the effects of this management is a difficult task. The proper way would be to make a census of wild animals at intervals ; even this, however, would produce only approximate figures, even if confined to a few species only. Hence only general information on the increase and decrease of the wild life population is available in the majority of cases. Every form of life has value and interest of some sort. Even the most insignificant creatures may be found to exercise the most profound influences upon mankind and have to be taken into account. Were it not for the numerous poisonous snakes in the Island, the " rabbit plague " would be astounding—even worse than in Australia—not to mention the unchecked increase of other vermin like rats, that would result.

The biggest water storage reservoir in Ceylon—The Senanayake Samudra—was created in 1951 by damming the Gal Oya river at Inginiyagala and submerging part of the Gal Oya Valley and the valleys of its tributaries—the Sallakka Oya, Balabedde Oya and the Gurulu Oya (these ancient names have now disappeared from the new maps of Ceylon). The water storage of this reservoir is 770,000 acre feet and the water spread 22,000 acres.

" *Sportsmen*."—As was planned, the development of large areas below the dam brought about the clearing of jungle—the refuge of wild animals. In addition to large scale clearings, the indiscriminate shooting of animals done in the first years for food and fun, mostly by inexperienced "used to town life" field and office staff employed by the Gal Oya Board, decimated the wild life in the " Valley." These " Sportsmen " were able to shoot deer, sambhur and pig only at night from vehicles and they did not care or were too afraid to follow a wounded animal and put it out of pain, even if it was a few feet off the road in the jungle ; consequently the " Sportsman " very probably collected not more than one animal for every five destroyed. At this stage the Fauna and Flora Ordinance was not included in the Gal Oya Development Board Act—and the Board's officers were not empowered to stop this practice. The King (Warden of Wild Life and his staff) was far away and God was very high, hence the law was not observed. Since 20th April, 1953, the problems in connection with the management of wild life were transferred to the Board and a special Wild Life Section was created, as a part of the Forest Branch, for wild life management.

Reserves.—To compensate the losses in wild life, the Gal Oya Development Board decided to proclaim certain areas for the protection of its Fauna. From 12th February, 1954—by *Gazzette*, No. 10,640 of 12th February, 1954—there are, in the " Valley," a *National Park* (100 square miles) and three Sanctuaries, namely : (*a*) North and West of the reservoir the *Amparai Wild Life Sanctuary* (47.7 square miles) ; (*b*) South and West of the reservoir the *Sellakka Oya Wild Life Sanctuary* (59 square miles) ; and (*c*) the water-shed of the reservoir itself—the *Senanayake Samudra Wild Life Sanctuary* (35.8 square miles). The total area demarcated for the preservation of wild life in the " Valley " is 242.5 square miles, corresponding to 155,200 acres.

Snakes—The reservoir started filling in October, 1951. In a few days I had proof of how nature's balance was upset. I landed by boat on one of the islands in the newly-created reservoir with the idea of inspecting the area for wild animals, which may have been marooned. I have seen action in World War II, but never did I get a bigger shock till the day of this inspection, when I was literally surrounded by snakes of various lengths, as I walked several yards into the island. It was

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like a snake pit. The gradual rise of the water level forced the vermin to retreat to higher places. Finally the highest place became an island. If my running was timed, I would probably be a world champion. I was interested to see what would happen to this collection of snakes in time to come, and inspected the island at intervals, very carefully, of course. After a short period, nature's balance was re-attained, and no more snakes were found on those islands, than in other forests. Most probably the bigger ones consumed the smaller, and some of them left the islands by swimming across the reservoir.

more than 500 pelicans, nesting in small areas ; and in the entire reservoir more than 2,000 pelicans' nests and more than 150 painted storks' nests were estimated. I have counted not less than 15 nests on one single tree. However, with time the branches of dead trees became fragile—not strong enough to support the nests with the old and young pelicans—with the result that the pelicans and painted storks, which were seen in large numbers in the past, are now rare. They do not nest in the adjoining forests, as their nests have to be built over the water to enable the young ones to reach this element direct from the nest.

"Enormous colonies of cormorants, egrets and snake birds are found during the nesting season. The number of those birds can now be counted in thousands and when further development takes place on the same lines it will become a problem."

Birds.—Only a small part of the reservoir bed was cleared of the forest, for landscape, in areas adjoining the dam ; and in areas along the rivers, for navigation. The unfelled jungle is to-day submerged, and as the trees are often higher than the depth of the water, their crowns are not submerged. In the first two years those trees were still strong—and were excellent nesting places for big water birds like pelicans and painted storks. It was an interesting sight to observe the colonies of birds consisting of

In spite of the fact that pelican nesting is now not so common, one can often observe big flocks of pelicans fishing, only during the dry season, when the water level is low in the small tanks (Amparai, Kondawatawan, Aligalge, Himidurawa, Weragoda, Andal Oya, Navakiri Aru, Irrakkamam, etc.), where feeding is much easier for pelicans, etc. In addition to big flocks of pelicans, enormous colonies of cormorants and shags, and to a lesser degree, egrets, grey heron, eagles and snake birds are

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still found during the nesting season (March—June) on the tree tops within the reservoir. The number of these birds can now be counted in thousands and when further development takes place on the same lines, it will become a problem. Other birds like kingfishers, fish-hawks, herons, hornbills, etc., are common as well. Very often crows build their nests close by and rob eggs and young ones from the nests of other birds. This is one of the examples of symbiosis or natural relationship.

Fish.—Fishing in the reservoir is very difficult, due to submerged trees. The abundance of water birds, which often daily consume five times their weight in fish, shows that fish are plentiful. The consumed fish, however, are not lost to the water community. The digestive system of the water bird is quite primitive and the food returns back in the form of droppings. Every bird is like a living quasi-manure factory, providing the manure for green algae—which again is consumed by fish. Introduced exotics—Tilapia Mossambica and Gourami—have already become well established, and a great number of indigenous fresh water fish in Ceylon waters are found in the reservoir. The carnivorous " Vallaya " and " Lula " are well represented, while " Pethiya " and " Korali " are plentiful.

Pistia.—In 1953 it was observed that the pernicious water weed—*Pistia stratiotes*—started to spread rapidly and certain parts of the water areas were entirely covered with a thick green carpet of this weed. It was suspected that this weed was introduced into the reservoir by birds. The necessity for its eradication was pointed out by a former Minister, Mr. Dudley Senanayake, when on his visit to the " Valley " he observed Pistia plants floating close to the Inginiyagala Dam. This task was entrusted to the Forest and Wild Life Branch, and by spraying and hand collection from boats it was possible, not only to stop further development, but to eradicate completely, this weed, from nearly the entire reservoir. The water level in the reservoir drops in the dry season—nearly 30 feet below spill level. This is an important factor in the building up of plant communities, as during this period, when the trees growing close to the reservoir require water it is far away. The influence of the reservoir on the water table in those seasons is nil, and this high fluctuation does not promote the development of water plants other than those that float. It is even suspected that the herbivorous exotic fish, Tilapia and Gourami, introduced in 1951, not having other vegetable matter for food, contributed to the eradication of Pistia. Observations are in hand to confirm this theory. In any case the spread of filaria carrying mosquitoes, which breed on Pistia and are responsible for Elephanthiasis infection, has been checked.

Crocodiles.—Monitor lizards were observed very often on the edge of the water. Several crocodiles were reported to have been seen on the islands. Before the reservoir was created, I have seen some of them in small tanks now submerged in the present tank bed area. Those must be now the patriarchs of the present crocodile breed. Only the Mud Crocodile (Crocodillus palustris) is found in the reservoir, and this species is satisfied with preying on water birds and fish, avoiding man. The Swamp Crocodile (Oophelis porosus), dangerous to man, is fortunately absent in the reservoir.

Scenery.—The reservoir, when viewed from the dam at Inginiyagala, is not an impressive sight. In spite of the fact that the water spread is the biggest in the Island of Ceylon, only approximately six square miles (1/6th of the reservoir) is visible from the top of the bund. The rest is hidden by the hills and the scattered islands. Only a small part of the former Gurulu Oya Valley and nothing of the former Sellakka Oya and the Balabedde Oya Valleys are to be seen. To see the reservoir and its beauty one must go on the reservoir by boat. For official work in the reservoir and the catchment area, for the benefit of visitors to the " Valley " and for the benefit of " His Majesty the Tourist," two launches and several boats—equipped with out-board motors—are avail-

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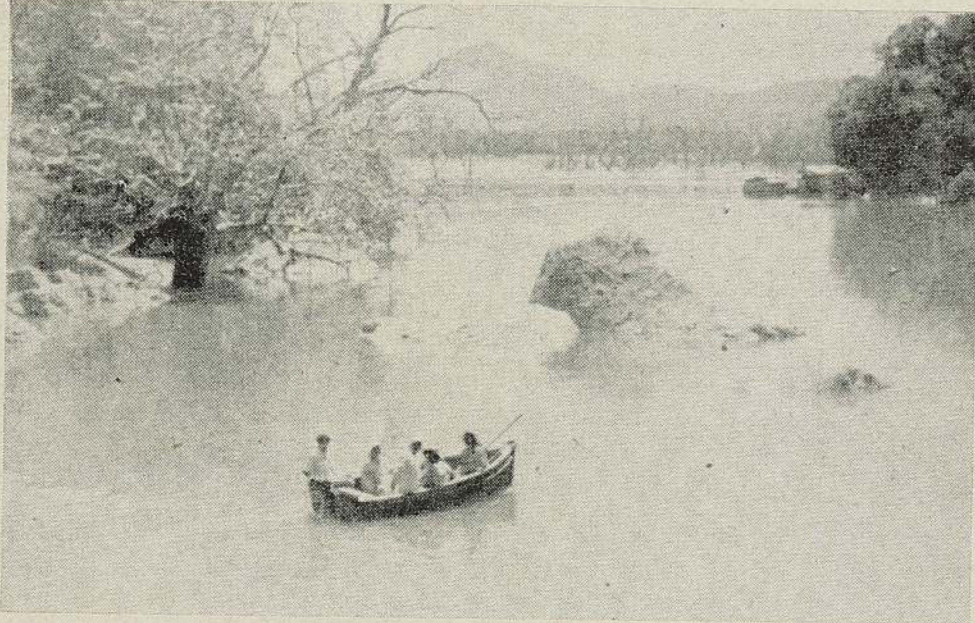
able, and I often feel I am an " Admiral." A small floating house awaits those who like to spend some time observing the water birds and their fishing habits, those interested in rod fishing or those who wish to spend a few hours, or even days, far away fom noisy civilisation.

clearly visible Uva hills catch the eye. The reservoir is surrounded by jungle, and in several places a green carpet is spread below the park-like scattered trees of Savannah Forest—the home of the elephant and other wild animals.

Malaria Control.—In spite of the fact that a vast area is now submerged, it is surprising



"The scenery round the reservoir, viewed from a boat, is one of the most beautiful in Ceylon" and "For the benefit of visitors and for the benefit of 'His Majesty the Tourist' two launches and several boats, equipped with out boat motors, are available."

The scenery round the reservoir, viewed from a boat, is one of the most beautiful in Ceylon. To the West, the Inginiyagala hill, which has become the emblem of the Gal Oya Scheme, proudly faces the reservoir. Further South, on the first plain, the Palang Oya hill, like a fat round lady, spreads itself over the jungle. The Wadinagala hill, standing further South, raises its majestic head into the sky. On the second plain in the South, the flat top of Westminster Abbey recalls the days when, centuries ago, this area was of political importance and during which time a fortress was built on its summit. North and East, several ranges of hills, both small and large, are scattered over the landscape as though planted by a talented landscape architect. On the horizon, to the West, the

that practically no mosquitoes are found close to the reservoir. This can be attributed to the fact that the reservoir is quite deep (its deepest point, close to the dam, being 110 feet at full spill level) ; there are plenty of fish which feed on the larvae ; and due to the fluctuation of the water level, water weeds are practically non-existent. Malarial fever, before the reservoir was created, was a serious menace to the residents of the present tank bed area and its surroundings. On several occasions more than half of the labour force engaged in clearing jungle and in timber extraction was affected. A field hospital was erected where labourers were treated by the Field Officers, as the hospital at Inginiyagala was overcrowded. Several labourers deserted their posts and did not re-

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turn. The absence of mosquitoes at the present, is one of the favourable changes in Nature after the dam was built.

Veddahs.—The present tank bed and its surroundings was a hiding place of the famous veddah outcast, Tissahamy, who was wanted by the Police for murder. He was able, for more than ten years, to avoid capture in those inaccessible jungles ; at the end of which period, he surrendered. (See " Savage Sanctuary " by Dr. R. L. Spittel). Till today, several Veddah families are living in the area, and as their main food is the flesh of wild animals, they are a permanent menace to wild life, and all efforts are being made to re-settle them outside the National Park ; although in a way they are an added attraction to visitors.

Climate.—It will be too early at this stage to make any statements about the climatic changes that have come about after the reservoir was created. It is a fact, however, that at present the climate is much cooler than in the past. It is hoped that it will be a permanent feature. Even during the summer, when the thermometer often shows 95°F., the air is dry and not sticky. Beautiful sunsets, accompanied by a cool breeze from the reservoir, make a visit to the " Valley " worth while. The landscape below the dam is now being gradually developed by the Board's Horticulturist, Mudaliyar Alex de Sylva. A small, but nicely arranged, rock garden has an interesting collection of both Dry and Wet Zone flowering plants ; and the collection of orchids, mostly local varieties, can lay claims to being one of the best in the Island.

Animal Population.—The area around the reservoir was proclaimed a National Park (100 sq. miles) in February, 1954. It is a strip of land, round the reservoir, two to four miles wide. Conditions in those areas changed, after the creation of the reservoir, for the benefit of wild life. Three essentials for its development, are required—(1) cover, (2) food, and (3) water. The cover is the " home " of animals, where they rest, breed and have protection against adverse conditions. But this home must be close to " food " and " water." Deer, for example, never move from an area more than two to three miles ; and when food and water are lacking within this circle, due to drought, they perish. Previously during the dry season all streams and rivulets ran completely dry. The conditions now prevailing are such that it is expected that more animals from other areas will migrate to the vicinity of the reservoir, as has been already confirmed, by observations. There is a general belief that prior to the invasion of man into the Gal Oya Valley, wild life was plentiful, but it was not so, wild life was really plentiful, but only around the existing man-created water storage tanks at Amparai, Kondawatawan, Irrakkamam, etc. These tanks were, however, built long ago by man. In other parts of the jungle, due to the scarcity of water in the dry season, when all water-courses usually ran completely dry, wild life was very scarce, and when found were only those animals dependent on water direct from tanks or water released from tanks. In August, 1955, for the first time since the reservoir was created, two large herds of elephants (one consisting of 25 elephants, including a tusker and two baby elephants and the other consisting of 14 elephants including one baby elephant) were observed in the Gurulu Oya Valley on the periphery of the reservoir. Both herds were seen from boats. Very often single elephants came down to water, usually shortly before sunset, and these have been seen by the wild life staff and visitors during boating trips. Availability of water in the Right Bank Channel has also attracted elephants to the vicinity of Inginiyagala. They come out daily into the open during the dry season, and scores of visitors have seen them. Those animals have now become semi-tame and do not take any notice of the public. Other animals often seen are :—wild buffaloes, deer and sambhur. The total number of elephants within the National Park is difficult to estimate due to their migratory habits. Rough calculations show

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that their number is in the vicinity of sixty ; in the whole "Valley," 150 elephants are estimated. The reservoir itself has created no obstacle to the movement of wild animals. On one occasion one elephant was observed swimming across the reservoir, and on another a sounder of wild boar. Wild buffaloes are often seen crossing from shore to shore. On yet another occasion a five-foot cobra was seen swimming across.

The role that wild life plays in soil conservation problems is well known, as the best method of soil conservation is to keep the area under adequate plant cover, and wild life management helps in that : "a home for wild life," without exception, is an area covered with vegetation. The interests of the "Wild Life Man" and the "Soil Conservationist," though different, are parallel ; and the objectives of both have to be obtained by the same operations. There is, however, conflict between the Wild Life Protectionist and the Soil Conservationist. The latter and the Forester consider grassland fires a destructive factor, and all efforts are made to prevent this phenomenon. The former encourages fires, as they help to provide more food by destroying the old grass and creating park-like plant communities—Savannahs. To prevent grassland fires, it means changing grassland into jungle or bush, but this will result in the migration of all animals with grazing habits, including the elephant, which strays into the jungle only to rest. Fortunately, in the Gal Oya Valley, this problem of preventing grassland fires, in the majority of areas, is only an academical one. It is beyond human power to check the annual fires brought about by villagers, in order to increase the extent of grazing ground for their cattle ; to make travelling on foot easier and safer (snakes) and to make the collection of "bulu" and "aralu" seeds easy. These seeds are used for medicinal purposes and are a catch crop for the jungle dweller. The fires which are started far away spread fast and reach the areas comprising the National Park, thus solving the conflict between the two types of protectionists. The former is happy and the latter has a clear conscience.

In the distribution of wild life in any area, the so-called "edge effect" plays a very important role. The edge effect is due to the fact that animals of all species, both big and small, select the line where two different types of vegetation meet, as their "home." A margin between forest and field under agriculture ; a margin where grassland touches the jungle or a margin where savannah forest changes into jungle, would be their most popular "home." This explains why one can travel miles across "Damana" land in the Nilgala talawas, within the National Park, and still not come across any birds or deer. Wild life is the phenomenon of the "edge."

Sanctuaries.—In addition to the *Senanayake Samudra Sanctuary*, a 59 square mile area South of the National Park has been proclaimed the South Western Sanctuary. This is to be redesignated the *Sellakka Oya Sanctuary*. In this area the human population, of approximately 2,000, live mostly on shifting cultivation (chenas). The shooting of animals is allowed for the protection of crops. In this area the construction of the Palang Oya Detention Reservoir, with an expected water spread of 12 square miles, is in hand. It will create, in the future, facilities for the preservation of wild life as the vicinity of this proposed reservoir will be free of human beings. This area was and still is "elephant country." It is not uncommon, when driving after sunset, to meet this colossus on the road. On the old 16 chains to an inch topo—surveying maps—the shooting boxes of such famous elephant hunters, of the last century, as Major Rogers (who had to his credit more than 1,400 elephants and was as a "punishment" killed by lightning at the resthouse at Haputale) and of the founder of Nuwara Eliya, Sir Samuel Baker, who after gaining experience in Ceylon became the Governor of Sudan, are marked in the Nilgala area.

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To the North and East of the National Park is the North Eastern Sanctuary (47 square miles), which is to be re-named the *Amparai Sanctuary*. This Sanctuary is interesting in that it includes many irrigation tanks, where bird life is plentiful, namely, the Amparai, Kondawatawan, Aligalge and Himidurawa tanks. The proposed Namal Oya Detention Reservoir will also be located within this Sanctuary. Steps are in hand to extend the present area of this Sanctuary by including part of the Nuwaragala Forest Reserve and the new Navikiri Aru tank. The historic Deega Vapi tank (abandoned from the time of King Duttu Gamunu) and the present Mahakandiya tank also fall within this Sanctuary. Wild life in these areas is fairly plentiful.

"Every elephant destroyed, had many old bullet wounds (in one there were 35) and it is no wonder then, that some of these turn rogue and have cause to hate man."

This elephant was a killer—and was responsible for the death of one colonist and suspected to be the killer in other cases as well. He has had only 21 wounds, was blind in one eye, which was completely infected by maggots. To destroy this rogue it was not only "self-defence" of men but an act of charity as well. This elephant was killed by Forest Officer Mr. Claessen.

Colonization and its Effect on Animals.—Where such a vast colonization scheme in former jungle areas, namely the present Gal Oya Valley, was and is in progress, conflict between the intruder—man—and the former unrestricted dweller of the area—the wild animal—has to be expected. The damage to crops, immediately following the settling of the colonists, is considerable ; but with time the animals realise that they are in competition with man and are on the losing side, and consequently retreat further into existing jungles. A few people, however, have paid with their lives for the privilege of becoming colonists. Five of them were killed by wild elephants and one by a wild buffalo. By erecting electrical fences and by patrolling, the Wild Life Section is doing its best to keep away the wild animals, of which the elephant is the most destructive, from cultivated areas. Since the Board took over the management of the Fauna and Flora in the "Valley," twelve elephants were shot and killed by villagers in the protection of their crops and in self-defence. In one case a Forest Officer destroyed a killer-rogue.

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Every elephant destroyed, had many old bullet-wounds (in one there were 35). It is no wonder, then, that some of these wounded elephants turn rogue and have cause to hate man.

The settlement of colonists has brought changes, in that primaeval wilderness has given way to agriculture. The larger species of wild animals, in the new development areas, are at present reduced to scattered remnants, which have been driven out of their original habitat into adjoining forest areas. For certain wild life species, however, especially birds, the newly created conditions in an agricultural environment are ideal for their development. The interspersion of forest (wind belts, irrigation reservations, etc.), with land under agriculture (edge effect); the first producing shelter and the second food, resulted in a great increase of bird life. The importance of this phenomenon for agriculture cannot be overlooked. Birds are the greatest enemy of insects, which if allowed to develop unchecked may become in the " Valley "—as practice has shown in other parts of the world—the greatest destroyer of crops, and consequently make the lives of men extremely difficult; but this role of the birds is very often overlooked by the public.

Wild Life Management.—Wild life management in the " Valley " at present is to take suitable steps to increase the wild life population. This is necessary as the indiscriminate shooting in the past has taken its toll of wild animals. Two methods have been adopted—first, to stop further destruction of animals, and secondly, by providing animals with their natural environments. The direct control of animals, *i.e.*, thinning, does not arise at the present.

The Board has created an *Advisory Council* to deal with the problems relating to wild life in the " Valley." The following gentlemen, who are keenly interested in the preservation of wild life, have accepted office :—the Hon. Minister of Justice, Mr. E. B. Wikramanayake; the Warden, Department of Wild Life, Mr. C. W. Nicholas; Dr. R. L. Spittel (the well-known author and scientist) and the elephant expert, Dissawa S. A. I. Elapata. The problems are discussed with the Chairman of the Gal Oya Development Board, Mr. K. Kanagasundaram, in the chair, at special meetings at which the Officer-in-Charge of Wild Life in the " Valley," Mr. T. Meynert and the writer, who acts as District Warden, are present.

It will therefore be seen, from the foregoing that the balance of Nature within the National Park and Sanctuaries, and in the New Development areas is still upset. The development of these areas is still in progress. However, it is beyond dispute that these " living laboratories "—the National Park and Sanctuaries—will become, in time, more and more popular, not only for the scientist but also for the lover of Nature, who prefers to observe wild animals in their natural environment—and not behind bars in a zoo or in a circus—and breathe at the same time the fresh air, which only the greenery of the forest can provide.

In a short time, a new road from Inginiyagala to Siyambalanduwa will be constructed; and this road will shorten the distance to Colombo by 70 miles. It is expected that, with the completion of this road, the number of visitors to the " Valley "—quite considerable at present—will double itself. At Inginiyagala, there is an excellent Resthouse (16 rooms), probably the best in the Island. Fishing, Swimming, and Boating are available. There is also a flood-lit tennis court, an excellent bar and still better company (I do not mean by this, myself) to keep the visitors happy.

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Elephant Swims three-quarter Mile

Sir,

After sending you my article dealing with Wild Life in the Gal Oya Valley, I witnessed a very interesting incident worth recording. On 19th March, 1956, about 5.30 p.m., during one of my routine inspections on the Senanayake Samudra Reservoir, I noticed an elephant approximately 10 ft. in height approaching the edge of the water from the jungle. To my surprise the elephant quietly waded through the water and started slowly swimming across the Reservoir to a point on the opposite shore which is over ¾ mile away. Only a small portion of the top of his head was visible but at intervals of approximately 20 seconds he raised his trunk out of the water (like the snorkel of a submarine) for respiration. Progress was quite slow—and it took him roughly 20 minutes to reach the opposite shore. This event was witnessed by the Commissioner of Income Tax, Mr. C. A. Speldewinde and the Assistant Secretary of Gal Oya Development Board, Mr. G. A. H. Wille, with me on this inspection. We watched the elephant from a distance of approximately 200 yards from a boat. Any attempt to get closer, we felt, would have scared the animal and thereby the chance of other people observing a similar incident would have been lost.

DR. R. W. SZECHOWYCZ.

Inginiyagala.

Tigers of Indore

By PHILIP K. CROWE

A HUNDRED yards below us, at the bottom of a ravine, was a small clearing flanked on three sides by dense bamboo jungle and on the fourth by a cliff, on a ledge of which was situated our mud and straw blind. The carcass of a buffalo lay grey and twisted in the yellow grass and at the far end of the clearing a pool of dark water glittered among low boulders. The stage was set, and the principal actor was due.

Little was known about this tiger beyond the fact that she was a big female, had killed the buffalo the previous evening, and should feed again in the late afternoon. She had been seen twice but never stayed on the kill long enough to allow a shot. Furthermore, she presented a difficult target. Not only did the distance from the blind to clearing necessitate a long shot, but the down angle was about forty-five degrees.

Four of us—Colonel Harry Nedou, Private Secretary to His Highness the Maharaja of Indore; Pir Mohamed, His Highness' Chief Game Warden, my wife and I—waited in the blind. We had arrived at three in the afternoon and remained glued to the look-out windows for the first hour of the vigil. It was a grand and wild view. The ravine, known as the Amba Ghar or Mango Springs, is a heavily wooded gorge leading up from the flat plain of the Chambal River Valley to the plateau above. It is exactly the kind of cover most favoured by tiger, for the dense jungles provide shelter from the sun, and the spring fed stream offers a constant source of water.

Aside from the murmur of the stream there were few sounds. Jays pecked at the kill and occasionally gave their calls ; langur monkeys barked in the distance, and once I heard the song of a magpie. Three grey mongooses slithered out of the jungle, poked their little pointed noses into the kill and fed heartily.

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Once a graceful spur fowl lit for a moment in the clearing.

Drowsiness induced by an excellent curry lunch and several glasses of beer began to get the better of me and, leaving my look-out window, I stretched out on a quilt on the floor and dropped off for a nap. It was four o'clock and I did not think the tiger would come before five. I was mistaken, for barely had I closed my eyes when Colonel Nedou nudged me gently. Rising quietly I squatted before my ten-inch shooting window and, poking the muzzle of my rifle slowly through the aperture, peered down at the clearing. The tigress stood broadside to us and looked huge and beautiful in the golden light of the late afternoon sun. She stretched, and then lowering her head, began toying with the kill. Signalling to the Colonel that I was ready, I rested the rifle on the ledge of the window and, covering her left shoulder with the sights, slowly squeezed the trigger. The heavy .425 Westly Richards double-barrelled rifle roared, and was followed a few second later by Harry's .500 Holland and Holland.

The tigress, to my inexpressible disappointment, did not even shudder. She simply swung left and trotted off into the jungle. Then my mind started functioning and I realized that both bullets must have hit her for the simple reason that if they had not, they would have kicked up a lot of dust, or if they had hit rock we could not have failed to have heard the whine of a richochet. This was cold comfort however. The tigress had vanished and we had to wait a safe period before sending the men down to the clearing to see if there was any blood or the tell-tale marks made by bullets in the ground. At last Harry despatched a posse of four heavily armed trackers. They reported that they could find no evidence of bullets in the ground neither could they find blood. Later the leader of the trackers shouted that he did find a tiny spot of blood but that it was dry and might have come from the kill. It was then near sunset and we called the men up and started sadly home.

The prospects were none too bright. If the tigress had been hit, the chances were that she had not been hit hard and might still be capable of delivering a highly dangerous charge in dense jungle. It is an unwritten law that wounded tigers must be followed up and killed. Since I had had considerable experience in big game hunting I hoped that His Highness would let me go along with Harry and the trackers. His Highness told me frankly, however, that he had a fast rule that guests would not be allowed to take part in this end of the business. Accordingly, the next morning, Irene, Salima—Harry's pretty young wife—and I were left sitting on the rocks above the ravine while Harry and his men went down to the clearing.

Following up a wounded tiger is a very tricky business and demands cool nerves and quick reactions. The advance is by short stages. A tracker is sent up a tree and takes a long look around before the remaining men press forward. Rocks are thrown into all dense covers in the hope that if the tiger is there it will reveal its presence by growls. Listening on the heights we could clearly hear Harry's advance, and I must say I thought his wife showed a good deal of coolness herself. The party had progressed about a hundred yards down the ravine from the clearing when one of the trackers shouted " Sher Milra "—tiger found, and we knew the quest was over.

She was found lying stiff and cold by the side of the stream. My bullet had hit her just above the liver and after tearing through had emerged on the far side. Harry's shot, made while she was moving away, grazed her tail and then broke her left hind leg. She had taken these heavy bullets without a visible effect and lost very little blood in the process. The stamina of a tiger is truly amazing when it is remembered that rifles such as ours hit with a striking force of more than 5,000 pound feet or two and a half tons shock force.

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From the tip of her whiskered nose to her tail the tigress measured nine feet. She was in the prime of life, probably about six years old and had fine strong white teeth. Her coat was dark and rich and her general appearance massive and muscular. We estimated her weight at about 400 pounds.

My second encounter with a tiger was several days later when I went along with Colonel Estes as his second shot. Harry and Salima came along also. The tiger had killed that morning and was reported to have eaten about a third of the buffalo, and to be lying up near the carcass. The location was a khodra named Chechi, about eight miles from camp.

It was five in the afternoon when we pulled up at the start of the trail down to the blind. The heat of the day was gone and a cool breeze was blowing. The trail ran down from the plateau where we left the car, to the very edge of the khodra where the blind was perched on a ledge very similar to that from which I shot my tiger. In the red sand of the path we saw a series of pug marks ; a big set imposed by a full-grown tigress and two smaller sets which came either from leopard or tiger cubs.

Creeping cautiously into the blind, we lifted the little curtains over the shooting windows and looked out. Down on the floor of the khodra, about ninety yards away, was the clearing with the kill tied to a stake in the middle. Around the carcass was a circle of hay, the bullock's last supper. I was using the glasses, and, after carefully examining the clearing, raised my sights and found myself staring straight into the eyes of a big tiger lying half concealed by the bushes about twenty-feet above the clearing. Harry and Estes saw him at the same time and we all froze until assured that what we thought was an alert tiger was actually a very sleepy and unconcerned one.

Then began an ordeal. It would have been both risky and foolish to have tried a shot with the tiger in that position. The only clearly exposed portion was the chest and even this, due to a dip in the ground, could only be seen partially. Estes had to wait until the tiger went down to the kill to eat or exposed itself for a decent shot. Time passed, shadows began to lengthen and the deep green of the ravine grew darker. At six, exactly an hour after we started the vigil, the tiger suddenly rose, and drifted down toward the kill without making a sound. We were sure the time had come and shoving our rifles through the windows, we clicked off the safetys and started to draw beads. Then for some unaccountable reason, the tiger only sniffed the kill and turning at right angles disappeared into the jungle behind.

The tension snapped with an almost audible bang and we leaned back weary from the strain. A few minutes later the tiger appeared again. It had simply made a circle and returned to the hollow for another forty winks. By this time it was half-past six and the clearing was nothing more than a dull brown spot in the dark mass of the jungle. For fifteen minutes more we stayed there, none of us willing to take the responsibility of saying it was too dark to shoot. Finally all at once we sighed and silently left the blind.

The following morning Estes and Harold Milks were at the blind at dawn and almost immediately had excellent broadside shots. They thought both bullets hit it, for the tiger rolled over, roared with pain and crashed out of sight into the bushes. It is a rule of big game shooting that one never follows up a wounded animal until they have a chance to stiffen or die from loss of blood. Accordingly Harold and Estes returned to camp for breakfast and left again at ten for the ravine. As they hoped, they found the tiger, a young but beautifully marked male, a hundred yards from where they had shot him.

I did not get a shot at leopard, known in India as panther, but Harry, Tati Anderson and I had a fascinating half hour watching a mother eat her breakfast. Her cub, said by the watchers to be only a few weeks old, did not appear in the clearing, but its presence

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was clearly apparent from the nervous glances that the pantheress gave toward the nearby jungle.

One morning a group of non-shooting guests was amply rewarded for getting up at the chill dark hour of 4.30 a.m. They arrived before dawn at a blind where a pantheress with three cubs had made a kill. This family group appeared before the startled and unaccustomed eyes of the American onlookers. For an hour they were fascinated by the sight of the cubs playing and the mother relaxing in the early sunlight. The scene gave a rare opportunity for photography and the camera enthusiasts returned as triumphant as any armed sportsman. There was even the leisure for a second group of spies on the happy domestic side of panther life to reach the blind, but they found that two of the cubs were napping, and soon the mother gave a signal for departure.

His Highness has an excellent rule that mothers with cubs should not be shot. It should be followed by sportsmen who forget what happens when you live on your capital.

Behind the killing of the tigers and panthers lies an elaborate and efficient organization. In fact, His Highness' Besla shooting camp in the Rampura Division of the State of Madhya-Bharat is dedicated to making such kills possible. The preserve occupies an area some 70 miles long by 20 miles wide at the broadest point and encompasses more than 1,000 square miles, most of which is situated on two plateaus divided by the Chambal River and its broad valley. In the numerous khodras, or ravines, leading from the valley up on to the plateau are 46 Agots, or shooting blinds. Unlike the tree machans usually used for shooting tiger in India, these agots are on the ground but are fully enclosed structures and offer excellent visibility as well as cover from the keen eyes of the tiger.

All of these shooting locations are kept baited with live buffalo and are constantly checked by watchers. When a tiger or a leopard kills the news is immediately reported by runner to the main camp or if the kill is far away the news is relayed by a radio circuit which makes contact with Besla camp three times a day. Quite aside from the advantage of knowing when to wait over a kill the radio proves its worth as a life saver. If a man is mauled by any of the big cats, blood poisoning would set in almost immediately and it would be of the utmost importance to get him into camp quickly. The blinds are all named. If a kill is made a red flag is flown to warn everyone that the tiger is probably lying up near it. If the buffalo is still alive a green flag is run up. Goats are sometimes used, especially for panther.

The necessary practice of tying up buffalo for the tiger to kill always comes in for some criticism, especially from the ignorant, and among the many rationalizations that I have heard the best is certainly that of Colonel A. E. Stewart, late of the 3/10 Baluch Regiment. In his definitive book "Tiger and Other Game" (Longmans, 1928), Colonel Stewart settles the matter this way :

"Roughly speaking a tiger or a panther will kill twice a week. This means that he will kill about 104 wild animals a year. Watch a sambar, nilgahi or cheetal doe with her fawn ; what a wonderful and beautiful sight ! You could not see these two separated or hurt for anything, would you ?" The Colonel further develops this theme to the point where the hardest heart melts for the young mothers. Then he makes the obvious and humanitarian point that by staking out the buffalo he is in fact, only saving the life of one of these gentle creatures who would make the tigers' meal if it were not for the generosity of Colonel Stewart.

Logical as the Colonel is to me, he is not so logical to Irene.

There are three generally accepted methods of shooting tiger. From a blind over bait ; having the tiger driven past a tree where the hunter waits for it on a platform known as a machan, and by ringing the tiger on elephants. By far the most dangerous is the last. The

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tiger is forced into a smaller and smaller area and by the time the ring closes he is ready to charge his way out. Since even a big Indian elephant seldom goes above twelve feet in height, and a tiger can spring much higher than that, there is always a chance that he may choose the hunter's elephant to attack. Shooting, moreover, due to the motion of the elephant, is difficult and as the tiger is invariably moving fast, the target is far from an easy one.

There is also some danger in shooting driven tiger from a machan as the beaters may have scared the tiger and put him in an ugly mood by the time he reaches the hunter. Most machans are well within a tiger's leaping distance. In Indo-China I used machans ten feet above the ground and on one occasion had a tiger come within twenty-five feet of me before I fired. This tiger was completely unaware of my presence and gave no more trouble than a rabbit. On the other hand, Mrs. Smithy, the wife of the British Colonel who was Conservator of Forests for the King of Nepal, had a wounded tiger scramble up the tree where she was sitting, and thrust his forepaws through the flooring of her machan. She jammed her rifle into the brute's mouth and pulled the trigger, only to have the gun misfire. She then fell backwards out of the machan just as her husband despatched the tiger with a well-placed spinal shot.

Mrs. Smithy used a very small bore light rifle and for a woman unable to hoist the great weight of a heavy rifle there is undoubtedly something to be said for a light one. There are many men however who also see great virtues in the light rifle. By light I mean a rifle with a bore smaller than ·400. This is all very well if one is shooting from the relative security of a cliff a hundred yards away from the tiger. The situation is very different when the tiger can reach you with a few bounds and a spring. Then I personally want a heavy rifle firing a charge that will stun the animal no matter where I hit him. In Indo-China I used an old Winchester .405 lever action which hit with a foot poundage of 2,500 or a shock force of little over a ton. Now I use a Westly Richards .425 double rifle which delivers a wallop 5,000 pound feet or two tons shock force.

When shooting soft skinned dangerous animals such as tiger and panther the weight of the bullet is also important and the 410 grains of the Westly Richards has a big edge over the 300 grains of the Winchester.

Responsible to His Highness for the whole Shikar, or hunting operation, is Colonel Nedou with Pir Mohamed as his chief of staff and some 56 Shikaris, buffalo watchers, trackers, etc., in the lower ranks. When Irene and I were guests of His Highness, the camp had been going for some ten days and five tiger and two leopard had been bagged. In addition to the guest a second shot was always stationed in the blind to shoot immediately after the principal hunter. As many of His Highness' guests had never shot a tiger before this was a wise precaution.

Harry estimated that there are about fifty tigers in the preserve with probably more females than males. His Highness, whose bag totals something over 300 tigers, never shoots females or young tigers and as he usually accounts for about a quarter of the total bag there are bound to be fewer males around at the end of each camp.

Skinning a tiger is a long and intricate business, and far into the bright moonlit night the skinners worked over my tigress. I was particularly interested in the course of the bullet and an incision showed that the liver had been torn badly. With such a wound the tigress could not have suffered long. There are several minor trophies to be had from a tiger in addition to the skin. These are called the lucky bones, the two small floating bones found in the shoulders, and can be mounted in gold as pins.

Besla camp is situated on the plateau at about 2,000 feet elevation and commands a superb view of a large irrigation tank beyond

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whose blue waters the rolling jungle lands stretch away to the horizon. There is a main house of stone large enough for four master bed rooms, one for His Highness and three others for guests. There is also a big dining room and a vast porch. Other guests and the staff of about eighty servants were housed in tents adjoining the bungalow. There were two huge kitchen tents—one for Indian meals and one for European. Supplying such a small city was a job in itself and was ably performed by Clement Sargon, the camp manager. Two trucks a day arrived from Indore City some 200 miles away with food, drinking water and other supplies.

Another important personage in His Highness' employ is Major Jagdale, the aide-de-camp, who helps Harry in the general job of administration and meets guests at the railway station at Shamgarh some fifty miles from the camp. Shamgarh is just about half way from Bombay to Delhi and is a comfortable over-night ride in the air-conditioned Frontier Mail.

Meals are the province of Mademoiselle Odette Girault and His Highness is particularly lucky in having the services of this charming and witty French lady. She takes the hunters' offerings and makes them into culinary triumphs. Blue bull steak, charcoal broiled to a tenderness that would delight habitues of the Saddle and Sirloin Club of Chicago's famed stock yards. Wild boar chops and fillets of that same delectable brute. Then there were the birds and ducks ; roast partridge, broiled sand grouse, teal and pintail ducks in red wine. From a mess of frogs shot by some enterprising hunter at the bottom of a well, Odette contrived a tasty dish entitled 'jambes de Grenouille.' On another occasion she took the humble sawanal fish, a type of pike living in the tank, and dished it up in a manner worthy of Pruniers' best.

Fresh salads, vegetables and fruit arrived daily from His Highness' own gardens in Indore. The trouble was everything was too good. As Odette succinctly put it "everything that is really good is immoral, illegal or fattening."

The guests during our week's stay at Besla were all Americans. They included Harold Milks, chief of the Associated Press in India and an old friend of mine from China days and his wife Evelyn ; Bob Anderson, third secretary of our Embassy in Delhi and his wife Elena. The Andersons and I are members of the Nanking Hunting Club, that fabulous group of sportsmen founded in the capitol of Free China in 1948. We drank a respectful toast to His Excellency John de Fonseca, president of the Club and now Portuguese envoy to Bonn. The U.S. air force was represented by Lt.-Col. Chandler Estes, air attache of the Embassy, his assistant Captain Jack Schifferer, and Captain Bowers, the Mats. liaison officer and his southern wife. Col. Charles Nichols, a retired regular army engineer officer from Bakerfield, Calif., currently on his way around the world ; Russell Wright, a retired business man living in Delhi ; and Jerry Gerold, manager of Pan American in India. The man who made the longest trip for the express purpose of hunting was Master Sergeant Beverly Samuels, on leave from our air force in Formosa. Unfortunately all he shot was a single grouse. Mr. and Mrs. Carl Eisenhardt of Baltimore, who had entertained His Highness on their Yacht in the Chesapeake, completed the party.

In addition to my tigress, Eisenhardt shot a tiger, Harold Milks a big panther, Captain Schiffer a young tigress, Captain Bowers another tigress and Col. Estes his bashful male. His Highness bagged a panther and a ten-foot male tiger. Colonel Nichols was content to photograph instead of shoot and got some excellent movie sequences of both tiger and leopard. James Bond, the big game hunter and lecturer, also showed up later and took pictures.

Life in camp was informal and pleasant. We rose, ate and drank when hunting permitted. A bridge game ran all the time. There was always transportation and shikaris for those who wanted to shoot birds or small game.

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Appointments with tiger and leopard were made by His Highness personally, and I admired the tact with which he arranged this greatest of shooting privileges. His activity is restricted by having suffered a broken hip. His Highness liked bridge and he and Evelyn Milks played most of the day, with the other hands taken alternately and sometimes a second table set up for an earnest game played by temporarily unemployed tiger hunters.

While the big cats were the main reason for the camp, I enjoyed the small shikars a great deal also. There was the afternoon Harry, Bob and I drove to a neighbouring tank, surrounded it and made a determined attack on the feathered population. It was a lovely evening with the sun sinking behind the ramparts of the bund and the cattle coming in from the forest to water. Teal, pintail and pochard flighted into the tank, and, after making a long circling approach, swung in straight over the guns. I got a double on teal and just had time to reload before a brace of snipe jinked up from the swampy ground ahead of me. I shot the leader and missed the easy one. When sport waned on the water we walked inland where I bagged a peafowl, a quail and a partridge. Final count was ten snipe, two pintail, six pochard, one peafowl, one quail, two sandgrouse and one partridge for the three of us.

Another shoot that stands out in my memory was the morning that Harry and I went to a tiny pond near camp and enjoyed a frantic hour with the sandgrouse. These fast flying little birds come in singles, doubles, troupes and armies. Appearing like fighter planes high on the horizon, they set their wings and swoop down toward the pond, offering the most sporting of targets. Either you shoot your bird on this first pass or you miss him. He only gives you one opportunity. Occasionally the grouse actually land, apparently aware of the fact that neither Harry nor I would shoot them on the ground. Three of them had made it safely to the border of the pool preparing to go forward to drink, when out of the sun shot a big hawk and drove straight at them. So fast was his swoop that he surprised us as much as he did the grouse, and the first thing I saw was the great bird striking a grouse to the ground, and the ensuing flurry of feathers as the hawk rose like a jet with his limp prey in his talons. The total bag was 32 birds.

Waiting for birds at tanks and ponds has its charms but I delighted in the walks over the Indian countryside. One evening Irene, Bob, Major Jagdale and I jeeped down to the cultivated area near the village of Rampura in quest of partridges and quail. The shoot was informal with our only beaters consisting of Salis, one of His Highness' old shikaris, and his little son. Lining up, we started across fields of white cotton and others of stubbled corn and jwar. There were not many birds but enough to keep one alert. We would see the tiny Indian quail running for cover and then wait expectantly while Salis thrashed the bushes with his stick. Out would come the little fellows in every direction and like as not the three of us would miss them all.

Irene, who is not a hunter, took a keen interest in the peasants of the area. They are big strapping hard-working types, who till their fields carefully and are, on the whole, well-off. Major Jagdale told me that the area has not had a famine in recent memory. They breed big white bullocks and travel in carts pulled by a pair of these fine draught animals. We passed many weddings with the families of the groom and bride settled comfortably in the back of gaily decorated carts. Besides photographing the peasants Irene drove to the tomb of one of His Highness' distinguished warrior ancestors. Ever since he died, more than a hundred years ago, a small corps of attendants has been retained to pay respect to his memory. Every day at the tomb a meal is cooked, a priest says prayers and a dancing girl does a ceremonial dance.

Religion plays an important part in the lives of the jungle people and on several occasions we came on triangular stones painted red and

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ringed by other stones. These are simple jungle deities before whom goats are killed in the age old ceremony of "pooja." Most of His Highness' jungle watchers are Bhils, a tribe famous for its jungle lore. At one of their jungle camps Pir Mohamed showed us how they make tea without dishes. From the Khatra tree he took two broad leaves and fashioned them into a clever cup. This he subsequently filled with water and placed over the glowing ashes of the fire. Sure enough the water boiled, without the disintegration of its frail container.

The scrub jungle and stony landscape around Besla abounded with game of all kinds. On my walks I saw Nilghai or blue bull antelope, four-horned deer, wild boar, sambhur deer and peafowl. These great birds know that they are revered by the peasants and stay as close to the villages as possible. I was interested to note that in this part of India they are shot with very light shot and I bagged a brace with number eights. The tough old jungle peafowl of Ceylon seldom succumb to fours. I also shot a good Nilghai bull.

I particularly enjoyed hunting with Harry Nedou and learned something about him on our numerous jaunts. Born in Scrinagar, capital of Kashmir, in 1911, he was educated at Bishop Cotton school at Simla and St. Georges' College, Missouri. He joined the Indore State forces as a lieutenant and rose to be colonel of it. He was later Military Secretary to the Maharaja of Kashmir and subsequently Director of Tourism for the State. Always keen about hunting and fishing Harry has shot over fifty tigers and whipped every worthwhile stream in the Kashmir Himalaya.

Harry takes the same interest in guns that I do and showed me His Highness' collection of fine firearms. I was particularly impressed with three beautiful little 20-gauge Westly Richards shot guns. In the big duck shoots one needs three guns as the loader may fall behind with only two. Another gun I liked was a double-barrel super .30 Holland and Holland rifle. My favourite rifle was his .465 Westly Richards which anyone can buy for about Rs. 1,500. I saw a new type of gun to me known as a Westly Richards 12-bore magnum Explorer. This combines the advantages of a shot gun and a rifle as the last three inches of the barrel are rifled for lead slugs. His Highness has a total of about twenty guns, all of which are the best money can buy. A special servant kept His Highness' and all of our guns as well, cleaned and oiled.

Major-General His Highness Maharajadhiraj Raj Rajeshwar Sawai Shree Yeshwant Rao Holkar Bahadur, G.C.I.E., LLd., Maharaja of Indore, Senior Up-Raj Pramukh, Madhya Bharat used to rule the fifth largest state in India. Covering an area of 9,500 square miles, Indore was just about the size of New Hampshire. The population exceeded 1,500,000. His Highness took great interest in his people and worked hard on their behalf. His state was considered to be among the best administered of the native units.

On August 15, 1947, His Highness along with the other ruling princes gave up his lands and power, keeping only his titles, a few thousand acres of land and a fraction of his former income. Despite this drastic cut in the exchequer, he refused to fire any of his retainers and continued to give all he could to his former subjects. The real affection they have for him was demonstrated on every trip I took around the preserve. On seeing the car, the peasants thinking His Highness was aboard, invariably ran over and salaamed. On one occasion a delegation called on him and showed their deep affection for him. His Highness was visibly touched.

A big spare man of six feet, His Highness has a thin intelligent face that lights up when he is interested and becomes benevolent when he talks to his people. The present Maharanee was the former Fay Crane of Los Angeles and is just as keen on sport as he is. She has a twelve-year-old son by the Maharaja named Richard Holkar, His Highness' family name, who is now in school in the States. Richard

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will not inherit the title however, it will go to His Highness' daughter, Usha, by his first wife, a Mahratta lady. This girl, is now 21 and said to be very pretty. The present Maharanee has a sixteen-year-old daughter named Gwenyth by Mr. Crane who also makes her home at His Highness' Manik Bagh Palace at Indore City.

Sitting on the porch while a fat yellow moon sailed over the tank, His Highness told me something of the history of his dynasty. It seems that about the middle of the seventeenth century, a shepherd was born in the village of Hol in the Deccan. One day he fell asleep in the sun and a cobra came and shaded his face from the glare. The villagers saw this and were duly impressed. Those were the days of the petty princes and one of these, a member of the Bande family, gave the shepherd command of a troop of horse. He performed so well at this martial job that he was given bigger commands and eventually gathered enough lands and prestige to set himself up as a minor ruler. From this modest beginning grew the state of Indore.

Relations with the British, a vitally important factor in the old days, have been good ever since an incident during the Mutiny. The British Resident and his bodyguard were beseiged by the rebels in a fort near Indore and faced almost certain annihilation. The then Maharanee of Indore, fully realizing that a relief expedition would be sent to avenge the Resident, persuaded the mutineers to raise the seige, she then held a parley with the Resident. During this talk she suddenly took off one of her bangles and clamped it around his arm. The Resident, a Mr. Hamilton, was then told the Indian belief that by this gesture he had become a blood brother to the Queen. The close relationship between the Hamilton family and the rulers of Indore has continued to the present day and His Highness still corresponds with the present Duke of Hamilton.

His Highness, a graduate of Oxford, succeeded his father on the latter's abdication in 1926 and ruled his state for twenty-one years until the Indian Independence. Married to an American and possessing a house in Los Angeles where he spends part of each year, he is in an excellent position to understand the problems of both countries, and takes a keen interest in Indo-American relations.

His Highness shot his first tiger at the tender age of ten. It was something of an accident. He had been required to accompany his father on a tiger beat and had taken along his own small bore .360 single shot rifle—not however with the faintest enthusiasm for shooting anything, and was supposed to occupy a stage position in the rear of operations. Then, while his father was otherwise engaged, one of the old shikaris asked him to follow and led him over to a clearing. He had barely arrived there when what appeared to him to be a huge tiger broke out of the opposite jungle and came running towards him. He was scared to death but drew a long breath and fired. The tiger evidently hit changed direction and made off into the jungle. His father subsequently gave both him and the shikari the devil when the tiger turned out to be a half-grown cub. His Highness did not shoot tiger again until he was sixteen when he went out with his sister, a year his junior. The sister, who only fired because her father insisted, missed and His Highness not only dropped the tiger she had missed but topped off this fine performance by making a double on another big male which showed a few seconds later. His father was so pleased that he ordered an all-night celebration. His Highness remembers the incident as a great effort to keep awake.

Since then he has bagged almost as many tiger and panther as there are days in the year and has shot them with smaller and smaller bores. He now uses a Westly Richards .280 bolt action. This little rifle hits with a shock force of over a ton but its 130 grain bullet must be very accurately placed to kill a tiger.

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Even though His Highness has shot this impressive total of tiger, he says he still gets a kick out of the sport and I believe him. The tiger is the unchallenged king of the Indian jungles and makes a trophy which excites the admiration of all sportsmen. His willingness to share these magnificent animals with other sportsmen is a really generous gesture.

Sports of Uva—Mahsir Fishing

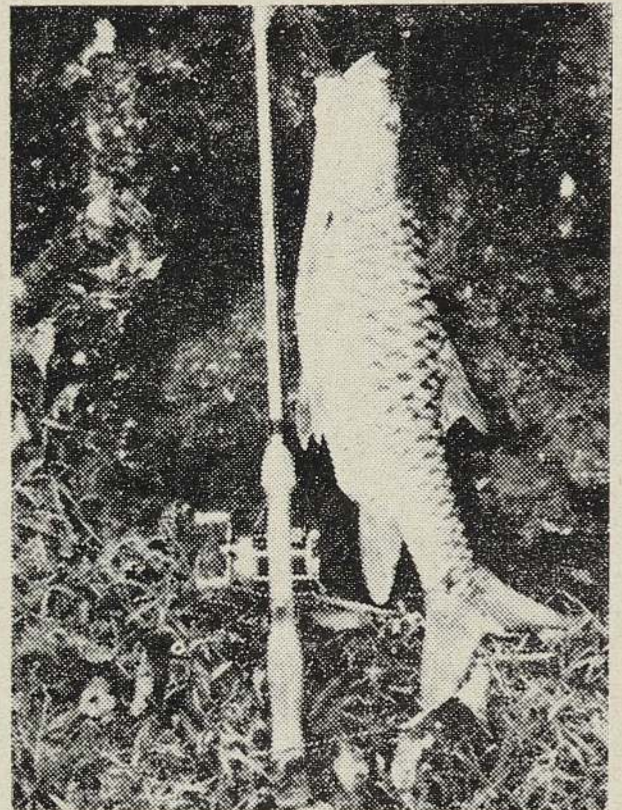
By DR. F. A. FERNANDO, *in Sunday Times*

OF everyone who has been stationed in the Uva Province, I have the same question to ask, *Have you fished for the Mahsir ?* Alas ! only a few can answer " yes ".

I have often wondered why people pronounce Uva a " dry hole " when this part of the Island provides some of the best of sport. Rarely does one meet with such a diversity of sporting pastimes in a single province, be it with Gun, Rod or Camera.

Fishing for the mahsir here provides endless hours of pleasure in surroundings unequalled in scenic beauty and tranquillity. The mahsir inhabits the cool waters that flow from the hills of Uva to join the Mahaveli, Kumbukkan, Menik and the Gal Oya rivers. Beginning life in bubbling brooks and mountain torrents, these tiny streams rush down the forest-clad slopes to form delightful rivulets, punctuating their headlong course with falls and deep rock-pools, ideal shelters for the mahsir.

Mahsir have been known to grow to colossal size in India where records of a hundred pounds have been established in the days gone by. It is admitted that the size of the river determines the growth of the fish in it, within limits. The food available (and I suppose Nature's guiding hand) will prevent it growing to a size that will ultimately dam the stream. Considering the smallness of the streams in Ceylon and the amount of poaching that goes on in them, a 30-pound mahsir would be a large (and very lucky) one. The average, in the waters worth fishing in Uva, is from four to ten pounds, which can give the angler all the sport he is in search of.



A Big 'Un

These streams are best fished when ever so slightly tinted by freshets from the hills. Water running red should be avoided, and during the drought while it is crystal clear all you may get is one fish in a pool and often not even that, for you will see the mahsir come flashing after your spoon, nose it, and then remember a date elsewhere.

A watercourse, which runs through jungle and patana, is hardly affected by local rains, the mud subsiding in an hour or two, but,

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where a stream has its banks contoured by paddy fields, a shower may make it unfishable for days to follow.

On the question of what tackle should be used I must admit I am no authority. Experience is the best guide, and there are a few simple rules which one might profitably follow.

Tackle should be light but not too light. Streams are small and rock bound and often studded with snags. You cannot afford to let your fish take too much line for it will surely fray it on some sharp ledge.

The most favoured lure is the spoon ; it is easiest to manipulate in swift water. A red tag is incorporated in the lure. A level winding reel is a great help in that it leaves you less to think about, which is important, considering the insecure footholds so often encountered. Braided nylon of a ten-pound strain is ideal. Traces should be of fine wire since nylon does not stand up to constant abrasion on rocks. Weights should be as inconspicuous as possible or you will drive the fish to shelter at the first cast. I use single-handed fibreglass rod and find it eminently suited.

Where to fish is one's next concern. The Survey Department Map, one inch to a mile scale, Nilgala sheet J23, 24—M3, 4, gives most of the streams in the Uva province. Choose those away from human habitation, especially tea estates from whence at regular intervals labourers descend, like a horde of ants, armed with dynamite and fish poison. Don't neglect the small streams for you will be pleasantly surprised at the fish they harbour.

Choose the high elevations within the limits of waterfalls and insurmountable barriers, fishing below them. Rock strewn pools are better than sandy bottomed ones, small ledges in the rocks, providing shelter for large fish ; and don't overlook the runs with white water or you may miss the occasional ten-pounder.

At lower elevations, especially in the Menik and Kumbukkan Oyas, where these rivers run through dense jungle, there are deep pools that contain great fish. These pools are inaccessible for week-end trips, but, after a baptism in the smaller rivulets that are more easily reached, an arduous trek to one of these will be in the nature of a Confirmation in mahsir fishing.

There is only one river which can yield a really big mahsir as far as records go and that is the Mahaveli Ganga. The difficulty, however, is to be able to fish it in ideal conditions, this being far from easy unless one lives by its banks. The river is unique in that it gets both the South-west as well as the North-east monsoons, in its catchment area and thus, more often than not, it is in spate. At the confluence of the Mahaveli and the Umma Oya is a place called Ran Tambe where the water and the formation of the long swims are ideal for mahsir. Here, I hope to land a really big one some day.

We have been whipping up enthusiasm, buying rods, reels and what not, but before venturing to cast remember, always, the watchword of success is " Stealth." If you approach a pool incautiously you will never see, let alone catch, a big one. Use the shade of overhanging branches, never approach with the sun behind you and do not cast from heights above pools. Step on rocks lightly and avoid wading if possible to prevent fish being scared off to other spots, giving the alarm.

Clothing is always a sore point. Be it therefore said that nothing but a good khaki or field green will answer. If your good wife insists on coming in all her finery say goodbye to the mahsir at the outset. If she accompanies you in khaki don't be surprised if you have to buy her a rod and reel.

Last, but not least, do not forget the leechproof boots, especially when fishing at high elevations, if you have no wish to be painfully reminded of a fishing trip (often an unsuccessful one) for weeks later.

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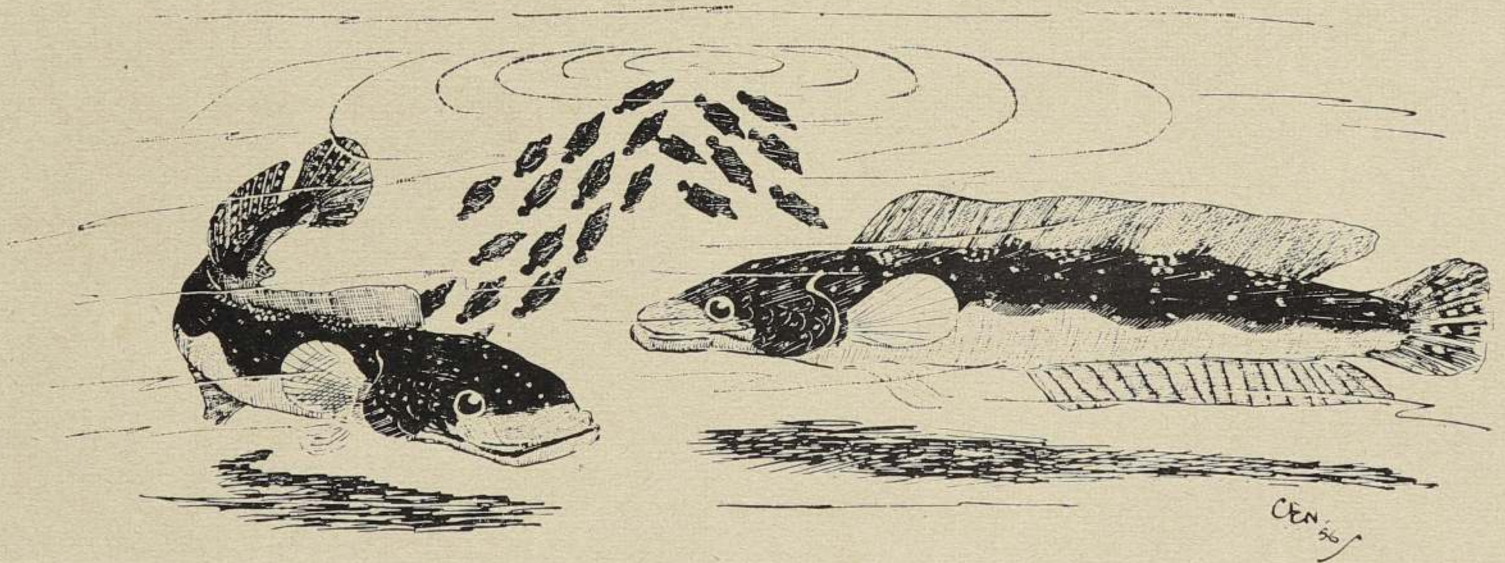
THE GIANT SNAKE HEAD

RECENTLY, when I was fishing a low-country stream for river Lula or Giant Snake-head (*Ophicephalus marulius ara*) I came upon a family gathering.

I was sitting, having just had lunch, on the root of a tree at the edge of a pool, dreamily looking at the water in the hopes of seeing a fish rise for air. I saw what appeared to be a cluster of small reddish leaves rise to the surface and then dive again. I knew these to be young Snake-heads as I had seen them once before on this stream, so I kept a careful watch for their reappearance. This occurred in about twenty minutes and this time I was able to see the dark shadowy form of one of the parents under the cluster of young. Shortly after this my attention was drawn to a slight commotion in the shallow water at the tail of this pool where, to my surprise, I saw two full-grown Snake-heads with the cluster of young ones between them. The largest of the two was a beautiful fish which must weigh between 7 to 8 lbs., and the other I estimate was about 3 to 4 lbs. The two were undoubtedly the parents of the young fry and were maintaining their constant guard over them.

I have been unable to determine whether the Snake-head is viviparous or oviparous but suspect the latter. The parents keep a very careful guard over the small fry when they are unable to look after themselves and it appears both sexes keep together when engaged in their vigil. The breeding season would appear prolonged as I have seen young in July and in March, but this may be governed by climatic conditions and the state of the water. Both times I have seen young were during dry weather when the stream was low and slow flowing. The Snake-heads are air-breathing fish and are very tough, being able to live for a considerable time out of water.

C. E. N.



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Leopards of Lenama

By PHILIP K. CROWE

KAROLIS, the old leopard-scarred tracker of Yala East, told me the legend. Centuries ago the Veddahs, the aborigines of Ceylon, built a temple in the ruins of the ancient city of Lenama and proceeded to light lamps to their gods. But in these lamps they burned the fat of wild pig and the gods were angry. To punish them the gods sent the leopards who promptly ate them. "That's why," said Karolis, "the leopards of Lenama are so big and so wise; they have eaten the strength and cunning of the jungle people."

My journey to Lenama on the remote south-east coast started at Ratmalana airport outside the capital of Colombo, when the little silver monoplane I had chartered headed east over flat green paddy lands toward the distant line of mountains. It was eight in the morning of a lovely clear day in mid-February and Tom Green and I looked forward to four happy days in the jungle. It was also pleasant to realise that we were flying in an hour a distance that would have taken us ten hours hard driving to cover by road.

The coastal rice fields gave way to coconut estates and the land began to roll gently into the foothills of the central massif. My pilot, a German ex deep-sea-diver named Jacob, pointed out the sights. We circled Adam's Peak, the mountain where Buddha left his footprint, and saw the pilgrims toiling up the rocky trail to the peak like an endless line of white ants. In the distance, rearing its head through a crown of snowy clouds lay Pedro, the 8,282-foot monarch of the Ceylonese highland. We then flew over the high tea country and I spotted bungalows where I had visited and rivers where I had fished for trout. Above the tea lay open grasslands and above them dark green crowns of jungle and on the peaks the age-old rock.

Then we swooped over a jagged ridge and saw the low-country spread before us like a vast green tapestry; laced here and there by the glint of rivers and the mirror surfaces of tanks. Our objective was Amparai, a jungle strip one hundred and twenty-four air miles from Colombo (270 miles by road) and we found it just fifty minutes after takeoff. Buzzing the "field" once to scare off stray cows, we settled to a smooth landing on the grass and sand surface. Old friends were there to meet us; Francis, equipment manager of the Gal Oya Project, and Jonklaas, his deputy in charge of tractors. We were driven to the Government bungalow and over a long cool beer caught up on the news of the Project since we last visited it in 1953. A vast complex of reservoirs, power stations and irrigation canals, the Gal Oya Development scheme, built by the American engineering firm of Morrison Knudsen, is an achievement of which Ceylon is justly proud. Some 40,000 persons have so far been settled on the development and many thousands more will be provided for, while sufficient power to supply all the nearby towns on the East Coast has been made available.

My visit to Gal Oya coincided with the first few days testing of ten giant American tractors which had recently been ordered from International Harvester, and Kanagasundrum, the chairman of the Gal Oya Board, invited me and Sir Cecil Syers, the British High Commissioner, and Lady Syers to see them perform. Lined up under the parental eye of Harry Alexander, one of the company's travelling representatives, the mammoth machines, known as T.D. 24's, were capable of moving mountains and did so before our eyes. Cecil and I were photographed together before one—a sporting gesture on his part.

As it was still early in the morning, Jonklaas and I took shotguns and went to the snipe fields while my companion, Tom Green, professor of education and director of the Department of Education at the University of Ceylon, inspected the training schemes which Francis feels are the basis for the Island's economic

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future. A genial burly South African, Francis has nearly completed his job at Gal Oya and will be missed by hundreds of the men he has so patiently and carefully trained.

At the paddy fields below a tank, Jonklaas and I were joined by two of the Perera boys, sons of the old gentleman who keeps a small pack of pig hounds near Amparai and with whom I had a fine evening's sport on my first trip to Gal Oya. The boys produced a dog and bitch, a recent litter out of Manika, and asked me to name them. I christened them Philip and Phillippa. Bernard Perera, the eldest son, had acquired a nasty gash on his head and told me that he had been clawed by a leopard which had broken through his pack and attacked him.

After an excellent lunch with Francis we boarded my car which I had to meet us at Amparai and drove the last sixty miles down along the coast to Arugam Bay, the rail head for conventional motor transport. Waiting for us at the resthouse was Abey Abeysekera who, with his wife, Loy, had driven their jeep and trailer from Colombo in a convoy also consisting of one of my jeeps and Ernest Kothalawala, my driver. Unloading the Cadillac we piled the gear into the two jeeps and took off on the last twenty miles of our trip to the jungle, arriving at sunset at Okanda, the headquarters of Peter Jayawardene, ranger of Yala East, whose guest cottage I had booked.

It was good to be back in the wilds. Kiri Banda, a grinning coal-black local boy whose name means milky white, joined our household staff while the aforesaid Karolis, the senior guide of the area, also made his smiling obeisance. A remarkable puckish faced old Sinhalese with his long hair coiled in a bun behind, and his back bearing the wicked white scars of a leopard's claws, Karolis has one of the keenest pairs of eyes in the jungle, and, despite deafness, is completely fearless. He was clawed while following up a leopard wounded by a European who turned and ran when the leopard charged.

The two big friendly dogs that greeted me the previous year, were gone, snapped up by leopards from the very porch of Peter's bungalow.

Soon the snipe were broiling on the coals, rice was bubbling in the pot and Abey and I raised our glasses to the Ceylon Hunting Club and its absent members. To my wife and children in New York; Chandra and Margaret Gooneratne in Colombo; to Bryant and Penny Moore in the fog of far away London; to Sam and Barbara Nixdorf in Washington; to Jack and Dosie Friar and to Tom, the new member. Another new member, Abey's virgin jeep, was also welcomed to the Club. A unique organisation, the Club has no headquarters but a tent, no dues but hunting licenses, and no laws but those of the jungle.

Before turning in I checked my guns. I had a new Holland and Holland .375 magnum to break in. Perhaps a bit large for Ceylon, the .375 magazine rifle is still a wonderful all around weapon for the East. It can handle tiger, bison and elephant in India and is still not too big for sambhur, Axis deer and pig in Ceylon. I had it fitted with a veri-power telescopic sight that allows for magnifications of from 2½ to 6 power and even with this mounted the total weight is only about eight pounds. I also brought my .318 Westly Richards, a light rifle for the longer marches, and two shotguns, a Parker twelve-bore for snipe and a Remington automatic twelve for leopard and bear. Loaded with SG slugs, the automatic shotgun is an adequate persuader even when potential danger is only a dozen feet away.

Another ritual I always followed before a shoot was to refresh my memory with a glance at a small hunting vocabulary. None of the Wild Life Service trackers speak English and to communicate with them it is necessary to know the Sinhalese and Tamil names for the fauna and flora of the jungle. A list of useful words and phrases, as prepared by the late Harry Storey, one of Ceylon's greatest hunters, and other sources, is appended to the end of this article. The spelling is phonetical.

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Although I have added the names of cobras, vipers, tarantulas and scorpions, I must hasten to inform my readers that all of these pests are very rare in the jungle. Peter has seen only six cobras in three years of living in the bush and I have only seen one cobra in all my jungle trips. I have never seen a Russel's Viper, a scorpion or a tarantula.

The number one block of Yala East Intermediate Zone, which I had booked, consists of about sixty square miles, and in addition to large jungle areas includes the great open park areas of Bagura and Andarukula. Originally estuaries of the sea, these wide vistas of marsh and pasture surround good sized lakes in whose brakish water flourish crocodiles and on whose lily studded surface sport a myriad of waterfowl. I saw pintail, whistling teal, and little quacky ducks. The marshes run to where the dunes guard the border of the sea, but the plain is far from unbroken. Huge, rounded boulders resembling prehistoric monsters, dot the area.

On the grass lands graze herds of wild buffalo and in the morning and evening axis and sambhur deer join them. Safe from the leopard because of the open terrain, the deer still face the hazard of the crocodiles. Once at Bagura I saw a tragedy in the sand. The tracks of a young axis deer, probably a doe, led to the edge of the lake and did not return. A few months ago Peter saw a dead croc that measured eighteen feet. Whether or not they will attack man is a moot question but the trackers never wade more than waist-deep in the lagoons of the area and the one time I had to swim to cross an estuary twenty feet wide I had a man stand on the bank with a ready rifle.

Later Peter spied a cock peafowl preening his gorgeous tail and I collected him with the shotgun ; at the same time forbearing to shoot three of his wives. There are many peafowl in the Bagura area and I had easy shots at half a dozen more but one was all we could eat and without ice there was no way to preserve the meat. Driving around the lake on the way home, I had a long overhead shot at a flock of whistling teal which came diving out of a pot-hole in the plain. There were also snipe, golden plover, and rail to say nothing of an infinite variety of non-sporting birds, among which I recognized sandpipers, pratincoles and lapwings.

Before lunch we swam in the Bay of Bengal, whose surf we could hear from our camp. Bluest of blue waters, the usually placid Bay sometimes thunders against the coast with typhoon force and washes away headlands. There are miles of sun-blistered dunes near Okanda among which bloom morning glory and other wild flowers. The sand is a fascinating study in tracks. We found the slot of sambhur and the wide trail of a sounder of pig, come undoubtedly to feast off the shell fish they find on the rocks when the tide is out. There were piles of fresh dung left by elephant and a slide down a big dune where a baby pachyderm had evidently tobogganed on his behind.

In the cool of the evening we drove to Bagura again and walked along the edge of the lake till we came to a mass of rocks known as Galge Mulla, literally salt rock cave corner. Some fifty feet high and extending over several acres, the outcropping was full of dark caves, passages and the rank smell of bear. Peter saw three there in one evening. Not a difficult animal to kill in the open, the bear is a very tricky antagonist in dense cover or in his rocky lair. Two will often attack at once from different directions and some of the Wild Life Department's trackers have been assaulted by them.

Returning we passed close to an old buffalo bull who lowered his head and made menacing gestures before he realised that Abey's jeep was bigger and ambled off. The buffalo in the reserve are protected, but once a year numbers are rounded up and captured to be tamed for farm use. This dangerous job is done by Moslem and Sinhalese hunters trained in the job of slipping rawhide nooses over the hind

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legs of the animals. Obviously loath to enter domestic service, the old bulls become very wary and dangerous. Recently one of Peter's trackers was driven into the sea by a bull and badly gored in four feet of water.

Hanging on the flanks of the wild buffalo herds, we saw a dozen jackals. Miserable mangy-looking animals with the heads of foxes and the coats of hyenas, they wait for a sick calf or an old animal that is dying. Then they attack in a pack. The jackal suffers from rabies and when they become infected they run screaming into the villages on the edge of the reserve and bite people and dogs.

The biggest head in Ceylon is that of the sambhur and one evening Peter took me to the coast behind Andarukula lagoon. There the red brown dunes, shot here and there by black streaks of ilmenite, form a favourite resting place for these brown deer. Scarcely had we started along the sand, when a buck jumped out of a bush and made off around a dune. I fired and missed. Later we rested and I found half buried pottery of a unique design. The pieces were fragments of ancient pots and we were sitting in one of the numerous pottery works belonging to the Ceylonese kings, which the sand had covered centuries ago.

Near the pottery we found the pathetic half-eaten corpse of a newly-born sambhur calf, with the tracks of jackal around it. The sambhur hinds have their young in thickets and hide them there for the first few days until they are strong enough to run. During this period the calves are highly vulnerable as the hind has no antlers to protect them and the stag is often away eating.

In a forest glen Karolis showed me a magnificent sambhur stag. Facing me only seventy yards away, the stag was looking straight at us but apparently without registering the fact we were the enemy. I raised the .318 and fired. The stag bounded away, and Karolis gave me the hurt look he did when he showed me a fine head and I missed it. The truth was my vision was not what it used to be. Perhaps the same cause that kept the old stag from seeing us was responsible for my missing him.

The Ceylon record sambhur measures 33⅞ inches along the outside curve of the antlers.

The toughest quadruped in the Ceylonese jungles is the wild pig. Unprotected by law and hunted mercilessly by man, the pig still thrive and multiply. The big boar, weighing up to three hundred pounds, is feared by everything in the wilds except the elephant. Leopard slink along the edge of a sounder or his family, and try to snatch a suckling but the second the old boar or for that matter the equally dangerous sow scent them they are in for real trouble and seldom stand to face the pigs' charge.

All the senses of wild pig are highly developed. Through my glasses I have seen a sow spot me, call her brood and make off while I was still five hundred yards away. Stalking them is equally difficult, the slightest sound makes them dash for cover. Sometimes they seem to make an uncanny use of camouflage. Karolis and I sighted a young boar lying in the mud of a water-hole beside several buffalo. The group heard us approach and all jumped up together, but before I could swing on the pig, he had dashed out of the hole and was streaking across the marshy border to the safety of the jungle. But he was not running in sight ; he was careful to keep the vast hulk of one of the buffalo between himself and me.

Pig, as well as leopard and bear, are scavengers, and will eat anything in any stage of decomposition. This habit may have something to do with the Moslems taboo against their flesh, for in India graves are shallow. Pig also love wild yams and in the deep jungle one finds little meadows completely dug up by them.

I did not shoot a pig on this trip but Abey accounted for several, among them a sow of several hundred pounds.

Except for the pot and baits for leopard we shot no deer but I wanted a good head for mounting and accordingly jeeped in the dawn to Bagura Plain and made a wide stalk on one of the herds. Peter estimated that there were

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five thousand head in the Yala East Zone. In one morning I saw four herds on Bagura alone of at least fifty animals per herd. Grazing near the line of the jungle, the delicate brown spotted creatures looked as tame as those in an English park but the moment they got our wind they bounded for cover like rabbits.

There were no really big heads in plain sight but I saw one buck standing behind the herd that looked as if he carried a good set of antlers. The distance was about one hundred yards. I fired, the buck staggered, and ran a little way behind some cover where Peter subsequently found him. The antlers measured 30 inches ; a long way from the Ceylon record of 36¼ inches but a well formed set.

The abundance of deer in the block spoke well for Peter's ability as a warden but could also be somewhat attributed to a possible decline in the leopard population. The leopard lives mainly on deer and it requires one a week or fifty-two a year to feed a full-grown leopard. Constant shooting in the block may have driven the leopard off to quieter hunting grounds or depleted their numbers.

Like the pig, the leopard is not protected in Ceylon and is shot, except in the reserves, at all seasons, often illegally from cars at night, when it is blinded by the headlights. The Wild Life Protection Society is interested in preserving the leopard and it is hoped sufficient pressure will be brought on the Government to give this beautiful animal the same respite that the deer and the peafowl now enjoy. A six months closed season and a limit of one leopard per person per year would go far toward building up the breed, and still not work undue hardship on sportsmen.

Meals are an important part of camp life and Loy Abeysekera fed us well. Meats included roast suckling pig, venison steaks, axis chops, liver, diced haunch, bacon and pig cakes. Fowls were well represented by roast peacock, curried jungle fowl, imperial pigeon, green pigeon, bronze wing pigeon, snipe and dove. In the nearby sea Loy and Tom caught delicious parava. We were also served with a great variety of vegetables such as lentils, cabbage, potatoes, beans, radishes, and fruits consisted of wood apples, pineapples, jack fruit and rabutan, a kind of lechy nut. Kiri Banda and Ernest served and made up in willingness what they lacked in formality.

We slept under blankets and were often chilly. Why is it that I cannot sleep at all in Colombo outside an air-conditioned room and in the jungle, a hundred miles nearer the equator, I am actually cold ? Tom had an involved explanation concerning the breathing of trees.

One evening we drove to Kumana, the only human habitation in the Reserve. A mud-and-thatch village of great antiquity, Kumana is more than thirty miles from Arugam Bay, the nearest town, and can only be reached by a fifteen-hour trip by buffalo cart, or by the rare jeep that hunters bring. The population consists of twelve families adding up to a total of about sixty-five souls. Many of the men work for the Wild Life Service ; Karolis came from Kumana and introduced his brother to us and his brother's pretty sixteen-year-old daughter, Ensohamy. There was a little school house with ten desks and a faded picture of Queen Elizabeth on the wall.

At Kumana we left the jeep and, taking fishing rods, we walked a quarter mile to the coast and then down the sand to where the Kumbukkan Oya, the river that divides Eastern from Southern province, empties into the sea. At the "modera," the place of the meeting of the waters, we built a fire and began to cast plugs into the swirling race where the river surged over the sand to be swallowed by the sea. The "koduwa," the big estuary perch, were chasing mullet and the race boiled with their voracious feeding.

The plugs proved ineffective and, changing to live bait, I soon had a heavy fish hooked. The koduwa have tender mouths and it is necessary to play them far more gently than the parava or other estuary fish. They fight

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hard, however, and it was ten minutes before I reached a twenty-two pounder. Later I hooked a far bigger fish, but lost him after fifteen minutes struggle.

It grew chilly and we sat by the fire, roasted mullet, and talked. Peter told me something of his roamings. A sergeant in the war he was ordered first to Africa and then to the Far East. Evacuated from Singapore shortly before the surrender, he and his company were sent to the Cocos Islands, the cable station in the Indian Ocean. The Japs attempted a landing from a destroyer but could not negotiate the reef and retired after being machine-gunned by the garrison.

Driving back in the moonlight we saw four elephants, passing one so close that I thought it was a boulder by the side of the road. The opening up of jungle, like the Gal Oya scheme, is forcing many of the elephant in the area into the reserves.

We put out four baits for leopard, two of pig and two of deer, but it was not until near the end of our stay at Okanda that one of these tempting morsels attracted a big cat. Jackal, wild boar, bear and even a crocodile feasted on our kills but a spread of food that should by all rights have attracted half the leopards in the area lured only one to our banquet. The reason was clear. Ten days previously another hunting party had fired at four without bagging any of them and the leopards had left the area.

The remaining leopard and he may well have been the only one in the area was, according to Peter, an old friend of mine. In 1954 I had this leopard, a huge male, in my sights and by every right in the world he was virtually a skin on my living room floor. But my gun was not loaded ; I had filled the magazine but neglected to throw a shell into the chamber. Peter has seen him several times since and knew he was still in the vicinity. Leopards don't grow big in Ceylon unless they are smart and lucky and this one was certainly a special favourite of the Devio, the jungle god.

I arrived at the kill at five in the afternoon and found Karolis waiting for me inside a blind so cleverly constructed that it took me several minutes to make out where it was. In Ceylon blinds for leopards are not put in trees as they are in India ; they are built on the ground of leaves and vines and never placed more than twenty feet from the kills. Theoretically it would be possible for a leopard to approach the bait through the blind but in practice this does not occur. The leopard invariably keeps to the open lanes and approaches his kills down these jungle trails. He makes wonderful use of shadows ; I have watched a grassy trail through field glasses and suddenly been astounded to see a leopard twenty feet away from me : later I looked at the traks and found the leopard had crept along the edge of the jungle in about a foot of shadow.

I took up my vigil at five. It was roomy inside the hide ; I had a chair to sit on and a water bottle behind me. Through the leafy aperture I could see the bait, exactly—I paced it off—twenty feet away. Needless to say the smell was strong, especially when the variable jungle winds blew from the kill to us. But there is something clean about death in the jungle, it has none of the sordid sickly smell of civilized filth. At six the sun sank below the tree tops and the birds sought their sleeping trees for the night. Karolis made himself an appetizing cud of tobacco, betel, and lime and settled down to wait. A four-foot talagoya, the dragon-like monitor lizard of the Ceylon jungles, waddled over to the kill, thrust his wicked-looking forked tongue into the fetid mass of flies and decomposed meat and made a sound repast.

The talagoya was followed by a fat mongoose. I saw him first when he sat upon his plump haunches, raised his head and darted his eyes in all directions at once. Satisfied that there was no danger around he dug into the kill till his sharp nose was dyed crimson.

One of the walls of the blind was supported by a hollow log to the open end of which

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Karolis put his ear and listened. A slow smile spread over his face. "Mee Messa," he whispered, and proceeded to run his long skinny arm into the hole and withdraw a large oval-shaped comb, dripping with honey. Also out of the hole swarmed the angry bees but for some unknown reason they did not sting us. Karolis dug further and retrieved several pounds of honey. I ate some and found it delicious with a wild tangy flavour. Later I learned from Peter that these bees can and do sting but are only apt to when their combs are full of honey ; many of those Karolis stole consisted only of empty wax.

My immunity to the bees' sting may, however, have been due somewhat to a generous laving of citronella oil which I used to discourage the mosquitoes. Long trousers and a long-sleeved bush jacket both of dark green are also a wise precaution in a blind. The leopard has virtually no sense of smell, due primarily to the rancid food he eats, but he has wonderfully keen eyes and might easily distinguish khaki in the moonlight. Wrist watches and other bright things should not be worn. I also always bring cough drops to the blind just in case of an overpowering desire to sneeze. Another wise precaution is to soap one's shoes to keep out the ticks. For some reason a lathering of ordinary toilet soap, even after it dries on the shoes, prevents these vicious little insects from mouting one's frame and feasting on it. The bite of a Ceylonese tick can accurately be described as that of a red hot needle.

The Author and the Lenama Leopard

Many leopard are missed in the moonlight by hunters who are unable to align the sights of their guns. Gun metal, being black, is extremely difficult to see at night and few

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sportsmen seem to realise that this disadvantage can be overcome by running a piece of white tape along the top of the barrel. Thus outlined, the barrel stands out sharply and allows a near perfect alignment, especially if the moonlight falls directly on the gun. This night the bright half moon was just right and its white light, supplemented by a heaven full of sparkling stars cast a pale glow into the blind.

A little after eight I heard the trumpet of an elephant and, forgetting that Karolis was quite deaf, nudged him. He looked at the dark outline of the kill and shook his head. Perhaps it was just as well. In September of last year, Paul Dudley—Rear Admiral of the U.S. Navy—was shooting leopard in this area. In the blind with him was Bill Langley of my naval attache's office, and Karolis. Out of the night came an elephant and thrust his trunk into the blind. Langley fired in the air and the elephant made off but not before giving everyone, especially Karolis, who had not heard it approach, a severe scare.

In addition to the presence of the elephant I kept thinking how much bears like honey and the bees were still making a devil of a racket with their interminable buzzing. These misgivings, however, were soon forgotten by the sharp staccato bark of a deer, followed a few seconds later by the danger cry of a wanderoo monkey. Only the leopard could provoke such sounds as these and the leopard must have been near. Then I heard the faint sawing sound that the big cats make and, zeroing the shotgun, on the kill, waited. The sawing came nearer, then receded, and finally ceased.

I waited two more hours till the moon was obscured by clouds and all hope of making a clean moonlight shot was past. Then we went sadly home. Except for the remote possibility of seeing a leopard in daylight at Lenama my last chance for one in Yala East was finished.

The trail to Lenama, fabled haunt of the Veddah-eating leopards, is a long and winding one. According to the trackers no hunters had been to the area for more than two years and we found the path overgrown with Nelu bushes and often blocked by trees pulled down by elephant. That there were many of the great beasts in the district was amply apparent ; branches of thorn trees, one of their favourite diets, were ripped from the trunks, and everywhere on the ground we saw great piles of droppings, some so new they smoked. We passed through long stretches of really dense jungle. Contrary to Hollywood, the jungles of South-East Asia are not green hells, dripping with perpetual moisture, but low matted areas of thorn and creeper seldom more than twenty feet high. The sun penetrates easily and the jungle floor is dappled with light.

Rising from the forest are vast rock outcroppings and one of these, Bombaragastalawa, we explored. Bombara means bee in Sinhalese and this particular formation is one of the places where the Veddahs used to gather honey. Extremely dangerous insects, the bombara have been known to sting a man to death and the Veddahs invaded their hives enveloped in clouds of smoke. Scaling the long hog back of the rock we found ourselves below a series of rock caves, hollowed out by the monks of a bygone age. Ingenious drip ledges kept the rain from entering the cave proper. In the soft sand of one we found the imprint of a very large bear and were glad he was not at home.

In front of the outcropping, the rock fell away sharply and a hundred feet below the green mat of the jungle stretched away to the sea. It was a breathtaking sight and may well have given John Still the basic idea for his beautiful book, *Jungle Tide*.

From Bombaragastalawa the trail led through another dense area. Diving down to the dry beds of rivers and then climbing around the edge of rock formations, the going was slow and exciting. We saw many deer, twice heard bear, and once met head on a fierce old bull buffalo who refused to move. We went around. Then we emerged into a lovely park area where

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green "eliyas," or meadows, dotted with islands of jungle gave varied vistas in every direction. We left the jeep and walked. These meadows were the ancient paddy fields of the city of Lenama and among the rocks we saw the crumbling ruins of dagobas and temples.

We had gone only a few hundred yards from the jeep when we rounded an island of jungle and saw two big leopard staring at us ten feet away. Before I realised what I was doing I threw up the .375, fixed the black rosettes of the nearest leopard's shoulder in my sights and fired. He sank to the ground, turned slowly over and died. His companion, a slightly smaller animal and probably his mate, bounded off in the jungle.

Measured between the pegs the leopard proved to be seven feet six inches long. Not a big cat by Indian standards where the record is nine feet four inches but, considering the Ceylon record is only eight feet three inches, a very fair trophy.

SHOOTING VOCABULARY

English	*Sinhalese*	*Tamil*
Elephant	aleeyah	ahney
Bear	wallahah	karradee
Pig	oorah	pandee
Leopard	koteeyah	pilee
Sambur	gohnah	marrey
Axis deer	pit-moowah	pullee-mahn
Mouse deer	meeminna	sarroogoo-mahn
Wild buffalo	wal meewah	kohtoo mahdoo
Crocodile	kimboolah	mothalley
Hare	hahwah	moosal
Jackal	narruyah	naree
Pangolin	kabbaleywah	ooloonkoo
Mongoose	moogiteeyah	kelree-pulley
Porcupine	itteywah	moollahn-pandee
Red monkey	silloowah	korran-goo
Grey monkey	wandoorah	mandee
Monitor lizard	talygoya	udumbu
Civet cat	ooroolava	pulloogoo-pooney
Peafowl	monnarah	my-ill
Jungle fowl	wellee kookoolah	kahtoo-sahavl
Snipe	hess-wattoowah	kottan-kooroovee
Imperial pigeon	mylee-boah	marathan-peerah
Green pigeon	batoo-goyah	pachey-peerah
Teal	sehroo	tahrah
Duck	sehroo	tahrah
Python	pimbura	male pamhi
Cobra	nahyah	nallah pahmboo
Russels Viper	tic polongah	vineyan-pahmboo
Scorpion	gonissa	komban-thel
Tarantula	devi makuluva	pulimuka-silanthi
Black ant	kadeeyo	kadeeyan
Tick	kini tulla	sellu
Leach	koodalla	adde

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USEFUL WORDS

English	*Sinhalese*	*Tamil*
Yes	owu, eyhey	ahmah
No	ney, neyhey	illey
Water (drinking)	wattoorah	tannee
Water-hole (animal)	wallah	tannee kevolee
Large river	ganga	heng-gey
Small river	oya	ahroo
Camp	wahdeeya	pahleyam
Gun	toowakkuwa	tohkoo
Rice (boiled)	bat	sohroo

HE SHOT SEVEN LEOPARDS IN ONE EVENING

By E. R. WIJESINGHE, in *The Sunday Times.*

THE article published in a recent issue of "The Sunday Times," describing how Jan Englebrecht, a farmhand on the East African veldt, shot nine lions in eleven minutes, reminds me of the acquaintance I had 50 years ago, with another Englebrecht who lived and died at Hambantota.

Englebrecht was a Boer prisoner who, with a number of his countrymen had been detained at Hambantota during the South African war. When war ended these prisoners were released and allowed to return to their country on taking an oath of allegiance. All but Englebrecht took the oath and left the Island.

Englebrecht, who refused to take the oath, continued to stay at Hambantota, at first living on the bounty of his friends and sympathisers and on his skill as a hunter, and later as the Game Ranger of the Yala Sanctuary, receiving a salary sufficient to keep him satisfied and comfortable.

I am also reminded, at the same time, of the story of a famous local tracker and hunter who created a Ceylon record by shooting seven leopards in one evening.

Mr. J. O. K. Murty of the Ceylon Civil service was the Assistant Government Agent of Hambantota at that time, and I happened to be the Mudaliyar of the Magam Pattu, the division then reputed to be the best game country in the Island and (where the Yala Sanctuary is also situated) largely patronised by foreign sportsmen.

Mr. Murty himself was a keen sportsman to whom the onrush of the fiercest rogue elephant meant nothing so long as he was armed with his 4-bore elephant gun, suited only to a man of his stature.

Often Mr. Murty and I availed ourselves of the opportunities we had, when out on circuit, of combining our duties with sport, and we found in Mr. Englebrecht a reliable standby to accompany us.

On one occasion we followed the tracks of a dangerous rogue elephant in the forest at Palatupane, and we were guided by that famous tracker and hunter, Lewishamy of Palatupane, whose knowledge of every inch of the vast forest was no less than wonderful.

On reaching the heart of the forest, Lewishamy lingered at a spot with which he appeared to be familiar, and looking around in a reminiscent mood, said : "This is the spot where about 20 years ago I shot seven leopards one evening." Pointing to a veera tree, he continued, "this is the tree on which I had constructed a messa to shoot sambur, and the place used to be full of them. One evening I came with another man and climbed up to the messa about 5 o'clock.

"We were there hardly half an hour when we heard something rushing through the jungle

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and the next moment, to our amazement, a number of leopards emerged, headed by a female, who was forced to lie down by the pursuing males crowding on her. I at once realised that it was a 'relamawa'—female in heat. I saw my opportunity for a big bag and to begin with, immediately shot the female.

"I knew that was the only effective way to detain the males. On receiving the shot the leopardess struggled violently, whereupon the males pounced on her fighting with each other. I next shot a large male, and quickly reloading my gun, a double-barrelled muzzle-loader, I shot two others.

"This caused a panic among the other leopards and they dispersed for the moment, some entering the jungle, only to come back immediately. In the meantime I reloaded my gun again and shot two more.

"My stock of powder was now over and what remained was just enough for one more load—with that I killed my seventh leopard.

"It was nightfall by then, but there was moonlight. More leopards were prowling about the place and I might have shot many more if I had ammunition. We kept awake the whole night fearing an attack, but before dawn we noticed that all signs of the prowlers had disappeared.

"Early in the morning we returned to skin and cut up the seven dead."

We had no reason to disbelieve this story, but to make sure that there was no exaggeration I made inquiries later from others in the village and from the headmen, and they all confirmed what Lewishamy had told us. Leopards were numerous even at the time we heard this story, 50 years ago, and there were occasions when I myself "bagged" a couple with my right and left barrels.

I do not know the ways of lions, but I know that Leopards in Ceylon have never been known to hunt in groups as Englebrecht's lions are said to have done. For my part, I am inclined to think that that group of lions had also been attracted to the spot by a lioness in heat as in the case of Lewishamy's leopards.

In any case there is no comparison between the two stories. Lewishamy shot the leopards from a safe messa on a tree beyond their reach, whereas Englebrecht faced the lions exposing himself to the danger of an attack. Of course Englebrecht had the advantage of a quick firing gun (a magazine, no doubt) which enabled him to finish the job in a matter of minutes.

Now, a veteran of 78 years, with 60 years' experience in big game hunting, often under conditions of danger and having had thrilling hair-breadth escapes from rogue elephants and ferocious wild buffaloes, the only beasts to be really feared in the Ceylon jungles, I can well understand and appreciate what it was to face a group of lions in the manner of young Englebrecht.

The courage and skill of South African hunters is a thing of common knowledge, and Englebrecht, the war prisoner I knew at Hambantota, himself a great lion hunter in his country, and very likely a kinsman of the young lion shooter, was a brilliant example of such skill and daring.

IN A TROPICAL FOREST

Deep in this forest's primeval innocence,
where Time is lost in green philosophy
that knows no change, the past and future seem
to wear a mask of kindly reticence,
while the present hears no more of history
than it can learn from silence and from dream.
Beneath the grandeur of these giant trees,
by this impenetrable wall of green,
humanity contracts to its true stature,
and we forget our world that's ill at ease,
our world of maybe *or of might-have-been*
dwarfed by the immense frugality of Nature.

RAYMOND TONG.

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Hounds in the Hills

By PHILIP K. CROWE

DEEP in the mountains of Ceylon lies a remote valley where the cry of hounds still echoes on the trail of sambur and wild pig, and where the ancient art of venery continues to be held in high esteem. I refer to the Mansfield Hunt and the grand sport shown me by its master, Charles Patterson, Esquire, of Allagolla Estate, Uda Pussellawa, in the province of Uva, who, with his brother Hubert, carries on the traditions of Sir Samuel Baker and the other great hunters of Ceylon. There are a few small packs of hounds still hunting in the low-country, but the Mansfield is the only hunt now in existence in the mountains, the traditional site of the noble sport on this Island.

The Madulla Valley, where the Pattersons have constructed a hunting lodge, lies only about three miles from Allagolla—if one could fly down the mountain to it ; but by the road and trail the distance is more than ten. Packed in a Land Rover, we chugged down the hair-pin turns of the tea roads until even these petered out and we walked several miles over overgrown mountain trails, crossed a unique hanging bridge over the roaring flood of the Halgranoya and finally climbed through an emerald green paddy field to the bungalow. We had begun our trek at the 4,500-foot altitude and were now down to the 1,800.

The Hunters Inn, as it is called, is exactly the kind of retreat that pleases the sportsman. On the porch hang a mixed bag of heads and horns that any master might be proud of. The central piece is a huge sambur head flanked by a brace of spotted deer and further set off by the delicate masks of two little red deer. There are the massive boar heads, whose scimitar-sharp tushes give wicked evidence of their erstwhile prowess. There are two grinning leopard masks and a great display of sporting pictures, ranging from faded portraits of long dead hounds and huntsmen to relatively modern pictures of the chase. Three comfortable double bedrooms with attached baths and a kitchen make up the living quarters. Meals and drinks are served on the porch or out under the spreading branches of a big flamboyant in the terrace overlooking the paddy field and the river. An unexpected luxury is electricity, generated by the ingenious use of power from a mountain stream. Built in 1925, the bungalow is still in good shape.

The party consisted of the master, his wife Lillian, Alexander McIntyre and Conway Davis, planters of the district and keen members of the Mansfield, and me. A more congenial group could not have been assembled. All of us were genuinely interested in natural history and the lore of the jungles. I was particularly fascinated to hear that the Madulla Valley is the home of two famous devils, Punchi and Locu Kiriappo. Locu now has no power due to the fact that one night he boasted to a cattle driver that he was able to make himself the size of an arecanut or as big as a Bo tree. The cattle driver dared Locu to make himself small enough to jump in the little metal box the driver kept for his lime. Locu did and the driver snapped shut the lid. Punchi, however, is still at large and can make things very rough for strangers. He has a habit of confronting them at night, asking if they are new to the Valley and if they say they are, squeezing them to death. It is not hard to spot Punchi for he always travels with a vanguard of bees.

Only a scattering of families live in the valley. Malaria years ago decimated it and today only a handful of peasants cultivate the meager chenas and paddy fields. Few of the inhabitants have ever been as far away as Nuwara Eliya and none have seen the sea or been to Colombo. Without exception they are deeply attached to Charlie and for good reason. Not only does he employ all the males as beaters for his hunts, but presents them with virtually all the fruits of it. A big boar weighs upwards of two hundred pounds and means meat for everyone. No wonder the peasants' hands were

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pressed together in salute as we passed ; a mark of respect that was sincere and heartfelt.

We left camp in the half light of a misty dawn and followed hounds down an overgrown trail for about a mile along the Madulla Valley. Below us the torrent of the Halgran Oya roared down its rocky course and over us towered the green slopes of Allacollælla and Muthetathema, two four thousand-foot peaks that guard the approaches to the valley. A wilder and more inaccessible spot it would be hard to find in all Ceylon.

Davis and I took up a post on a saddle back about five hundred feet above the floor of the valley, while Charlie and Mac stationed themselves further along the ridge. When we were all in position Charlie blew his horn and the silver notes echoing off the cliffs told Valaithan, the huntsman, that he could cast his hounds. He was hunting seven couple and it only seemed a moment before the pack broke into a chorus of music that gladdened our hearts. They had found and were running abreast high scent. A moment later we heard a savage grunt, followed immediately by a yelp of pain. The quarry was a boar and evidently a large enough one to inflict punishment.

Then the boar took off up the mountain and we saw the ripple of jungle grass as he made his way up a nearby ravine. I clocked the run from the moment of find and it was just under forty minutes when the report of shot guns from the heights told us that the boar had been sighted. Bringing the glasses to bear, I saw a huge black form somersault in the air and crash down hill. The hounds went crazy and we knew the end was near. It took two more shots, however, to finally do the old boar in.

The victory was a costly one. Four hounds were badly cut up. Chutney, a pretty young bitch, was slashed across her back, the vicious tushes just missing her spine. Sailor, one of the grandmothers of the pack also took a severe beating on her ribs and shoulders. Ranger and Sinbad, two young entries, were badly cut in the flanks. When it is remembered that the average old boar is armed with five inch tushes and weighs seven times more than a beagle, the inequality of the contest is apparent. It takes real courage to close with a wild pig and Charlie's pack deserved full marks.

By seven the sun was above the peaks and the valley lay bathed in a flood of amber light. Hounds were cast again ; this time further up the valley and again found almost immediately. Charlie shouted up that it was another boar and I clocked the beginning of the chase. Forty-seven minutes later this boar was also shot. Not as large as the first, he was still a formidable customer.

It was then past nine and as scent was drying up and we had a fine bag, we called it a day and started home. The boars, their feet lashed to poles, were borne triumphantly along by six men each. Charlie always contributes the flesh to the peoples of the valley and there is never a lack of labour to bring in the quarry. Back at camp, we had a well-earned beer and proceeded to the kennels to see that the hounds were made comfortable and the wounded bound up. William, Charlie's major domo, then did an excellent job of butchering, saving me the head of the largest boar for mounting purposes.

After a heaping curry lunch and a long sleep we walked to the river and watched the birds. We saw the gorgeous Paradise Flycatcher called the " gini hora " or fire thief on account of the cock's long red tail ; the charming little painted thrush and black-headed oriole. Near the bridge we heard jungle crows, barbets and the " george joyce " cry of the jungle fowl. Conway pointed out the sensitive plant, a curious little fellow that pulls in its leaves and goes to sleep at four in the afternoon and will also retreat on contact with a foreign body. Patna oaks, kumboks and bo trees lined the river and overhung deep pools where mahseer were rumoured to lurk.

Poor old Melody never did return to the kennels and Valaithan went back to find her. For hours we heard the faint sweet notes of his horn as he blew on the summits but Melody never answered. She was an old bitch and tired.

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Perhaps her heart simply gave out or perhaps one of the giant python that inhabit the dank ravines of the valley caught her in its coils. Charlie says he has lost hounds before and is sure the great snakes get them. Leopard are also very fond of beagles but they seldom come to the valley.

The next morning's draw was further down the Valley, under the frowning cliffs of Kimbulla Gala, literally "crocodile rock" due to the peak's resemblance to an inverted crock. A light rain was falling and the mist curled upwards around the peaks like a lazy dragon. Climbing several hundred feet above the road Conway and I and our two trackers took up a position on a little shelf of land where an old bo tree gave protection from the rain and clumps of red and yellow lantana bushes lent colour to the prevailing green of the jungle hillside.

Again, hounds found immediately after being cast and again to their sorrow, the quarry turned out to be pig. This time it was an old sow who bit three hounds so badly that they had to be retired from the hunt. Out of the original seven couple, eight hounds were now hors de combat and not wishing to take chances on the further reducing the pack, Charlie called it a day and we went home. Injured hounds were immediately treated with Margosa oil, the excellent medication that is distilled from the Margosa fruit.

That evening, as the whisky passed and a new moon rose over the dark summits of the mountain behind the bungalow, Charlie told me some of the history of the Mansfield Hunt. He and his brother, Hubert, started the pack with a bobbery assembly of local hounds in 1900. By 1915 they had become so interested that they sent to England and imported a draft from the Duke of Beaufort. These big white hounds lent stamina to the pack but proved entirely incapable of coping with the rugged terrain. The brothers decided that the sixteen-inch beagle was far and away the best type of hound for the country and have since then maintained hounds of this variety and size. The present pack consists of about ten couple, most of which are black, white and tan, although there are a few couple of lemon and whites. I was particularly impressed with Sailor and Warrior, sons of the lamented Melody.

The season opens on November 1st and lasts till the 28th of April. Hounds go out an average of fifteen times per season ; a really excellent record in view of the injuries the pack sustains from boar and the rough mountain terrain. In addition to pig, the pack hunts sambur, red deer and spotted deer. The sambur, locally known as elk, is really the favourite quarry and it was to hunt these great brown stags that hunting with hounds was inaugurated in Ceylon.

In the early days stag and boar were killed by the huntsman with a knife after the pack had brought the quarry to bay, and the grand chasseur of these intrepid nimrods was Sir Samuel Baker who maintained a conglomerate pack at Nuwara Eliya from 1851 to 1855. Consisting of pure blooded fox hounds from England, kangaroo hounds from Australia, Scotch deer hounds and odd mixtures of the above, the pack was bred for only one purpose— to run down and then hold the quarry until his arrival with the lethal blade.

The jungles of upland Ceylon are dense, and Sir Samuel's three-pound killing knife was used to cut his way through matted brush, skin out the trophies and later fashion his simple huts. The blade was only a foot long, two inches wide and double edged three inches from the point. It was made specially for him by Mr. Paget of Picadilly, London. So keen were the cutting edges that he could slice one of the old trade pennies in two without blunting the knife.

While boar were often killed, the primary game consisted of sambur deer and the smaller red deer. The sambur is a big quadruped similar to our elk and quite capable of putting up a furious battle against hounds and man. I was once charged by a wounded sambur in Indo-China and have a healthy respect for its

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courage even after receiving a slug in the shoulder from a .405 Winchester. Sir Samuel accounted for 138 sambur, 14 wild hog and 8 red deer during one two-year period when he kept a diary of his hunting.

Dangerous as the sambur is at bay, he does not stand a candle to the wild boar, and Sir Samuel's pack took heavy losses from the big tuskers. Like their cousins of the mainland, the Ceylon boar runs straight only a short distance before he turns or "jinks" and leads a wild chase among the gullies and ravines until he finally finds a dense cover where he is protected behind and if possible on his two sides. Then, his little red eyes blazing and his razor-sharp tushes champing like the knives in a sausage machine, he faces the pack.

Sir Samuel had two types of hunting hounds ; those which brought the quarry to bay and the "seizers" who actually attacked the boar or sambur and held him till their master could get in with his knife. He could not train the dogs for the "seize" and many brave and foolhardy hounds were killed attempting a head-on attack. A few highly intelligent hounds learned to jump over the boar's back, seize him by the ear on the opposite side in a manner that would turn the boar's head up in a contrary direction and thus save themselves from the raking thrust of the tushes.

The courage necessary for this type of hunting can be imagined when it is remembered that the jungles are sometimes so thick that it is impossible to see more than three feet away and unless Sir Samuel's hounds held the boar fast, he would often find himself facing the infuriated beast.

In his hunting classic "Wild Beasts and Their Ways" (MacMillan, 1898), Sir Samuel describes a typical hunt of a hundred years ago.

"My narrowest escape occurred upon the hills of Nuwara Eliya in a jungle of dense bamboo grass. Although this tangled mass is termed "grass," it is merely a species of bamboo which grows at an altitude of about 6,500 to 7,000 feet, in a climate too cold for its complete development. Instead of forming a hollow cane, it extends in long and thin creeping stems, entwining together, forming a mass which can be broken through only with the greatest difficulty.

"A large boar had turned to bay after a short run within the jungle composed of this dangerous vegetation.

"Having broken my way with great exertion until I was within five or six yards of the "bay," I halloed the dogs on. Two powerful long-legged hounds immediately sprang from my side, and in a few minutes I heard the peculiar angry sounds which told me that the boar was seized. I tore my way through the tangled jungle, and almost immediately found myself in the presence of a large boar exactly facing me. Without a moment's hesitating, it made a supreme effort to attack ; its charge was so furious and sudden that, being unexpected by the dogs, they lost their hold, and for a moment the boar was free. I instinctively jumped to one side, as the brute rushed at me, and delivered a tremendous cut with the heavy knife across its back, just behind the shoulder. At the same moment a very powerful bitch named Lena had recovered her hold upon the boar's thigh. The boar fell dead, never moving a muscle.

"In those days I could hit tolerably hard, but the effect of this blow was so instantaneous that I was almost incredulous when I saw the body of the boar lying at my feet, cut half-way through. The knife had struck downwards, as the boar had passed at full speed ; the body, being stretched through the weight of the bitch that had seized the thigh, gave way at once before the keen edge of the heavy blade. The spine was cut clear through, and the knife had passed through the vitals.

"The boar weighed about 275 pounds, as nearly as I could estimate its weight, from its length and general appearance. The largest I have ever killed with hounds and hunting knife weighed 400 pounds, and the head alone, when slung upon a pole, made a tolerable load for two men, who were well contented to be

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released from their burden after a long march to the camp ; the carriers being my brother and myself."

In addition to being a great hunter, Sir Samuel was a noted explorer. Born in London in 1821, he spent his early years on the 2,000-acre estate of his family and learned early to use a rifle and ride a horse. Having the means to travel he went to Ceylon in 1846 and remained there for eight years, shooting elephant and buffalo as well as hunting with his hounds. In 1861 he went to Africa and spent the next four years exploring the upper Nile, in the course of which trip he discovered and named Lake Albert N'yansa. He hunted later in the Rocky Mountains of North America and bagged wapiti, bison, grizzly and mountain sheep. Still later he journeyed to India where he added tiger, rhinoceros and buffalo to his total of big game trophies.

Sir Samuel was a student of rifles and in his seven books of big game hunting there are constant references to the types of guns he used and the charges that went in them. Those were the days of muzzle-loaders and most of them were single shot weapons. If one missed there was no second chance and the fact that few hunters were injured indicates the care with which they shot their big game.

Physically Sir Samuel was a very big and powerful man. In a sketch of his life published recently in Whelen's excellent two volume work " Hunting Big Game," the case is cited where two of his native guides became obstreperous. Catching each by the back of the neck, he held them at arms length, feet dangling, and bumped their heads together until they " became good."

I have not read all his works but I can recommend " Eight Years Wanderings in Ceylon " and " Wild Beasts and Their Ways " as two of the best adventure books one could read.

After Sir Samuel's day hunting was firmly established in the highlands and one of the keenest sportsman to follow him was Charles Heneage Bagot, a planter, who hunted his own pack from 1890 to the turn of the century. Known as the Horton Plains Hunt the pack was taken over in 1906 by C. H. Sparkes and R. K. Maitland. The hounds met on Sundays. Sambur was hunted and killed by stabbing, although a rifle was carried for boar. After the first world war the Horton Plains Hunt became a subscription pack and lasted until the beginning of the second world war. The hounds were chiefly seventeen inch harriers.

Through the kindness of Charles Bagot, son of Charles H. Bagot, I was able to examine the former's game books. The first entry was on January 5, 1890, and noted that he drew Molapola with a pack of thirteen couple and killed a hind. On March 7 of the same year, he ran for three-quarters of an hour without a check and killed in the river. In 1895 a fierce brute of a boar killed Vesta and Balletgirl and wounded five other hounds. Later the same year a tic polonga bit five hounds of which two died. Among the distinguished guests who hunted with Mr. Bagot was H.R.H. Prince Louis D'Orleans and H.R.H. the Grand Duke Cyril, later Tsar of all the Russias.

For a vivid report of hunting in the old days, I quote from a story of Hubert Patterson about a hunt of the Mansfield Hounds on February 7, 1912.

" It took us some time to get down the very steep approach to the river, but eventually after a grim struggle, we reached the bay where the gallant stag, having taken up his position in a large deep pool, was keeping the hounds away by pounding each one as they swam out to him. It was a grand sight, never to be easily forgotten. The roar of the hounds baying and the rushing waters added to the effectiveness of that scene.

" The seizers came up after a pause of 15 minutes or so and as soon as they were released Satan and Spring made a leap at the stag which was soon well held by the ear and nose. The pack instantly closed in on him, and it was difficult to stick him but a dark red patch on the water indicated that my pal's knife had gone into the gallant beast's heart.

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" He soon disappeared under the water, the end of a magnificent run which started at 6.45 and finished at five minutes past one o'clock. Here the lunch box arrived with whisky, sodas and a good supply of sandwiches and we all fell to it. The morning run being well discussed, it was now time to cut the beast up and move homeward bound."

Hugh Kennedy, one of the old-time planters, expressed it in poetry:

" *Farewell to the jungles and patnas,*
Farewell to the old Horton Plains
A garden of Eden in sunshine
A place to avoid in the rains.
When striving for trout in the river
When struggling after the pack
I have lived a man's life in your spaces
Great days which will never come back."

Bird Watching in Holland

By E. B. WIKRAMANAYAKE

THE little island of Rosenburg, a short distance off the coast of Holland, is one of its bird sanctuaries. Every Sunday morning the ferry boat which plies between Rosenburg and the mainland is crowded with men, women and children completely equipped with rubber boots and field glasses who go there to indulge in the pastime of bird watching. Thither I went too accompanied by one Mr. Kist, a lawyer who is also an ornithologist of no mean repute, his little ten-year-old son who, I was told, could already identify over two hundred birds in the field, Mr. Swaap who knows almost all the birds in the world, and a few other enthusiasts.

It was a bitterly cold morning when we set out from the Hague. I was told that the season was not a good one for birds as the residents had already gone southwards and the migrants had not yet arrived. We drove a distance of about thirty miles to the ferry. The sea was alive with gulls—Black-headed gulls, Herring gulls, Common gulls. On the island itself we drove through a vast expanse of flat pasture land broken here and there by some scrub jungle. Tall trees were conspicuous by their absence but in the spring thousands of ground nesting birds like Plovers, Avocets, Sandpipers come there to bring up their families. Flanking the island was a dyke on the other side of which was a long stretch of mud flats and then the North Sea.

The first bird we saw as we drove through the island was a Magpie, a black and white bird which looked like a large edition of our Magpie Robin but with a longer tail. Next was the Hooded Crow, a winter visitor from Russia. Flocks of Jackdaws were scattered about the meadows and Mr. Kist asked me to keep a look-out for any with a white patch on the neck which he said were a sub-species from Russia. A dejected looking Kittiwake sat in the middle of one of the fields. The Kittiwake does not come inland except under great stress and this one looked very miserable. A Lapwing flew across the road and the oncoming car drove pheasants and partridges scuttling into cover. On one of the few trees that dotted the landscape was perched a Kestrel, and in the distance we could see a Marsh Harrier quartering the ground for prey.

Our objective, however, was the long stretch of mud flats on the other side of the dyke. We climbed the dyke and focussed our glasses. In the distance were a pair of Gray Lag Geese feeding. The Gray Lag Goose has been recorded only once in Ceylon. In the sea were swimming a large number of Ducks which

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were identified by Mr. Kist as Widgeon, Mallard and Teal. Beyond them was a flock of the great Black-backed Gull, a larger Gull than the Black-headed Gull. The Black-backed Gull, as its name indicates, has a back that is completely black. There were also a few Cormorants and Great Crested Grebe, and large numbers of Coot were swimming about close to the shore.

The number and variety of wading birds was disappointing. A couple of Oyster-catchers were feeding on the mud flats and by them was a single Curlew. Oyster-catchers are coming with increasing frequency to Ceylon. I have found them in the Jaffna Lagoon by the Karainagar causeway. There was also a large flock of Dunlin and with them some Knots and a Gray Plover. The Dunlin is not found in Ceylon ; the Knot has been once recorded and the Gray Plover is not uncommon. In the spring the Avocet breeds here and the Ruff and Reeve. The little island is then alive with Waders. The mud flats are an ideal breeding ground particularly since, unlike in Ceylon, there are no buffaloes wandering about against which they have to guard. The island, moreover, is very sparsely populated and the birds have it more or less all to themselves.

We had lunch at a little inn. After lunch the sun was pleased to shine ; so we picked up our field glasses and went out again in search of birds. Mr. Kist had promised to show me at least sixty different species of birds and he was very keen on keeping his promise. There were lots of little birds which were new to me, of which I got barely more than a glance as they flew past. A flock of Fieldfares flew off from one of the tall trees. A little bird that rose from the ground was, I was told, a Twite. Great excitement was caused by the news that a Richard's Pipit was seen in the neighbourhood. Richard's Pipit is a common winter visitor to Ceylon and numbers of them may be seen on the Turf Club or the Sinhalese Sports Club grounds. But it had only once before been known to visit Holland. Men waded breast high in the reeds through mud and water to get a glimpse of the bird and they were rewarded. We saw a Richard's Pipit rise from the ground and fly a little distance where we let him remain undisturbed.

It was now getting much too cold to be comfortable and we decided to return. In spite of all the handicaps we had had a most enjoyable day. Bird watching is like golf. You never realize how much enjoyment there is in it until you begin. There is in Ceylon a wealth of bird life even in towns and a stroll in Colombo can be productive of much pleasure. The capacity for finding pleasure in Outdoor Nature is a capacity for taking pleasure in common things and is a capacity in which anyone can share.

MAN OF PROPERTY

Not one scant rood of England do I own
By wax-sealed testament or title-deed :
The sight of her dear face, and that alone,
Is all the real estate I'll ever need.
Yet mine are all her lovely plains and hills
From Tamar's tilth to wilds beyond the Tyne :
For love, not grudging last-hour codicils,
Has made these proud possessions truly mine.

The meadows where I've smelt the tedded hay,
The fields whose hedgerow flowers I've often plucked—
All, all are mine for ever and a day,
Not by inheritance but usufruct,
Why should I envy some rich heir's bequest ?
The land belongs to those who love it best.

C. V. Merrett.

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We'll Find Quiet in the Jungle

By CHRISTINE WILSON

"ONE day," we said, "We'll go back there." And three years passed.

Distorted voices blare in three languages over radios and megaphones ; telephones shrill, clamorous, impertinent ; horns screech. Dear God, give us quiet to think again, untrammelled.

And suddenly we remember a jungle road, a green river along which long ago Robert Knox found his way to the coast, and a cottage on a rise, embowered by tamarinds.

We do not find quiet ninety miles from Colombo at our over-night stop. All evening a shrill female voice bleats hysterically over the loud-speaker of the cinema adjoining the Puttalam resthouse. It intrudes on the tranquillity of the sunset reddening the lonely harbour ; it drowns the song of the roosting birds.

In many countries I believe it is an offence to disturb your neighbour with your radio. In Ceylon, a whole neighbourhood—children—aged—dying—are violated with hideous sound—and nothing is done about it.

And when at last we reach our quiet place, so accustomed have we grown to raucity, that the stillness is disquieting.

"What," I wonder, " shall I do for ten whole days with nothing to do ? " For in town we forget how to sit still and listen ; life to-day forces most of us to close our ears to all extraneous noise.

But gradually the tone-deadened town ear begins to forget sophisticated sounds and regains its sensitivity. It discovers with new delight that there is not a second of absolute hush in the jungle : only lulls as deceptive as silence. It has time to listen to the wind in its variety of moods.

In our haven I heard the wind keening like a mourner at a wake. I heard it in the lashing fury of a monsoon storm, aided by the thrust and counter-thrust of rapier pointed lightning, the heavy cannon-fire of nearby thunder. I have heard it drop its voice abashed, and murmur like a lovesick sweetheart, and again, sing as softly as a mother to its sleeping child. Then, too, it can be silent.

But the wind is only the background, the occasional orchestra, for all the other myriad jungle noises.

There are the birds, for instance. The first glimmer of dawn is announced by the crowing of a cock—and through the night, had you listened, you might have heard the predatory eagles calling, and perhaps a Devil Bird's scream. Now comes the booming note of the coucal or crow pheasant ; next the eager " George Joyce ! " of the jungle fowl, and the warbling of the barbet. By early breakfast time a whole jubilant chorus of tiny unseen birds are a-twitter. You watch the turquoise kingfisher above the river : and lest its brilliant feathers should give it too great a conceit of itself, the bird is cursed with a voice of cackling harshness.

As the sun warms, green pigeons feed on palu trees. Lord ! how they stuff themselves ! Have they not been found choked to death by their own greed ? Nearby, doves coo and we wander out to a tree where they nest yearly. The nests are flimsy structures consisting of no more than a few twigs carelessly held together with gossamer.

For the first time I sit bird-watching, with the binoculars glued to my eyes and Henry's book of birds fluttering at my side. Tracking busily up and down the barbed wire and poking its small bill into every hole of the concrete posts is a little beauty : black jacketted, yellow waistcoated. I learn that it has a name as lovely as itself : the Ceylon Iora. And there on that palu tree, sipping nectar, darting at insects, flashing through the leaves in vivid emerald flight is, according to my book, the gold-fronted Chloropsis.

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One morning a peahen flew on to the bank above the river not a hundred yards from the bungalow in search of snakes. This is peacock jungle and their cries come forlornly over the tree tops. In April their large pale eggs will be laid under the scrub, to be brooded only during the day, while for fear of enemies the hens roost on the trees at night.

Evening comes with less jubilant, drowsier bird song. In the forest skirting the channel bund the shamma calls. There is a glimpse of a Paradise Flycatcher, not yet in full mating plumage—a symphony of blue-black, copper and white. On a tree over the bund no less than four hornbills alight—grotesquely comical with their enormous yellow beaks.

As darkness gathers the little Scops Owl hoots mournfully. Later, the great Ceylon Fish Owl calls. "*Hmm!* it grumbles. Immediately there comes a hurried, less resonant "*Hmm-Hmm!*" It is his wife, who, according to legend must answer swiftly with a double call or he will kill her.

The other jungle creatures have already begun to stir. Earlier, from the kumbuk trees over the river, the langur monkeys have called to each other in deep-booming basses. Far along the bank another species, particular to this region, shaggy, black and fierce, are said to roam.

Lamplight flickers over the tufted grass. Beyond lies the jungle, brooding, expectant. In its depths large animals begin to wander.

Suddenly within that darkness an elephant trumpets. There is silence again, except for the cicadas, the eternal cicadas. Then a defiant challenge rings out! In the forest, screaming defiance at each other, two elephants slowly converge.

Everything stills. There is only the intermittent cry of the owl and the eagles. A moment passes. A distant jackal pack, baying, rouse the dogs to frenzy. Quiet falls again. I sleep.

Suddenly I am wide awake, listening. Had I dreamed that menacing, throaty growl? No—there it is again. Leopard. Beyond my window there is a startled pounding of hooves, fading, fading. Sambhur? Wild boar? Next time would it be as lucky?

I drift at last into dreamless sleep. The full cycle of sound is complete. Never silent, never still is the jungle. Yet, primitive and terrible though it can be, its sounds have a fitness, an inevitability, that bring peace.

Note on Purple-faced Leaf-Monkeys.

By C. E. NORRIS

IN Ceylon there are found three species of monkeys, namely :—The Toque Monkey, the Ceylon Grey Langur and the Purple-faced Leaf-Monkey. Each of these, with the exception of the Grey Langur, is represented by various races according to the districts in which they are found.

The Toque Monkey is represented by two sub-species ; the Northern Toque Monkey being confined to the low-country dry zone whilst the Dusky Toque Monkey is confined to the low-country wet zone and the hills. Both races, however, overlap on the boundaries of their respective zones.

The Ceylon Grey Langur is found throughout the low-country dry zone and may ascend into the lower foot hills. The Purple-faced Leaf-Monkey is represented by four sub-species. The Bear Monkey or Highland Purple-faced Leaf-Monkey is confined to the central hill ranges above an altitude of about 4,000 feet. The Black Wanderoo or Purple-faced Leaf-Monkey is confined to the wet zone low-country and penetrates into the Adam's Peak range of the central hills. The Western Purple-faced Leaf-Monkey is found in the south-western wet zone and the Eastern Purple-faced Leaf-Monkey shares its habitat with the Grey

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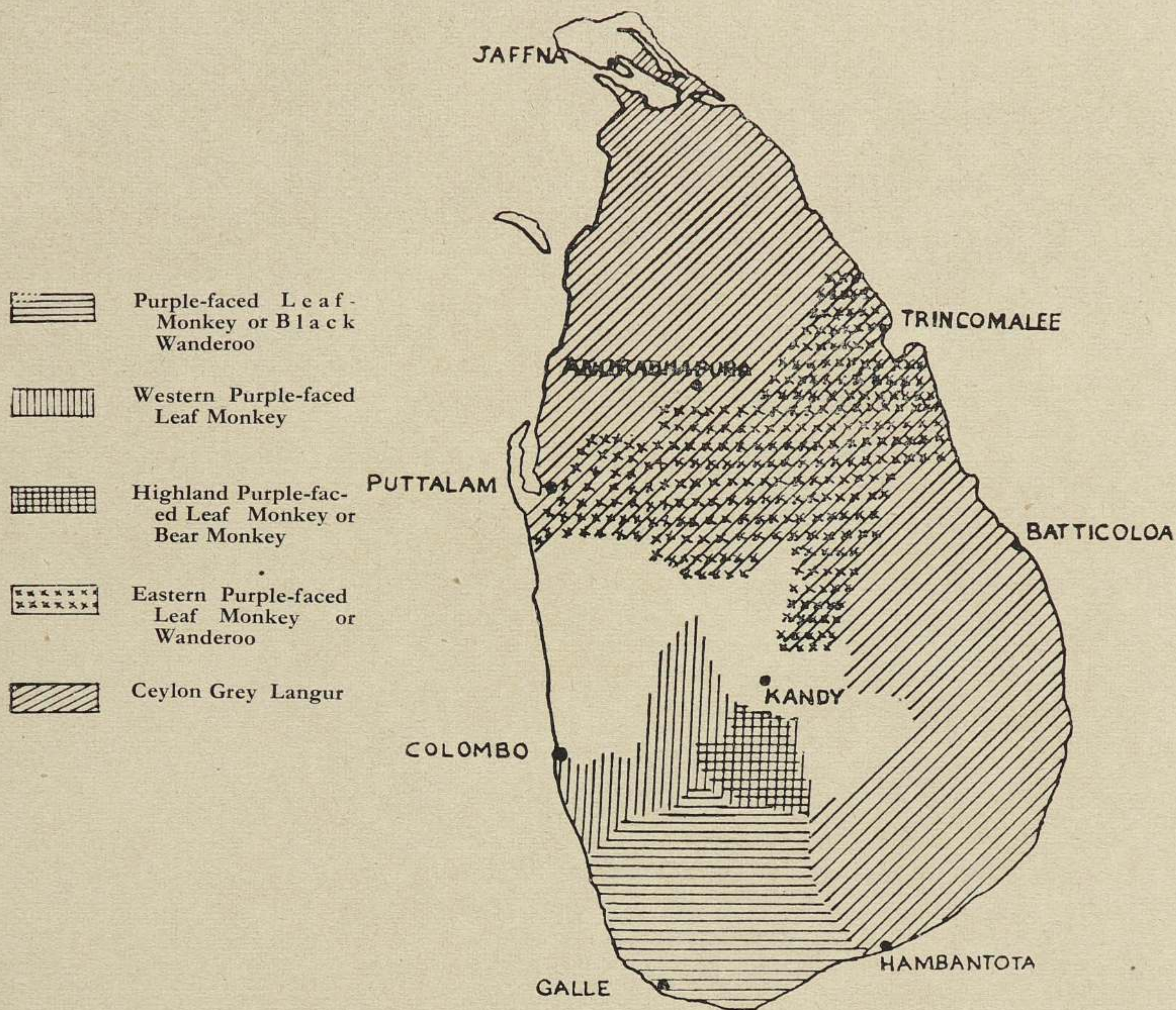

Distribution of Monkeys

Langur in a belt across the Island between Trincomalie and Puttalam, ascending the Matale hills.

The Purple-faced Leaf-Monkeys can be distinguished from the Grey Langur by their long ruff of whiskers, flatter heads and longer hair on their shoulders and backs. The Eastern form is the largest and more closely resembles the Grey Langur in size.

The Leaf-Monkeys have a distinctive *Hooh* call which they are in the habit of emitting in the early mornings. This call resounds through the jungle denoting the presence of a troop.

The majority of Leaf-Monkeys if left unmolested pay little attention to human activity —but owing to their being hunted for their flesh, become shy and difficult of approach.

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The Birds

Translated from the French of Chateaubriand by T. A. Mudiappa

NATURE has her moments of solemnity, when she summons musicians from different regions of the globe. Seen hastening at such times are learned artists with marvellous sonatas, wandering troubadours who only know to sing ballads with burdens, and pilgrims who repeat the verses of their long hymns a thousand times over. The Oriole whistles, the Swallow twitters, the Wood-pigeon moans ; the first, perched on the highest branch of a young elm, challenges our Blackbird, which does not yield to this stranger in anything ; the second, under a hospitable roof makes its confused warbling to be heard ; the third, hidden in the foliage of an oak prolongs its cooings, similar to the undulating sounds of a horn in the woods ; at last the Robin red-breast repeats its little song at the door of the barn where it has placed its big nest of moss. But the Nightingale disdains to lose its voice in the middle of this symphony. It waits for the hour of meditation and of repose and undertakes this part of the festival which must be celebrated in the shadows.

When the first silences of the night and the last murmurs of the day struggle on the hills, at the edge of the rivers, in the woods and in the valleys ; when the forests become silent by degrees, when not a leaf, not a moss sighs, when the moon is in the sky, when the ear of man is attentive, the first chorister of creation intones its hymns to the Eternal. At first the notes appear to be discordant although pleasing. The disorder is in its songs. It jumps from a low-pitched tone to a high-pitched tone, from the soft to the loud. At times it pauses. At other times it sings slowly and at yet other times it sings quickly. The music is the effusion of a heart that joy intoxicates, a heart which beats under the weight of love. But suddenly the voice falls, the bird keeps silent.

It begins again. How its accents have changed ! What tender melody ! Sometimes these are languishing modulations although varied ; sometimes they are somewhat monotonous like the air of those old French romances, masterpieces of simplicity and of melancholy. The song is as often the sign of sadness as of joy. The bird which has lost its young sings again. It is yet the tune of the time of happiness that it sings for it knows no other tune. But by a stroke of its art, the avian musician has only changed the key and the cantata of pleasure has become the complaint of grief.

An admirable Providence is remarked in the nests of the birds. One cannot, without being moved, contemplate this divine kindness which gives skill to the weak and foresight to the reckless.

As soon as the trees have put on their leaves, a thousand workers begin their labours. These carry long straws into the hole of an old wall, those build houses in the windows of a church ; others steal a hair from the tail of a mare, or the bit of wool that a sheep has left hanging from the briar. There are woodcutters who cross branches at the top of a tree ; there are spinners who gather the silk on a thistle. A thousand palaces rise and each palace is a nest. Each nest sees charming changes : a shining egg, then a little bird covered with down. This nursling puts on feathers. Its mother teaches it to rise on its bed. Soon it goes as far as to lean on the edge of its cradle from where it throws a first glance on nature. Frightened and delighted it throws itself among its brothers who have not yet seen this spectacle. But recalled by the voice of its parents, it comes a second time from its bed and this young king of the air, who still carries the crown of childhood around his head, dares already to contemplate the vast sky, the waving top of the firs and the depths of verdure above the paternal oak.

And yet, while the forests rejoice in receiving

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their new guest, an old bird, which feels abandoned by its wings, falls down near a stream of water. There, resigned and solitary it waits tranquilly for death at the edge of the same river where it sang its loves and whose trees still bear its nest and its harmonious issue.

While one part of creation sings each day in the same places the praises of the Creator, another part travels in order to relate his wonders. Messengers cross the heavens, glide in the waters, cross the mountains and the valleys. These arrive on the wings of the spring and soon disappearing with the gentle breezes, follow from region to region their moving country ; those stop at the house of man ; distant travellers they claim the old hospitality. Each one follows its inclination in the choice of its host. The Robin red-breast applies to the cottages ; the Swallow knocks at the palaces ; this daughter of a king seems still to like her pomps but the sad pomps like her destiny. She spends the summer in the ruins of Versailles and the winter in those of Thebes.

Hardly has she disappeared than one sees advancing on the winds of the north a colony which comes to replace the travellers of mid-day in order that there remains no empty place in our countries. In a greyish weather of autumn when the icy blast of winter blows on the fields, when the woods lose their last leaves, a troop of wild ducks all drawn up in single file cross in silence a gloomy sky. If they notice from high up in the air any manor-house surrounded by ponds and woods, they get ready to descend. They wait for the night and hover above the woods. As soon as the mists of night envelop the valley, with neck stretched and wing rustling, they sink down suddenly on the waters which re-echo. A general cry followed by a deep silence rises in the marshes. Guided by a small light which perhaps shines at the narrow window of a tower the travellers draw near the walls under cover of the reeds and the darkness. There, flapping their wings and shouting at intervals in the middle of the murmur of the winds and the rains, they greet the abode of man.

One of the nicest inhabitants of these haunts but whose pilgrimages are less remote is the water-hen. It appears at the edge of the rushes, plunges into their labyrinth, reappears and disappears again while uttering a small wild cry. It walks in the moats of the castle. It likes to perch on the sculptured coats-of-arms in the walls. When it stands there motionless, one would take it, with its black plumage and the white tuft of its head, for a bird in heraldry fallen from the shield of an ancient knight. When spring draws near it retires to lonely sources. A root of willow undermined by the waters offers it a shelter. It conceals itself there from all eyes. The convolvulus, the mosses and maidenhairs hang in front of its nest carpets of verdure, the watercress and the lentil furnish it a dainty food ; the water murmurs sweetly in its ear ; beautiful insects are attracted by its glances, and the naiads of the stream in order to hide this young mother better, plant around it their distaffs laden with a purple wool.

Among the passengers of the North Wind there are some, who get used to our habits and refuse to return to their country ; some like the companions of Ulysees are captivated by the sweetness of some fruits ; others like the deserters of the vessel of Cook are seduced by the enchantresses who keep them in their islands. But the majority leave us after a stay of a few months.

It is not always in troops that these birds visit our abodes. Sometimes two beautiful strangers as white as snow come with the cold weather. They descend in the middle of the heather in an uncovered place, which one cannot approach without being noticed. After a few hours of rest they climb up again on to the clouds. You run to the spot from where they departed and you find only feathers, sole signs of their passage that the wind has already dispersed. Happy the poet who like the swan, has left the earth without leaving other relics and souvenirs than some feathers from its wings !

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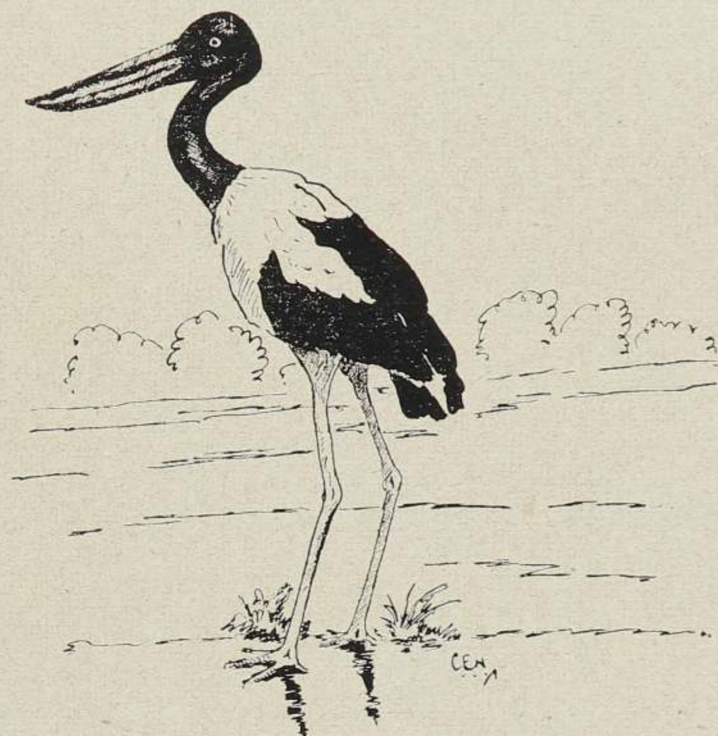
The Black-necked Stork

Xenorhynchus asiaticus asiaticus

By C. E. NORRIS, F.Z.S.

WHILST sitting at Siyambalagaswala in Ruhuna National Park, when one could move around at will, I was watching a Paradise Flycatcher catching flies. A movement above the trees caught my eye as two Black-necked Storks glided round investigating a place on which to land. Their huge white wings were outstretched and the black band running along the coverts was very distinctive ; as they came in to land they thrust their bright red legs forward and landed with amazing lightness for such large birds. Hardly daring to move unless I frightened them, I very slowly raised my binoculars so that I could study these handsome storks more closely. The metallic blue-black of their backs and wing coverts shone in the sunlight, which also played on the purple and green sheen of their heads. It was possible to pick out the female by her bright yellow eye as that of the male is dark brown. Both birds slowly stalked through the shallow water, every now and again darting their huge beaks into the grass to snap up a frog. As I watched, I could not help thinking it seemed so silly such a large bird had kept its nesting in Ceylon a secret for so long as no nests have as yet been recorded. This fact has made the status of the bird uncertain although it has been presumed it is a resident. On 6th July, 1952, I see from my field diary, I saw three pairs in Ruhuna National Park : one at Gonalebbe, one at Buttuwe and one in the bed of the Menik Ganga. It is possible one or more of these pairs were the same as it is impossible to distinguish between individual birds. The pair in the Menik Ganga were doing something about nesting as I observed one of them pick up a stick from out of the water and fly up-river carrying it in its bill. This observation is a little bewildering as the time of year appears very late for the birds to be nest-building, but it may be possible, like so many birds, additions



are added to the structure of the nest even after the young are hatched. Whistler gives the breeding season, in India, from October to January, and Wait surmises in Ceylon it is about Christmas time. I think it may perhaps be later, and probably extends from April to August but this is purely a guess and awaits proof.

The Black-necked Stork is a rare and very localised resident, in fact, I only recall having seen it in the South-East corner of Ceylon around the lagoons and water-holes of the wilder parts. I believe in former years it was more numerous but has now decreased to a few pairs that, luckily, have taken up their abode in the Yala Reserves, so there is a chance of their survival. As I watched these two magnificent birds quietly going about their own business I realised how little was known about them and hoped I would be able to find out more during my visits to these reserves.

E. H. N. Lowther has published a very lovely photograph taken in India of this bird

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on its nest with two young. This nest was built on the crown of a Bo-tree, some sixty feet from the ground, situated by itself in the middle of cultivation and some considerable distance from water. The nest was a huge affair, three to five feet in width made of substantial twigs, with finer twigs and grass for lining. Lowther records, the twigs and branches are invariably of a thorny nature, a fact clearly shown in his photograph. In Ceylon, I think it probable the nest will be situated in a very remote place, very likely in the top of a Kumbuk tree.

This last year has brought us a little nearer to discovering these birds closely kept secret as in November, 1955, W. W. A. Phillips records having seen two young Black-necked Storks, which first made their appearance on the 23rd August, 1955, in Ruhuna National Park. On 15th January, 1956, I was informed by Peter Jayawardene, the Ranger in charge of the Yala East Intermediate Zone, there were two immature birds at Helawa and another at Bagura. I did not see the two at Helawa but was lucky in getting a good view of the one at Bagura. This youngster was a dusky brown with off white underparts ; in flight the distinctive black band along the wings of the adults was not present, but there were noticeably whitish circles near the primaries. Peter Jayawardene reports this young bird was first seen by him in August, 1955, when it was unable to fly having apparently only just emerged from the nest. When he came across it, it was on the edge of the Bagura lagoon; the parent bird took flight and the young one flopped into the water and struggled across through shallow water to some mangrove trees. I asked to be taken to this place as I felt the presence of an old nest might be helpful but, of course, could not be taken as conclusive proof that it was the nest of the Black-necked Stork as it could very easily be that of a Fish Eagle. We did find two old stick nests situated in the top of a large "Dambu" tree in the very place the young flightless bird had first been seen. This discovery was most thrilling as I felt we were beginning to get "warm" in our quest for this elusive nest. Peter Jayawardene also informed me he had seen a young bird in 1954 in the same locality which had probably been hatched in 1953. Could the second nest be the one from which this youngster had been hatched ? Both nests were dilapidated and only the foundation was still intact but from what I saw the substantial twigs were not of a thorny nature.

It is interesting to note that both Phillips' and the youngsters seen by me were only accompanied by a single adult and not the pair. I mentioned this fact to Peter Jayawardene and he told me he had noticed both parents appear to stay with the young for about three months then one departs. I was not able to get close enough to the parent bird I saw to determine which sex it was. The young bird at Helawa has been observed by Peter Jayawardene being fed by its parents. The youngster, I was told, literally snatches the fish or frog from the parent's bill as soon as it is caught.

I sincerely hope it will not be long before this mystery is unravelled and the status of this lovely bird conclusively proved. It is problems such as this which makes the study of birds so enthralling and interesting.

Even this absolutely harmless bird, which is nominally fully protected, is not safe from persons suffering from the "itching finger" whenever they get a gun in their hands, as I have heard of the carcass of a shot-bird having been found with only its breast cut out !

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By the Menik Ganga

By D. L. EBBELS

IT was my good fortune to sit, on December 31st last year, in what I think is one of the pleasantest spots in Ceylon—on the bank of the Menik Ganga at Yala. Not only is the scene itself beautiful, but from under the shade of a spreading tree, one can see a large amount of wild life, especially if aided by a good pair of binoculars.

I sat there, quite still, and gazed at the view spread before me bathed in the hot sunshine. A gentle breeze ruffled the surface of the water, and occasionally a fish made a leap at a passing insect. At the bend, however, the water was smooth, and floating there I could discern through binoculars, two crocs with only their snouts and eyes above the surface. One turned with graceful sweeps of its tail and started to drift slowly downstream.

A gentle drumming sounded in the tree above me, and after a few moments, I was able to see the drummer, a Pigmy Woodpecker, which was busily investigating a small hole in a dead branch. He would put his head in and peck a few times, and then withdraw it and take a look round to see that no enemy was near who could take him unawares while he was half inside the hole. Once he went right through and came out the other side. Looking up beyond him, through the delicate tracery of the branches, which appeared almost black against the bright blue sky, I could see a Painted Stork wheeling in great circles far above the jungle. A White Ibis came into view for a short time lower down, but soon descended behind the trees. I looked back at the river : one of the crocs had run himself aground on a sandbank and was now half out of the water. A Great Egret, fishing close by, looked dangerously near to him, but the croc paid no attention and the egret calmly stalked about the shallows, its eyes intently scanning the water.

The next birds to draw my attention were a pair of Wood Sandpipers, which came flying swiftly up the river and alighted on a patch of mud by the water's edge, bobbing their heads and tails in their usual enchanting fashion. Each morning since we had been staying at the Yala bungalow, a pair of Pied Kingfishers had made their appearance on the river at about half-past eleven, so this morning I was watching for them. Sure enough, soon after eleven o'clock I heard a shrill cry and they both came flying upstream. Old jungle-goers tell me that Pied Kingfishers have frequented this reach of the river for at least twenty years, and certainly I have never failed to see them when visiting Yala. On this morning the birds commenced to fish up and down the river. One would pick a promising spot and hover with rapid wing beats about twenty-five feet above the water, its head bent at a sharp angle, intent on the movements of its piscine prey. Suddenly it would drop like a stone and, if lucky, would emerge from the water with a gleaming silver fish in its bill. More often, however, it flattened out of its dive before reaching the water and flew on to another spot where it repeated its performance.

On the far side of the river, Pied Hornbills had been raucously advertizing their presence to all and sundry, but now my attention was drawn by commotions among the branches, and eventually a small troop of wanderoos made their appearance. They seemed hesitant about descending onto the river bank, but at last one rather more bold than the others jumped onto a bare patch of sand. The others soon followed suit and eventually even the younger ones screwed up enough courage to make the descent. Once they were on the sand they seemed to forget their cares and soon a game of leap frog and tail pulling was in full swing. Some, with no inclination to such a rough pastime, repaired to the bar, and at a small creek they leant down and quenched their

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thirst, their tails forming a graceful question mark above their heads.

Another disturbance on the opposite bank a little further up stream produced a family of pig with about five striped piglets. They made their way to a grassy patch and started to rootle about in the undergrowth.

However, pleasant as it was to sit in the shade and watch the river, my inner man told me that it was lunch time, so I arose and stretched myself. This action seemed to annoy a small brown monkey, which I had not noticed was on the bank immediately below me. He appeared to think I was about to take his dinner, which he held in a hairy brown hand, and showed me he would not stand any nonsense by making a fearsome face and chattering at me. I therefore, hastily departed, leaving him to continue his meal and going in search of mine.

I had, however, promised myself another session of sitting on the bank and watching the river life in the evening. Accordingly, after dinner at about half-past seven, I and also the other members of the party took chairs out under the tree and sat in silence in the cool darkness. Peafowl were noisily roosting in the trees and in the river fish were leaping.

Suddenly the " sawing " noise of a leopard broke out close on the farther bank. Twice we heard it and then silence, which was broken only by the " honking " of an anxious sambhur. All was peaceful save for an occasional squawk from a peafowl and the ever present trilling of the crickets and cicadas.

Next I heard a faint scratching sound and shining a torch in the direction of the noise, I saw in the circle of light some holes in the ground. Protruding from one of these was a pair of ears. They disappeared when the light was fully on them, but reappeared when I moved the beam away. I could not, however, see what the ears belonged to, so I switched the torch off for a few moments and then switched it on again. I was just in time to see a small, mouse-like animal which moved in short hops, before it disappeared into another hole. The other members of the party were greatly intrigued by this show and christened the performer " Ears " forthwith !

Slowly the moon rose above the sand-dunes and cast a path of silver directly up the river towards where we sat. At first the moon was almost orange in colour and rather distorted in shape, but as it got higher, round and full, it became a brilliant white.

It was then that we saw a sight which I shall never forget. A faint splashing sounded, and from the dark shadows of the jungle on the left bank of the river there emerged an elephant, which waded across the moon's silver path. It was a black silhouette, a mysterious beast, which held us spell-bound as it slowly waded across and disappeared in the jungle on our side of the river.

This was apparently the last act in the play of wild life which we had been watching, for nothing else happened. Reluctantly we bestirred ourselves, and taking a last look at the jungle-dwellers' domain for 1955, we retired to our beds on the verandah.

KANGAROO FOSSILS IN NEW GUINEA

The fossilized bones of kangaroo-like animals found recently in the central highlands of New Guinea may lead to new discoveries about the way the world's land masses formed millions of years ago. Judging by the fossils brought back from New Guinea, the oldest ever found in the South Pacific it is about ten million years since the modern kangaroo's ancestors roamed this area.

Scientists believe *pouched animals first appeared in North America* about 125,000,000 years ago and that they spread to the South Pacific region about 80,000,000 years ago. How they migrated and at what period is still a mystery which, if solved, would provide new information on the way continents and other large land masses are formed.

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Extracts from my Jungle Diary

By A. M. M. DAVIES

Tukella Kulam, E.P., September, 1954

WE arrived at Sengamuwa Wewa at dawn to find the tank about half full and apart from the usual egrets, darters, lapwings, a few whistling teal and some cotton teal, there was nothing of special interest to be seen. The crocodiles of Sengamuwa and Lahugala tanks are being slaughtered during the dry months by villagers who shoot by torch-light from a dhony. From Sengamuwa we went due north about three miles along the dry bed of the Kirimeti Oya to Tukella Kulam. This trek revealed eight meat and fish drying racks and four camp sites, all of which had been in recent use. Poachers had been taking their toll of the animals that came to drink at the few remaining, stagnant water-holes along the river. A subsequent visit by the Game Department disclosed further evidence of large-scale poaching activities in the area. The only game seen was a small sounder of seven wild pig, three sambhur and one small crocodile skulking in its dry river burrow. Stork-billed kingfishers and pied hornbills were numerous. There was little sign of deer or buffalo. A fair number of elephants are still in the area but, with the proposed inauguration of the Heda Oya scheme, their future is far from secure. One tusker was shot in the area and the shooter unfortunately escaped detection. This animal, I was informed, had tusks four feet long and was shot, not in protection of crops, but for its ivory.

Nalitta, E.P., August, 1955

I have paid one or more visits annually to this area over the past six years and it holds many happy memories for me but, like so many other places in Ceylon, it is now desolate and lifeless. The area is poached by villagers who come down the Wila Oya and, after a few days, return to dispose of their illgotten spoils to the voracious populace of Monaragala. During my last visit, evidence of this took the form of meat racks, a bundle of twenty-three spotted deer feet and practically no sign of any game. There are, however, elephants in this area and I am of the opinion there is some migratory movement between Lahugala and the Kumbukkan Oya.

Bagura, Yala East Intermediate Zone, Sept., 1955

One of the most prominent features of Bagura is its herds of spotted deer. From 3 p.m. onwards they appear from the jungle on every side of the plain in increasing numbers ; stags, some well over thirty inches, innumerable does and fawns of all ages. By 7 p.m. the plain must have a compliment of anything up to four hundred deer grazing on it ; very comparable to the herds of impala, Thompson's and Grant's gazelle in East Africa.

Wild pig were also numerous and an interesting sight was a sow crossing the plain with a litter of sixteen piglets. For a sow to foster the litter of another that has died is not unusual ; they sometimes become very weak and emaciated after littering and during the period of lactation, and at such times fall easy victims to crocodiles and leopards. At a water-hole near Bagura I was able to watch and photograph a Black-necked Stork feeding. The only other place I have seen these birds was a pair at Uriniya Wewa in the Ruhuna National Park. Although they are known to breed in the Island, I believe no nest has actually been found as yet.

Dambugaswela, Yala East Intermed. Zone, Sept., 1955

This popular mud-wallow is fed by a perennial spring and during a three-hour period of watching was visited by sambhur, pig, spotted deer and peafowl. The most persistent visitor was a sambhur hind which spent over two hours wallowing and regurgitating the marble-size seeds of the " neralu " fruit, the root of which is believed to be a remedy against snake-bite and the bark is used in native medicine, though

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it is said to be a malignant poison. She was continually on the alert, twitching her ears backwards and forwards, but was quite oblivious to the whirr of my cine camera. She was later joined in her mud haven by a single wild boar who ploughed himself into the mud next to her and went to sleep. They made a very amusing pair !

Kiripokuna, Yala East Intermed. Zone., Sept., 1955

This lotus pond, fed by an oozing spring, is one of the most beautiful spots in Yala East. I believe it has never been known to go dry even during the most severe droughts and, together with its sister rock water-hole, situated about half a mile away, attracts every sort of fauna in the neighbourhood. Although, during this visit, no bear or elephant came to drink, I did see sambhur, pig, buffalo and countless spotted deer. A leopard drank from the rock water-hole at about 9 a.m. The variation in individual coat colours of the spotted deer was most noticeable ; from a pale yellow-fawn to a rich brown, whilst others had an almost black coat that greatly emphasised the white spots and bib. Equally noticeable was the variation in the stages of growth of the stag's antlers. A few were in velvet, two had just shed their antlers, whilst others possessed antlers of thirty inches or more in length. One stag had a deformed left antler which had grown almost parallel to the ground and nearly touched the top of his shoulder blade when he turned his head to the left. This was probably the result of an injury during his period of velvet when the antlers are tender and easily damaged. It is during this stage, I have been told, that stags usually seek the seclusion of the jungle owing to the does having an irritating tendency to nibble at the velvet.

Two other interesting little visitors to the water-hole were a pair of fluffy Striped-necked Mongooses who spent their time excavating for insects and grubs amongst the dry buffalo droppings. When they were not engaged in foraging for food they would pounce upon each other and roll over and over in a bundle of orange-red fur.

Kumana Wewa, Yala East Intermed. Zone, Sept., 1955

There was no serious drought in Yala East Intermediate zone during 1955 and the Kumana Wewa was no more than two to three feet below high-water mark during the driest period. I camped below Singanagalge which afforded some protection against the south-west wind which blew across the tank. During the day the temperature was ninety-five in the shade but the nights were bitterly cold. Pig and spotted deer were seen in their usual large numbers and a considerable amount of bear spoor was to be seen around Unapotugala. Five elephants spent over three hours watering and feeding near my camp late in the evening, and on the west side of the tank was a large flock of over two hundred painted storks and a number of pelicans.

Arugam Bay, E.P., October, 1955

There is remarkably little game left in this area and even pig, which used to be so numerous five to ten years ago, have decreased alarmingly. It has been suggested this may have been due to some contagious disease or other, but I would speculate it is the result of the very considerable increase in cultivation and the increasing demand for dried pork in Monaragala and Kalmunai.

Ruhuna National Park, Block 1, November, 1955

This Park is annually increasing in popularity and game is also on the increase ; it is no exaggeration to say that we now have one of the finest National Parks in Asia. Elephants are increasing in number and visitors seldom leave without seeing these interesting pachyderms. Apart from the numerable lone bulls, some large herds have been seen this year. Bear and leopard are seldom seen though there are estimated to be about seventy-five and fifty respectively in the Park. On the 31st December I saw two leopards on the banks of the Menik

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Ganga. There are some very large estuarian crocodiles in the lower waters of the Menik and numerable marsh crocodiles at Uraniya, Jamburagala and other water-holes.

Ruhuna National Park, Block 2, December, 1955

At 4.30 p.m. one afternoon I came upon a herd of fourteen elephants, including seven young animals, drinking about four miles up the Menik Ganga from the Yala Bungalow. One cow had, amongst her four youngsters, two that were of identical size and one wonders if they could be twins. Another cow and her tushed calf watered at mid-day at Agara Wewa. After watering, both proceeded to rub every conceivable part of their bodies against suitable trees, even to the extent of straddling a low bough in order to scratch below their bellies and between their legs. A lone bull, which, I understand, has taken up almost permanent residence in the area, was twice seen at Pilinnawa Wewa. He spent the whole day kicking up grass, the earth from which he would rub off on his foreleg, before eating it. He appeared to be selecting only a certain type of grass or grasses which were extremely stunted and dry and which would probably, should an analysis be made, prove to be rich in certain minerals.

Much useful work could be done by a wild life ecologist in the study of grazing ; the distribution and migration of game ; the analysis of soils and vegetation and their relationship to the local fauna, and similar work. The officers of the Royal National Parks of Kenya and the Game Department have realised the importance of such a biologist and this necessity should not be overlooked by the Wild Life Department of Ceylon.

A young cow elephant lay dead on the side of the Katupila Ara and was affording an irresistible repast for countless wild pigs of all ages, crows, maggots and a few estuarian crocodiles. An interesting sight was that of a large crocodile making a land stalk after a wild boar that was obviously tainted with the strong odour of putrid flesh having just fed at the carcass. Spotted deer and sambhur were seen throughout the day with a large herd of about two hundred of the former at Yalewela.

On our return to camp one evening, we were stopped by the hoarse grunts and snarls of two animals in a patch of scrub jungle. Investigation disclosed a wild boar and a leopard having an argument over the ownership of a recently killed buffalo calf. Both animals reluctantly retreated into the undergrowth at our approach but no sooner were our backs turned than the leopard returned to retrieve his kill and place it, no doubt to the irritation of the wild boar, up a tree.

Hybernation

By T. A. MUDIAPPA

ONE of the puzzles of natural history is the cause which prompts certain creatures like the brown bear of Europe to hibernate at the commencement of winter.

Sir Samuel Baker in his book, " Wild Beasts and Their Ways," attempts to explain this phenomenon as follows :—

" It is impossible to unravel many of the mysteries of Nature, and the cause which prompts the instinct of a winter's sleep will always remain doubtful. I should myself attribute hybernation to the necessity of repose at a period when food was impossible to procure. The body can exist for an incredible length of time, provided that it is capable of undisturbed rest, which appears in a certain degree to take the place of extraneous nutriment. It is well known that every exertion of the muscles is a

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loss of power, the force of the body being represented by heat. To lift a weight or to move a limb requires a certain expenditure of heat which means force ; this loss of heat and power is recuperated by food ; thus in the absence of provisions for the necessary supply, there would be no loss of heat if there is no exertion. Sleep is the resource, as the body is not only at rest, but the brain is also tranquil ; there is accordingly a minimum of exhaustion. Human beings have been known to live without food of any kind (excepting water) for a period of forty days, and have then resumed their ordinary course, simply confining themselves to moderate diet for the first few days after their long abstinence. In a time of starvation in Africa I have frequently composed myself to sleep in the absence of my daily food, and I have awoke without any disagreeable craving for a meal. Continued sleep will to a certain extent render the body independent of other nutriment, and I should imagine that the custom of hybernation has been induced by necessity. At a season when the fruits of the earth are exhausted, the ground frozen to a degree that would render scratching for roots impossible, an animal that was dependent upon such productions for its existence must either starve or sleep. The sleep is in itself a first stage of the process of starvation. The creature that can sleep through an existence of four months without food, and save the whole of its fat during that interval of inaction, has already lost all that supported life during the period of total abstinence—the fat, or carbon. If it were to begin another turn of sleep in its exhausted state, it would be unable to support its existence.

"I therefore, regard hybernation as the result of the highest physical condition, the animal being thoroughly fat ; the food ceases, and the beast, knowing this fact, lays itself down to sleep, and exists upon its own fat, which gradually disappears during the interval of starvation. The bear wakes up in spring with a ragged ill-conditioned skin, instead of the glossy fur with which it nestled into rest ; and it finds its coat a few sizes too large, until an industrious search for food shall have restored its figure to its original rotund proportions.

"The proof of this necessity for repose during a period of enforced abstinence will be observed in the independence of tropical bears, which do not hybernate, for the best of all reasons, 'that there is no winter,' therefore they can procure their usual food throughout every season without difficulty or interruption."

While citing the case of tropical bears which do not hibernate because "there is no winter" Sir Samuel Baker elsewhere in his book makes the following remarks about the crocodile :—

"The crocodile has the power of hybernating. This may be seen in many parts of India, where these creatures exist in small lakes or tanks, which are perfectly exhausted during the hottest season. At that time there cannot be the slightest doubt that they are buried in the mud, which dries and hardens above them, in which torpid state they exist until released by the refilling of the tank in the rainy season. Under such conditions the crocodile never grows to a large size, but it is limited to 8 or 9 feet."

As Sir Samuel Baker's explanation is by no means conclusive, I wonder whether any knowledgeable reader of your journal could throw further light on this matter.

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Elephants of the Addo Bush

The Armstrong Fence

THE Addo Bush lies between the Suurberg Mountains and the Sundays River valley, some 40 miles from Port Elizabeth. It is terribly thick, often impenetrable except along elephant and buffalo paths.

When in 1779 William Patterson crossed the Sundays River, he was surprised " at the large number of quadrupeds such as lions, leopards, elephants, rhinos, buffaloes, springbuck, etc., occurring in the neighbourhood." The bush then covered 100 square miles but, with civilization, came its reduction and an end to the animals' care-free life. The elephants became a nuisance to humanity, and in 1919 the well-known elephant hunter Major Pretorius was commissioned to destroy the whole herd. His attempt to do so lasted for a year, and 110 of the 126 elephants were destroyed.

But public opinion in South Africa and abroad had been thoroughly aroused the slaughter was stopped, and soon an elephant•reserve of 27 square miles was established in a part of the bush unsuitable for farming. Unfortunately, trouble started again. The elephants entered farm lands, wrecking gardens, destroying trees, trampling cattle fences and damaging water supplies. They were shot at with guns ; even old cannon were set at water-holes against them, and there came a strong demand for their final elimination. However, Mr. P. G. W. Grobler, the Minister of Lands, refused to agree, and in 1931 proclaimed the Addo Elephants National Park.

The problem of driving the elephants into the park remained. To achieve this the National Parks Board transferred a ranger, Harold Trollope, from the Kruger. Continuous persecution had made the elephants cunning and dangerous. Trollope's report shows some of his difficulties : " The animals are apt to become confused and no doubt feel as though they are being cornered. On these occasions they are not only out to fight, but barge about the bush in all directions, trumpeting in a most alarming way and searching for human scent. The driver cannot run, the bush will not allow it. His greatest safety lies in keeping quiet provided he is below wind—if not he must light up a fire to produce smoke to deaden his scent."

But eventually Trollope's task was done and the shrunken herd safely in the park area.

The nervous state of these 11 elephants may be imagined. They had seen 10 times their number shot in the massacre ; they had been harried for years and now had been driven back to the very area out of which they had fled from Pretorius. But at last they were being treated considerately and their numbers began slowly to increase. Local interest grew, and in 1935 the Addo Advisory Committee was formed in Port Elizabeth. There was plenty for it to do, for complaints against the elephants had started again.

Throughout all this the Parks Board refused to sanction the elephants' destruction. It was clear that the elephants must be fenced in. But how ? In 1943 Graham Armstrong was appointed as ranger. First he tried many forms of electric fence. All failed, usually because the elephants discovered that they could root up the unelectrified standards.

Armstrong was undaunted. He made an experimental half-mile of fence from disused tramway lines, spaced twelve or more feet apart, buried six feet in the ground, connected with six steel cables one inch in diameter, fixed through holes in the uprights.

One moon-light night he placed oranges, a favourite elephant food, on the near-side of the fence and waited. Soon the elephants came. First a bull pushed against the fence several times with his head ; this failing he turned round and pushed hindways. Sometimes a swaying motion forwards and backwards was tried. For 14 nights the elephants strove against the fence but were baffled. The physical

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problem was solved, the financial problem remained.

At this stage, the Waygood-Otis Lift Company came to the rescue and provided, free of charge, 40 miles of used lift cable. Things then moved quickly. McNicol's heavy machinery cleared the bush along the fence line, the city councils of Johannesburg and Port Elizabeth provided old tram lines cheaply, the Post Office hole digger dug 2,500 holes in a month. By the end of 1954 the Armstrong fence had enclosed the Addo National Park. So far the fence has stood the test.

The Vanishing Elephant

By C. E. NORRIS, F.Z.S.

I WONDER whether any other animal in the world receives such horrible treatment as the Ceylon Elephant ? The Warden of the Department of Wild Life tells us in his reports, 200 elephants have been known to be killed during the last four years and, I am certain, there are many more which have died unknown. These figures are staggering when we consider the estimated total of wild elephants left in Ceylon today ; here again the Warden tells us the total population probably does not exceed 900 animals. The Ceylon Elephant has now reached the stage when extinction of the species is not far off, but are we doing sufficient to keep away this evil day ? I think not—as killings continue unceasingly, especially on the boundaries of our National Parks. On a recent visit to Ruhuna National Park, Block 2, I came upon a recently dead cow elephant still in her prime; it was subsequently proved she died from gunshot wounds. In *Loris*, Vol. VII, No. 2, was published a frontispiece of a lactating cow lying in agony, probably paralysed with tetanus from a gunshot wound. So far this year, besides the carcass seen by me in Ruhuna National Park, another two carcasses have been found by the Park Staff, one, I am told, definitely died as the result of gunshot wounds, the cause of the other's death has not yet been determined. The capture of a baby elephant by villagers in the Anuradhapura district was published in the press but, only half the gruesome story was told. This baby died of septicaemia from gunshot wounds, ten bullets or shots were recovered from its little body. Some of these were in the shoulder, two were in the sternum and one in the cranium, which shows that the wretched animal had been subjected to a horrible attack of random shooting. The one pellet which was found in the cranium had caused a fracture of the skull so it can be imagined the suffering this poor creature must have gone through before it died. The mother had, I believe, been shot some months previously, since when, the baby had wandered about with a herd of cattle in a pathetic state. Another horrible death was reported from the Hungama area in the Southern Province of a fine cow elephant which had died from tetanus. A bullet weighing 10 ounces was taken out of the chest cavity ! I doubt if such a missile could have been fired by a crop-protecting villager, it is far more likely to have come from someone handling a firearm for which he was quite unsuited. Another full-grown elephant is reported to have been shot near a chena in the Anuradhapura district. It was reputed to have come towards the watch-hut when the watcher shouted at it and fearing it would kill him he fired his muzzle-loading gun at the elephant ! The elephant always appears in press reports as the villain of the piece and is depicted as a terrible rogue which is expected to attack and kill on sight; this, I consider, to be a vast exaggeration of true facts in the majority of

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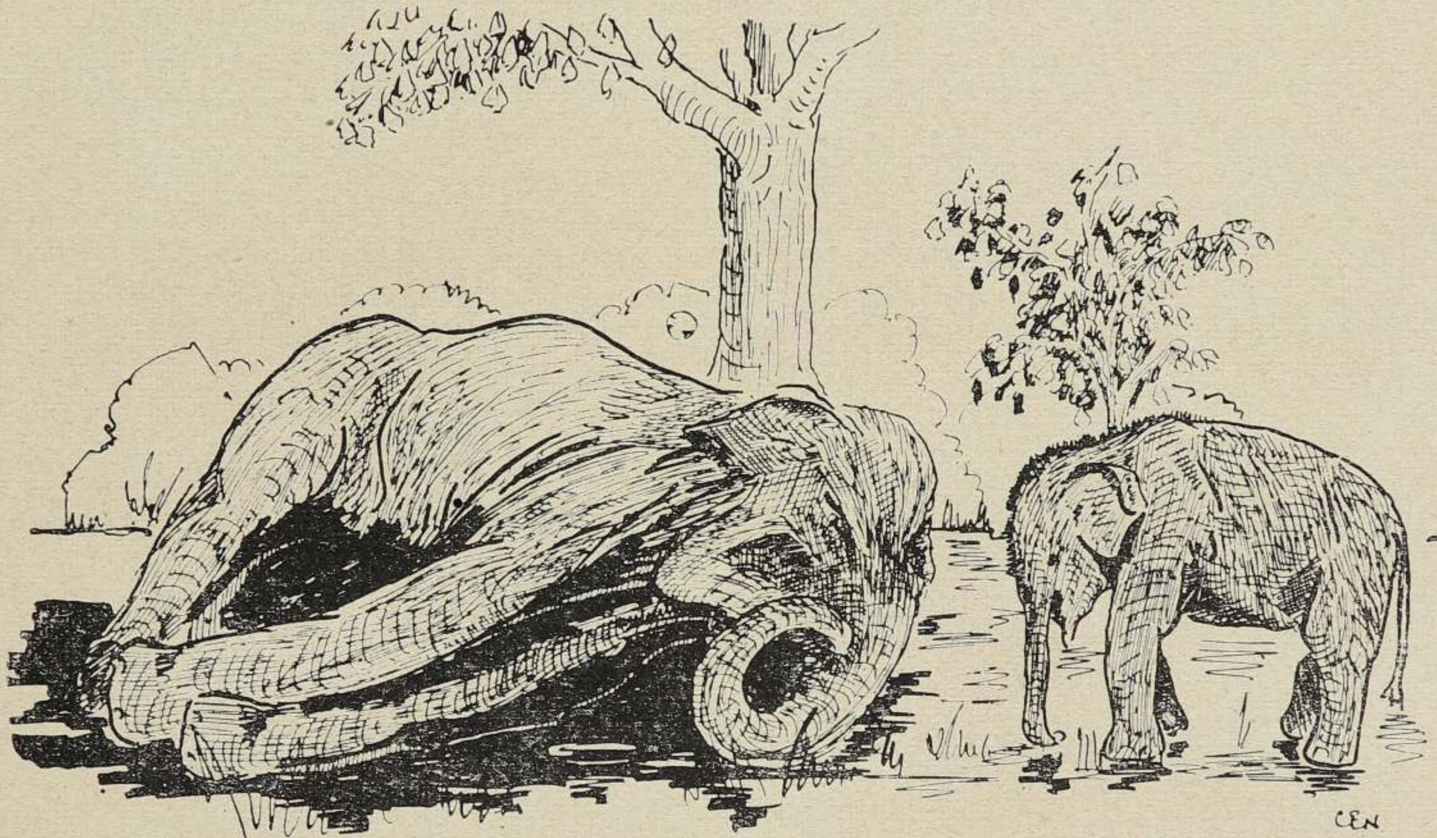
cases. I will not deny that an elephant, whose patience has been tried to such an extent by indiscriminate shooting, will not turn rogue; it will, and one cannot blame if for trying to get its own back.

Unfortunately it is nearly always some completely innocent person who has to pay for the sins of others. Elephants are accused of attacking on sight, but this generally is because the person, who thinks he has been singled out, is in the line of the animal's retreat when its one thought is to get away as quickly as possible from what it considers to be imminent danger. Elephants are certainly not animals with which one can take undue liberties but, with care and experience of their ways, one can watch them safely without fear of one's life being in danger. One of the main troubles in trying to preserve elephants is that they are great wanderers, seldom confining themselves to a single locality for very long. They wander around seeking their food and water, but are denied the free range their ancestors knew when they ranged the up-country hills during the South-West Monsoon. This is a very important point as our National Parks are not large enough to contain all that the elephants require to sustain themselves throughout the year. I am fully aware there are always elephants in Ruhuna but their numbers fluctuate with the seasons and herds do go outside the Park to find their food. This is where the trouble lies as cultivators cannot be blamed for defending their crops, which after all are their only mainstay from starvation. It is regrettable that guns are used too freely in the supposed defence of crops and animals are actually fired at from very close ranges, whereas in most cases a shot over their heads would suffice. I can see little hope in the future for the larger



Is my fate to be the same ?

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animals that are living outside the reserves as their numbers must diminish with the opening up of more land. It is, therefore, more than necessary our Reserves are big enough to accommodate the larger forms of animals so that they can be saved from extermination.

The Reserves in the South-East portion of the Island are situated in good elephant country and I would suggest a careful watch be kept on the wandering herds to ascertain to where they move. When this point has been established, together with their routes, corridors could be left uncleared and sanctuaries established in the areas the animals spend their time when not in the Reserves, as they always return to the Reserves when the North-East rains have started. Other countries in the world have realised the importance of saving their threatened forms of Wild Life before it was too late ; such as the Bison in America and the Asiatic Lion in India. So let us, very seriously, consider the Elephant in Ceylon as if we allow it to become nothing more than a memory all the marvels of modern-day Science cannot resuscitate it.

Note.—Since writing this article, it has come to my knowledge that five elephants were shot over a period of ten days during March, 1956, in the Wellawaya area. One, I believe, was maliciously killed with the object of getting the headman into trouble.

CORRIDORS FOR ELEPHANTS

The dwindling fauna of the Island, particularly the elephant, was the subject of discussion at the meeting of the Central Board of Agriculture, Dr. A. W. R. Joachim, Director of Agriculture, presiding.

The discussion followed a resolution moved by MAJ. E. C. DE FONSEKA that, in view of the rapid dwindling fauna in the Island, particularly the elephant, the Board should recommend to the Ministry of Lands and Land Development that immediate steps be taken to formulate a scheme, so that corridors could be demarcated to enable game sanctuaries and reserves to be connected wherever possible.

The resolution (which was unanimously adopted) stated that the Settlement Officer should be instructed not to settle lands falling within the demarcated areas and that the Land Commissioner be instructed to take steps through the Government Agent to prevent infringement of those corridors.

Mr. de Fonseka said immediate steps should be taken to prevent the total extinction of a national asset which was also their national emblem—the elephant. Nowhere else in the world did the same species of elephant as the Ceylon elephant exist and its loss would be a loss not only to the country but also to natural history, he said.

There were six places in the Island, where the elephant could live—in the Sinharaja and Sripada forests, the Gal Oya reserve and the Yala, Wasgamuwa and Wilpattu sanctuaries.

In the fight between man and animal, man with his deadly weapons, was always the victor. If animals had more food there would be less danger to crops. As it was, animals were shot at and went away to die a lingering death. The proposed scheme of corridors was therefore necessary for their preservation.

It was not possible to connect the Sripada forest with the Sinharaja forest, but it was possible to connect the other four preserves.

MR. D. B. ELLEPOLA, seconding the resolution, said the scheme was practicable and different reserves could be linked up.

No elaborate survey was needed but the demarcation of land could be examined from a topographical map. Land marked out for corridors should be locked up and posterity be allowed to decide whether they require the corridor land.

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Mr. B. I. Palipane, Senator, said that he, as a Buddhist in the year of Jayanthi, could not find a better comfort than in wholeheartedly agreeing with the intention behind the resolution. But was the motion in order ? he asked. As an advisory body to the Government in the sphere of agriculture, was the Board's motion in accordance with their constitution ?

Dr. Joachim, President, agreed the motion was strictly not within their rights except the last part of it.

Mr. D. B. Ellapola rose to voice his disagreement. So long as forests were agriculture in natural form, he said, the motion had a close bearing on their agricultural development.

Mr. R. H. Spencer-Schrader said he agreed with Mr. Ellepola. The Tennessee Valley authority had proved it beyond all doubt that animals did form part of a country's agriculture because they helped to preserve soil fertility. He said the protecting of animals by having corridors helped in the preservation of soil fertility and kept the animals from interfering with cultivation.

Mr. G. B. Portsmouth said the scheme would have a very big effect on agriculture.

Sir James P. Obeysekera was of opinion that corridors would have to be established along elephant tracks.

Mr. J. A. de Silva, Conservator of Forests, told the meeting that the scheme had not only been considered by his department but also a map of the corridors had been drawn up. (Applause). However, they had not been able to put it into operation and it could not be done till such time as the general overall picture of where development was to occur was finalised.

Mr. de Silva added that the elephant population, which was estimated at 30,000 a hundred years ago, might now be about 1,000.

Mr. S. Arumugam, representing the Director of Irrigation, said the Irrigation Department had investigated the question of reserves but could not find any method or plan in the way reserves and sanctuaries had been originally laid out. For the next Six-Year-Plan more and more land would be needed and they should have systematic planning of the natural resources of the Island. Mr. Sam Elapata suggested that catchment areas of big irrigation schemes should be made game reserves.

After further discussion it was decided to refer the motion to the Minister of Lands and Land Development.

Compensate Fully for Elephant Damage to Crops

Something has changed—and not the elephants. If you want proof, I will remind you that in that golden prime when Ceylon was The Granary of the East and the elephant population of the Island was a hundred times what it is today and there were no single weapons capable of killing an elephant and no ring fences the problem was satisfactorily solved. There exists in Polonnaruwa today a 12th Century edict of King Nissankamalla forbidding the killing of any animal within a radius of 20 gauw (30 miles) of the city of Anuradhapura. And Anuradhapura was the centre of the Island's paddy growing area.

No democrat would dare make such a suggestion today. It might well cost a seat in Parliament. The villager's right to own a gun and to use it with unnecessary malice, with exasperated intent to kill, maim or wound, where the mere report of the gun would suffice against any animal trespassing on his lands, is securely sacrosanct. But there is a loophole for politicians, in the passage through which it should even be possible to annex an extra vote or two. It is a suggestion already officially put to Government but insufficiently publicised or explained.

What if shooting at elephants were forbidden and full compensation were paid for any crops damaged as a result ? Government does pay compensation as it is. But it is on an ill-conceived principle. The villager is not required

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to desist from shooting elephants ; but when he shoots them and still fails to protect his crops Government pays him a degree of compensation that leaves him feeling ill-used and more determined to trust to his gun than ever. Compensation at present payable is limited to " the shortfall in food supply for family needs " only. If, that is to say, a man's field produces 50 bushels, of which his family requires 30 ; and elephants destroy half the field, the compensation paid is for the 5 bushels shortfall only. At this rate the annual payments for the last three years have averaged Rs. 11,000.

Rs. 11,000 is the world market value of One Ceylon elephant. Ever since the days of Pliny and Strabo the elephants of this country have commanded, for their intelligence and docility, up to three times the price of any related sub-species, such as the Indian or Burmese; they are the one asset we possess that is unquestionably superior to any rival the rest of the world can offer. What is this asset worth to us—as a part of our culture, as a scientific trust, as an economic resource ?

Would you say it was worth a lakh and a half a year—two-sevenths of what we spend yearly on the Zoo ; one-third of the annual cost of our museums ; less than one-half of the Archaeological Department's expenditure on the conservation of dead monuments ?

For that is all it would have cost the Government, on the basis of the last three years, to compensate fully for all the damage done to crops by elephants in a year.

Why shoot them ? Why pen them ? Why not go one better than Nissankamalla ?

Daily News.

Elephant Population

Sir,

We have had numerous letters and discussions regarding the fast dwindling elephant population.

With the war and a number of food production schemes, numbers of elephants have been and will be destroyed in future wherever humans intrude into the jungle area for purpose of cultivation and expansion.

The late Mr. Nolthenius, the champion in the cause of the protection of elephants, gave us the first warning and since then many people had their own views.

A recent news item gives us a total of 900 elephants and 17 tuskers all told to be found distributed throughout the Island. I would like to know the grounds for such a statement.

From my observations, I would state that there are three times the number of elephants in the wilds of Ceylon than that quoted.

I would invite those concerned to get off their jeeps and start walking from Yala and Kumana along either bank of the river up to Buttala and Okkanpitiya during the months of July-August. They would find more than 400 elephants on the Yala river only. Kirindi Oya should also be explored. It is only then that they would have an idea of the number of elephants found in the southern parts of the Island. The next check should be at the major and minor tanks, villus and rivers in the E.P., N.C.P., C.P., and N.P.

We want facts as figures in a vital question of this nature and this can only be had by walking through the jungles.

E. C. FERNANDO.

Elephant Encounter

Mr. K. Jayatilake, sales representative of an oil company, had an unpleasant encounter with a herd of about 10 elephants on the road to Bakamuna.

Mr. Jayatilake, in the company of a prospective agent, left Giritale by car and proceeded along the lonely road to Bakamuna.

Just before dusk he met the herd on the road. No amount of tooting of the horn would disperse the elephants.

Mr. Jayatilake, finding that one particular elephant, a magnificent-tusker, was showing signs of aggressiveness, decided to reverse his car. As soon as the car started reversing, the tusker

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too moved in its direction.

Mr. Jayatilake then decided to abandon the car and bolted into a culvert, which to his surprise he found to be too small for him.

Glancing back he found his prospective agent climbing a nearby tree. Taking an object-lesson from him Mr. Jayatilake, too, fled up the same tree.

The elephant remained around for about one hour, and the prolonged shouting of the two finally made it move into the jungle.

Daily News.

Greater Love Than This

- A drama of intense motherly love, in which a cow-elephant which had rescued her calf from a deeply mudded irrigation canal and then had fallen back into a pit nearby, came to a tragic end when, despite all efforts by people here to save her, she died through sheer exhaustion. This happened near Hambantota.

The animal, which during the week-end had used up all her energy to pull her calf to safety had fallen into a pit below the canal embankment and had lain motionless.

Standing guard over her was her rescued calf. Jealous in her love for her mother, the calf would allow no one to approach her. Finally, the calf was scared away and since then had not made its appearance at the spot.

Officers of the Wild Life Department then began the rescue of the cow-elephant. They placed logs in front of her hoping she would grip the logs with her trunk and crawl out of the pit but she was too weak for that. They tried to drain off the mud behind the pit but again this proved of no use.

Finally with the aid of a tractor and ropes wound round the elephant, they pulled the animal out of the pit. She lay exhausted and died 15 minutes later. Her body was burnt.

Jumbo Chased Car

Elephants are roaming the jungle roads in the Puttalam district.

About 8 p.m. Mr. G. F. de Silva, apothecary of the Puttalam hospital, who was driving along the Kurunegala-Puttalam road, met two elephants near the 7th mile post.

He stopped the engine and waited for them to go off the road. One elephant entered the jungle, probably without seeing the car, but the other began to walk towards the car with his trunk raised.

Fearing an attack, Mr. Silva started the engine and sounded the horn, thinking the animal would go off. But the frightened elephant approached the car and Mr. Silva turned the car and drove off. The elephant chased him for about a quarter of a mile on the road.

Observer, January, 1956.

Elephant Kills Cyclist

At Hambantota two cyclists were attacked by an elephant near Bundala five miles from Welligatta about 5.30 p.m. One of the cyclists, Sunder, was badly injured.

The other cyclist, took Sunder to his residence in Bundala where he foun dthat the injured man was dead.

Times, February, 1956.

Don't Shoot the Elephant

The Government is considering a proposal to pay compensation to villagers whose crops are damaged by wild elephants. But there is one condition—the villagers must not shoot the animal.

This is the latest effort of the authorities to preserve the Island's fast-dwindling elephant population.

Such a move is open to abuse, and it was proposed that the Government should pay compensation only if the investigating officer was satisfied that the villagers concerned looked after his crops and kept a continuous night watch.

The Government now pays compensation for damage to crops by elephants to the tune of Rs. 11,000 every year. This is, however, not

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full compensation, payment being made only for part of the assessed damage. If the proposal is accepted, well over Rs. 100,000 will have to be made available for the payment of full compensation, the amount being debited to the Food Bill.

Morning Times.

Jets *vs.* Jumbos

If a decision of the Indian Government of some ten days ago had been adhered to, today's rejoicings in India commemorating Republic Day would have differed in one important respect from previous years. The ceremonial processions which are a feature of the day would have included positively no elephants. The mere proposal to omit so familiar and essential a feature of Indian pageantry gives one furiously and somewhat sadly to think.

One is saddened to learn that these monumental, ornamental, useful, patient and long-suffering creatures were to have been excluded from the tamasha in favour of jet-propelled planes.

The Ministry of Defence decided that more planes than ever should take part in the ceremonial march past this year and their plans envisaged a hundred-odd planes of various kinds which will " zoom past the saluting base at 300 miles an hour."

It was felt that such a display of armed force and the appalling noise that goes with it, might have a very unsettling effect upon the ceremonial jumbos, and to guard against the danger of their running amok among the spectators, it was decided to dispense altogether with their traditional contribution to the ceremonies of the day. We are happy to announce, however, that, in response to the public outcry evoked by this proposal, the Government of India has now reversed its decision.

What contribution has the jet plane made to Indian history and tradition ? As far as we are aware, none whatever. And where would the traditional art and literature of India be without the ubiquitous elephant whose martial, vehicular, spectacular and bulldozing functions almost surpass those of his human masters in versatility ?

Daily News.

Baby Elephant Captured by Villagers

A baby elephant, which is reported to have been abandoned by the herd, has been seized by villagers at a village in Hurulupalata. Government Agent, Anuradhapura, requested the Zoo authorities to come over and take charge of the animal.

It appears that when a herd of elephants broke into a cultivation, the villagers opened fire. In the stampede the mother fled with the herd leaving behind the baby which was easily caught.

It was so thin its ribs were showing, and its left shoulder had a shot-gun injury.

Between Oalpothegama and Heenukwewa, in Nuwaragam Palata West, a father, mother and baby are roaming the area.

A young elephant 7 feet high, has been shot dead at Angunukolapelessa, a village 10 miles off Tanamalvila.

December, 1955.

Polonga Bite Kills Elephant in Minutes (?)

(i)

A huge four-ton elephant belonging to Mr. Ram Banda of Gampola, crashed to the ground, stone dead, a few minutes after being bitten by a deadly poisonous " pala polonga " in the village Meemure.

The animal was eating leaves in the jungle after some work when it suddenly withdrew its trunk with a jerk and was soon writhing in pain. Death followed in a few minutes.

According to the mahout, a small injury was seen at the tip of the pachyderm's trunk which

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was swollen. Death was said to be caused by the bite of a " pala polonga " usually found in jungle trees.

The Superintendent of the Zoological Gardens, Major Aubrey Weinman, said that the " pala polonga " was a deadly species of viper found in the Teldeniya jungles. There had been instances in the past where elephants had been bitten by poisonous snakes and died within 35 minutes.

Daily News.

(ii)

With reference to the news item "Polonga Bite Kills Elephant in Minutes," it is quite likely the elephant was bitten by a Russell's Viper, *Vipera russelli* (Sinh. Tic Polonga, Tam. Kanadi Viriyan). The only other viper whose bite can cause death is *Echis carinata* (surutai pambu), found only in the sandy desert areas of the North of the Island. It is essentially a desert dweller. Next comes the hump-nosed viper *Ancistrodon nepa* (Sinh. Kunukatuwa also known in Tamil as surutai pambu). The bite of this snake is never fatal to man but causes pain and swelling for a few days.

Next comes the Ceylon pit viper *Trimeresurus trigonocephalus* (Sinh. pala polonga, Tam. patchai viriyan or the kopi viriyan). This snake is peculiar to Ceylon and is found up to an elevation of about 5,000 feet, and is well known in the planting districts, as many labourers get bitten while pruning or plucking tea. It is a beautiful green black snake with a large flat triangular head with formidable fangs. The bite of this snake has never been known to prove fatal to man and, except for pain and swelling, there are no other ill effects. I was on the spot on two occasions where pluckers were bitten.

It is strange to note that, although the bite of the pala polonga never proved fatal to man, it is said to have killed an elephant in minutes. It would be interesting to know whether the snake was killed and identified.

I also wish to point out that the tic polonga is very fond of climbing trees either in search of rats, small birds, etc., or after a meal. It was probably the tic polonga and not the pala polonga that caused the death of the elephant.

E. C. FERNANDO.

Dehiwela.

(iii)

I am inclined to the opinion of Mr. E. C. Fernando that a tic polonga and not a pala polonga was the cause of the recent elephant tragedy. I remember having read an account in the *Loris*, a couple of years ago, where a detailed description of the different Ceylon vipers was given. This article—I have forgotten the name of the author—bears out the statement of Mr. Fernando, that the green pit viper is not a highly poisonous snake. I have met with this snake at elevations of 4,000 feet particularly in cardamom areas. It so blends with the twigs or greenery on which it lies that it is hardly noticeable, except on close scrutiny.

Though I have seen many, the largest was perhaps about 2 feet long and about the girth of, say, a 16-bore cartridge. My observations of the pit viper are that it is a lethargic snake, slow of motion and inaggressive, as several of my attempts to rouse it to action with proddings of a stick have produced little or no response. A kunukatuwa or a tic polonga, if one had the temerity to trifle with the latter, would on the other hand, have stuck back immediately.

" INTERESTED."

Hatton.

Ed.—The article alluded to above was by D. R. R. Burt and appeared in *Loris*, Vol. III, pp. 115-118. In it, the venom of the Green Pit-Viper is said to be ' not virulent.'

(iv)

It is quite possible for an elephant to die in a short time, as the result of the bite of a poisonous

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snake provided, the bite was on a fatal " Nila."

These " Nila " or nerve-centres are situated in various parts of the elephant's body, which stimulate, depress or command obedience when touched or pressed with hand or foot.

In all, there are 12 " Nila" in an elephant. It is quite likely that the bite was on a fatal Nila, causing the elephant to die in a few minutes.

J. HABARAGODA.

Keppitipola.

(v)

It is passing strange that a huge 4-ton elephant dropped " stone dead a few minutes after being bitten " by this species of viper, which according to snake-authorities is not at all regarded as " deadly poisonous."

It is very doubtful whether the snake, known to planters up-country as the Green Tic-polonga (*Trimeresurus trigonocephalus*) can inject venom sufficiently toxic to kill a man, much less an elephant. This latter serpent is, I think, peculiar to Ceylon, though not uncommon in many parts of our hill country up to an elevation of about 5,000 feet. Major Wall of the Indian Medical Service, in his book, cites several instances of poultry bitten by these not-so-very-poisonous vipers, but most of the cases did not end fatally.

It is a pity that the snake which killed Jumbo could not have been identified, but, for all I know it must have been the deadly tic-polonga, or Russell's Viper which the Tamils locally call " Kannady-Pudayan." I have killed an adult " Tic " about 4 feet long, and have seen several of about that length or perhaps more. Dr. Garpurey in his book states that " frequently the adults are 3 to 4 feet long, but they may grow to 5½ feet." Major Wall, too, says in his book that, though " specimens over 5 feet are exceptional, it can grow to 5½ feet."

The tic-polonga is our loudest hisser among snakes when infuriated ; and, though it prefers to inhabit the plains, it may be found in altitudes ranging from about 2,000 to 5,000 feet, or even more. And though, as Mr. Abhayaratne says it " keeps more to the ground " it climbs trees under special circumstances, for instance, to catch rats, etc.; it often swims in water too. Despite its sluggish ways it can become very ferocious when roused to anger ; and when about to strike will even spring with great force from the ground. The deadly venom may kill the victim " in a few hours if not after some days " so what I cannot understand is how a large, thick-skinned elephant could have succumbed to its bite " in a few minutes." May-be, the snake bit the animal on the delicate and sensitive tip of the trunk.

There is nothing very surprising about a wild boar swallowing a tic-polonga. Mr. Phillips, in his book on Mammals, mentions that the wild pig, which is omnivorous, " also devours snakes." And we know too that several bushy-haired or thick-skinned animals, like the mongoose, certain wild cats and pig—not to mention certain birds like storks, peafowls and serpent-eagles—kill and eat snakes among other food, though none of these are immune to snake poison.

If a venomous snake bites any of these animals, say a mongoose, on the mouth (a soft part without any natural defensive covering), it may die ; that is why it avoids the fangs of the reptile with such great skill. In the case of the pig, however, Dr. Garpurey says it is " practically immune to snake-venom, as its body is covered with thick layers of fat."

S. V. O. SOMANADER.

Kalkudah.

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Cobra or Viper?

By R. L. SPITTEL, F.R.C.S.

From The Indian Medical Gazette, October, 1946

IS it possible, in a case of snake-bite terminating fatally, to say from the symptoms whether the offending reptile was a cobra or a Russell's viper?

The specific action of snake venoms (still imperfectly known) depends on ferments (proteolytic and fibrin), cytolysins (acting on red cells, leucocytes, epithelium and nerve cells), agglutinins, cardiovascular toxins and neurotoxins. The neurotoxins predominate in the venom of colubrines, the cardiovascular toxin in that of the viperines.

Colubrine poisoning is characterized by rapidly advancing *paralyses* due to the action of the poison on the brain and cord—the muscles involved are usually those of the tongue, lips, throat, eyelids and limbs. Other symptoms are mental apathy, nausea and vomiting, and contracted pupils. Death is said to be due to paralysis of the respiratory centre. Coagulation nil, *haemorrhages* nil—according to Rogers.

Viperine poisoning is characterized by *haemorrhages* (local ecchymoses, hæmaturia, melæna) due to hæmolysis and intravascular clotting followed by incoagulability. Other symptoms are : collapse, thready pulse, nausea and vomiting, dilated pupils insensitive to light, and early loss of consciousness. Death is caused by paralysis of the vasomotor centre in the medulla. 'There is *no paralysis of muscles* . . . ' (Manson).

But is the differential symptomatology between cobra and viper poisoning so clear-cut as to justify such assertions as that there are no hæmorrhages in the former and no paralyses in the latter?

F. Wall in 'The Snakes of Ceylon' says of *cobra venom*, after emphasizing the characteristic paralytic manifestations : 'Among other symptoms may be mentioned nausea or actual vomiting, and, not infrequently, *haemorrhages from various orifices* as a result of the action of the poison on the blood, altering its composition, reducing its coagulability, and dissolving the red cells' (p. 487). In his illustrative case of the bitten punkah coolie, however, there is no mention of hæmorrhages from orifices. Regarding *viperine poisoning*, Wall is emphatic that, 'There are *no paralyses* as we see in colubrine toxæmia" (p. 518).

Wall's position then is that, while paralyses always characterize colubrine poisoning, there may also be hæmorrhages ; in viperine poisoning, on the other hand, there are hæmorrhages but no paralyses.

The Military 'Manual of Tropical Medicine' is more guarded when it states : 'A given species of snake usually has venom that is predominantly of one type or the other, although more or less equal mixtures of the two occur in a few cases.' And this is perhaps the right view to hold as the following case testifies. In it both paralyses (eyelids, tongue, pharynx) and hæmorrhages (gastric, rectal) co-existed.

Case.—S., a well-built Englishman of about 45, stepped out of his club at Colombo and was about to enter his car parked in a dark garage in the garden when he trod on a snake and received a bite. In the uncertain light, a large reptile 'yellowish-green' or 'khaki-coloured' was seen to glide hurriedly away. When the sock was turned down an electric torch revealed a single puncture on the inner side of the ankle.

A few attempts having been made to squeeze out the poison, the patient was driven to a doctor who applied a tourniquet and incised the puncture under a local anæsthetic, but could induce very little bleeding.

I saw the patient at 10.30 p.m., about 1½ hours after he was bitten, and applied crystals of potassium permanganate into the open wound, followed by a compress of a saturated solution of magnesium sulphate to encourage bleeding. Except for slight pain about the ankle, the patient was in good spirits, and felt that unnecessary anxiety was being manifested

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over the bite of a harmless reptile, probably a 'rat snake,' which seemed possible from the description of its great length. He insisted on going home instead of entering hospital.

At about 5 a.m. the following morning, his wife phoned up to say that he had spent a sleepless night and was complaining of great pain in the affected limb. He was admitted into a Nursing Home in a cold sweat, and complained of pain in the affected limb, epigastrium and body generally. There was *ptosis* (drooping) of both upper eyelids which he had to lift with his fingers to enable him to see. His pupils were normal and responded to light; there was no dimness of vision or diplopia. He was quite conscious and did not seem over-anxious about himself. His pulse, respiration, and blood pressure were normal. There had been some oozing of blood-stained serum into the compress covering the wound.

He next developed *paresis of the tongue* with difficulty of articulation (which partially improved in the course of the day) and of the *pharynx*, nearly choking himself in attempting to drink. Then followed a series of severe attacks of retching and hæmatemesis and the passing of *blood per rectum*, and later of mucus. There was no hæmaturia.

He was now becoming increasingly restless, and perspired profusely all the time. He kept jerking his injured leg violently, injuring it against the foot of the bed. Towards afternoon, his pulse became rapid and thready, his blood pressure dropped and his respirations became shallower, while his struggles were so violent that four persons could hardly control him. He did not quite lose consciousness until about 15 minutes before his death which occurred at 5 p.m., 19 hours after he was bitten.

Treatment.—He was given two bulbs of concentrated antivenene, one intravenously and the other subcutaneously—but this was not until the following morning, as the serum could not be obtained earlier. Saline and glucose intravenously, calcium, vitamin K, adrenalin and pituitrin were also administered. But none of these seemed to have the least effect.

Apart from the immediate application of a tourniquet and amputation where possible, such as of a finger or toe, there does not appear to be general agreement as to the best treatment of snake-bite. The Military 'Manual of Tropical Medicine' condemns the time-honoured use of alcohol and potassium permanganate. Even as regards incision, the Pharmacopœia of the Calcutta School of Tropical Medicine lays down, 'On no account should any incision be made.' While in the instructions supplied by the Central Research Institute, Kasauli (Punjab) we read, 'Make an incision at least ¼ inch deep over the fang wounds about one or two inches long and encourage bleeding to wash out the poison'—a counsel that should certainly not be disregarded as immediate treatment.

A lad I know was bitten between the thumb and index finger by a large Russell's viper that clung on and had to be wrenched off. He immediately applied a tight tourniquet, made two deep incisions over the fang marks, sucked out the wounds, and applied potassium permanganate. Even so, he soon became drowsy. His eyes were kept open with the use of pepper! he was walked about, and purged abundantly. For 24 hours he caused anxiety, but after that his recovery was rapid, dimness of vision persisting for a few days. He consulted me three days later for the treatment of his wounds which gave little trouble.

Identity of the reptile.—In the case of S. I have described this was difficult to establish. The symptoms provided no clue whatever, paralyses and hæmorrhages co-existing. The snake, from the description of its size, was most probably one of two—a cobra or a Russell's viper—or possibly the much rarer Indian krait that grows to 4½ feet, the action of the venom of which is almost identical with cobra venom. Of these I myself think it must have been a Russell's viper for the following reasons :—

Russell's vipers were known to abound in the locality which was overgrown with scrub during military occupation ; the description 'yellowish-

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green ' is more applicable to the Russell's viper than the cobra; the cobra poises its hood and strikes downwards, while the Russell's viper, when trodden on, turns instantly and snaps like a dog ; the single fang mark was a comparatively large one ; the hæmorrhages (especially gastric) were a more prominent feature than the paralyses.

Considering that toxins affecting both the nerve cells and the blood elements are present in both colubrine and viperine venoms, there will probably always be cases where the predominant toxin, characteristic of one or the other, is levelled.

CEYLON WILD LIFE PROTECTION SOCIETY ANNUAL GENERAL MEETING

Photo by C. Wickramasinghe

W. W. A. Phillips

Mr. C. E. Norris, Hony. Secretary, in making the presentation of a mantle-piece clock to Mr. W. W. A. Phillips, said :—

" Mr. Chairman, Ladies and Gentlemen,

It is never a pleasant task to have to say farewell to one's old friends especially those whose absence will leave a void that will be difficult to fill. This year we are to say farewell to Bill and Paddy Phillips who are leaving Ceylon to retire in England. As you all know Bill Phillips has done more for the Wild Life in Ceylon than anyone else, I could nearly truthfully say it has been his life's work but I must not overlook the fact that he is a planter and that the tea bush has had to receive his primary attention when the fauna has allowed him. Forty-four years ago he joined our Society —unfortunately I have not been able to find out when he was first elected to the General Committee. In 1928, he suggested the formation of a Government Game Department but it was not until 1950, 22 years afterwards, that he saw the materialisation of his idea. Truly a case of ' everything comes to him that waits.' Also in 1928, he took on the Secretaryship of the Society, a post he held for 12 years until 1940. During these twelve years he worked unceasingly for the protection of the Wild Life of Ceylon ; he served on many deputations to drive home to Government the need of greater protection that was so vital if Ceylon was to keep her wild life. It was through his efforts the Fauna and Flora Advisory Committee was appointed and as a result of recommendations of this Committee all shooting between sunset and sunrise was prohibited on Crown land. In 1935, Government published his outstanding work on the Mammals of Ceylon, so outstanding was this work that the then Deputy Keeper of Zoology at the British Museum stated in his preface :—

' It would be difficult to imagine anything better and it is doubtful whether any treatise

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of the kind has ever rested on a sounder basis of personally observed fact.'

These words describe all works done by Bill Phillips as he has always been meticulously careful of the observed fact.

It was in 1935 I had the pleasure of starting my long friendship with him. He invited me to join him on a week-end in the N.C.P. and it was his enthusiasm and guidance which roused my interest to love our wild life. I shot my first crocodile on this week-end and I was so wildly excited I nearly lost it. My first real jungle trip was done with Bill and Paddy—I shall never forget their kindness in bearing with an over-keen youngster who must have been unbearable with his unending flow of questions. Bill Phillips played no small part in the preliminary preparations of the Fauna and Flora Protection Ordinance which was proclaimed law in 1937. The great interests and sympathetic hearing given to the Society's deputations by the late Mr. D. S. Senanayake when he was Minister of Agriculture and Lands helped immensely in making this Ordinance what it is today. Mr. D. S. Senanayake was most enthusiastic to conserve the wild life of the Island and was not hampered by the political influence which is so apt to cloud the issue today.

It was during Bill Phillips' long term as Honorary Secretary that *Loris* was born, now known throughout the world; also, he was the originator of the Wild Life Calendars which were so popular. He was also responsible for the publishing and circularising of posters and propaganda drawing the attention of the public to our National Parks, Sanctuaries and Game Laws.

Many are the papers he has published on Ceylon Birds in *Spolia Zeylanica* and I must not forget to mention the two excellent numbers of his "Birds of Ceylon' which must have helped so many people trying to glean knowledge of our birds.

The Society gave its highest honour in electing him a life member in December, 1941, an honour that was certainly deserved and hard earned. He was President of the Society in 1942-43 and again in 1947-48, when he persuaded me to take on the Honorary Secretaryship.

His knowledge of the animals and birds that inhabit Ceylon is unique and it will be nigh on impossible to find some one who can answer as authoritatively as he has always done. I am sure Dr. Spittel will miss his good natured arguments regarding the identity of the devil bird!

Bill Phillips is one of those rare personalities, and in token of our thanks, our esteem, and our affection and regard to both him and Paddy, I have great pleasure in asking them to accept this souvenir which I hope will remind them of the jungles and the places they loved.

DR. R. L. SPITTEL said :—The institution of our National Parks and Sanctuaries is due to the work of Mr. W. W. A. Phillips more than to any other. To me he has always been a great friend and I shall miss him very much. The subject of the Devil Bird has been mentioned by Mr. Norris. But Mr. Phillips and I have come to an amicable compromise over that. I shall always remember him as having proposed me as the first Ceylonese President of the Ceylon Game Protection Society as this Society was then called.

Mr. W. W. A. PHILLIPS, in accepting the presentation, said :—

Mr. Chairman, Ladies and Gentlemen,

When first I heard a rumour to the effect that you had decided to honour me in this manner—by presenting me with this magnificent memento of my long connection with the Society—I was frankly horrified—for I certainly do not deserve to receive this honour. Previously, the Society was so kind as to present me with a lovely piece of silver plate, in recognition of my services as Honorary Secretary for a number of years. Since then, I feel that I have definitely not merited further recognition for, although the protection and conservation of our wild life have always been one of the main interests

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of my life—I have not, unfortunately, been able to devote to the matter as much of my time as I would have wished.

Since I first came to this Island, towards the end of 1911, I have seen many changes—some good, some bad and some indifferent. As far as the wild life has been concerned, the changes have almost all been for the bad. Large areas have been deforested and opened up, uninhabited districts have been invaded by settlers and the motor car and spotlight have decimated the larger animals in almost all of the unprotected areas. On the other side of the picture, however, we now have a Wild Life Department, whose sole work is the protection of our Fauna from undue exploitation and we have a number of Sanctuaries, National Parks and protected areas, where the destruction of bird and animal life is strictly controlled.

As long as these areas are allowed to remain as they are at present, the survival of our most interesting and unique wild life is assured—but, beware the irresponsible politician! so many of whom subordinate all other interests to their own immediate political ends and who would think nothing of destroying the remaining wild life, did it suit their purpose. And do not forget that wild life once exterminated can *never, never* be resurrected.

The only safeguard we can have is a National Trust—and I sincerely hope that this Society will devote the whole of its influence and energies to the formation of such a Trust—without which I am convinced the doom of all wild life and all the fascinating far-off places is sealed.

About the year 1927 or 1928, I was so much struck by what was being done and advocated in Europe, to conserve the wild life and the natural beauty spots that, on my election to the Secretaryship of this Society, I started an agitation that eventually led to the formation of the Wild Life Department and to the setting aside, for the welfare of the fauna and flora, of a number of protected areas. The first area that occurred to me—that would make an ideal National Park—was the Horton Plains plateau—which I knew well from old hunting days. Because of the hunting and fishing rights that already existed over the area, however, the question of having it officially protected as a National Park or Sanctuary was dropped and the Hakgalla area was chosen instead. But I still think that the Hortons would make the ideal National Park and I hope that, one day in the not too far distant future, this fascinating area will be set aside as a highland National Park while safeguarding the rights of the Ceylon Fishing Club to fish for trout in the waters of this most lovely tract of highlands.

Another area that I would like to bring to your notice—as a perfect setting for a Bird Sanctuary—is the block of almost uninhabited and rather desolate country lying to the East of the Hambantota-Wirawila road, bounded on the south by the sea and to the north by the Weligata-Bundala road. This area, containing as it does three large lagoons or kalapas, Bundalawewa and large tracts of scrub jungle, sand-dunes and open pastures, would make an ideal Bird Sanctuary in which not only would many beneficial resident species be protected but that most interesting and attractive bird—the Flamingo—would be granted a chance of a little peace and security. The area is very accessible by car or bus, so all the bird-life could easily be studied and photographed without too much cost and difficulty.

Ladies and Gentlemen, my time in Ceylon is rapidly drawing to a close. I shall leave the Island with a heavy heart. I shall miss greatly the birds and other forms of wild life that have always fascinated me but, above all, I shall miss my many friends of whom I am delighted to see so many here this evening. But when I look at this beautiful memento, as it reposes as it will do, above my writing desk in our new home in England, I shall

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think of you all and of the best hours of my life spent in your company or in the depths of your jungles, watching the fascinating wild life of the Island.

Ladies and Gentlemen, once again I thank you, from the bottom of my heart, for the honour that you have done me, in presenting me with this beautiful memento.

Necessity for National Trust

In connexion with the plans for the preservation of wild life and keeping the parks, reserves, etc., inviolate, it deserves to be emphasised that though we do have a comprehensive Fauna and Flora Protection Ordinance, a Department of Wild Life and parks and sanctuaries, there is an ever present menace in the complete lack of any security of tenure for these reserves. Any one of them can still be cut down or abolished with the stroke of a pen by politicians. This has in fact happened more than once already. Apart from Wilpattu, to which we have referred, Veddikachchi has lost nearly half its area ; Ridiyagama and Kalumetiya have all gone. Nor is there a guarantee that similar vandalism will not occur in the future if politicians are allowed to have their own way. The Ceylon elephant appears to be doomed, at the rate at which its destruction is taking place at present. But little protection can be given to the elephant —or any other wild animal—unless the sanctuaries and parks are kept inviolate. Plainly, this can only be assured if a National Trust is formed and we have a body of trustees who are not susceptible, as politicians are, to pressure from interested parties.

To make a case at this stage for the establishment of a National Trust is, we take it, to preach to the converted. But we should like to emphasise here the urgency of the problem. Nearly two years have gone by since the Society appointed a four-man committee to draw up plans for such a trust. As Mr. C. E. Norris said at the time, if a trust was to be formed to protect our game reserves it had to be done quickly, while there were still wild life in our parks and reserves. Politicians come and go but our wild life is a precious asset which has to be safeguarded, and action to this end should not be slackened or shelved.

" Morning Times " Editorial.

Snips

Snail Pest

Man has exterminated certain animals and carried many others into regions where they could hardly otherwise have penetrated. And often with truly devastating results. Few of such invasions have been so dramatic as the spread over half the tropical world of *Achatina fulica*, the Giant African Snail.

This now most notorious of land snails originally inhabited only East Africa and Madagascar. Then, about the beginning of the last century, we hear of it in Mauritius and then in the Seychelles and Reunion. In the middle of the century it appears in Calcutta and fifty years after that in Ceylon.

During this century, it has travelled faster and farther, spreading to Malaya, Indonesia, and Indo-China, and then into the Pacific : Formosa, Hongkong, Honolulu.

During the Second World War, it spread throughout the tropical Pacific, from the Philippines to New Guinea and eastward over the Micronesian island groups.

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This creature, the largest of its kind, is a major pest. Yet its distribution over half the globe is almost entirely due to deliberate action by man. Conchologists carried it to India and later to Ceylon.

It was distributed throughout Malaya and Indonesia for use, when crushed, as poultry food. But it was the Japanese who carried it through the Pacific Islands. They seem to have thought highly of this snail as an article of human food but still more so as a medicine.

The Japanese not only sold living snails ; they gave instructions about breeding them, and it was about this time that Japanese residents imported them in spite of quarantine regulations, into Honolulu.

In spite of its size, this snail defies man. It reproduces rapidly—being hermaphrodite all individuals lay eggs—while it can live almost anywhere within the tropics and eat anything from vegetable matter (preferring agricultural crops) to decaying plant or animal matter including the crushed bodies of other snails.

Action began by following established practice and tracing the pest to its original home to discover how its numbers are there controlled; and in its native haunts in East Africa the Giant Snail is no menace at all.

It is only moderately common and little wonder, when it is sought and eaten by such a miscellaneous assemblage of animals as a civet cat, two land crabs, various carabid beetles, and also by other and purely carnivorous snails.

It was decided to see what effect the two last might have in the Pacific, but the beetles proved difficult to rear in captivity and in the event it has taken a mollusc to control a mollusc.

Next the central Pacific was searched for some isolated and uninhabited Island suited for an experiment on control. The Island of Aguiguan in the Marianas appeared ideal for this purpose. At that time, in 1950, it was impossible to walk anywhere on the lower slopes of the Island without almost at every step crushing a Giant Snail.

Predatory carnivorous snails were introduced ; and after two years dramatic changes were evident. By January, 1954, within this same area almost the only trace of Giant Snails was their empty shells. Higher on the Island they were still present, but everywhere attacked by enemy snails assisted by rats and birds and by coconut crabs and hermit crabs, while they had assisted their own destruction by eating almost all suitable vegetation.

An experiment on an uninhabited Island is one thing ; quite another would be the introduction of these carnivorous snails into the cultivated Hawaiian Islands. Meanwhile the problem grows as man's efforts fail against molluscan fecundity.

PROFESSOR C. M. YONGE
in *Manchester Guardian*.

Evening Serenade

As I was musing on a mountain in the Cameroons in Africa, the forest was suddenly shattered by the most blood-curdling scream, which was followed by bursts of horrible, echoing maniacal laughter, that screeched and gurgled through the trees, and then died to a dreadful whimpering which eventually ceased. I stood frozen in my tracks, and my scalp pricked with fright. I have heard some ghastly sounds at one time and another ; but for sheer horrific impact this was hard to beat.

After a few moments silence I summoned what little courage I possessed and crept through the trees in the direction of the sounds. Suddenly it broke out again, spine-chilling gurgles of laughter interspersed with shrill screams, but it was much farther away now. Then suddenly I realised what was making this fearsome noise : it was the evening serenade of a troupe of chimpanzees. I had often heard chimps laugh and scream in captivity ; but I had never, until that moment, heard a troupe of them holding a concert in the forest which

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gave their cries an echoing quality. I defy anyone to listen to these apes at their evensong, without getting a shudder down his spine.

G. M. DURRELL

in *The Overloaded Ark.*

Bird Roost

As we entered the fields on the outskirts of the village at dusk Elias, my Negro guide, stopped and pointed at a dead branch which hung low over the path. I peered at it hopefully, but it was quite bare, with one dead and withered leaf attached to it. Disturbed by our whispering the dead leaf took its head out from under its wing, gave us a startled glance, and then flew wildly off into the night.

The fact that the birds slept so close to the ground amazed me, when there were so many huge trees about in which they could roost. But a little thought showed me why they did this : perched on the end of a long slender twig they knew that, should anything try and crawl along after them, its weight would shake the branch or even break it. So, as long as the branch was long, thin and fairly isolated, it mattered not if it was a hundred feet up, or five feet from the ground. Elias informed me that one frequently came across birds perched as low as that, especially in farm lands.

G. M. DURRELL

in *The Overloaded Ark.*

Saving Hawaiian Geese from Extinction

An article on the present status of the Ne-Ne, or Hawaiian goose, probably the rarest goose in the world, gives figures to July, 1955, including the remarkable fact that a flock of no fewer than 22 wild specimens was seen in Hawaii on July 28. Five goslings of this species were hatched in the trust grounds at Slimbridge, Gloucestershire, this year, and the total there is now 20, of an estimated world population of 70. In 1950 the world population was estimated at 40.

The 20 Hawaiian geese at Slimbridge are the result of importing one male and two females from Hawaii in 1950. The annual report emphasizes the importance of building up a large stock of this bird in captivity, keeping in mind the eventual possibility of liberating some of them in Hawaii should conditions there ever become more favourable to their survival than they now are. The trust plan is that " as soon as sufficient birds are available . . . pairs will be distributed to zoos and private conditions where good care can be guaranteed."

London Times.

Child Pecked by Cock, Dies of Tetanus

A two-year-old child of Ovitigala, while having his morning meal of rice, was pecked on the head by a cock bird. A few days later the child died of tetanus at the Nagoda hospital.

At the inquest the child's mother said that when her child was pecked by the cock she took him to the Matugama Peripheral Unit, where the officer-in-charge examined the child and prescribed the wound to be dressed. That was done and the child was taken back home. No anti-tetanus serum was given to the child.

Three days later the child developed a temperature and there was rigidity of the neck. The child was then given an anti-tetanus injection, but he died the following day of tetanus.

Morning Times.

"Ban Fishing and Hunting Here"

A strong protest against large-scale fishing in the Minneriya Tank by outside fishermen was made in a resolution which was adopted at the monthly meeting of the Sinhala Pattu Village Committee.

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Mr. M. H. Dharmadasa, who proposed the resolution, said that in ancient days fishing in those tanks was prohibited by the Sinhalese kings who had also banned the killing of animals and birds. That was evident not only from ancient chronicles but also from rock inscriptions set up by them in Polonnaruwa and Anuradhapura—two religious cities.

As the Government had planned to restore and preserve the sacred cities of Anuradhapura and Polonnaruwa, Mr. Dharmadasa said, they should demand a ban on fishing and killing of animals and birds in those sacred areas.

Squirrel Caused His Death

A. G. Ratnappu (60 years) a father of three children, died instantaneously when a stone that was hanging under the flower of a kitul palm suddenly fell, on his head.

It is believed, that a squirrel had gnawed the string with which the stone had been attached to the spathe.

• *Daily News.*

Jungle Cock

(i)

In the whole of my shooting career, which dates back to well over thirty years, I have called up successfully and shot only three jungle cocks by clapping, with a handkerchief between my hands, thus imitating the challenge of another cock to a fight. Harry Storey in his book "Hunting and Shooting," says that he always adopted this method of shooting when he wanted these birds for the camp pot. I have also heard of, but witnessed only once, villagers adopting this method of shooting, the only difference being that they used their sarong instead of the handkerchief to produce the necessary effect.

My experience, though limited to three birds over thirty years (I have shot several by other means) revealed that the jungle cock is a tough fighter and answers the challenge in a most gallant manner. When he accepted the challenge, he did so with lightning speed. I consider it a great pity that sportsmen should resort to this manner of deceiving a brave bird. One should have no objection to the hungry villager with a limited supply of ammunition shooting in this manner, but I do hope that sportsmen with any sense of sport in them will refrain from this unsporting method of shooting. I for my part have decided not to do it after my last experience a few days ago.

S. Ratnanather.

Daily News.

(ii)

With all this pother about the Jungle Cock, a few facts about this lovely and lordly bird may interest your readers.

The jungle fowl (*Gallus lafayetti*) is, next to the peacock, the largest game bird in the Island. It is peculiar to Ceylon. It is still plentiful in our jungles from the sea coast to the highest hills. When the "Nellu" (*Strobilanthes*) blossoms once in ten years, jungle fowl ascend to the hills in great numbers to eat the seeds.

The cock is a gorgeous creature, all enamelled reds and yellows, with a red comb set off by a strikingly bright yellow spot. The hen looks dowdy besides her lord, being a mottled brown.

The jungle cock is the wariest of birds, and it is no mean feat to shoot one. It is possible to call up a jungle cock by imitating the flapping of a rival's wings. But it cannot be done by everyone. It needs much patience and skill.

One of the most thrilling sounds one can hear is a jungle cock's call. Phonetically rendered, it sounds like "Jock-George Joyce."

Of all the sounds of the jungle
If I had to make my choice,
I would choose to hear that clarion clear,
The Jungle Cock's "Jock-George Joyce."

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How it cuts the air of the morning,
That roystering, boist'rous noise,
It is heard above all, that arrogant call
The Jungle Cock's " Jock-George Joyce."

Ah, I picture the flashing beauty
And the jaunty, martial poise
Of that swaggering Knight, all spurred for the fight
As he challenges " Jock-George Joyce."

Here in the dusty city
In my heart re-echoes that voice,
And I long for the day when I'll hie me away.
Where the Jungle Cocks call " Jock-Joyce."

GALLINAGO.

Daily News.

Buffalo Stung to Death

A buffalo which was attacked by a swarm of hornets on the edge of the Kandalama Wewa, died a short while later.

The buffalo had rubbed itself against a dead tree, from a branch of which a hornets' nest got dislodged and fell beside the animal.

Daily News.

Hornets Kill 2-year-old Child

Two-year-old Herath Banda of Angammana took a delight in aiming stones at a hornets' nest. He never hit it, until yesterday when the enraged insects mercilessly swooped down on him. His mother, hearing his cries rushed to help him, but neither she nor the neighbours could save him from the hornets. The little boy died before he could be removed to hospital.

Gypsies have Radio Set

Gypsies are the proud possessors of a radio set and a gramophone. This group camped at Malpettawa, Ambalantota, is believed to be the first group of gypsies in Ceylon to own a radio set.

The dry-battery radio is placed in a hut made of date-palm leaves and in the evenings all the families of the gypsy camps crowd round the radio set and listen to the day's programme. They prefer Hindi music most.

The head of this gypsy clan is called Arachchi. All the gypsies have to do exactly as he says. He settles quarrels and sometimes imposes heavy fines. With the money he gets from these fines he buys toddy, and all of them including women, drink to the health of the man who is punished.

Why Save Wild Animals ?

Why save wild animals at all ? Is it not more simple to accept here and now that they are useless and obstructions to the necessary expansion of human endeavour ? Anyone who cannot answer this question cannot very well be convinced that there is any virtue in preserving the natural scene, or perhaps growing flowers, or painting pictures. The value of wild life can be assessed only in relation to its absence. Imagine, for instance, a pretty valley or a forest glade devoid of living creatures—no squirrels, no birds, or in Africa no big game. Nothing could be a greater disaster than to wipe out all the beautiful, interesting and sometimes dangerous animals that give life to the African scene, and no words can adequately appraise the intangible, almost immortal, pleasure of seeing wild animals in their natural setting.

Anyone who is untouched by this plea must concede that there is another and perhaps very material reason to preserve wild life. All the animals that fly or roam or creep across the plains have an earning capacity. People travel from all corners of the world to see and photograph them, and travellers spend freely in hotels, shops and transport agencies. Thus, even if to some there is no pleasure in the beauty of nature, they must admit the economic advantage of retaining an irreplaceable asset which earns a considerable share of the national income.

It may appear that the case for preservation

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is designed to favour only the rich traveller, or the soulful observer from cultured communities, but this is only the immediate phase. The people of various countries are beginning to realise that wild animals are more than objects for destruction. They know that much of their history, their folk-lore and their customs are entwined with their knowledge of the wilds. They will, in time, regard it as a tragedy if their children cannot see the extraordinary and exciting animals which their fathers have described or to which they have dedicated many of their songs and rituals.

MERVYN COWIE in *The Field.*

The Tiger's Nose

(From *The Field*)

(i)

With regard to the sense of smell, tigers hardly possess any, and what little they do they seldom use. Jim Corbett confirms this in his inimitable books. Leopards, too, whose hunting methods are broadly comparable with tigers, have little or no scenting powers, though with acute sight and hearing, like tigers. (Though its eyes are not quite so good as these big cats, I would back an old Scottish hind's all-round senses against anything on four legs).

In dealing with calf-killing leopards which it has been necessary to shoot—shy, unsophisticated animals, perfectly harmless, unwounded, to human beings—I have at least three times had them pass within eight or nine feet of the hide without detecting me; probably oftener, since they rarely omit that miraculous silent glide that can render them inaudible even over dry-leaves in the stillness of the African dusk. I have only once been fortunate enough to hear a tiger, and once a leopard, march straight on to a kill without bothering about how much noise they made. A leopard returning to a kill usually circles it, and consequently a hide, at a radius of about 25 to 50 yards, depending on the ground, and sits down for a careful look before moving in. Given suitable broken ground, a hide on it is far better than a machan in a tree, easier to make and to conceal, and much more comfortable. Two or three cushions, and 12 to 20 yards from the kill is ideal. A leopard questing for a kill dragged about 20 yards through light bush to be nearer to a good place for the hide, used its eyes, and did not put its nose to the ground. Incidentally, of course, given some knowledge, reasonable care, and decent shooting, so-called "dangerous game" is hardly ever in the least dangerous.

A. JAMES.

(ii)

Jim Corbett, states in his *The Temple Tiger* that he is convinced that tigers are quite lacking in the sense of smell, and he gives one particularly striking example of a couple of young tigers passing close to a kill, which was obvious to even a human nose, without finding it under the leaves which covered it.

G. H. R. PYE SMITH.

(iii)

During my stay in India of very nearly 50 years I shot several tigers and produced many others for V.I.Ps. and lesser mortals to shoot. I am definitely of opinion that tigers have a sense of smell and use it to find their prey. Frequently I have seen a tiger when some distance from a "kill" (bait), throw up its head and sniff. I had a hobby of sitting by pools in the hot weather and watching and studying the various animals that came and went. My companion on these occasions was an aboriginal, a Gond, Madia or Korku. They were all firmly of the opinion that tigers had the power of scenting, and taught me how to deodorise myself with a solution of rusa grass (*Andropogon Martini*) or other pungent herbs. This had a definite effect in camouflaging our presence.

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Red dog (*Canis vel non rutilans*) appeared to be the only animal which ignored the scent and sight of humans.

F. C. COVENTRY.

(iv)

Indian shikaris and aborigine trackers probably know as much about the subject as most people, and none of them have ever taken me down wind to where we expected to meet *Felis tigris*.

LIEUT.-COL. STEVENSON-HAMILTON.

(v)

My own opinion, based on sixty years' experience of India and its tigers, is that the tiger has a sense of smell. It is due to the animals' highly developed sight and hearing that in hunting he has not to rely upon his nose.

R. W. BURTON.

Whooping Cranes to be Undisturbed

(i)

The United States Air Force has abandoned its plans to expand its bombing and gunnery range at Matagorda, Texas, in deference to opposition from the Canadian Government and other interested parties who wish to preserve the wintering grounds of the whooping crane, only two dozen specimens of which are known to exist.

When it became known some weeks ago that the Air Force was proposing to expand its range to a point where exploding missiles might frighten or endanger these scarce creatures, the Canadian Government, which protects them in their summer habitat, sent a protest, and this was backed by several American naturalist organizations, including the Audubon Society. Much public discussion followed, with people writing letters to the papers on both sides.

The present decision means, in the words of an editorial in to-day's *New York Times*, that " the largest of our cranes, with a 5 ft. windpipe and a peculiar call which cannot be mistaken for anything else in nature, has won its argument with the Air Force."

(ii)

Ottawa, February 28.

From April 1 whooping cranes will be able to nest undisturbed by the roar of aircraft engines. The transport department here has issued an order forbidding pilots to fly lower than 2,000 ft. over Caps Wood, Buffalo Park, in the North-West Territories, where two-thirds of the Canadian nesting grounds lie in deep wilderness. Nor will aircraft be allowed to land in the protected area. At the moment the number of whooping cranes officially recorded is 28, which is the highest for some years. The ban will remain in force from April to October 15, the period covering the cranes' residence in Canada.

London Times.

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Correspondence

Lapwings at Play

Sir,

Sometime ago on the Sinhalese Sports Club grounds at Maitland Place, I watched a very curious performance by a pair of Red-wattled Lapwings. One bird (presumably the female) was on the ground. The other was circling overhead uttering his " Did he do it." Suddenly he turned and dived at the female. She bent her head and he passed right over her body. He then turned and dived at her again. She in the meantime had turned completely round and stood facing him and he passed over her body as before. This performance was repeated several times. Was this, I wonder, courtship display or merely *pour faire passer le temps*.

E. B. Wikramanayake.

Uncommon Birds on Galle Face

Sir,

To-day (26.3.56) there are three Java Sparrows *obviously wild* (see a " Guide to the Birds of Ceylon by G. M. Henry, p. 85) in the compound of the Colombo Club.

Yesterday I saw a Small Cuckoo in a garden between Galle Road and the Beira Lake.

Incidentally in this garden a Nightjar or two may be frequently seen.

S. P. Shelley.

Colombo Club.

Albinism in Mynahs

Sir,

On the 28th December, 1955, amongst the birds that daily visit my garden, was a mynah with a very prominent white patch on the upper right wing. The white feathers appeared to be amongst the greater coverts and secondaries, as can be seen from the accompanying sketch. Six days after this visit another mynah appeared with an abnormally white tail that had only one or two normal black feathers.

This is the first time I have seen or heard of

albinism occurring in mynahs and I think it may interest your readers.

A. M. M. Davies.

Sloth Bear Crossing Water

Sir,

While out on a shooting trip in the Galge area during the end of August this year, I saw a rare sight which I doubt any sportsman has seen before. I had my camp pitched on the bank of Menik Ganga, off " Hendi Kema." One of my men informed me that there was a bear on the opposite bank. I rushed up and true enough there was one about 150 yards away, drinking water. Although there were several of us watching this incident, the animal took no notice of us, but had its fill and crossed over to the other bank. The river was low at the time but not dry. The shallowest at 6 in. and deepest part 18 in. to 24 in. of water. I was much surprised at what I had seen. It is well known that a Sloth Bear, unlike in other countries, does not readily go into water.

Would any reader record if this has been observed before ?

E. C. Fernando.

Tasmania

Sir,

At the moment we are busy constructing an artificial lake for irrigation purposes, but we shall stock it with rainbows so it will serve a dual purpose.

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There is to all intents and purposes no shooting in this country, I have been invited to go "'roo shooting," but the locals are quite trigger happy and I would not feel very safe. There are many quite unnecessary accidents every year. And it is poor sport shooting these great hopping, lumbering creatures. We have only one real kangaroo in "Tassy," but a number of Wallaby and smaller marsupials. The two most interesting are the Duck-billed Platypus and the Echidna or Spiny-Anteater. They are quite common and we have both on the farm, and I have picked them up and handled them. I often watch the former swimming about in the pools when fishing. I do not think these are true marsupials but belong to the sub-class of monotremes. They lay eggs as well as suckle their young, as is well known in the case of the Platypus, but the Echidna is not so well known. It lays an egg but it also has a pouch into which, by some anatomical contortion, it manages to deposit it. It then suckles the young when it hatches. They have fur as well as spines. Strange creatures, these Australians.

There is the rabbit, of course, but cartridges are too expensive to waste on him, and those that have not been wiped out by Myxomatosis are poisoned or trapped. We do not suffer from them as much as they used to on the mainland, but they can still consume a lot of grass.

When I first came to Australia I spent a day in the Sherbrook forest, some 25 miles out of Melbourne, watching the Lyre birds, and I do not think I have ever had such an interesting day with birds. They are wonderful creatures, and nobody visiting Australia who is interested in Natural History, should miss them.

IAN CAMERON.

Forth, Tasmania.

Deer Shooting

(i)

Sir,

Numerous people are under the erroneous belief that permits to shoot deer are issued only to those in possession of rifles. I should like to inform them that it is no offence to use a smooth bore gun to kill deer.

The use of a rifle is made compulsory under certain circumstances, like the destruction of rogue elephants, for instance. It would be discriminatory to restrict the right to shoot deer only to those in possession of a rifle when such luxury weapons are in the possession of a limited few. The control of deer shooting is not affected by the restriction of certain weapons but by the limitation of licences and a close season.

The efficiency of the Wild Life Department is often criticised without taking into consideration the great amount of work that has to be done with a very limited staff and a regrettably inadequate budget. That poaching is rampant is no fault of the Wild Life Department, it is due to the lack of public appreciation of the value of our wild animals.

A. M. M. DAVIES.

Daily News.

•

(ii)

Your correspondent, Mr. A. M. M. Davies, whose letter appeared in the "Daily News" is under the mistaken belief that it is lawful to use smooth bore guns on big game except on rogue elephants. May I for his benefit quote authority in support of my contention that it is unlawful to do so.

The Legislative Enactments of Ceylon, chapter 325, the Fauna and Flora Protection Ordinance, section 11, Form E, which is the prescribed form of the game licence, states clearly : "This licence does not authorise the use of smooth bore gun for the purpose of shooting at or killing any animal of the following species —Deer."

C. R. W. ABHAYARATNE.

(iii)

A quotation from the Fauna and Flora Protection Ordinance reads : "This licence does

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not authorise the use of a smooth bore gun for the purpose of shooting at or killing any animal of the following species . . . Unless the licensing authority specified the species in the blank space provided, there is no prohibition of the use of a shot gun. The matter is one in his discretion. He will, doubtless, specify elephants and buffaloes where the licence is to shoot animals but will not normally specify deer . . ."

I hope this quotation will serve to clear the misconception of many who have been under the belief that deer should not be shot except with a rifle.

J. C. Amerasinghe.

.416 Rifle Ammunition

(i)

Sir,

There was an article in the last journal of *Loris* in regard to ammunition and as this is likely to give a wrong impression, I enclose a copy of a letter from Messrs. John Rigby & Co. (Gunmakers), Ltd., in regard to their .416 ammunition to which I should be obliged if you will give publicity in the next edition of *Loris*.

There may, of course, be other rifles of a proprietary nature not included in the I.C.I. circular.

D. F. H. Armitage.

(ii)

Sir,

We have received your letter of January 30th in connection with our .416 ammunition. This is a proprietary cartridge of ours and although these cartridges are loaded for us by I.C.I. they are not listed in I.C.I. catalogues. We have ample supplies of this ammunition in stock and you could order direct from us, or if you place an order with your local Gunmaker he could order from I.C.I. in which case the Indent is passed on to us and we hand the ammunition over to I.C.I. for shipment. As a matter of fact, the .416 rifle is more popular than ever and we are constantly receiving fresh orders for this rifle and, of course, for ammunition.

John Rigby & Co. (Gunmakers), Ltd.

32, King Street,
St. James's, London, S.W. 1.

.375 Magnum

(iii)

Sir,

On a recent shooting trip I hit a standing buck (spotted) at a range not exceeding forty yards, the rifle being a best quality English .375 magnum, and the cartridge used the 300 grain soft-nosed variety.

The buck ran over fifteen yards from where it was standing, before it fell, and died a minute or two later.

The hole in the skin was about three inches long by two inches broad at its widest point. The bullet was stopped inside the animal.

My question is, why did that buck not drop in its tracks, the wound being six inches behind the left shoulder, when hit standing by a muzzle velocity of 2,500 and muzzle energy 4,160? Mr. John Taylor in his book 'Big Game and Big Game Rifles' claims that smaller antelope hit by this rifle seem paralysed by its blow.

Could you or any other member of the Society please tell me, from your own experience, whether this incident is not unusual for a .375 magnum? I shall also be grateful to know how this rifle would perform against bear and leopard, as I have not yet had an opportunity of using it on these animals.

A. F. Tampoe.

Mr. Philip K. Crowe, to whom this letter was referred, says, "The reason that the deer moved off after it was shot was obviously because he had not hit it in a vital spot. I have a Holland and Holland .375 magnum myself and believe it is one of the hardest hitting guns on the market. I have used it for tiger and sladang and have the greatest confidence in its shock force if, of course, one hits the animal in the right place."

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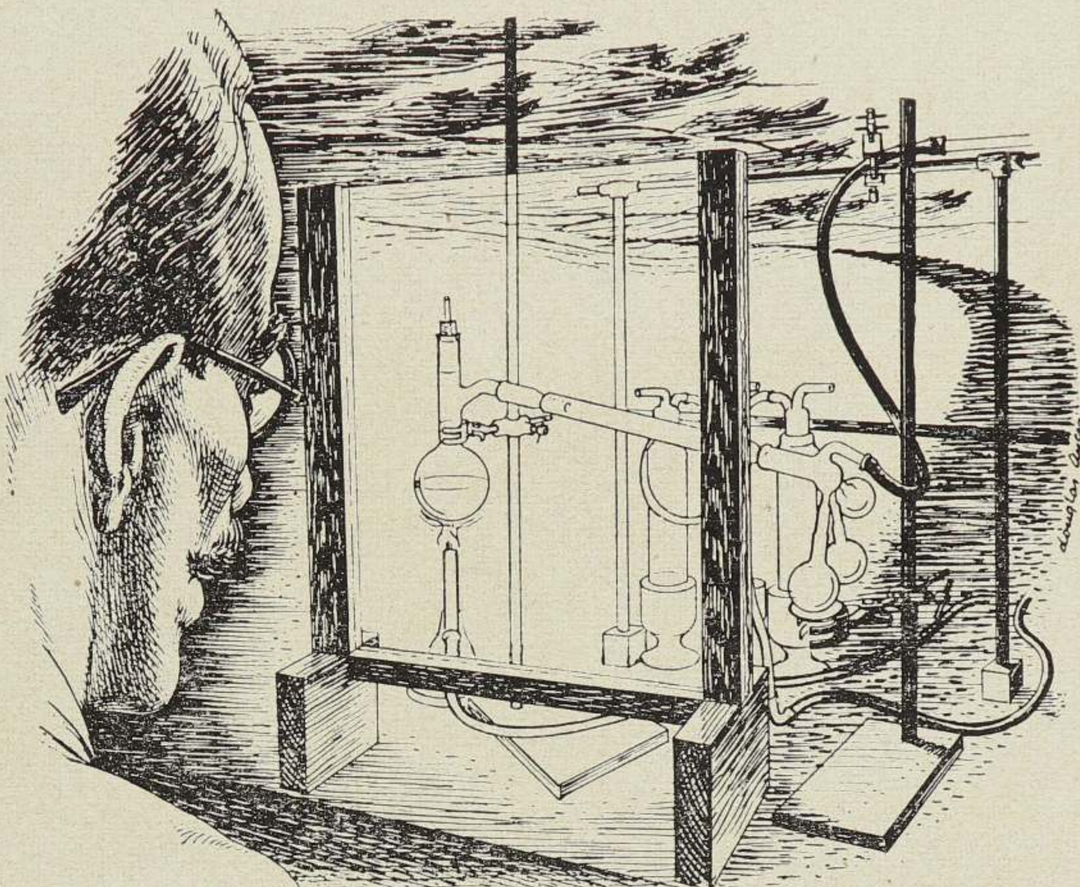

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