

K9/650

PAPERS LAID No. 97

NUMBER	IND. S.S.	
	FEBRUARY	✓
MARKS BT.	BINDING (2)	
REPORTS	PRESS (3)	



COLONY AND PROTECTORATE OF KENYA

PARLIAMENT  
OF KENYA  
LIBRARY

**GAME DEPARTMENT  
ANNUAL REPORT  
1960**

---

Two Shillings - 1961

---

060.  
GOK



K.S. 30  
K/9AM

LEGISLATIVE COUNCIL LIBRARY

PARLIAMENT  
OF KENYA  
LIBRARY

**GAME DEPARTMENT  
ANNUAL REPORT  
1960**

KENYA NATIONAL ASSEMBLY

Accession: 10013045

Call No: 060-13/epk



## CONTENTS

	PAGE
PART I.—STAFF AND GENERAL .. .. .	1
PART II.—CONSERVATION AND EXPLOITATION .. .. .	2
A. Future Status of National Reserves .. .. .	2
B. Exploitation Based on Viewing and Photographing Game .. .. .	4
Controlled Areas .. .. .	4
Meru African District Council Game Reserve .. .. .	4
C. Exploitation by Hunting .. .. .	5
D. Exploitation by Harvesting for Hides, Meat, etc. .. .. .	7
Galana River Game Management Scheme .. .. .	7
Other Game Cropping Schemes .. .. .	8
E. Exploitation by Capture and Export of Live Animals .. .. .	9
PART III.—CONTROL .. .. .	10
A. Control by Shooting .. .. .	10
General .. .. .	10
Game Control Unit .. .. .	11
Vermin Control .. .. .	11
B. Control by Capture .. .. .	11
General .. .. .	11
Capture Unit .. .. .	11
Rhinoceros: Other Methods .. .. .	12
Carnivores .. .. .	12
Thomas's Kob .. .. .	12
Other Animals .. .. .	13
C. Disposal of Trophies .. .. .	13
D. Compensation for Losses .. .. .	13
PART IV.—LAW ENFORCEMENT .. .. .	14
A. Illegal Hunting .. .. .	14
B. Illegal Trade in Trophies and Other Products .. .. .	15
C. Prosecutions .. .. .	16
PART V.—RESEARCH .. .. .	16
PART VI.—BIOLOGICAL MATTERS AND NOTES ON INDIVIDUAL SPECIES .. .. .	17
A. Disease .. .. .	17
B. Drought .. .. .	17
C. Game Counts .. .. .	18
D. Occurrence of Melanism and Albinism .. .. .	21



## GAME DEPARTMENT ANNUAL REPORT, 1960

### PART I—STAFF AND GENERAL

During the first half of the year under review the non-clerical establishment of the Game Department consisted of one Chief Game Warden, two Senior Game Wardens, 16 Game Wardens and 280 Game Scouts, plus a temporary Game Control Unit brought into being in 1957, principally to assist private land owners.

The 1960/61 approved estimates envisaged the upgrading of one Game Warden post to that of Biologist (Scale A) and an increase of three Game Wardens and 60 Game Scouts. The new posts had not been filled by the end of the year however, and shortly after its close the Game Control Unit was abolished and the establishment reduced by two Game Wardens and 31 Game Scouts. The third Game Warden post had had to be used to meet the urgent need for a licensing officer at headquarters so the expected increase in field staff was brought to naught and the Department was in fact reduced by the loss of its Game Control Unit.

Considerable redistribution of staff was necessitated by the impending abolition of National Reserves. A small Colonial Development and Welfare financed Fauna Research Unit consisting of a Biologist, three Game Scouts and a Stenographer came into being on 1st July, the Biologist post being filled by Mr. D. R. M. Stewart, who took up his appointment in September.

The Galana River Game Management Scheme, partly supported by a grant from the Nuffield Foundation, went into full operation in April, the two Game Warden posts involved being filled by secondment from the regular establishment.

Major I. R. Grimwood was appointed Chief Game Warden with effect from 1st February, on transfer from the Northern Rhodesia Department of Game and Fisheries.

Honorary Game Wardens once again displayed varying degrees of activity. The Department is wholly dependent on these volunteer officers to make up for the inadequacy of its permanent staff and without their efforts the position of fauna in many districts would be even more parlous than it is. Duties variously undertaken consisted of supervising and directing the work of subordinate Game Department staff throughout large areas, active patrolling and the bringing to justice of poachers and law breakers generally, the control of dangerous and other game and the conservation of isolated pockets of often rare species of animals. There is little glamour and a great deal of hard work attached to most of these activities and it is impossible adequately to thank those who devoted their time, and often money, to such ends. Those others who could not take an active part but who brought their influence to bear on public opinion are also deserving of gratitude.

Close liaison was maintained with the Director and staff of the Royal National Parks, to whom the Department is indebted for many acts of assistance, particularly in the Nairobi area and in getting the Galana River Game Management Scheme under way.

The Kenya Wild Life Society, which continues to grow in numbers, stature and authority, also afforded practical as well as moral support on many occasions and thanks are due in particular to those individuals who, together with

representatives of the East African Natural History Society and members of the staff of the Coryndon Museum and the Royal National Parks, regularly gave up their time to sit on the Game Capture Advisory Committee, which controls the very considerable trade in live wild animals.

The East African Professional Hunters' Association maintained its policy of close co-operation and consultation with the Game Department, to the benefit of both, and continued to be a powerful force in the conservation world.

The Game Department was again relieved of many of its duties in gazetted Forest Areas which, where not required for plantation development, serve as reservoirs of wild life, and thanks are due to officers of the Forest Department, as well as to many members of the Administration, for their personal interest and often strenuous efforts on behalf of wild life.

An Interim Advisory Committee on Game was set up in June pending the introduction of the legislation necessary fully to implement the recommendation of the 1956 Game Policy Committee for a statutory board.

This Committee sat under the chairmanship of Sir Ferdinand Cavendish-Bentinck and consisted of the Permanent Secretary to the Ministry, Dr. Likimani, the Director of National Parks, and representatives of the Administration, the Wild Life Society and the East African Professional Hunters' Association as well as the Chief Game Warden. It met four times during the course of the year.

## **PART II—CONSERVATION AND EXPLOITATION**

### **A—Future Status of National Reserves**

In Sessional Paper No. 1 of 1959/60 Government accepted the recommendation of the Game Policy Committee that National Reserves should be abolished, and the carrying out of that recommendation became the main preoccupation of the year.

The failure of the National Reserve concept had been due, as the Committee's report stated, to the Trustees having been charged with the conservation of wild life without being given powers to control human activities and other factors inimical to its continued existence. The regulations applying to successor conservation areas would therefore have to overcome that difficulty.

The same regulations would also have to overcome the growing antagonism to game of the pastoral tribes inhabiting the reserves arising from the feeling that game animals were "Government's cattle" maintained at their expense in terms of competition for grazing and for water, and to their detriment in respect of losses of stock and often human life, with nothing to show in return.

If game was to continue to exist it would have to share the land with man and his domestic stock, and it was therefore logical that the people who would have to concede it living room should derive the benefits accruing from its presence.

The policy adopted was therefore to attempt to get local authorities, in the shape of African district councils, themselves to institute conservation measures by supplying the incentives of profit and prestige and to convince them that, if properly exploited, game could increase the overall yield of their land.

In the previous year the Meru African District Council had set an example by creating its own 600 square mile Game Reserve by passing by-laws controlling entry, grazing, cultivation, the destruction of vegetation and similar practices which, superimposed on its status of a Controlled Area in which all



animals had been declared to be game animals, gave the same degree of overall control as prevails in National Parks and in Game Reserves in countries other than Kenya.

This was the model followed where animals still existed in numbers sufficient to be exploited by tourism for the benefit of people wishing to see and photograph them and by the end of the year agreements on these lines had been reached concerning all but the Marsabit National Reserve.

Thus the African District Council of Narok had agreed to create a Game Reserve, to be known as the Masai Mara Game Reserve, covering some 700 square miles of the best of the Mara country and including the whole of the Mara National Reserve.

In this region the annual grass fires lit to improve grazing for the flocks of sheep and goats which are yearly pushing their way further into the tsetse country present the greatest threat to wild life, because they are rapidly destroying the thickets and riverside vegetation essential to species such as buffalo, rhinoceros and lion.

The only by-law applying to the whole reserve prohibits such burning, but an inner area of some 200 square miles lying between the Talek and Mara rivers is to be made a complete sanctuary by by-laws controlling entry, grazing and all human activities, and it is there that the visitors' lodge to be presented to the African District Council by the Government, will be built.

In the Kajiado District the African District Council have agreed to pass by-laws prohibiting burning, cultivation or the enclosure of land in the Kitengela area of the Ngong National Reserve, thus preserving the migration route of game from the neighbouring Nairobi Royal National Park, and throughout the West Chyulu National Reserve which borders on the Tsavo Royal National Park. By-laws similar to those for the Meru and Masai Mara Game Reserves will apply to the Amboseli National Reserve which will be taken over by the African District Council and run under the name of the Masai Amboseli Game Reserve. Here, too, Government is presenting a new visitors' lodge to the African District Council.

Both the Narok and the Kajiado African District Councils will employ their own Wardens with subordinate staffs to administer their Game Reserves, which will come into being when the National Reserves cease to exist in 1961.

In both districts, the prospects of direct harvesting of common species such as zebra and wildebeest for the value of hides and meat, as a second form of exploitation, is under investigation in areas adjacent to the African District Council Game Reserves.

The Marsabit National Reserve presented a more difficult problem because the tourist potential will be largely absorbed by the two tiny National Parks which are to be created, the one covering Marsabit Mountain itself, and the other an area on the Uaso Nyiro River near Archer's Post. The bulk of the African District Council's revenue must therefore come from other forms of exploitation.

Of these sport, hunting and direct harvesting of animals offer the greatest possibilities and before the National Reserve was degazetted on 1st January, 1961, agreements concerning both had been reached with the Samburu African District Council.



The Controlled Area which succeeds the National Reserve has been divided into a number of blocks, in some of which limited hunting will be allowed and to others of which it is hoped to attract photographic parties. In certain blocks the use of motor transport will be prohibited in order to ensure that hunting is carried out in the most sporting manner, and the African District Council will run a pony and camel transport hire service, which will enhance its income from Controlled Area fees.

The harvesting of game, principally zebra, oryx and gazelle will take place on the controlled grazing scheme areas of Leroghi plateau and the high plains to the west of the Matthew and Ndoto mountains. The abundance of game in these schemes, which fall into three groups based on Baragoi, Wamba and Maralal, has been the cause of considerable complaints in the past because wild animals are accused of taking an undue share of the limited grazing available and of concentrating in the blocks being rested. After aerial counts had established the number of animals present however (see Part VI of this report), the African District Council signed an agreement establishing a quota of game units as well as of stock units to be permitted in each group of schemes. The proceeds of culling to keep within these totals is to be paid to the African District Council. The number of animals counted represented 14.7 per cent, 14.5 per cent and 6.5 per cent respectively of the total liveweight of game and stock combined in each group of schemes. In the first two cases these figures will be the quota for the future. In the third case, game will be allowed to build up a little before harvesting begins.

It would be unwise to be too sanguine about the prospects of African District Council Game Reserves and other locally sponsored enterprises, since in all areas there are other legitimate and apparently conflicting human interests. A policy whereby those on whose forbearance the existence of wild life depends are given a stake in its future and a stake in the profits to be made from its presence must, however, offer the best hope for the future.

## **B—Exploitation Based on Viewing and Photographing Game**

### **CONTROLLED AREAS**

Exploitation of this nature is mainly based on the Royal National Parks, but a growing number of visitors like to travel farther afield and have paid photographic fees to enable them to pursue their hobby in Controlled Areas.

The most popular one for game photography is Controlled Area Block 61, covering the region from the left bank of the Mara River up to the Loita Plains, in which no hunting has been allowed for the last ten years. So popular had this area become that during the year it was necessary, in order to avoid spoiling its amenities, to limit the number of parties which could visit it at once and to restrict the number of persons and the number of vehicles in each party. Despite this, over 800 photographic permits were issued during the year. The popularity of this block bodes well for the Narok African District Council as the greater part of it will be included in the Masai Mara Game Reserve.

### **MERU AFRICAN DISTRICT COUNCIL GAME RESERVE**

The enterprise of the Meru African District Council in setting up its own Game Reserve on the Kinna River has been mentioned earlier in this report. Few people visited the reserve during 1960 owing to the relative difficulty of access and its undeveloped state. An airstrip has now been put in, however, and 100 miles of internal roads built. Lodge accommodation for visitors together with a small provisions shop should be ready by the time it re-opens at the end of the rains. This is the reserve in which the famous lioness Elsa and her cubs were released and where Elsa died. Part of it is therefore familiar to those lucky enough to have been invited to visit her.



### C—Exploitation by Hunting

As may be seen from Table 1 below the number of hunters remained at much the same high level as during the previous two years, the only significant change being the marked drop in the number of persons taking out bird licences.

Some idea of the percentage success of hunters may be gained by comparing the figures of animals killed on licence, shown in Table 2, with the number of licences issued. Table 2 represents animals killed in Controlled Areas only, to hunt in which either a full or a 14-day licence is necessary, together with a special licence for those species which require one. An exact comparison of kills to licences cannot be made, however, as it is possible for some holders of full or 14-day licences to have shot certain animals covered thereby on private land, and such kills are not recorded in Table 2. Private land licences do not entitle the holder to hunt in Controlled Areas or to take out a supplementary licence, so their number can be ignored. No details are available of animals shot on private land.

Sport hunting in Kenya must be regarded as having reached almost its full potential as more hunting parties could not be accommodated in Controlled Areas without imperilling the stocks on which the sport is founded. On private land opportunities for expansion still exist, however, and farmers who conserve game will probably have increasing opportunities of renting their shooting rights. It is therefore encouraging to see the birth of a *safari* firm which specializes in hunting on private land.

The established system of regulating hunting in Controlled Areas continued to work smoothly. Under this Controlled Areas are divided into blocks in which only one party of two hunters is allowed at any time. Blocks may be booked up to six months ahead and each species of animals occurring therein is listed as being totally protected, 50 per cent protected, or not protected at all; i.e. that no animal of that species may be hunted, that only one may be hunted by each party of two, or that both hunters of a party may hunt that animal. This rule-of-thumb method of classification is adequate in the light of present knowledge of population dynamics and permits hunters to make their plans well ahead. Further conditions applying to individual blocks allow local sanctuaries to be created in which no animal may be killed, or in which one or more species is protected, and protection can be given to females or to animals carrying undersized trophies in the same way.

The difficulty of affording protection to game birds during the breeding season, which varies considerably from year to year in any locality depending on the onset of the rains, has been met by closing bird shooting in each block on receipt of advice from the local Warden that pairing has started. Such a system has certain disadvantages for hunters, who cannot be certain that they will be able to shoot birds in the block which they have booked, but it achieves its object of conserving stocks whilst allowing the longest possible open season.

Controlled Area fees are paid by hunters in arrears in accordance with the number of animals shot, and these fees are made over to the African District Council in whose area the block lies. Table 3 shows the total amounts paid to African District Councils during 1960. Government revenue from the sale of game licences during the same period amounted to £40,475.

The East African Professional Hunters' Association continued to invite the Chief Game Warden to attend all meetings of its Executive Committee and it is largely due to the co-operation of that body, and of individual professional hunters, that control of hunting continued to work so smoothly.

A total of 70 professional hunters were licensed to operate in Kenya during 1960, of which 14 held permits restricting them to assisting clients to hunt non-dangerous game.

TABLE 1—GAME LICENCES ISSUED

Licences Issued	1958		1959		1960		Total
	Visitors	Residents	Visitors	Residents	Visitors	Residents	
Full .. .. .	189	490	175	393	163	478	641
14-Day .. .. .	36	52	33	19	20	28	48
Private Land .. .. .	8	141	26	129	35	131	166
Bird .. .. .	—	—	—	—	—	—	366
Employees .. .. .	—	—	—	—	—	—	—
		2					3
		679					568
SPECIAL LICENCES—							
1st Elephant .. .. .	201	39	144	46	137	49	186
2nd Elephant .. .. .	16	25	16	11	23	13	36
Rhinoceros .. .. .	114	130	94	15	102	12	114
Masai Lion .. .. .	87	2	70	5	63	5	68
Non-Masai Lion .. .. .	25	13	48	12	41	11	52
Leopard .. .. .	136	2	127	12	128	6	134
Hippopotamus .. .. .	—	—	—	2	1	—	1
Buffalo .. .. .	248	301	356	275	417	332	749
Grevy's Zebra .. .. .	91	4	68	9	63	5	68
Bongo .. .. .	7	11	18	13	19	11	30
Eland .. .. .	87	30	122	40	115	31	146
Greater Kudu .. .. .	20	4	31	6	15	5	20
Hunter's Antelope .. .. .	22	—	21	3	20	2	24
Blue Monkey .. .. .	3	—	—	—	4	—	4
Ostrich .. .. .	26	8	28	12	28	12	40
		34					



TABLE 2—GAME ANIMALS SHOT ON LICENCE—CONTROLLED AREAS ONLY

Species	1959	1960	Species	1959	1960
Elephant .. ..	151	180	Klipspringer .. ..	15	17
Rhinoceros .. ..	88	100	Oribi .. ..	39	26
Burchell's Zebra .. ..	314	598	Steinbuck .. ..	26	27
Grevy's Zebra .. ..	69	50	Dik-dik .. ..	229	121
Bongo .. ..	10	2	Impala .. ..	309	326
Buffalo .. ..	200	180	Gerenuk .. ..	150	110
Greater Kudu .. ..	16	14	Thomson's Gazelle	239	229
Lesser Kudu .. ..	70	69	Grant's Gazelle .. ..	296	282
Bushbuck .. ..	86	76	Wart Hog .. ..	128	118
Eland .. ..	85	65	Giant Forest Hog ..	5	8
Duiker .. ..	23	36	Giraffe .. ..	2	2
Waterbuck (both species) .. ..	46	138	Lion (Masai) .. ..	6	27
Reedbuck (all species)	34	34	Lion (other) .. ..	11	18
Oryx (both species) ..	165	159	Leopard .. ..	84	72
Topi .. ..	24	47	Crocodile .. ..	46	37
Hunter's Antelope ..	18	12	Ostrich .. ..	27	26
Coke's Hartebeeste ..	182	238	Wildebeest .. ..	83	104

TABLE 3—CONTROLLED AREA FEES, 1960

<i>District</i>	<i>Fees Paid</i>	
	£	<i>s. cts.</i>
Kajiado .. ..	984	5 00
Narok .. ..	1,009	10 00
Machakos .. ..	463	5 00
Kitui .. ..	119	3 00
Kilifi .. ..	93	11 00
Taita .. ..	258	13 00
Kwale .. ..	118	8 00
Lamu .. ..	58	15 00
Tana River .. ..	202	10 00
Kabarnet .. ..	22	10 00
Elgeyo Marakwet .. ..	14	10 00
Kapenguria .. ..	32	5 00
Maralal .. ..	110	15 00
Isiolo .. ..	295	5 00
Marsabit .. ..	20	0 00
Turkana .. ..	15	15 00
Garissa .. ..	273	15 00
Nanyuki .. ..	62	0 00
Meru .. ..	84	10 00
Embu .. ..	113	0 00
Mt. Kenya and Aberdare Forests .. ..	96	15 00
TOTAL .. ..	£4,449	0 00

#### D—Exploitation by Harvesting for Hides, Meat, Etc.

##### GALANA RIVER GAME MANAGEMENT SCHEME

The Galana River Game Management Scheme, after a period of experiment and exploration of possibilities, went into full operation in April, backed by a £10,000 grant from the Nuffield Foundation to cover initial capital costs.

The scheme is based on cropping game (initially almost exclusively elephants) on a sustained yield basis in a 2,000 square mile area to the east of the Tsavo (East) Royal National Park, with the triple objects of:—

- (a) Demonstrating that land useless for agricultural or pastoral purposes is capable of yielding a worthwhile return from its wild life resources, if properly managed.
- (b) Rehabilitating the Waliangulu tribe by providing as many as possible of its members with employment of a nature to which they are eminently suited. (Nearly every adult male of some sections of this tribe, which traditionally exists by hunting, had been sent to prison as a result of the 1956-1959 anti-poaching campaign. Most of their prison sentences were coming to an end at the time the scheme was planned to start.)
- (c) Controlling the increase of, and if necessary reducing the elephant population of the neighbouring Tsavo (East) Royal National Park during the period when herds move out of that sanctuary. (The damage done to vegetation in certain areas of the Park has been causing the authorities considerable concern in recent years.)

Scheme headquarters was set up on the left bank of the Galana River near Lali Hill, to which an approach road was later cut, with the kind assistance of the Warden of the Tsavo (East) Royal National Park, which follows the boundary of the Park from near Mackinnon Road Station. The early months were taken up in obtaining transport and other stores, in building houses, offices and stores at headquarters, in constructing roads and tracks to facilitate hunting and the extraction of meat when elephants are shot, and in recruiting and training participants in the scheme.

Because of these duties hunting could not be started in earnest before the onset of the rains in November, but in the course of training hunters 14 elephants were shot. The meat of these was turned into biltong which was disposed of without difficulty to a coastal plantation owner at 75 cents per lb. Feet and ear skins were preserved and sold to buyers in Nairobi.

It is evident that the success of the scheme is going to be largely dependent on intimate knowledge of the movements of elephants, which emphasizes the importance of regular flights over the area. Every effort is being made to obtain the services of a biologist to take advantage of this unique opportunity for studying the population dynamics, movements and general biology of elephants.

#### OTHER GAME CROPPING SCHEMES

Preliminary investigations and experiments have been made in the marketing of the products of game culling which, as mentioned in a previous section of this report, will have to be initiated in the Samburu grazing schemes when they cease to be part of a National Reserve in order to keep numbers of game animals within the totals agreed by the African District Council. As also mentioned earlier, cropping schemes are under consideration in areas adjacent to African District Council Game Reserves in Narok and Kajiado districts.

The experiments referred to, in which the help and advice of the Veterinary Department must be gratefully acknowledged, indicate that at this juncture game harvesting schemes must be approached with caution, since Kenya is perhaps unique in Africa in offering no ready market for meat. Basically this is due to the low purchasing power of the African population, but the problem is a complex one.



As part of its destocking policy in certain rural areas the Government has instituted the practice of buying up all surplus stock available and, because of its low quality and the difficulties of transport, turning it into biltong or carcass meal. Considerable difficulty has been experienced in disposing of this, even at the low prices at which it is offered, yet the areas that produce it are the very areas in which game cropping would be possible and game meat would have to be converted into similar products and sold on the same markets. No local sale of fresh meat is possible because the tribes concerned do not eat game.

Thus, not only would any cropping scheme have to sell its meat in competition with subsidized beef products produced in the same area, but care would have to be taken not to interfere with the offtake of domestic stock since it is overstocking itself, which is the major cause of the decline of game. All external markets are closed to game meat because of Kenya's position in an endemic rinderpest area.

The prospect for hides and skins is better; properly prepared zebra skins commanding a fairly ready market at an average price of Sh. 100 for a first quality skin, with more than double that figure for Grevy zebra skins. The hides of antelopes are used principally for leather and fetch only Sh. 1 to Sh. 1/50 per pound weight, giving a value of about Sh. 25 to a wildebeest skin.

#### **E—Exploitation by Capture and Export of Live Animals**

The demand for live wild animals for zoos and similar institutions increased considerably during the year and the trade in their capture and export has now reached dimensions beyond the power of the Game Department in its present form adequately to supervise and control.

The Game Capture Advisory Committee, consisting of representatives of the Royal National Parks, the Wild Life Society, the Coryndon Museum and the Natural History Society, under the chairmanship of the Chief Game Warden, continued to sit once a month to consider all applications for dealers permits and permits to capture animals.

In the case of dealers permits, it is now obligatory for the names of all members or employees of the firm concerned who will be in any way involved in the handling of animals to be entered on the permit and for each of those individuals to be approved by the committee.

Subsequent capture permits issued to the firm are endorsed with the names of the person authorized to perform the actual capture, which must be one of those appearing on the dealer's permit.

Before authorizing the issue of a capture permit the committee satisfies itself that the application is in respect of a genuine order from an approved zoo or scientific institution and that the proposed place and method of capture are satisfactory. Strict rules are laid down concerning the reporting of captures and the subsequent crating and moving of animals and every holder of a dealer's permit is required to render a return monthly showing increases and decreases in stocks and his current holdings.

Despite these precautions it is felt that the way is still far too open for abuses to occur. Further rules and restrictions would only serve to irritate the conscientious and humane trapper without unduly inconveniencing the unscrupulous. It appears that satisfactory control will only be obtained when it is possible to insist on every capture being performed in the presence of a member of the Game Department and for inspection of dealers' premises to be carried out not less than once a week.

A feature of the year has been the demand from both America and Europe for large numbers of baboons and grey vervet monkeys for medical research and the production and testing of vaccines, for which purposes those originating in Kenya appear to be particularly suitable. This trade has brought with it its own series of problems.

Besides some 2,500 monkeys and baboons, 229 wild animals and 189 birds were exported during the year, on which the exporters put a total value of over £20,000.

### PART III—CONTROL

#### A—Control by Shooting

##### GENERAL

In accordance with the stated policy of the Government, the Game Department continued to give all possible assistance in protecting crops and livestock from depredations by game animals and the table below shows the numbers of six of the major species destroyed by members of the Department in 1959 and in 1960 in the course of that duty:—

Species	1959	1960
Elephant .. ..	364	329
Rhinoceros .. ..	93	32
Hippopotamus .. ..	65	65
Buffalo .. ..	463	399
Giraffe .. ..	12	11
Lion .. ..	27	27
Leopard .. ..	14	14
Cheetah .. ..	4	1

These figures can only be taken as an indication of the numbers of animals killed in defence of property as they do not include those shot by landowners themselves or by certain Honorary Game Wardens.

In addition, some 850 game animals of other species were killed by members of the Department during 1960, mainly in rural areas, and it is safe to say that thousands, perhaps tens of thousands, of zebra and common bovidae, the killing of which do not have to be reported, were destroyed by the owners of private land.

As usual, elephants gave the most trouble in the Coast Province in general and the Tana River District in particular. Buffalo did the greatest damage on farmland adjoining the Mt. Kenya and Aberdare forests and to Forestry Department plantations and *shambas* as well. Hippo damage was almost confined to cultivation along the banks of the Tana River from Kitui District to the sea, though control had also to be exercised at Naivasha and in the Kwale District. The necessity for killing these animals, which are nowhere common in Kenya, is to be deplored, the more so when, as is so often the case, the crops they have been raiding consist of small patches of cultivation scarcely to be graced by the name of *shambas*, planted right on the edge of the river with no attempt made at fencing them.

Many complaints were received from farmers of an overplentitude of giraffe. These animals do little direct damage to crops, except for their predilection for the flower heads of sisal plants, but their habit of going through rather than



over fences makes them understandably unpopular. Whenever possible, trappers were invited to reduce numbers by obtaining their requirements in the affected area before shooting was resorted to.

Of the total of 32 rhinoceros killed in 1960, 15 were shot in the Embu District where large areas of formerly good game country are now being opened up to planned settlement.

#### GAME CONTROL UNIT

The special Game Control Unit consisting of one Game Warden and six Scouts which was created to augment the efforts of regular Game Wardens, each of whom is responsible for carrying out needed control in his own area in addition to other duties, was based on Thomson's Falls throughout the year. From there it operated mainly on European farms and succeeded in destroying over 100 buffalo as well as many pigs, baboons and other animals coming from the neighbouring Mau, Mt. Kenya and Aberdare Forests.

#### VERMIN CONTROL

Control of non-scheduled animals is normally the responsibility of individual occupiers of land, but in the Garissa District the problem has been tackled communally, the African District Council employing eight Vermin Control Scouts who work in with Game Department staff, and whose salaries are partly met from receipts from Controlled Area fees. During the year these eight scouts accounted for 350 hyenas, 100 baboon and 100 jackals.

Towards the end of the year the Lamu local authority instituted similar measures, including the raising of a dog pack to deal with baboons, and the Tana River African District Council were contemplating following their lead.

Game Department staff helped with the control of vermin wherever possible and accounted for over 200 hyena in the Isiolo and Nanyuki Districts alone.

### **B—Control by Capture**

#### GENERAL

With the accelerating rate of decline in the numbers of most wild animals in Kenya, the importance of attempting to save rather than destroy those individuals which constitute a threat to livestock or crops increases, particularly when they belong to uncommon species.

Lack of staff, lack of funds and the need for speedy action usually makes the capture of such animals and their release elsewhere impracticable, but some progress along those lines can be reported.

#### CAPTURE UNIT

Thanks to the generosity of the American Shikar and Safari Club, which presented a four-wheel drive five-ton lorry and further funds specially for the purpose, a capture unit, consisting of one Warden and eight Scouts operated throughout the year. Efforts were concentrated on rhinoceros as being a species particularly in danger of extermination and the method used was that of injecting them with an immobilizing drug administered by a hypodermic dart fired from a crossbow. This method has the advantage that it can be used anywhere and is not limited to open country as is the more conventional one of chasing the animals and lassoing them from a lorry.

The capture team is not a research unit and ideally it should merely apply the results of the experiments of others. With so little known about this method in regard to rhinoceros, however, it was inevitable that the Warden should have

to spend a great deal of time in trying out drugs and dosages as well as in developing a suitable dart and crossbow and in evolving hunting techniques. The results by the end of the year of five rhinoceros successfully dealt with are therefore sufficiently encouraging for the work to be continued. Two other rhinoceros died shortly after being darted, one as the result of receiving an overdose intended for a larger animal and the other probably from the cumulative effects of the drug and three very recently inflicted poisoned arrow wounds. A further four were darted and lost through either the use of too small a dose or through having recovered and moved off before they could be tracked down in thick bush.

#### RHINOCEROS: OTHER METHODS

As a preliminary to the opening up to settlement of the Molinduko triangle, in Embu District, two professional trappers were engaged to remove as many rhinoceros as possible from the area. Their efforts resulted in the capture of 32 rhino of which 11 were released (nine in the Meru African District Council Game Reserve and two in the Nairobi Royal National Park) and nine died. Capture permits were also issued for certain other rhinoceros whose destruction or removal from private land had been requested by owners.

#### CARNIVORES

The major carnivores, lion, leopard and cheetah, present an exception to the general rule in that it is often no more difficult to catch than to destroy them. Eleven leopard, two lion and one cheetah, all stock killers, were trapped by members of the Department and released in places of safety, in addition to those caught by officers of the Royal National Parks. Professional trappers also assisted, particularly with cheetah, as no capture permits were issued for that species except in cases where complaints of damage had been received and then only on the basis that one animal of every two caught would be released.

The Warden of the Meru African District Council Game Reserve caught ten leopard and three cheetah, stock and poultry raiders, and released them in the Game Reserve.

#### THOMAS'S KOB

The only kob now left in Kenya exist on certain farms at Lugari near Kitale. Thanks to the protection afforded them by the owners, their numbers have risen to approximately 500, which is more than the farmers can afford to maintain without detriment to their other interests. Previous attempts at netting surplus animals having failed, "darting" was tried and in February, with the help of Dr. A. M. Harthoorn and Mr. J. A. Lock, 20 of these animals were caught, using succinyl choline chloride as the immobilizing agent. Thirteen of them, all that could be got into the small lorry available, were transported under largactol and released in the Meru African District Council Game Reserve some 250 miles away. The remaining seven were released on the spot. The prohibition on movement of animals, resulting from a succession of foot-and-mouth disease outbreaks, prevented this initial experiment being followed up by the movement of a large number of kob. It is, however, hoped to make the transfer early in the new year.

Owing to a series of unforeseen circumstances, no responsible person was present to look after the kob immediately after their release and five of them are known to have been killed by predators in the first two days. Others were scattered and have not been seen since. It appears that on future occasions it will be necessary to keep these animals coralled at the release point until they have developed a herd sense and a sense of territory before letting them go.



## OTHER ANIMALS

The assistance of those professional trappers who captured, transported and released certain other animals at their own expense, as well as the action of those Honorary Game Wardens and members of the public who performed similar services, must be gratefully acknowledged.

## C—Disposal of Trophies

The Game Department continued to operate the Ivory Room at Mombasa, where auctions of Government trophies were held in May and November; ivory and rhino horn were also sold for the Royal National Parks of Kenya, the Uganda Government and the Uganda National Parks.

The amounts sold and the prices realized are given in the following Tables 4 and 5. The total proceeds to the Kenya Government amounted to £21,925.

TABLE 4—TROPHIES SOLD—ALL FIGURES IN LB.

Description of Trophies	Kenya Govt.		Royal Nat. Parks, Kenya		Uganda Govt.		Uganda Nat. Parks	
	May	Nov.	May	Nov.	May	Nov.	May	Nov.
Ivory .. ..	12,454	9,082	6,269	6,575	23,783	14,356	1,054	3,967
Rhino Horn ..	413	237	1,049	127	38	34	—	25
Hippo Teeth ..	305	80	—	—	77	68	1,354	946

TABLE 5—AVERAGE PRICES REALIZED—ALL FIGURES IN SHILLINGS PER LB.

Price Realized	Vilaiti Ivory	Cutchi Ivory	Calasia Ivory	Fankda Ivory
May .. ..	18/- to 22/50	16/50 to 18/-	17/- to 19/10	16/70 to 17/70
November ..	18/50 to 22/10	15/10 to 20/80	16/30 to 20/80	14/- to 16/-
Price Realized	Mascob Ivory	Dandia Ivory	Rhino Horn	Hippo Teeth
May .. ..	15/90 to 17/10	16/10	90/- to 90/40	5/50 to 6/-
November ..	17/- to 18/60	18/90 to 19/-	88/- to 101/-	5/- to 5/20

Increased restrictions on the import of ivory into India and the continued U.S.A. restriction on imports of carved ivory from Hong Kong, with a consequently lesser demand for raw ivory by that country, did not depress the market as much as had been feared. The effect of the greatly increased amount of ivory coming from the former Belgian Congo can, however, be expected to be felt by the next sales due to be held in May, 1961.

## D—Compensation for Losses

The Government accepts no liability to pay compensation for damage done by game animals, but the Kajiado African District Council has evolved its own system of recompense, using funds derived from Controlled Area fees for that purpose.

The Game Warden, Kajiado, comments: "The responsibility for paying compensation falls entirely on the members of the District Council. No attempt is made to investigate each claim as this would obviously involve either Game

Department staff or the Council in an impossible amount of work. Claims are made from all over the district and in 1960 mainly involved incidents in which stock was lost to leopard or lion. The recommendation of the local chief or headman is usually sufficient to guarantee payment. There are doubtlessly occasions when a claim is made for losses due to carelessness, but as a general rule most claims appear to be genuine."

## PART IV—LAW ENFORCEMENT

### A—Illegal Hunting

The special anti-poaching team was disbanded early in the year, when each Warden became solely responsible for law enforcement in his own area.

The degree of poaching varied from region to region, and more particularly from tribe to tribe, but nowhere could the situation be regarded as satisfactory.

Undoubtedly the worst offenders were the Kamba who, not content with destroying the game of their own country, led forays into the neighbouring Masai, Embu, Meru, Tharaka and Orma territories. A severe famine in Ukambani led to an increase in "subsistence" poaching for meat, but there was also an enormous increase in the illegal hunting of rhinoceros for the commercial value of their horns, which, if not checked, will lead to their extermination in that region within the next few years.

The Boran also maintained a bad reputation for lawlessness both within and without their borders, and the illegal hunting of the Meru, Embu, Turkana and Waboni also increased.

There were a number of incidences of the spearing of rhino and elephants in Samburu country, the main motive for which appears to have been devilment. Similar incidents involving rhinoceros were reported from the Kajiado District of Masailand and, to a lesser degree, from Narok.

An alarming development is that it is now usual for the horns of rhino thus speared to be stolen and there is no doubt that both Samburu and Masai have learned that such killing can be a profitable as well as an amusing illegal pastime.

No incidents of the spearing of lion, other than in genuine defence of livestock, were reported from Masailand, but a band of Kipsigis were convicted of killing seven young lion from a pride found near Lolgorien.

Besides poaching from within its own borders, Kenya's game suffered from the attentions of raiders from without. The worst offenders were the Chagga, who frequently crossed the border in large groups armed with firearms and sometimes using motor transport. An encounter with one such gang, by the anti-poaching team before its disbandment, led to a running battle but not, unfortunately, to the arrest of any of the offenders. Indications are that such raids by Tanganyika poachers are not always unwelcome to local residents, for whom they no doubt represent a useful market for illegally obtained trophies.

The migratory game moving between the Mara region and the Serengeti National Park continues to suffer a heavy annual toll, which may amount to thousands of animals, as a result of widespread snaring in the strip of "no man's land" known as the Lamai wedge on the Tanganyika side of the border.

Gangs from across the Uganda border regularly hunt in the forests on the Kenya side of Mt. Elgon and the joint operation mounted in December, involving police, army units and Game Department patrols from both countries, with the invaluable help of local Honorary Game Wardens, is unlikely to suppress the practice for more than a short time.



On several occasions mounted parties of Gelubba made poaching forays into Kenya from across the Ethiopian border.

From nearly all ranges the Wardens in charge report that poaching is generally on the increase and that the commercial killing of rhinoceros, of which 135 cases were dealt with, is worse than before the 1956 anti-poaching campaign, though the same does not always hold for elephant. Game Department staff is everywhere inadequate to enforce the law, and as the Senior Game Warden, Isiolo, writing of his own area, puts it: "The illegal killing of 30 rhino, 35 giraffe, 11 leopard, 11 elephants, four lion, two cheetah, six buffalo, nine oryx, five eland, two ostrich and a quantity of lesser game was investigated. This may perhaps represent 20 per cent of the total actually killed illegally."

At the end of the year the following directive was issued by His Excellency the Governor:—

"It has been brought to my attention that the activities of poachers have once more assumed proportions which threaten the continued existence of Kenya's wild life.

2. In 1957, the then Sir Evelyn Baring, while Governor, found it necessary to issue a directive to all officers, and particularly those of the Administration and of the police, asking them to make themselves familiar with the provisions of the Wild Animals Protection Ordinance and of the Royal National Parks Ordinance and to take all possible measures to put down poaching.

3. As a result of that directive, and of active campaigns undertaken against poachers in the field, the illegal killing of game animals was for a period brought under control.

4. Recently, however, there has been a resurgence of this form of lawbreaking and I wish all officers to redouble their efforts to suppress it. Wire snares and poisoned arrows together account for the greatest toll of animals thus killed and every possible step must be taken to put down their illegal use or possession.

5. I wish in particular that every effort be made to save the dwindling number of rhinoceros from the attentions of poachers and to bring to justice those guilty of unlawfully killing them or of dealing in their horns."

#### **B—Illegal Trade in Trophies and Other Products**

The illegal market for rhino horn undoubtedly flourished during the year and was the cause of the great increase in poaching. Several small traders were apprehended, but the big dealers will continue to go free until this problem is considered worthy of an East Africa-wide campaign involving the whole-time services of the Criminal Investigation Department. Much of the illegal horn is smuggled overseas both by direct shipment to the east and by dhows and smaller boats plying to Zanzibar. A certain amount also crosses the land border to Tanganyika prior to shipment.

The illegal trade in ivory does not appear to have revived to the same extent, though several caches were recovered and some tusks were intercepted as they were being smuggled into Somalia.

Arrow poison continued to be manufactured and pedalled almost throughout the country, and though the mere possession of glycocides of *acokanthera*, the usual arrow poison, is illegal under the Pharmacy and Poisons Ordinance, poisoned arrows are still carried openly in many areas.

### C—Prosecutions

Prosecutions resulting in the conviction of 408 persons of offences against the Wild Animals Protection Ordinance were brought by officers of the Game Department.

### PART V—RESEARCH

The Fauna Research Officer, appointed under a three-year Colonial Development and Welfare scheme, arrived at the beginning of September. His initial tasks are to institute a system of recording biological data on Kenya animals and to study the food choices of plains game, from the initial approach of analysing the contents of dung samples.

With regard to the first task, a game report form has been produced and distributed from which, when sufficient returns have been received, it should be possible to deduce sex ratios, reproductive rates and seasons, gestation periods, growth rates and diets. To elaborate on this and to determine past and present distributions and densities, a more comprehensive questionnaire has been prepared which is filled in by the biologist during personal interviews with knowledgeable individuals. Game Department records are also being searched for data recorded in the past. As a preliminary to the second task the Biologist has started on the preparation of a reference collection of microscopic slides showing the cuticle patterns of the various grasses to be found in Kenya.

Dr. and Mrs. Lee M. Talbot continued their investigations into the ecology of plains wild life in the Mara-Serengeti region which began in June, 1959, under the auspices of the National Academy of Sciences - National Research Council and from July onwards was supported also by the Kenya Government and the New York Zoological Society. The results of their work will not be generally available until after their field studies are completed in 1961, but the close co-operation of these two and the almost day-to-day passing on of information as it is obtained have already been of immense value to the Department.

Various individuals have carried out experiments in Kenya and other parts of East Africa on the administration of immobilizing drugs to wild animals by means of hypodermic darts, with the object of facilitating their capture for marking, transfer and other scientific purposes. Amongst these the Department is indebted to Dr. A. M. Harthoorn and Mr. J. A. Lock of Makerere College, Uganda; Dr. Lee M. Talbot; Mr. H. Lamprey, Biologist of the Tanganyika Game Department, and Dr. H. K. Buechner of the State College of Washington, for details of their results, which have allowed of a list of suitable drugs and dosages for different animals being prepared.

Mr. T. Collyer Summers visited the Galana River Game Management Scheme in August to obtain samples of various organs of elephants for the Anatomical Society of Great Britain and Ireland. He returned in December and took back with him the entire carcass of a four- to five-year old cow, which he first injected with several gallons of preservative and then sealed in a steel tank.

Messrs. W. J. A. Payne and M. P. Ledger of the Animal Husbandry Division of East African Agriculture and Forestry Research Organization carried out research on the carcass analyses of wildebeest, Thomson's gazelle and impala, and it is hoped that they will later extend their work to cover other species of game animals. Their results to date indicate that wild ungulates under typical East African conditions are more efficient converters of fodder into meat than are their nearest domestic equivalents, as evidenced by the fact that wildebeest and Thomson's gazelle carry some 9 to 13 lb. more lean meat respectively per 100 lb. liveweight than do zebu steers, while their overall dressing out percentage is also higher.



Individual members of the Department assisted in the collection of material for work carried out by various scientists and bodies, principally concerning the role of wild animals in the transmission of animal and human diseases. Thus zebra fat was supplied for the Medical Research Council's work on tuberculosis, various carnivores and pigs for the investigations of Dr. G. Nelson of the Medical Research Laboratory, Nairobi, into the occurrence of trichinosis in humans in the Mt. Kenya region; the carcasses of warthogs and other pigs in connexion with the work of Dr. D. E. de Tray of the United States Department of Agriculture on African swine fever and many samples of tissues and parasites were sent to officers of East African Veterinary Research Organization in connexion with their work on rinderpest and other transmissible animal diseases.

The South West Foundation for Research and Education, of San Antonio, Texas, obtained a temporary occupation lease of some 500 acres of ground near Darajani railway station on which to build a centre for medical research involving the use of live primates, principally baboons.

Apart from its own requirements the centre will cater for the needs of visiting scientists from other institutions and it is planned to be able to handle a minimum of 1,000 baboons a year. Trapping concessions have been granted over neighbouring areas to which the Foundation hopes to attract baboons from surrounding regions by judicious planting of food crops.

## PART VI—BIOLOGICAL MATTERS AND NOTES ON INDIVIDUAL SPECIES

### A—Disease

Rinderpest appeared amongst game animals in epidemic form in the Marsabit and Samburu Districts early in the year and spread steadily southwards and eastwards, reaching the Mukogodo area of Nanyuki in June, by which time the whole of Isiolo District and north-western Meru District were also affected.

By October the disease was on the wane and it appeared that its southward advance had been checked by the European settled zone to the north of Mt. Kenya. During December, however, it broke out on a farm bordering the forest near Timau and later it became apparent that forest game had become infected, some 96 animals (buffalo, eland, bushbuck and bushpig) being found dead in the one area during that month. Though no bongo occur in this region, it is feared that the disease, once established in the forest, will travel eastward round the mountain and affect those animals in the Meru and Embu Districts.

During this epidemic the disease took a particularly virulent form which, nevertheless, was slower than usual to die out. Often one species would have almost recovered from its onslaught before another was affected, giraffe, in which blindness seems to be the most prevalent symptom, usually being the last to suffer.

The Game Warden, Maralal, assessed losses in his range at 60 per cent of all eland, warthog and greater and lesser kudu; 50 per cent of buffalo, giraffe and bushbuck; 40 per cent of impala and a considerable number of oryx.

As a result of the work of Dr. Talbot and research workers of E.A.V.R.O., it has been established that the "yearling disease" which annually carries off nearly half the wildebeest calf crop of the Mara-Serengeti region, but does not affect the Athi Plains herds, is a form of endemic rinderpest.

### B—Drought

The year was a dry one for most of the country and during November and December conditions in Kajiado District in particular became critical. There the eroded land, the result of almost universal overgrazing, leaves nothing in reserve



for times of stress, so by the end of the year cattle were dying by the thousand and many hundreds of game animals, chiefly zebra, wildebeest and hartebeeste, were also succumbing to starvation. Competition for water became fierce and the Game Warden records that four rhinoceros took up residence in Kajiado township in order to benefit from the Ngong pipeline water tank. Many thirst-crazed animals fell into Masai wells and were unable to climb out and there were several incidents of cattle being killed by rhino or elephants when they met over water.

Ironically, the one downpour which relieved the drought only exacerbated the situation since it fell on the Konza grazing scheme and neighbouring European ranches alone, concentrating all the game from the surrounding arid plains into that area.

These animals, naturally, resisted all attempts to drive them away and in the six weeks campaign waged by the Game Warden, Kajiado, and his staff many had to be shot.

The conditions, attributed by the National Park authorities to drought, which resulted in over 80 rhinoceroses being found dead in the Tsavo Royal National Park, do not appear to have been reflected outside that area as no such deaths were reported from neighbouring ranges.

### C—Game Counts

Game counts were carried out in several of the more important areas, all by the use of aircraft; the results of which are as follows:—

(a) A count of the wildebeest and zebra on the Loita Plains in Narok District on 12th April gave a total of 5,397 of the former animal and 6,907 of the latter animals. This represented practically all of the Mara-Serengeti populations on the Kenya side of the border at that time as a reconnaissance showed there to be no more than a few hundred of either species in the remainder of the Mara region.

(b) Counts of animals in the Samburu grazing schemes were carried out during May and again in September, the results of which are shown in Table 6. Burchell's and Grevy's zebra were not distinguished, but the figures can be compared with those published in the 1953-54 annual report.

(c) On 12th December a count was made of game in the Meru Northern Grazing Scheme area, which totals some 480 square miles. The results are shown in Table 7.

(d) The Game Warden Kajiado, using his private aeroplane, has carried out regular counts over the last three years of the nomadic species of plains game in the Athi-Kapiti Plains of Kajiado District. Table 8 shows the averages of all counts in 1958 and quarterly averages of counts for 1959 and 1960. Counts were made in each month of the last two years except for May and October, 1960.

Regular counts were not made of species other than those shown in the table, but 957 eland and 3,483 Grant's gazelle were recorded on one occasion in 1958 and 1,374 Thomson's gazelle on another in 1959.

The Game Warden has maintained records of distributions as well as numbers and his observations show that the movement pattern of the species shown in the table is one of opportunism, following grazing and water, rather than migration. The area counted appears to be an almost completely closed system for wildebeest and only slightly less so far for Coke's hartebeest. Zebra are more prone to move out into the surrounding broken and bushy country, but even so the counts show a fairly constant number in the area.



TABLE 6—COUNTS OF GAME ANIMALS IN SAMBURU GRAZING SCHEMES, 1960

Area		Elephant	Rhino	Zebra	Eland	Oryx	Hartebeeste	Impala	Gerenuk	Thomson's Gazelle	Grant's Gazelle	Giraffe	Ostrich
Wamba . . . .	May	142	—	805	27	176	—	20	8	—	387	188	Not counted
(Wamba, Ngarone and Seya Schemes)	Sept.	58	28	812	75	357	—	42	63	—	1,773	298	126
Leroghi . . . .	May	27	—	4,096	199	169	165	564	—	2,912	884	—	Not counted
(Plains, forest and escarpment)	Sept.	275	4	4,014	349	180	293	654	—	3,931	801	—	77
Baragoi . . . .	May	40	—	1,203	28	1,327	—	—	36	—	2,689	17	Not counted
(El Barta, Merti and Kowop Schemes)	Sept.	26	2	1,283	47	576	—	—	23	—	1,297	25	163

TABLE 7—COUNT OF GAME IN MERU NORTHERN GRAZING SCHEME, 12TH DECEMBER, 1960

Sector	Elephant	Rhino	Burchell's Zebra	Grevy's Zebra	Eland	Oryx	Hartebeeste	Impala	Gerenuk	Grant's Gazelle	Giraffe
Somali Concession . . . .	6	2	289	588	40	426	—	48	51	1,034	140
C Ranch . . . .	—	—	383	20	99	1	1	32	—	97	97
A and B Ranches . . . .	198	—	1,732	33	58	8	9	116	24	368	490
TOTAL . . . .	204	2	2,404	641	215	435	10	196	75	1,499	727

TABLE 8—COUNTS OF NOMADIC SPECIES OF PLAINS GAME IN ATHI-KAPITI PLAINS AREA, 1958-1960

Species	Average All Counts, 1958	Average Jan., Feb., Mar., 1959	Average April, May, June, 1959	Average July, Aug., Sept., 1959	Average Oct., Nov., Dec., 1959	Average Jan., Feb., Mar., 1960	Average April, May, June, 1960	Average July, Aug., Sept., 1960	Average Oct., Nov., Dec., 1960
Wildebeest .. ..	8,782	8,984	9,691	8,777	8,564	8,247	9,291	9,501	8,751
Coke's Hartebeest ..	5,698	6,321	5,553	4,832	4,579	5,227	5,390	4,921	5,239
Zebra .. ..	5,793	5,002	4,537	5,690	5,223	5,143	5,773	4,817	4,958



**D.—Occurrence of Melanism and Albinism**

Black leopards were killed near Timau, Maralal and Barsalinga and it is interesting to note that the last locality is of low altitude and a dry and rocky nature.

The Game Warden, Maralal, reports two more black leopard inhabiting forest areas near the *boma*.

A white zebra, showing discernible stripes, can regularly be seen on the Leroghi plateau.

