

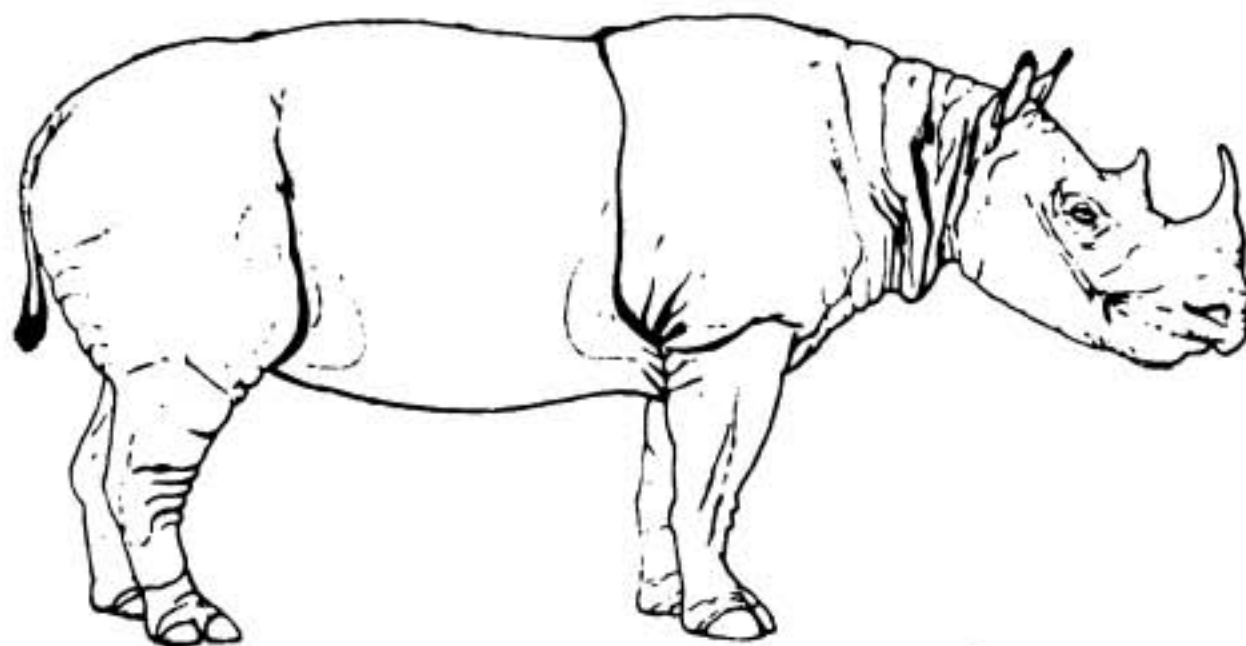
6

FIELD NOTES ON  
**WILDLIFE CONSERVATION**  
IN MALAYA

A report prepared for the International Union for  
Conservation of Nature and Natural Resources  
and the  
American Committee for International  
Wild Life Protection

by

OLIVER MILTON



*R. sum atrensis*

1963

---

SPECIAL PUBLICATION NO. 16  
AMERICAN COMMITTEE FOR INTERNATIONAL  
WILD LIFE PROTECTION  
NEW YORK 60, N.Y.

# American Committee

## For

# International Wild Life Protection

### OFFICERS

**HAROLD J. COOLIDGE**  
*Chairman*  
 2101 Constitution Avenue  
 Washington 25, D. C.

**VICTOR H. CAHALANE**  
*Vice-Chairman*

**LEE S. CRANDALL**  
*Secretary and Treasurer*

**EDITH H. FRANZ**  
*Ass't Secretary-Treasurer*

### MEMBERS

**HAROLD E. ANTHONY**  
*Ecological Society of America*

**RUSSELL M. ARUNDEL**  
*Society for the Preservation of Species*

**GEORGE E. BREWER, JR.**  
*The Conservation Foundation*

**ERNEST BROOKS, JR.**

• **CARL W. BUCHHEISTER**  
*National Audubon Society*

**VICTOR H. CAHALANE**

**JAMES L. CLARK**  
*Camp Fire Club of America*

**WILLIAM G. CONWAY**  
*American Association of  
 Zoological Parks and Aquariums*

**HAROLD J. COOLIDGE**  
*Boone and Crockett Club*

**LEE S. CRANDALL**

**JEAN DELACOUR**  
*International Council for  
 Bird Preservation*

**THOMAS DOLAN IV**  
*Wilderness Club of Philadelphia*

**JOHN T. EMLÉN, JR.**  
*University of Wisconsin*

• **CHILDS FRICK**  
*American Museum of Natural History*

**IRA N. GABRIELSON**  
*Wildlife Management Institute*

**HAROLD T. GREEN**  
*Academy of Natural Sciences  
 of Philadelphia*

**JAMES C. GREENWAY, JR.**  
*Museum of Comparative Zoology  
 at Harvard College*

**CARL O. GUSTAFSON**  
*American Conservation Association*

• **C. R. GUTERMUTH**  
*North American Wildlife Foundation*

• **E. RAYMOND HALL**  
*Museum of Natural History  
 University of Kansas*

**WILLIAM P. HARRIS, JR.**  
*Museum of Zoology  
 University of Michigan*

**EDWARD J. HOUSE**

**CARL L. HUBBS**  
*Zoological Society of San Diego*

• **WARREN KINNEY**

**EDWARD J. MAGEE**  
*Pittsburgh Zoological Society*

**GEORGE W. MERCK**

**ALDEN H. MILLER**  
*Museum of Vertebrate Zoology  
 University of California*

**ROBERT C. MILLER**  
*California Academy of Sciences*

**OLAUS J. MURIE**  
*The Wilderness Society*

• **M. GRAHAM NETTING**  
*Carnegie Museum*

**JAMES A. OLIVER**

• **FAIRFIELD OSBORN**  
*New York Zoological Society*

**JOSEPH W. PENFOLD**  
*Izaak Walton League of America*

**ROGER TORY PETERSON**  
*Wilson Ornithological Society*

• **GEORGE A. PETRIDES**  
*The Wildlife Society*

**WILLIAM H. PHELPS, JR.**  
*Pan American Section  
 International Council for  
 Bird Preservation*

• **RICHARD H. POUGH**  
*American Ornithologists' Union*

**AUSTIN L. RAND**  
*Chicago Natural History Museum*

**BAYARD W. READ**  
*United States Section  
 International Council for  
 Bird Preservation*

• **S. DILLON RIPLEY**  
*Peabody Museum of Natural History  
 Yale University*

• **LAURANCE S. ROCKEFELLER**

**ARCHIBALD B. ROOSEVELT**

**WILLIAM G. SHELDON**  
*American Society of Mammalogists*

**ANTHONY WAYNE SMITH**  
*National Parks Association*

• **RUSSELL E. TRAIN**  
*African Wild Life  
 Leadership Foundation*

**WILLIAM VOGT**

**ALEXANDER WETMORE**  
*Smithsonian Institution*

• **Board of Directors**

---

PUBLICATION OF THIS REPORT IS JOINTLY SUPPORTED BY THE  
 AMERICAN COMMITTEE FOR INTERNATIONAL WILD LIFE PROTECTION

seums  
1  
51  
5  
4  
16



## FOREWORD

IT SEEMS strange that in this day and age an important animal like the two-horned Sumatran rhinoceros could reach the verge of extinction before scientists should think of making a serious effort to study its ecology and to obtain the information that is essential if measures are to be taken by governments or private individuals to save the species.

Oliver Milton, a former Game Ranger and the author of this report, was engaged in a Burma Wildlife Survey in 1959-60. One of the objectives of that survey was to determine whether any wild rhinos are still to be found in Burma, and if so, what protective measures might be taken to increase hopes for their survival. Because of the unsettled political situation, however, it was increasingly difficult to carry out a project which involved extensive travel in remote parts of Burma, but fortunately he was able to continue his search and study of the rhinoceros as part of a wildlife study in Malaya during the period from January 1961 to May 1962. His work in Malaya, sponsored by the American Committee for International Wild Life Protection and the New York Zoological Society, had the endorsement of the Survival Service Commission of the International Union for Conservation of Nature and Natural Resources and the cooperation of Malayan Government officials. Milton describes his findings in this narrative report, which forms a part of the information assembled on his field trips.

The author's modesty gives but little indication of the difficulties he had to overcome in observing wildlife and tracking the elusive rhinos that still survive in very small numbers in swampy forested sections of Malaya. His account will be of interest and help, not only to naturalists and local authorities, but also to the supporters of the World Wildlife Fund, which was established in Zurich in 1961 and now has a branch in the United Kingdom and associated groups in the United States and other countries.

I am pleased that the American Committee, through the generosity of private supporters of the project, including the late Dr. Lawrence Whittemore, can make these reports available to those who have a special interest in the rhino as well as in conservation in Malaya. Thanks are also due to Jean Packard for her valuable help with the editing and publication of this report.

It is to be hoped that the Government of Malaya will strengthen its established system of national parks and reserves, and take special measures whenever possible to assure the survival of the last remnants of the wild rhinos that are still found in its magnificent forests.

Harold J. Coolidge, Chairman  
American Committee for International Wild Life Protection

June 1963

## CONTENTS

FOREWORD . . . . .	iii
INTRODUCTION . . . . .	1
STATUS OF THE RHINOCEROS IN MALAYA . . . . .	2
CONFLICT BETWEEN GAME AND DEVELOPMENT . . . . .	9
EXISTING RESERVES . . . . .	11
GAME DEPARTMENT . . . . .	14
CONCLUSIONS . . . . .	16
REFERENCES . . . . .	18



## INTRODUCTION

IN 1955 the Survival Service Commission of the IUCN sent an American ecologist, Lee M. Talbot, on a mission in the Middle East and Southeast Asia to study the status of certain endangered species of wildlife. He spent a short time in Malaya and recommended that a survey be made to determine, so far as possible, the numbers, locations, and species of surviving rhinoceros.

I visited Malaya in 1960 and had the opportunity to talk with Professor John Hendrickson from the University of Malaya, John Wyatt-Smith of the Forest Research Station at Kepong (also President of the Malayan Nature Society), and G. T. C. Metcalfe, the only European member of the Game Department. I realized there was a chance to carry out some research work in Malaya, so when I returned to Burma and found the government unable to grant me an extension of time for further work there, I contacted Mr. Wyatt-Smith to explain that I was leaving Burma and could come to Malaya if the Government agreed.

Shortly after this I received an affirmative reply, and my wife and I arrived in Kuala Lumpur, capital of the Federation, on January 19, 1961; except for an absence of two months, I remained in the country until May 1962.

## OBJECTIVES

The plan was to stay in Malaya for one year and pursue the following three objectives:

1. To study the status of the endangered species, with particular reference to the rhinoceros.
2. To study the everpresent conflict between rural development and the game.
3. To assess the existing sanctuaries and suggest recommendations for the future.

## ACKNOWLEDGMENTS

I should like to give special thanks to John Wyatt-Smith, as it was owing to his efforts that I was able to go to Malaya, and during the entire time I was there he gave me much assistance and advice.

Thanks are due also to the Malayan Government, particularly to the members of the Ministry of Rural Development, the Game Department, and the Drainage and Irrigation Department of Selangor. In addition to these, many other people assisted me, but I should especially like to mention Professors John Hendrickson and Duncan Poore of the University of Malaya in Kuala Lumpur, Dr. H. E. McClure of the Institute of Medical Research in Kuala Lumpur, and Mr. H. T. Pagden of Penang, a retired Government entomologist.

## STATUS OF THE RHINOCEROS IN MALAYA

ATTEMPTING to survey an animal such as the rhinoceros in a country like Malaya or Burma is a problem analogous to searching for a needle in the proverbial haystack. In East Africa, where most of the country is fairly open and vast areas can be covered by car, wildlife species are comparatively easy to locate from either the ground or the air. In Southeast Asia, most of the terrain is covered with dense jungle, and the animals do not occur in great concentrations.

Even a rhinoceros is not too hard to study in Africa, but in the jungle it is a solitary and retiring creature very seldom encountered. As they cannot be located from the air and the topography prohibits the use of any motor vehicle, one must visit the area in which they are believed to be found and spend much time exploring the region on foot.

The aboriginal tribes know the jungle best, and it is on them that one depends for information and guides. Sometimes, however, peculiar things happen: in 1957 a Sumatran rhinoceros suddenly appeared walking down a road in an oil palm estate north of Kuala Lumpur near Slim River; a few years later the episode was repeated—fairly definite proof that at least one specimen was living in the vicinity.

As Slim River was only about two and a half hours by car from Kuala Lumpur, I decided to make use of this fairly up-to-date information and start my survey in this area.

### ULU BERNAM AREA, SELANGOR

Acting Chief Game Warden James Au suggested the area in the vicinity of the Perak-Selangor boundary north of the Ulu Bernam. This is near the seven-mile canal which connects the Ulu Bernam with the Sungei Tengi in order to irrigate 50,000 acres in the Tanjong Karang extension near the coast. The area is a known habitat of the rhinoceros.

There are two species of rhinoceros in this part of Southeast Asia: *R. sumatrensis* and *R. sondaicus*. The former is smaller and more common; except for a small concentration of about 50 animals in the Udjong Kulon Reserve in Java, it is not known definitely whether the latter still survives elsewhere in Southeast Asia. During my work in Tenasserim, Southern Burma, in 1960, however, I received reports that there might still be a minimum population—so far as reproduction is concerned—in the remote forests on the Burma-Thailand border.

In Malaya, the last definite record of *sondaicus* was in 1937, when a specimen was shot in the Ulu Bernam area. In 1953 the Drainage and Irrigation Department of Selangor began work on the canal, and during the following years laborers saw rhinoceros on numerous occasions. Some of these people have told me there were four animals—one large, two medium, and one young—and that they all had a single



horn. I was told that one night a rhino came into camp and licked the salt from a discarded shirt.

In March 1957 and again in August 1960 a solitary rhinoceros was seen and photographed in Lima Blas oil palm estate about five miles north of this area; it was identified as *sumatrensis*. G. T. C. Metcalfe of the Game Department made a short survey in this general area, during which he saw two animals together on one occasion and on another was able to obtain some photographs which also identified the species as *sumatrensis*.

The Director of the Drainage and Irrigation Department in Kuala Lumpur gave his full cooperation and very kindly allowed me to use his departmental bungalow at the north end of the canal for two months, from February 13 to April 12. I had the use of the Game Department boat and outboard engine for travel on the canal from the bungalow to the forest about three miles away.

During the first week I was accompanied by Game Ranger Baharu Din from Kuala Selangor. He was of great assistance, having visited the area before, and could take me around the forest. After he left I chose to work on my own, assisted by a local villager.

Until March 28 heavy rain every afternoon handicapped the work, so during this period I usually slept in the bungalow. However, I constructed two platforms in different localities and spent several nights on these, as well as camping elsewhere with a small tent.

The D.I.D. bungalow is about 12 miles southwest of Slim River village (72 miles north of Kuala Lumpur) and situated a few hundred yards from the south bank of the Ulu Bernam and the canal intake. The region surveyed was about three miles south of the bungalow in that portion of the western extension of the Bukit Belata Forest Reserve lying south of the Sungei Dusun (approximately long. E. 101.22° and lat. N. 3.39°). This extension is bounded on the west by the D.I.D. canal, which is about 75 feet wide. Beyond this lies a vast expanse of swamp forest. To the south lies another stretch of desolate jungle which extends as far as the Sungei Tenggi. To the east is the Bukit Belata Forest Reserve; the northern boundary is adjacent to blocks of forest where timber is being extracted commercially. Slightly farther to the northeast is the new Gedangsa Land Settlement, where more than 600 families will settle in about 9,000 acres.

The average elevation of the area I studied is about 50 feet above sea level, although the land rises toward the east and reaches 829 feet in the Bukit Belata Reserve before sloping down again to the headwaters of the S. Dusun and the S. Tenggi.

The low-lying land is almost entirely swamp forest and is characterized by such trees as *Koompassia malaccensis* (kempas) and *Shorea rugosa* v. *uliginosa* (meranti bakau) and by palms such as *Licuala* sp. and *Cyrtostachys lakka*. The S. Dusun has been dammed so that its waters flow into the canal, with the result that many acres of the forest have been flooded and the trees have died. The higher portions of the ground are poorly covered with a non-dipterocarp type of forest typified by *Burseraceae* (kedondong), *Sapotaceae* (nyatoh), and *Dilleniaceae* (simpoh).



The canopy is fairly open; there are few large trees; and much of the undergrowth consists of Bertram palms (*Eugeissona triste* Griff.) and rattan (*Calamus* sp.). The largest trees are probably jelutong (*Dyera costulata*), and there is a network of paths connecting them that have been made by the Chinese and aborigine tappers who collect latex. These paths are used by elephants and rhinoceros.

From February 13 until the third week of March there was heavy rain daily, accompanied by severe thunderstorms. The minimum shade temperature was 72° F., the maximum 96° F. In spite of very little wind, several trees and branches crashed to the ground each day, bringing with them a mass of creepers and plants, and thus allowing the sunlight to reach a hitherto dark portion of the forest.

I was very fortunate in seeing one rhinoceros, but unlucky in missing the same, or another, on several subsequent occasions.

On February 16 I nearly walked into one. I had stopped for a short rest, when a noise to the left attracted my attention. In a matter of seconds a rhinoceros ambled out of some thickets and walked toward me on the path. Unfortunately, it was almost entirely hidden by a clump of Bertram palm. It stopped and stood for a few seconds directly facing me before turning and trotting off into the dense undergrowth. Although it was only 16 paces away, I was unable to identify the species, but I could see it stood at least 4'6" at the shoulder.

After this brief encounter I saw fresh tracks in various parts of the forest and at a wallow on February 23 and 24. It (or they) then left the area and returned on March 2 and 3. For the next six days I saw no further signs, although I approached the wallow each day by a fairly well hidden path.

On March 10 I visited another area before returning to the wallow by a different track, which was rather overgrown. I had to cut my way and was only 20 yards from the wallow when there was a splashing and general commotion, followed by the sound of breaking branches. The time was 11 a.m., and the animal had been lying at the side of the wallow until my arrival caused it to crash off into the dense swampy area a few yards away. However, it returned on March 11, 13, 14, 15, 17, and 18, and then went away until the 24th, which was the last time I saw any signs of it in the vicinity.

I had put down 40 pounds of rock salt, which the rhino seemed to appreciate, but there was no suitable tree in which to construct a platform. There was a fallen tree about 3 feet in diameter and 20 yards from the wallow, in full view. As it was next to the path used by the rhino, I hesitated to build a ground-level platform for fear of frightening the animal; but on the 16th I finally constructed a rude shelter, which was ignored. I rigged up a trip line for a flash photograph, but on the only occasion the rhino tripped the nylon line, the flash failed to go off.

During the following days it became apparent that the rhino had left the area once again and retreated to the higher hills toward or in the Bukit Belata Reserve. I followed the tracks for about two miles and camped in the forest, but the very densely vegetated swamp prevented further progress.

That rhino have resided in this general area for a number of years is indicated by several well-worn paths that have not been made by jelutong tappers—a number

of trees and saplings with the bark, previously rubbed off, now regrowing over the exposed cambium—and the fact, previously mentioned, that the animals have been seen on several occasions since 1953. I also found several old tracks on a small hill about 5½ miles south of the D.I.D. bungalow, but once again extensive swamps prevented a thorough exploration of the neighborhood.

I made plaster casts of four clear tracks; and taking into account the nature of the ground, there is reason to believe that there are still at least two (as previously reported by Mr. Metcalfe), and possibly three, animals. The track measurements are:

	LENGTH (from tip of central nail to rear of pad)	BREADTH (between tips of lateral nails)	CENTRAL NAIL
Cast 1	21 cm	22 cm	8 cm
Cast 2*	20 cm	19 cm	6 cm
Cast 3*	19 cm	18½ cm	6 cm
Cast 4	15 cm	14 cm	5 cm

\*possibly same animal

Summarizing the information available, we know that a *sondaicus* was shot in 1937 in this vicinity, which is typical habitat (i.e., low-lying swampy ground). This species also is known to travel to higher levels periodically.

The *sumatrensis* is more likely to be found in the hills near the sources of streams, and yet it has been seen on several occasions in this low-lying swamp. C. S. Ogilvie, formerly of the Game Department, considered that the casts I had made came from a *sumatrensis*. He remarked on their large size, but pointed out that the toes naturally would tend to spread out in wet ground.

I measured one of the many small trees (about 3' in diameter) growing along the paths followed by the rhino and used as rubbing posts. Dried mud and absence of bark reached 4'2" above the rhino's tracks. If this were caused by shoulder rubbing, then the height of this animal at the withers would be about 4'10", which is too big for a *sumatrensis*. However, the marks could have been made with the head.

#### **Other Fauna Recorded in the Area**

**Elephant** – There were numerous old tracks in several places, probably made by the herd known to occur in the Bukit Belata Reserve.

**Bear** – I crossed some tracks early one morning, and a jelutong tapper I met shortly afterwards said he saw the bear. The cast made of his track measured 18 cm long and 9 cm wide.

**Tapir** – One was seen near the main road to the D.I.D. bungalow, and I came across several tracks in the forest.

**Binturong** – Probably frequent, but not often seen. I watched one nearly 30 minutes as it climbed about a tree above my camp collecting fruit; unfortunately, it was at dusk, when photography was impossible.

**White-handed Gibbons, Long- and Pig-tailed Macaques** – Seen and heard every day.



**Otter** – Very common along the canal.

**Tiger and Leopard** – Reported, but not seen.

**Pig** – I disturbed a number of them feeding on fruit of *Mangifera foetida*, and saw a fine boar near the D.I.D. camp.

**Bearded Pig (*Sus barbatus*)** – I made one cast of a pig which indicated a very large beast such as this. The actual hoof measurements were 9 cm by 6 cm, but including the two impressions made by the "dew claws", the over-all measurements were 10½ cm by 7 cm. The cast was made on moist but fairly hard sand.

**Mouse Deer** – Common and often seen.

**Argus Pheasant** – Very common; heard calling every day and frequently at night as well.

### **Conclusions**

With land development progressing so rapidly in the Federation of Malaya, one must consider the possibility that all or part of some of the existing game reserves and sanctuaries are endangered and ultimately may have to be degazetted.

Every effort should be made to locate new areas which could become permanent reserves or national parks. Malaya has such a wealth of wildlife that it is imperative to save as much of it as possible so that not only will future generations be able to enjoy it, but other countries would be able to see that the appropriate authorities are sufficiently progressive and far-seeing to set aside wildlife sanctuaries as well as opening up vast areas for agricultural development.

There are great potentialities in the Ulu Bemam, and this small area would make a unique rhinoceros reserve or national park for the following reasons:

1. It can be reached by road in a little under three hours from Kuala Lumpur, capital of the Federation.
2. With carefully planned path-cutting and construction of platforms, camp sites, and artificial salt licks, visitors would derive great enjoyment from the area and its wildlife.
3. Preservation of the forest, which is not rich and contains little timber valuable for commercial purposes, would also protect one of the watersheds, from which numerous streams flow into the D.I.D. canal.
4. Toward the S. Tengi to the south the major portion of the land presumably is largely unattractive for agricultural purposes.
5. Beyond the canal to the west lies the largest swamp forest in Malaya, extending almost to the coast.
6. The Sumatran rhinoceros, one of the world's endangered species, inhabits the area; every effort should be made to save it from extinction. Moreover, the Javan rhino (*sondaicus*) was here in 1937, and there is some speculation that it still occurs in the area. If so, the fact that both species occur in the same locality would be of great interest throughout the world.

I suggest the following geographical features in connection with delineation of the boundary, totalling an area of 20 square miles:



Commencing from the junction of the D.I.D. canal and the Sungei Dusun eastward following the Sungei Dusun to map reference 271604, thence southeasterly following a river upstream to the watershed at point 197 feet (map reference 295575) and continuing southeast following down a stream to its junction with the Sungei Tenggi at map reference 308557. Thence following the S. Tenggi downstream in a southwesterly direction to its junction with the D.I.D. canal; thence north to originating point.

As the area is already well known and frequented by jelutong tappers, there is a constant risk that the rhinos living there will be shot. I feel, therefore, that it is very important for a member of the Game Department to be stationed there as soon as possible on a full-time basis; he would act as a deterrent to poaching and could carry out a more detailed study of the animals, their habitat and movements.

#### NORTH PERAK

The headwaters of the Selama River lie in the mountainous country not far south of the Thailand border. The hills of this general area, which is known as Ulu Selama, are well forested and rise to over 5,000 feet.

Former Game Warden J. A. Hislop visited the area in 1956 and proposed formation of a game reserve. Because of Communist activities, the district had not been visited since, but the Sumatran rhinoceros was known to be there, as well as other wildlife.

While there, I saw a Sumatran rhinoceros at fairly close quarters. The horns measured about 10" and 2". After several minutes the animal moved away, drank from a nearby stream, and then ambled off into the undergrowth, still unaware of our presence. Later in the morning I found fresh tracks in another area, so there is every reason to believe that there is a minimum of two animals in this region.

Although I saw only a portion of Ulu Selama, I suggest that the Game Department make a thorough exploration of the area and follow up the proposals previously made by Mr. Hislop.

#### PAHANG

The Krau Game Reserve (see the fuller description beginning on page 11) once contained a number of rhino, but it is threatened on all sides by development projects that place the animal's habitat in a precarious position.

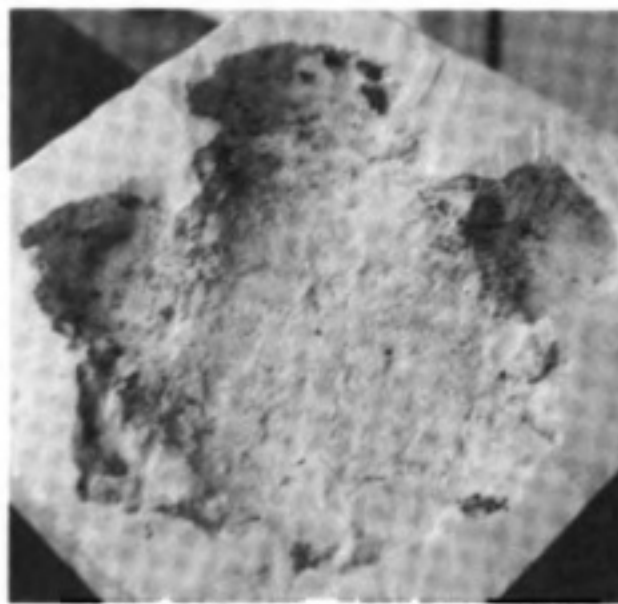
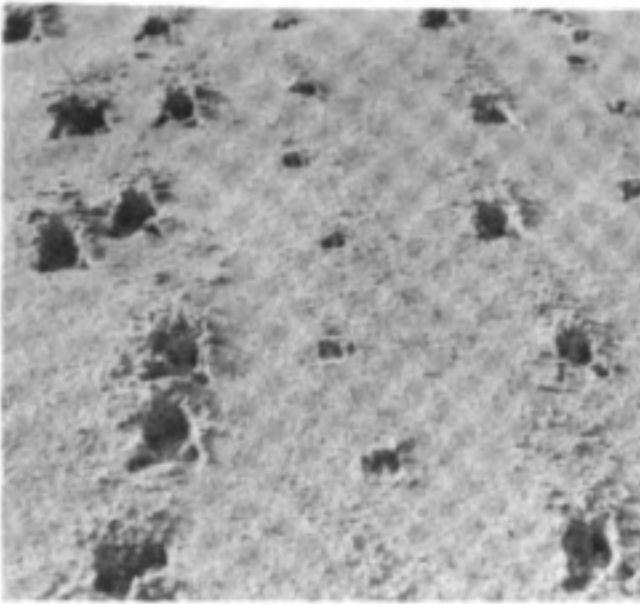
I visited a formerly famous salt lick (Jenut Baik) in the south of the reserve, but found only some old elephant and tapir tracks. The local Che Wong aborigines confirmed that no rhino had been seen in several years. Farther west I found rhino evidence at another salt lick (Jenut Bakap), together with elephant, seladang, tiger, tapir, pig, and mouse deer tracks. I was unable to visit the northwest corner of the reserve, but the Che Wong say that rhino are still to be found there.

#### JOHORE

This state was once famous for its wildlife, but the game is now seriously threatened and it is doubtful that more than ten rhino still remain. During 1959







All photographs by Oliver Milton

Above, top row, left to right:

1. Giant Leatherback Turtle (*Dermochelys Coriacea*), Trengganu.
2. Tracks of the turtle, measuring more than 7 feet across, on Dungun beach.
3. Egg laying; some of the eggs can be seen at the bottom of the 2-foot hole.

Second row, left to right:

1. Sambhur tracks leading to a small pool on the shores of the Endau River.
2. Sumatran rhino track; Cast No. 2 in text (see page 5).
3. Jelutong tree (*Dyera costulata*) being tapped for its latex.

Lower right: A "path" in the Krau Game Reserve, Pahang.

Opposite page, top row, left to right:

1. The small Che Wong aborigine settlement at the junction of the Sentau and Teris rivers. The temporary shelters are built of bamboo, cane, and palm leaves, and are situated in their cultivated area.
2. The Endau River near the Pahang State border.

Opposite page, second row, left to right:

1. A Che Wong hut, built on a tree stump to be safe from elephants.
2. Che Wong Rajah Tenk, with his blowpipe and quiver of bamboo.
3. Another view of the Endau River; much of the forest is swamp.

Opposite page, bottom row, left to right:

1. Fairly open undergrowth in the Krau Game Reserve near a rhino habitat.
2. Rhino wallow near Slim River in Selangor.



and 1960 two females (or perhaps the same animal) were seen at different times; a pair was seen twice; and once three rhinos were seen together. In 1961 a local Game Ranger found the remains of one animal, with the horn missing, on the Sungei Tersap in the northeast.

Near Tanah Abang, several miles south of the S. Tersap, the aborigines report three rhino still living; but with the timber extraction being carried on by the Chinese it is uncertain how long these remnants will survive.

On the coastal strip near Tenggara, the Game Ranger believes there are three animals. One was seen in February 1962, and the tracks of two others have been reported; but as there is practically no control, these animals are probably doomed unless immediate steps are taken to protect them from poaching both from the mainland and the off-shore island hunters.

#### FUTURE OUTLOOK FOR THE RHINOCEROS

As elsewhere in Southeast Asia, the prospects for rhinoceros are not encouraging; yet with the recent increased interest in fauna conservation here, particularly of the endangered species, the position is not completely hopeless.

It is extremely difficult to estimate the number of rhinos in Malaya because of the impossibility of reaching all parts of their habitat. From all available information, it seems that there might be 40 to 50 animals left, approximately as follows:

Johore	10
Pahang	8
Selangor	5
Perak	10
Kedah	4
Kelantan	5
Trengganu	5
Total	<u>47</u>

The idea of establishing one or more rhinoceros reserves to safeguard this dangerously low number is sound, but there are two main difficulties: (1) locating and immobilizing the animals in their present habitat, and (2) the actual mechanics of moving them. Trucks are generally useless because of the almost impenetrable swamps. Boats and rafts might be used in some places, and perhaps manpower if the animal is small enough.

I believe the proposed area near the Ulu Bernam in Selangor would support at least one or two more pairs; and an area in either Perak or Kelantan is feasible, since these are the only two states retaining vast portions of jungle which are not going to be developed for some time.

Whatever is decided, the Game Department must be reorganized and the staff considerably increased and strengthened. Where rhino are known to exist, one or two members of the Department should be stationed in the vicinity to keep daily contact with the animals. At the present time there is almost nothing to prevent a poacher from killing a rhino, removing the horn, and selling it.

## CONFLICT BETWEEN GAME AND DEVELOPMENT

MALAYA provides many examples of the conflict between man and wildlife. No day goes by without some section of the country being opened for development (resettlement of natives, mining, timber extraction, or rubber), and this not only causes destruction of the natural habitat of the resident wildlife, but also forces many of the species to leave the area—if they are not killed first—and seek refuge elsewhere. Otherwise they wander about aimlessly until they are shot as crop raiders, or because they have damaged an estate or harmed human life. In many areas, land which has lain fallow for many years could surely be developed again instead of opening up virgin forested land.

In Johore, during the rule of the late Sultan Ibrahim, any form of hunting was prohibited in the State except by special permit from the Sultan himself or one of his officers. Because of this commendable condition the game population lived in comparative peace, but now the position has changed.

New rubber plantings, mining, and timber extraction have reached every part of the State, with the result that the former range of many species has been interspersed with artificial habitats which afford grave danger to the welfare of the wildlife. For instance, elephants visiting their old haunts may now find themselves in a new rubber plantation or in a mining area from which they are chased away—if they are not shot. J. A. Hislop, Chief Game Warden of Malaya (1957-60), writes;

In Johore three large areas are often shown as Game Reserves on maps; they are the Segamat Wildlife Sanctuary, the Endau-Kluang Game Reserve and the Endau-Kota Tinggi Game Reserve. The situation however in these three areas is anomalous since they have never been properly constituted under the provision of any Wildlife Enactment and their boundaries include, apart from large commercially exploited Forest Reserves, much alienated and occupied land. They owe their position to the very strict shooting laws in force in Johore under the late ruler, His Highness Sultan Ibrahim ibni Almarhum Abu Bakar.

Twenty years or so ago, the late Sultan imported a number of banteng (*Bibos banteng*) into Johore, and a small herd of about 20 animals still exists in the western portion of the Segamat Sanctuary. There is also a herd of about 70 seladang (*Bibos gaurus*) which probably represents the largest concentration of these animals in the southern part of Malaya. But the eastern end of this long and narrow Reserve has been divided into 20 blocks of 1,000 acres each, and the commercial extraction of timber will be carried on there for the next 20 years, 1,000 acres per year. This will involve the building of roads and laborer camps, the presence of humans, and the destruction of wildlife habitat. At the Sanctuary's western end, 21 blocks of 750 acres each have been given out for prospecting. As these two schemes will affect almost half of the Sanctuary, there is little hope for the game unless it moves north into the State of Pahang before it is completely encircled.



In the Endau-Kota Tinggi Reserve, through which runs the road from Singapore and Johore Bahru to Mersing and Endau, large areas have been opened for timber extraction, and Mersing has become increasingly popular as a seaside resort for people from Singapore and elsewhere. Any animals seen on the road are invariably shot, especially at night, and the Game Department is not staffed sufficiently to prevent this.

Near Sungei Ulu Sedili, two or three seladang have been seen by the Game Ranger, who has also reported a small herd of about seven elephants a few miles farther south. These animals have been seen by other people; and unless they can be enticed back to a more favorable area, they will certainly be faced with extinction. At present they are being hounded from one place to another and have become quite confused. If they enter an estate or plantation, the owner is entitled to protect his property, which usually means death for the intruder.

The Endau-Kluang Game Reserve lies on the border of Pahang State and probably contains some of the wildest country in Johore. Much of the jungle bordering the Endau River is inaccessible swamp, but timber extraction is taking place in certain sections of the Reserve in which rhino are known to live.

In Pahang State, the Krau Game Reserve could be one of the finest reserves in the Federation; but with the development that is taking place along its boundaries, the game is being crowded farther and farther toward the center.

On the eastern side of the Reserve adjacent to the Krau River, the Jah Hut aborigines have planted rubber, and at Runjak there is a school; farther south, some 6 square miles of the Reserve were leased to a Chinese contractor for timber extraction. Elsewhere, Chinese have the right to collect latex from the jelutong tree, which involves the cutting of paths and construction of camps, and poses a threat to the wildlife, particularly rhinoceros. In the southern portion of the Reserve, about 800 of these trees are being tapped by 15 laborers.



*Photograph by Oliver Milton*  
Part of the Krau Game Reserve. Seladang, tiger, and tapir tracks have been seen here.



## EXISTING RESERVES

I VISITED three game reserves—Krau, Endau-Kota Tinggi, and Endau-Kluang—but was unable to reach Segamat as there were no porters available.

### KRAU GAME RESERVE

This fascinating reserve was gazetted in 1923 and lies almost in the center of the State of Pahang. It consists of 280 square miles of magnificent hilly jungle, crisscrossed with small streams and abounding in wildlife. In the northwest corner, the highest hill in the vicinity, Bukit Benom, rises to 6,916 feet. From this ridge numerous streams flow east to join the Sungei Krau, one of the Reserve's three large rivers. The other two, the Sungei Lompat and the Sungei Teris, are fed by tributaries rising from the hills in the central and southern portions.

Because of its jungle remoteness, much of the Reserve is practically unknown. Along the S. Krau there are four Jah Hut aborigine settlements—Runjak, Balet Nyor, Pian, and Galong—totalling 77 houses; at the junction of the S. Teris and the S. Sentau to the west, there is a lone group of Che Wong aborigines, 12 houses with 17 families. Although all these people live within the confines of the Reserve, they do very little harm to the wildlife. They hunt with blowpipes and kill only for food. Shifting cultivated plots furnish them rice, sweet potatoes, tapioca, and corn.

Although these aborigines on the S. Krau live in comparative harmony with their surroundings, one can foresee further developments in the near future. The existing rubber plantations will increase in size; commercial extractions of timber may expand; and the Chinese may open stores. Once this has happened, there will be a very serious threat to the wildlife. Therefore thought should be given to the ultimate degazetting of the eastern portion of the Reserve and the addition of a suitable new area to compensate for the loss.

#### **Eastern Section**

The Game Warden of Pahang, G. T. C. Metcalfe, one of the most active members of the Game Department, arranged for three members of his staff and three aborigine porters to accompany me. Leaving Kuala Krau on July 8th, we walked through rather uninteresting inhabited country before reaching the forest and the Game Department outpost at Kuala Lompat at the junction of the Lompat and Krau rivers. This is the main entrance to the Reserve on the east.

Half a mile from this entrance a small artificial salt lick has been constructed. Already this is being visited by seladang, sambhur, and other species of wildlife. This lick will become even more important as an attraction to game which will be forced out of the area outside the eastern boundary as development continues. More licks are being constructed to attract the animals.

On July 9th we walked to the aborigine settlement of Pian (at the junction of the Pian and Kráu rivers), where there are 21 houses. En route I saw the Runjak school, the rubber plantations, and much forest clearing. I continued up the river to a small village of Galong (or Blem) near the mouth of the Terbau stream, and found the inhabitants of the five houses digging a furrow to divert a small mountain stream to their newly planted hill cultivation.

I spent three days in the Che Wong aborigine village at the junction of the S. Teris and the S. Sentau. They form a fairly small group—about 80 people—of primitive jungle nomads who depend on the jungle and small cultivated patches for food. For the past several years they have been living in a semipermanent jungle clearing, but if and when they return to their former nomadic life they will leave a relatively large cultivated area which will attract game.

The area for about 2 miles northeast of the settlement is nearly devoid of game, and I suspect the extensive jelutong tapping is largely responsible for this.

### **Western Section**

To the west and beyond the existing boundaries, there is a large and very valuable area for wildlife. The jungle is extremely dense, and there are at least nine salt licks. One of these, Jenut Bakap, is particularly beautiful and had a wealth of tracks along the small stream flowing through this remote jungle clearing. I saw a young bear and frequently heard gibbons and siamang in the trees overhead.

Argus pheasants are very common along the main ridges, and I found 14 patches where these magnificent birds had cleared away the litter of twigs and leaves from the forest floor to make dancing grounds. One of these was 10' by 12', and above it the bark of a small branch was worn quite smooth by the bird's continual perching. Frequently five or six pheasants could be heard calling at once, and even during the night one or two would be audible.

This concentration of wildlife might indicate that they have been driven from their former habitat farther east and southeast. Now they are staying in some of the thickest forests of Pahang, but many of them are still outside existing Reserve boundaries.

In view of this, I recommended that further surveys of the area should be made by representatives of other governmental agencies concerned (Agriculture, Mining, Land Settlement, etc.) to see if the Reserve could be extended to the west. I suggested the following boundary alignment:

Commencing at Bukit Lanchar westwards to the junction of the Sg. Per-tang (S. Bakap) and S. Klau Kechi. Thence upstream along the S. Klau Kechi to point 350 (map 3 B/4), thence along the ridge to point 2255. From here in a northeast direction to point 705, thence east to point 4610 (map 3 C/1), 4980, thence to 5750 where it joins the existing boundary.

Should this boundary revision be accomplished, the value of the Klau Reserve would be greatly increased and consideration could be given to changing the status to a national park.

### **Other Recommendations**

1. All commercial tapping of jelutong to be stopped within the Reserve.
2. No mining or commercial timber extraction, such as is now taking place in the eastern sector, should be permitted within the Reserve.
3. Timber extraction, mining, and other developments should not be allowed within a certain distance of the Reserve boundary, thereby forming a buffer strip around the area itself.
4. The eastern boundary should be revised in the light of any future plans for the Jah Hut aborigines now living within the Reserve.

### **ENDAU-KOTA TINGGI RESERVE**

This area of 385 square miles in Johore is fairly safe from any development at present.

### **SEGAMAT RESERVE**

This area, 145 square miles directly west of Endau-Kota, is being bisected by a development project. Dr. Johnson, Professor of Zoology at the University of Singapore, says there is a herd of at least 70 seladang here, representing the largest concentration in Malaya. Unless the animals are encouraged to move east, or the development is stopped, there is little hope for the resident game population.

### **ENDAU-MERSING RESERVE**

This is the largest—397 square miles—and the most remote area in southwest Malaya, but a north-south road on the eastern side is becoming more heavily travelled as development steadily increases in the Pandang-Endau area to the north.

This region is noted for Sumatran rhinoceros. During the past year or so, these animals have been reported:

- 2 near Ulu Sungei Labong in Endau region
- 1 male at Ulu Sg. Tersap
- 3 near Pengalan Bukit and Longgu Forest Reserve
- 1 female seen October 1960 on Kota Tinggi road
- 1 female seen near Tanggong Tenggawk (possibly same as above)
- 2 at Ulu Sg. Mas in Endau-Kota Tinggi Reserve

No deaths have been reported since one female fell into a pit trap in 1959; she was rescued, but later died in captivity.



## GAME DEPARTMENT

A REPORT on Malaya would be incomplete without some reference to the Game Department. I had frequent contact with some of its members, and as the months went on I realized that it was a body which was not functioning in an entirely satisfactory manner.

Based on my experience as a Game Ranger in the Tanganyika Game Department from 1948 to 1955, I would like to offer a few suggestions and comments for consideration.

1. So far as I know, the Game Department is not a federal department—which means, among other things, that the Chief Game Warden, who at present has his headquarters in Negri Sembilan, has to be gazetted officially as a Game Warden of any other State which he might wish to inspect. Without such official notification, even though he visited another State, he would have no jurisdiction over the Warden of that State. The Chief Game Warden obviously should be in charge of all matters concerning the wildlife of the whole of the Federation, and therefore able to visit any other State at any time to carry out his duties.

2. The Department at present is very understaffed. In Johore, when I was there, one Game Ranger was stationed at Mersing, and his only means of transportation was a bicycle. If he wanted to make any trips by river, he had to depend on someone else who had a boat. The one Ranger at Endau was in a similar plight. Three men at both Mersing and Endau would be more suitable, and a boat at each place is an absolute necessity. Without a boat it is quite impossible for any conservation work to be carried out satisfactorily.

The other States in the Federation are as poorly staffed, so I consider that the entire Department should be reorganized, with the following as a basis for consideration:

**One Chief Game Warden** — Responsible for the entire Federation and making frequent trips to the various States.

**One Deputy Chief Game Warden** — To assist the Chief Game Warden and be authorized to act for him when away on tour. His presence would enable the Chief Game Warden to do considerable travelling.

**Eight Game Wardens** — It is not necessary to have a Warden in each State, so they might be stationed at Kelantan, Trengganu, Pahang, Johore, Negri/Sembilan/Malacca, Selangor, Perak, and Kedah/Penang/Perlis. Each Game Warden would tour his area as much as possible and visit each Game Ranger.

**Game Rangers** — One stationed in each district in each State. Except for a few days at the end of each month, which would be allocated to office work, each Ranger would be visiting his Game Scouts.

**Game Scouts** — Each Game Ranger would have a varying number of Game Scouts who would patrol his district.

Office staff would be allocated appropriately.

Provided certain conditions are adhered to (see paragraph 3), the above framework will enable anyone at any time to receive up-to-date and reasonably accurate information on the status of the Malayan wildlife.

3. Each Game Scout would be out on patrol duty for at least nine months of the year. During this time in the field, he MUST keep a diary in which he would report, for example:

- |   |   |
|---|---|
| (a) The places he visited and the route followed and dates  | (h) Signs of poaching   |
| (b) How he travelled and the expenses involved  | (i) Damage to crops, estates, and what precautions the owners had taken to prevent such damage                        |
| (c) Weather conditions  | (j) Photographs, if possible, with full details   |
| (d) Detailed account of animals seen:<br>Species<br>Sex . . . adults . . . young<br>Numbers            Condition<br>General behavior (nervous, fairly tame, etc.) | (k) Sketch maps of paths, licks, wallows, feeding grounds, etc.   |
| (e) Reports of animals by other people, and how reliable  | (l) Feeding and other habits, especially mating   |
| (f) Tracks seen, species, and how recent  | (m) Try to locate range of various species; are they more frequent in any one spot at any particular period, and why? |
| (g) Salt licks or other favored spots such as wallows   | (n) How many rounds of ammunition used and reason for use   |

These are just a few of the subjects which should be included in every Game Scout's report, but such a report will be useless unless it is submitted every month to the Game Ranger, who in turn will forward it to the Game Department headquarters, where it can be filed. Thus the Chief Game Warden will have an accurate up-to-date picture of the wildlife situation.

4. Owing to frequent and sometimes unavoidable friction between rural development and game, it is essential that the Chief Game Warden be a person who can discuss at high levels the many problems which arise over this conflict; this can be done satisfactorily only if he has a personal knowledge of the position of the game. By the same token, it is most necessary that the Game Department be consulted when any new plans are being formulated by other departments. In this way many arguments might be avoided and the lives of many animals would be saved.

The Game Department should cooperate fully with scientific institutions such as universities, museums, conservation societies, and zoological societies in the Federation and abroad. At this time there is increasing interest in wildlife conservation, and although much of it at present is devoted to countries other than Malaya, I think that before long Southeast Asia, and Malaya in particular, will become the focus of new conservation activities.

5. If the Department is going to be increased, one is faced with the question of finding suitable personnel. Wherever these persons might come from, they should be sent for a four- or six-month period to study the methods of another Game Department—perhaps somewhere in India—where the conditions are not too dissimilar from those in Malaya.



## CONCLUSIONS

THE FEDERATION of Malaya is very rich in natural resources and comparatively rich in wildlife. Apart from Burma it is the only country in Southeast Asia which has the best ingredients to create lasting and definite reserves. However, before this can be realized it will be necessary to make certain adjustments to the present wildlife conservation practices in force.

1. The existing Game Department should be reorganized completely and reconstructed on a much larger scale. The Chief Game Warden should have control over the wildlife of the whole Federation, and his staff should be large enough so that information on any part of the country is readily available.

The Game Laws should be revised so that they are up-to-date with the current problems of wildlife conservation.

2. Certain development projects are necessary, but there should be much closer cooperation with the Game Department if there is to be any hope of preserving the national fauna.

3. Malaya still has a small population of the Sumatran rhinoceros (perhaps 50 animals, about 20 definitely known), and it is necessary to consider the possibility of setting up a special reserve for them: The area near Slim River is one suitable place; and I would suggest that further surveys be made of Kedah, Perak, and Kelantan with the idea of locating a second suitable area. If it were found, then rhinos from other parts of the country—Johore in particular—could be transplanted there, once the problems of capture and transportation were solved.

4. When the boundaries of the few existing reserves were defined, the many development programs found today did not exist. For this reason some of the reserves are suffering, and the lives of the animals are seriously threatened. It would therefore seem necessary to have a further examination of the reserves, and if needful revise certain boundaries, as well as making sure that the reserves are not touched by any projects such as mining, extraction of timber, collection of latex, schools and stores in connection with resident aboriginal tribes, fishing, or native resettlement. Humans can adapt themselves to numerous and varied conditions, but the wildlife must be given a fair chance for survival in habitats which are agreeable to them.

5. The Malayan Nature Society is a very commendable organization, and as a public voice its opinions should be heeded by the Government in matters concerning the preservation of natural areas and the conservation of endangered species of wildlife.

6. In view of the recommendations passed at the First World Conference on National Parks, held in the United States during July 1962, the Government should:



- (a) intensify its efforts to locate the dealers in rhinoceros horn and other parts of the body, and make possession or sale a serious offense; and
- (b) in cooperation with other appropriate governmental departments, intensify its efforts to prevent the importation of live orang-utans into the Federation. If importers are found, every effort should be made to learn the exact origin of the animals. To afford any such orang-utan the best chance of survival, it should be sent to Mrs. Barbara Harrison at the Sarawak Museum in Kuching; she has established an orphanage for young orang-utans where they are given excellent treatment. Once they have established themselves, they can be released into a nearby "orang-utan reserve" where they will have the best possible chance to continue their lives in more or less natural surroundings.

Apparently conservation programs are absent in the schools, although one college does encourage students to write on scientific subjects by publishing their articles in the biannual college magazine. At lectures on conservation given by foreign specialists, the younger members of the audience show little understanding of the meaning of preservation and conservation; their age group was unable to get into the countryside during their earlier years because of Communist terrorism, so they lack a general knowledge of the out-of-doors.

In many countries of the world this unawareness of the existing flora and fauna often leads to unintentional breaking of the law by destroying something which is protected. For example, many species of birds are completely protected, but unless a person can associate a bird in the field with the one mentioned in the conservation laws, it is rather unfair to blame him for killing it. Wherever practicable, each protected species should be well publicized with photographs or drawings so the average person can know what he may legally hunt.



*Photograph by Oliver Milton*

**The Giant Leatherback Turtle (*Dermochelys Coriacea*)  
is certainly deserving of protection.**

## REFERENCES

- Hislop, J. A. 1961 Protection of Wildlife in the Federation of Malaya. *Malayan Nature Society Journal*, Special Issue, page 141.
- Metcalf, G. T. C. 1961 Rhinoceros in Malay and Their Future. *Malayan Nature Society Journal*, Special Issue, pages 183-191.
- Talbot, Lee M. 1960 A Look at Threatened Species. *Oryx* 5, page 24.



*Photograph by Oliver Milton*

Very dense, almost impenetrable, forest along the Endau River.

INTERNATIONAL UNION  
FOR CONSERVATION OF NATURE  
AND NATURAL RESOURCES  
MORGES, SWITZERLAND



INTERNATIONAL COMMISSION ON NATIONAL PARKS

Enrique Beltran, Mexico  
Dusit Banijbatana, Thailand  
John R. B. Coleman, Canada  
Mervyn Cowie, Kenya  
Kai Curry-Lindahl, Sweden  
W. J. Eggeling, United Kingdom  
Rocco Knobel, Union of South Africa  
F. C. Lehmann, Colombia  
Mirghani M. Medani, Sudan  
Theodore Monod, France  
Wladyslaw Szafer, Poland  
Tsuyoshi Tamura, Japan  
Nguyen Van Hiep, Vietnam  
Victor Van Straelen, Belgium  
Conrad L. Wirth, U.S.A.

Harold J. Coolidge  
Chairman  
2101 Constitution Avenue, N.W.  
Washington 25, D. C. (U.S.A.)

Jean-Paul Harroy  
Vice Chairman  
31, rue Vautier  
Brussels, Belgium

Fred M. Packard  
Secretary  
2000 P Street, N.W.  
Washington 6, D. C. (U.S.A.)

SURVIVAL SERVICE COMMISSION

R. Bigalke, South Africa  
Boonsong Lekagul, Thailand  
F. Bourlière, France  
J. H. Calaby, Australia  
Harold J. Coolidge, U.S.A.  
Mervyn H. Cowie, Kenya  
E. P. Gee, India  
James C. Greenway, Jr., U.S.A.  
L. Hoffman, France  
J. A. Ibarra, Guatemala  
E. M. Lang, Switzerland  
R. A. Phillippi-B., Chile  
J. Verschuren, Belgium  
J. Vincent, South Africa

*Chairman:* Col. C. L. Boyle, United Kingdom  
The Fauna Preservation Society  
c/o The Zoological Society of London  
Regent's Park, London, N. W. 1, England

*Vice Chairman:* Jean Dorst, France  
National Museum of Natural History  
55, rue de Buffon  
Paris V<sup>e</sup>, France

*Secretary:* A. Daubercies, United Kingdom  
The Fauna Preservation Society  
c/o The Zoological Society of London  
Regent's Park, London, N. W. 1, England





