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# KENYA NATIONAL PARKS

REPORT  
FOR  
1968/69



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REPORT  
FOR  
1968/69

# KENYA NATIONAL PARKS

(as at 30.6.1969)

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HIS EXCELLENCY THE HON. MZEE JOMO KENYATTA, M.P.

The President of the Republic of Kenya  
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# KENYA NATIONAL PARKS

## ANNUAL REPORT — 1968/69

### PART I

#### **GENERAL:**

Approximately 14 years after the first National Park was gazetted the total surface area controlled by the Trustees of Kenya National Parks has risen from 113.96 sq. kilometers to nearly 26,000 sq. kilometers and these figures are a fair index of not only the expanded and widened responsibilities of the Trustees in terms of management of all the conservation areas but also the growing concern and interest that the peoples of this country and the Government has shown over the years and particularly the post-independent periods whereby all concerned have spared no efforts to effectively protect our ecological heritage.

Though no new National Parks other than Shimba Hills National Reserve were gazetted within the period 1st July, 1968, to 30th June, 1969, the tempo of activities increased tremendously over all our established National Parks and particularly the new National Parks and National Reserves that were established after independence as shown on the Survey Map series SK 72, all our National Parks and similar National Reserves are spread out liberally throughout the country and their flora and fauna contents, geographical locations, ecological and habitat formations are as varied as their general distribution.

Wildlife conservation in this country is actively spear-headed by the Trustees of Kenya National Parks who derive their powers and authorities from National Parks of Kenya Act originally promulgated in 1945. In that same year members of the Board of Trustees were appointed to control and manage the National Parks and on the recommendation of the Government Game Policy Committee the first Park in East Africa, the Nairobi National Park, was proclaimed on 16th December, 1946, when the Gazette Notice was published. Ever since that date many more National Parks and National Reserves have been declared and as at the 30th June, 1969, established National Parks and National Reserves were:—

Nairobi National Park; Tsavo (E) and (W) National Park; Meru National Park; Mount Kenya National Park; Aberdare National Park; Marsabit National Reserve; Marine National Park; Marine National Reserve; Mount Elgon National Park; Ol Doinyo Sapuk National Park; Lake Nakuru National Park and Shimba Hills National Reserve.

Later we will give a more detailed description high-lighting thereby the main activities partaken in each one of these Parks/Reserves during the 1968/69 Financial Year.

In addition to these Parks and Reserves that are managed by the Board of Trustees, certain other areas that are ecologically suitable as National Parks but could not be so gazetted and pronounced because of local complications and owing to legal status of the land, have been placed under partial or full control of County Councils — the principal areas are Amboseli, Ngong, Mara and Samburu Game Reserves. In addition, we have other narrower wildlife conservation belts that lie in the arms of other authorities such as the Tsavo Road — Railway Reserves that runs right across the famous Tsavo National Park or the privately owned Estates some of which are remarkably rich in wildlife.

Our review of activities within wildlife sanctuaries will greatly centre on the areas that are controlled and managed by the Board of Trustees in consistence with the spirit of the National Parks of Kenya Act Chapter 377.

The Full Board of Trustees, is comprised of 20 members, 5 of whom are ex-officios, namely, the Permanent Secretary, Ministry of Tourism and Wildlife; the Permanent Secretary, Ministry of Home Affairs; the Permanent Secretary, Natural Resources; the Chief Conservator of Forests; and the Chief Game Warden; the rest are members either in scientific or other social fields appointed by the Minister in charge of Tourism and Wildlife and two are Honorary Trustees. The Trustees have two principal duties, firstly the preservation of the natural flora and fauna which they are entrusted with; and secondly the provision of adequate facilities for the visitors both residents and non-residents to see, enjoy and study the denizens within the confines of the areas legally protected as wildlife sanctuaries.

In the pre-independent period, the early Board of Trustees and their Executive Officers had the insurmountable problems of convincing the Government, the African land-owners and the general public of the need to establish National Parks. Limitless problems of communications, poaching, transport, local citizens hostility, disease, shortage of finance, met and often strided the efforts the pioneer Trustees and their Executives put up not only in founding but also on management of the original few Parks but in the year 1968/69, though some of these problems still lurked on our way, a great many of these have been minimized. With the institution and construction of better communication facilities, by way of better roads, new and stronger vehicles (including aircraft) and new radio system and diversification of country-wide education programmes, a greater cross-section of the local people now appreciate the philosophy of conservation in greater depth than the past.

## VISITORS INTO NATIONAL PARKS

As will be seen from the enclosed schedule, the gross number of paying-in visitors in our National Parks reached the highest point in the year 1968/69 where 274,370 visitors paid to enter our National Parks as compared with 188,186 in the previous year, or 156,034 in the year 1962/63 (excluding 31,961 entrants to Gedi and Fort Jesus National Parks). This figure is significant in that when the entrance fees were raised from 1st January, 1968, there was wide spread criticism that visitors into National Parks would be reduced by high fees. Statistics have proved just the opposite. It is however, interesting to note that of the gross figure of 274,370 people who paid to visit our National Parks, 133,677 went to Nairobi National Park; 22,320 Tsavo (E) National Park; 39,406 Tsavo (W) National Park; 16,299 Marine National Park and 1,285 Meru National Park.

Of the gross figure 41.8% were residents, 37.3% non-residents and 20.9% were children including school parties' children. On top of that figure we had a further entry of 125,155 adults and children who visited Nairobi Animal Orphanage and 16,440 who visited Treetops during the same period. With these indexes we could confidently say that the number likely to be recorded of paying-in visitors in ensuing 1969/70 year will definitely be in the region of 300,000 to 350,000 people, taking all factors into consideration — already in the first quarter of 1969/70 we had 77,398 paying-in visitors into our National Parks.

## ENTRANCE FEES

Though in the year 1965/66 the Trustees did try to keep entrance fees as low as possible, it was also forecast in the same period that the "present" blanket-cover fee of Shs. 5/- was even then considered to be in-sufficient. As a result of detailed thinking the Trustees decided that with effect from 1st January, 1968, new entrance rates into Kenya National Parks would be as follows:—

- Shs. 5/- for adult resident
- Shs. 20/- for adult non-resident
- Shs. 1/- for children under 16 years
- Shs. 10/- for vehicles

However, an exception was set for Marine National Reserve where entrants are charged Shs. 2/50 for Kenya residents and Shs. 10/- for non-residents and Shs. 1/- for children under 16 years. In addition to these, residents were availed a special privilege of car passes under the following regulations:—

- (i) that the applicant is a **bona fide** resident of Kenya;
- (ii) that the applicant is the registered owner of the vehicle for which a Pass is sought;

(iii) that the vehicle for which a Pass is sought is not a hired vehicle, and that it is not being obtained for use by a company or by an organisation;

(v) that such a Pass is valid for **one vehicle** only, the details of which are recorded on the Pass;

(vi) that such a Pass is **not transferable**;

(vii) that such a Pass is valid for the use of the owner of the vehicle for which it is issued — a resident of Kenya — and for such other residents of Kenya as may be transported in the said vehicle up to the maximum number of persons for which it is valid;

(vii) that, should persons other than Kenya residents accompany the applicant in the vehicle for which such a Pass is issued then a differential fee of Shs. 15/- per adult will be payable at the time of admission to the Park for each such person transported. Should the number of persons transported in the vehicle exceed the number for which such a Pass is valid, then the full entry fees applicable to the excess number carried will become payable on admission.

(ix) that such a Pass is valid only (1) for the calendar year (ending 31st December, 1969) or (2) for the first or the second six months of that calendar year (or for any part of the said periods).

The relative fees payable in respect to each Park are:—

- |   |            |
|---|------------|
| (1) For 5 persons (including driver) for the calendar year (ending 31/12/69) .....  | Shs. 150/- |
| (2) For 2 persons (including driver) for the calendar year (ending 31/12/69) .....  | Shs. 100/- |
| (3) For 5 persons (including driver) for either the first or the second six months of the calendar year (ending 30/6/69 or the 31/12/69 respectively) .....             | Shs. 80/-  |
| (4) For 2 persons (including driver) for either the first or the second six months of the calendar year (ending 30th June, 1969, or the 31/12/1969, respectively) ..... | Shs. 60/-  |

A further type of Car Pass, which is **valid for any** of the Wildlife National Parks under the jurisdiction of the Trustees of Kenya National Parks (but including Marine National Parks/Reserves and the Nairobi Animal Orphanage), is also available.

- |   |            |
|---|------------|
| (a) For 5 persons (including driver) for the calendar year (ending 31st December, 1969) ..... | Shs. 400/- |
|---|------------|

- (b) For 2 persons (including driver) for the calendar year (ending 31st December, 1969) ..... Shs. 300/-
- (c) For 5 persons (including driver) for the first or the second six months of the calendar year (ending 30th June, 1969, or 31st December, 1969, respectively ..... Shs. 250/-
- (d) For 2 person (including driver) for either the first or the second six months of the calendar year year (ending 30th June, 1969, or 31st December, 1969, respectively ..... Shs. 180/-

It is significant for us to point out that revenue accruing from Car Passes, entry fee paid by persons, entry fee paid on vehicles rose from £3,642 Shs. 10/-; £34,921 Shs. 14/05; £13,195 Shs. 15/-; in 1965/66 respectively to £6,837; £123,985 Shs. 6/50; £27,363; in the year 1968/69 respectively.

In all cases it is indicated that revenue from entry fees has more than doubled particularly on the first three items and this rise in entry fees revenue particularly in the year under discussion constitutes nearly 60 per cent of the total incoming recurrent revenue.

## **DEVELOPMENT**

One encouraging factor to note here is that from 1946 up to the year 1965/66 road development in the Parks was almost at a standstill point because of lack of funds. But a very healthy development has recently taken place with the tourist road programme which started under the mutual agreement of the Republic of West Germany and the Republic of Kenya, and the fruits of that agreement were at last realized in the Parks in 1966/67 financial year when we received a special Government grant for road development of £21,000 and in the following year, 1967/68, we received £18,000, and in this financial year 1968/69, to complete the programmes of tourist roads Phase II inside the National Parks, the Trustees received £115,757. This has really given a boost to all our Kenya National Parks, and particularly the main upland Parks such as Tsavo East and West, the Aberdares and Meru Parks where until recently most of our tracks were completely inaccessible in wet weather; but with this special Government grant that we have received from the Ministry of Works, it has now been possible to realign our roads by better and heavier road machinery with the total effect that our essential roads leading to the main lodges in the Parks and main game tracks in the various Parks are accessible throughout the year. The Trustees spent over £48,000 out of this money in buying new road machinery in the form of tippers, traxcavators, D-4 caterpillars and other



very useful road plants, that were vitally needed throughout our Parks system, not only to cut new roads, but also to maintain the existing roads at a high standard. We anticipate that this development, together with our dues for the tourist roads Phase III, will ensure that all our National Parks will be very readily accessible to tourists throughout the year. In this way the tourist industry will have a real and definite boom in the years after..

Tourist Roads Phase II has now been completed in practically all our Parks and we now await receipt of our quota of the £1.8 million tourists money that the Treasury is negotiating with the German Government. With regards to Phase II development, specific examples of tourist roads that have been completed are seen all over Tsavo East and West and Aberdares National Parks where we have spent over £25,942. This development has inevitably meant a new boost to our Parks as no doubt some members of the public will have witnessed that the new Chyulu Hills circuit road has now been opened. Besides, the new tracks were opened up between Kinjaro Hills and Kavuma in the South of Tsavo West National Park and further track from Kinjaro to the international boundary of the Republics of Tanzania and Kenya and along the boundary up to Lake Jipe has also been completed. On the eastern side of the Manyani/Lugard Falls/Sala Gate roadwork has been completed as well as the Voi/Aruba/Sala 75 mile track that links Voi township with Malindi township.. Other roadworks and service routes whose expenditure total over £6,414 have also been programmed for completion in the present financial year.

So far in the Aberdares and Mountain Parks work has been completed on the restoration of 2,000 tons of soil to the Treetops waterhole and construction of 5 miles of new road to the ARK waterhole has also been completed. Extensive work has also been done on the construction of an entrance gate on the road to the Ark Lookout; and we are pleased to report that the new Ark Game Lookout has also been completed.

In Nairobi Park work has now been completed on the new Orphanage, and practically all the animals formally penned at the old Orphanage have been transferred to the New Orphanage which is more roomy and better placed for the various types of animals. The new Orphanage has become very popular with visitors because of its numerous and airy-rest places where tired visitors and particularly children can relax after walking around the camp. The famous Sebastian has successfully been made to live peacefully in friendship with Sussie albeit the experiment may be short-lived. Other construction work such as completion of subordinate staff

houses has been completed in Nairobi Park at the cost of over £5,454. In addition to that, road realignment and murraming has been done at great cost, and with the arrival of the three tippers that we have recently purchased for Nairobi Park, we anticipate that practically all the main tracks of road in Nairobi Park will conveniently be accessible throughout the year.

Development in the Parks has been really lopsided in that whereas we received a generous grant of £115,757 from the Government on road development programmes for the year 1968/69, we have virtually very little capital for development of other administrative projects such as offices, staff houses, game lookouts, protective fire breaks, game trenches, research centres and other capital-requiring projects throughout our Parks system. The £40,000 development grant we received from the Government still remains a mere drop in the ocean and had it not been for the donations received from private overseas agents, persons and Institutes, some of our very useful projects completed in the year under review such as entrance gates; purchase of the aircraft for Meru Park; cutting of the survey boundary of Tsavo (E) National Park; construction of Education Centre at Voi and completion and installation of observatory tank at Mzima and purchase of the land for construction of new Marine Headquarters and construction of water supplies for Meru would never have materialized.

Expenditure incurred on gross development items throughout the year is £220,996 Shs. 16/26. This figure excludes the £8,743.465 carried forward on the balance on water for Wild Animals. At this rate of expenditure, whereas welcoming the £40,000 p.a. standard development grant from the Government, it becomes abundantly clear that there is need to increase the Government Development Grant as indeed traditional reliance on donations and revenue earned from internal resources such as entrance fees cannot be fully relied on to carry on the heavy development burden that seems to cumulatively increase as new and more wildlife conservation units are brought under the Trustees' jurisdiction. Already more than 30% of the budgeted development money is spent on administrative functions and facilities which include items like housing for Senior and Junior Staff, workshops, storage sheds and water, to say nothing of the expenditure on transport units. Thus, if standard tourist facilities and maintenance of the present tourist attraction such as Mzima Springs tank are to be maintained and improved upon in line with the specification of our Development Plan, Government assistance will have to be tripled.

You will find more details on the Development Projects carried on each Park under Part II of this Report.

### **KENYA NATIONAL PARKS FINANCES**

For the last 20 years it has been generally accepted that wildlife and particularly the National Parks in this country are

one of the lucrative foreign exchange earners in our Republic, coming almost second to the Agriculture industry. However, we have suffered considerably in raising the necessary revenue for our recurrent expenditure, and also for our capital development. In the years between 1946 and 1950, the Trustees of Kenya National Parks received a special grant from the Government totalling £88,638, and in the following year the Trustees got only £31,997. With the increase of development and recurrent expenditure activities, in the year 1965/66 this Government grant was raised to £69,000 which figure remained constant until 1968/69 financial year when the Government grant was cut to £60,000. Our recurrent revenue has risen from £2,241 during the period 1946/49 to £134,616.0 in the year 1962/63 that is when we had just got our independence, and the present figure of recurrent revenue in the financial year 1968/69 is £295,658. The rise in expenditure, as indexed by these figures, clearly epitomised the expansion of the Parks' activities from the time when we were founded to date. On the expenditure side in the years 1946/49 recurrent expenditure was £57,593 and in the year 1962/63 recurrent expenditure rose to £130,091. By 1968/69, six years after independence, the figure rose up to £299,770. These figures, no doubt, have much to tell but our greatest difficulties in this Organization over the years have been the impossible task of making our ends meet and the magnitude of this problem will cumulatively increase with the increase in the number of areas to be administered by the Trustees unless Government support rises progressively.

Our budget for development rested at £220,996.16.26 and most of this money came from the Ministry of Works in the form of grant of £115,757 and on top of that we got another Government grant from the Ministry of Tourism totalling £40,000. We further got a substantial revenue from private donations to the tune of £9,627 (gross) out of which the principal donations were from the Frankfurt Zoo, that gave £6,000 for a biologist to be recruited at Marine Park and Elsa Wild Animals Appeal Fund that donated £2,153.8.75 for the purchase of an anti-poaching lorry for Meru Park. The figure of £9,627 donation money represent 4.3% of the total development budget.

The total revenue on recurrent vote for the same year reached an all time height of £295,658 as compared with £228,618 for the previous year.. We will not go into a detailed analysis of the various channels through which development revenue accrued to Kenya National Parks coffers or the hundreds of vote heads under which expenditure were incurred as indeed these details are very professionally portrayed on the appended balance sheet but we would mention that of the £295,658; £166,182 came out from entry fees constituting 56.21% of the gross revenue. In the

preceeding year entry fees percentage of total revenue was only 45.57% this phenomenal upsurge rose as a result of general increase in chargeable entry fees into our National Parks which came into force in January, 1968. It is however, to be noted that total donations revenue on recurrent grant was £4110 which is 1.37% of the total gross recurrent revenue. Other capital sources on recurrent revenue were the grants received from Government which remained at £69,000 in the year under review; the accommodation fees collected at both Aruba and Kitani which reached £7,991 and the rents payable from Treetops was £8,928. Rangers' fees constituted only £714.

## **LODGES AND CAMP SITES**

Though it is impossible to satiate the increasing demand for lodges inside the National Parks, we are proud to say that the Minister for Tourism and Wildlife, the Hon. S. O. Ayodo conducted the opening ceremony of the 100-bed accommodation lodges at Ngulia and Voi Safari on the 22nd and 23rd May respectively. The popularity of these lodges has increased by leaps and bounds throughout the main centres of the world. Following closely on the heels, His Excellency the Vice-President of the Republic of Kenya, the Hon. D. A. Moi, officiated at the opening ceremony of Treetops Extension on 19th June, 1969. The present Treetops accommodates between 60 and 70 guests per night.. The luxurious Ark lodge, also situated in Mountain Parks, is due for completion by the end of November, and becomes fully operative on 1st December, 1970. Other feasibility studies on lodges have been undertaken in Northern Kenya by prospective developers in conjunction with the Tourist Development Corporation and particularly in Meru Park, where up until now we have had poor and inadequate accommodation. Other lodge-development studies have been completed in Lake Nakuru National Park where a proposal to put up the Baharini Lodge has come up. We anticipate that by the end of 1970 other proposals will be forthcoming for the construction of Lodges at Marsabit and Shimba Hills National Reserves and possibly Mount Elgon National Park..

greatly relieve the pressure hitherto existing in our main wildlife tourist habitat for a number of years. The existence of better accommodation facilitates on Glen Cotters Camp, Kitani and Aruba Lodges will facilitate lower and middle class groups throughout the Parks to enjoy their recreative stays in Tsavo Parks. Experience has also shown that we shall soon require more beds

All these new lodges in Tsavo and Aberdare Parks will in this category of lodges as the local residents are more lured to spend more time in our National Parks.

Camping remained popular particularly with the local residents throughout the year. This year we now have at least 10 camping sites in the Aberdare National Park and these are Mwate River Camp; Nyeri-Chania River camp; Gachago camp; Gikururu River camp; Magura River camp; Cave water fall camp; Kururu River camp, Thareini camp and Karium and Fort Jerusalem camps. All these camps are situated more than 20 miles from Nyeri town: distance measured and calculated through track "8" and over 30 miles from Naivasha. These camps remained accessible and available to members of the public only when the Park was open with roads adequately dry. Facilities provided to campers included pit-latrines, trout fishing in nearby streams (under licence) and clean clear water is readily obtainable from the nearby streams. In the Mountain National Parks members of the public made full use of camping sites at Naro Moru Gate camp; Met. Station, Sirimoni Gate camp; Makindo Amitani and Naro Moru cave camps. The last two sites are situated en-route and near the main peaks and can only be reached on foot either up to Naro Moru or Simimon points. Practically all these camps can be reached by road and vehicles can be left at Road Head Camp while visitors walk to the higher reaches near the peak. The closest town to these camp sites in Nanyuki and the road remained passable during dry weather. About 20 to 40 persons can be accommodated in each of these camps and water is the only meaningful facility readily available albeit the Mountain Club of Kenya have constructed a few huts at some of these camp sites.

Within the year established camp sites in the other Parks were not as wide-ranged as in the Mountain Parks. In Nairobi Park there is no camping allowed to visitors though there are picnic sites at Hippo Pool which is 12 miles from the Main Gate; King Fisher Point which is 6 miles from the Main Gate and Impala Point which is 3 miles from the Main Gate.

Tsavo West remained with two popular camping sites one at Mtito Andei which is about 400 yards from the Main Gate and 2 miles from Kamboyo Park Headquarters. These camping sites are accessible and open throughout the year, and can easily accommodate 4 to 5 parties of four. The camping ground is nearly 3 acres. Shower, water-borne sanitation and firewood are available on the other side of the Nairobi-Mombasa road. Another camping ground is at Tsavo Gate at a point 400 yards up stream on the river and the nearest shopping facilities are found at Ngulia Lodge 25 miles away.

Tsavo East has two camping grounds for the general public one at Voi Gate only 200 yards from the Main Entrance Gate. The camp was open and popular throughout the year and could carry 5 parties of approximately 4 people each. There are toilets,

showers and water-borne sanitation and firewood readily available and the camping ground is in close proximity to Voi shopping centre. The other camping ground remained at Aruba Lodge and was open throughout the year. Three parties of four people each could be also be accommodated. In addition to the above, there are two other sites on Voi river for safaris in charge of Licenced Professional Hunters. Hardly any public facilities exist at these sites.

Other than picnic sites hardly any camp sites have been opened in the Shimba Hills National Reserve but the next year we foresee that some camping sites possibly near the Park Headquarters will be opened. The same thing where members of the public freely camped throughout the year. There is, however, the old Assistant Warden's camp known as "Magadi" about 8 miles from the main entrance of the Park which proved very ideal to campers. There were no public facilities in the camping ground; but adequate public amenities are satisfactorily provided at Nakuru township which is only a few miles from the main gate. Due to poor access road to Meru Park no campers went there throughout the year, even though we have a few places where camping is permissible within the Park. The same applied to Marsabit and Mount Elgon National Park/Reserve respectively.

## **RESEARCH**

As a result of growing populations of elephant within the Park, wide-spread and progressive changes have taken place in the vegetation since the early 1950's. Between 1960-61, a very severe drought occurred which caused the death of some 300 rhinoceros in one section of the Park, and it became evident that there was an urgent research problem to discover that changes were actually taking place in the habitat and how this was affecting the elephant, rhinoceros and other large herbivore populations.

In 1966 a sum of £70,000 was granted by the Ford Foundation to finance a 3-year research project in Tsavo Park and this money was fully expended by April, 1969. A formal request has been submitted to the Ford Foundation to provide more money to facilitate the establishment of the new section of the Wildlife Research over the three years commencing October, 1970. At present these are two research officers employed on the project, a Warden (Botanist) and a Zoologist.

## **RESULTS OF FIRST PHASE**

The eye lens dry-weight technique was successfully used in determining the ages of the 300 elephants cropped in 1966.

A second technique of estimating the age of elephants when only the skull of a dead animal is recovered was established.

When the results of the eye lens dry-weight method were plotted against estimated ages based on tooth replacement and wear, a similarity developed from the age of 9 and 10 years to cover 60 years. This was taken to confirm the accuracy of the age criteria adopted, and points to a time when both techniques may be developed to a point of precision.

Dr. Laws (1967) had suggested that this method might provide an objective check on the accuracy and precision of age estimates in other species.

Two further methods of determining an elephant's age were discovered. One of these methods was based on a formula with regard to the weight of the hind leg in relation to the total weight of the animal. In the first instance this method requires that the animal is dead. The second technique, which may best be adopted by the Kenya National Parks in most of our future investigations, pertains to the ability to determine age based on aerial photographs of elephants taken from a known height and calculated on the basis of a definite formula. In this case the herds in question do not necessarily have to be shot.

The first phase of the Tsavo Research Project was therefore successful insofar as we may want to determine the family composition of the various herds of elephant, based on age, sex etc., without first killing the animals. On the basis of information available, it is now possible to determine the various age groups in a given herd, and thereby establish age differences — a method which easily reveals the rate of population increase.

The second phase deals with habitat changes. When the results of Phase I are read against the work now underway in Phase II, we are coming to a point where it will definitely be possible to tell at any given time, and even forecast, the status of the habitat, basing our decisions on recorded rainfall, annual census and age composition of herds, rate of population increase and the current state of the habitat.

This will enable us to tell what may be expected, e.g. over grazing, habitat destruction, or whether from time to time reduction in numbers of any species through cropping may be considered.

A careful study of the information at our disposal is not conclusive evidence, in any manner or form, that a policy of cropping on a sustained yield basis can be contemplated. However, a flexible attitude will be maintained.

## **RESULTS OF SECOND PHASE**

A fully equipped meteorological station was established at Voi Headquarters, and rain gauges were set up at Mbololo Hills

(Manyani) Mudanda rock, Irima, Lugard's Falls Sala and Bachuma.. Another fully equipped meteorological station is already existed at Ithumba in the closed northern section of the Park.

A soil survey was carried out in the Irima area, and 12 soil pits were dug in six different soil types across the valley. The samples were sent to the National Agricultural Laboratories in Nairobi for analysis.

Soil moisture studies at various depths, using gypsum blocks (electrical resistance units) were set in progress at the Voi Headquarters, in the Irima Valley, near the turn-off to Mbololo Camp, and a few miles down the Aruba-Sobo road. These stations are yielding useful data, but will have to continue over several rainy seasons before the sound conclusions can be drawn.

Periodical reconnaissance flights were made over different seasons. Counts of all large animals were made periodically in the Manyani-Irima and Ndara plains blocks. In addition, detailed studies of buffalo, kudu and gerenuk are being carried out to cover their numbers population dynamics and food preferences.

#### **THE USE OF FIRE IN HABITAT MANAGEMENT**

We believe that burning at the right time is a useful habitat management tool, but early burning as a result of uncontrolled fire can be very harmful to grassland, especially during periods of drought when the available soil moisture is insufficient to support fresh sprouting. This leaves the surface of soil exposed to the sun and wind for 5 to 6 months at a time. The significance of this statement is emphasised by the results of recent soil temperature and soil moisture investigations in the Park which reveal that in the hot season surface temperatures may exceed 160°F (56°C); and at depths of between 6 ft. (2m) and 16 ft. (5m) temperatures remain constant at 84 — 29.5°C). This indicates that moisture is exposed soil in grasslands is in a constant state of vaporisation becoming lost at the soil surface. More research is needed to regularise the use of fire as a management tool.

#### **SUMMARY**

The "elephant problem" in the Tsavo National Park has been a matter of grave concern to the Trustees of Kenya National Parks for the last 10 years. Many discussions have been held and much has been written. Studies of elephant population dynamics and reproductive rates have been made; 300 elephants have been shot and it was recommended that 2,700 more should be killed; as it was thought by some people that the Tsavo National Park is grossly overstocked with these animals. It was also claimed that great numbers of elephants not normally resident there had



taken refuge inside this Park as a result of increasing human population pressure outside its boundaries.

Until this time none of these claims have been supported by scientific facts. The most obvious and urgent existing problem is that Park is to discover just what effect these animals are having upon their habitat and what the long-term results are likely to be, both on the elephants themselves and upon the other important herbivores within the Park. It has also been said that as a result of the effects of elephant on the vegetation, the Tsavo National Park is well on the way to becoming a desert unless immediate action is taken to reduce the elephant population.

Nothing could be further from the truth.

It is true that elephants have drastically altered the vegetation pattern over much of the Park and that in the 1961 drought it did look as if the Park was becoming a desert — but the situation is totally different now.

Because of an upward trend in annual rainfall and the destruction of **Commiphora** and other trees by elephants, a new vegetation pattern is emerging with a vastly higher carrying capacity — in spite of a very large elephant population — than has existed there since 1951.

In addition, many more plains animals have appeared since then such as oryx, zebra, eland, kongoni, buffalo etc., and the variety of species seems to have increased.

It is hoped that as a result of these investigations enough information will be made available to the Trustees to formulate a workable management plan for the Tsavo National Park within the next 3 years.

However, because of the inherent variability of natural process, biological problems are seldom easily or quickly solved and long-term studies are also necessary. Thus the Tsavo Research Project will continue for many years to come and allowance is to be made for this fact.

Throughout the period under review we have had other research activities and particularly for Nairobi Park where we had four University Research Workers undertaking scientific investigations on various animals and these studies were conducted by:—

- (a) Mrs. J. Roodnair who undertook studies on lions in Nairobi for nearly two years.
- (b) Mr. MacLoughlin who undertook studies of cheetah for the same period.

- (c) Mr. Wyatt who conducted scientific investigations on Masai giraffe.
- (d) Mr. R. E. G. Allsop from University College Nairobi who undertook studies on bush buck in Nairobi Park.

Findings of these University scholars on the four animals were wound up towards the close of this year and their findings have not yet been published but we are anxiously awaiting their report which we believe will greatly enhance not only human knowledge on these animals but also assist management in evolving up to date conservation techniques which would be applied in the general interest of the flora and fauna of the Park. Now that we have new Parks added into the Trustees' fold, the need is even greater for scientific investigations to be carried out particularly in the Marine and Shimba Hills National Park/ Reserve, respectively, and it is anticipated that the on-coming years will bring in both capital and appropriately qualified scientists to undertake the ecological study of these new areas.

## PART II

### **PRINCIPAL ACTIVITIES IN OUR NATIONAL PARKS AND NATIONAL RESERVES**

To avoid a very lengthy report we shall give selected details by high-lighting the spectrum of activities that went through the pipeline of some of our old Parks on basic work carried out at Nairobi National Park including Ol Doinyo Sapuk and the Animal Orphanage; Mountain National Parks; Tsavo East National Park and Tsavo West National Park.

With regards to the remaining Parks and National Reserves we shall mainly portray some of their selected activities by a series of photographs in relation to the Unit Sanctuary during the period under review.

#### **NAIROBI NATIONAL PARK**

In the first half of the Financial Year a little uncertainty prevailed because Mr. J. Nesbitt who had just been transferred to Meru National Park left Nairobi Park on the 7th August, 1968, and Mr. E. C. Goss took over from him with immediate effect. Some construction work, however, was completed and this mainly comprised of re-roofing of the Assistant Warden (Orphanage) house 3 double rooms with relevant ablution blocks and kitchen facilities were completed at Langata Gate, Banda Gate, Hippo Pool Point. Cheetah Gate and Gate No. 6 for the

subordinate staff. These schemes cost £5,000 to complete. After the long rains which ended mid-June, 1968, all the essential Park roads were graded and this had been the job that the new Warden embarked on right from the start. Culverts were laid at Gate No. 7 and No. 24 and Messrs. Santa Singh tarmacked the Park Main Road up to the edge of the Bridge No. 4. Within the second half of the year a pipe line was installed to the Banda Gate. This made it possible for the fresh water to be supplied from the borehole to the Gate. In the new Orphanage Rhino moat was completed together with a roomy pool to house the Pygmy hippo presented to our Head of State by His Excellency President Tubman of Liberia, who had just visited Kenya under an invitation to open the 1968 Nairobi Agricultural Show. In the same period a new and stronger Gate cum-office leading to the new Orphanage was completed and the old shop at the Main Gate was converted into the Warden's office as the previous Management had completely failed to run the canteen.

Amongst the important visitors who entered Nairobi Park was His Excellency President Tubman of Liberia who visited the Park on the morning of 1st October, 1968. He was extremely successful in his visit which was high-lighted by a spectacular scene whereby a female cheetah with four of her cubs successfully chased and killed a mature male impala, a scene which the President witnessed just as he was pulling out of the Park next to the Narogomon dam. Other visitors included Hon. Aleke Banda, a Minister from Malawi who visited the Park on 9th February; Princess Beatrice of the Netherlands and her husband on 11th February; the Indian High Commissioner on the 13th February; General Ankrah of Ghana and his wife on 17th February; Ltd. General Sir Oliver Lees on 23rd February; Mr. Akol from Uganda, Mr. Gilbert from Mweka, Tanzania, Major Gisau and his Assistant from Ethiopia and Mr. Ole Saibull from Ngorongoro, Tanzania, on 27th March, 1969.

As shown on Appendix "B" Nairobi Park maintained the highest figure of the number of visitors vis-a-vis all the other Parks in the country. The total number of visitors into Nairobi Park reached an all time record of 133,677 excluding the 125,155 persons including school parties, who went into the Animal Orphanage during the period under review. The number of visitors to Nairobi Park was more than half of the gross figure recorded throughout the country, and this becomes significant when we realise that entry fees as a percentage of total revenue collected throughout our Parks up to 30th June, 1969, represents 56% of the gross Park revenue.

## **GAME NOTES**

### **Lion:**

The Athi River pride has been seen in the Park only 2 occasions. Two lionesses and three cubs were seen on several occasions in the Forest area. They were last sighted in October with four cubs. One female must have got lost as the original four were: two males and two females; the three lions recently seen were two males and one female. A lioness has had three cubs at No. 5; she had by the end of the year parted company with her cubs (three males) that can now do their own killing. In general, the lion population in the Park remained the same as observed in the previous year.

### **Cheetah:**

The mother of the four cubs normally resident at No. 8 has now left them to feed for themselves. This development was first observed on Monday, 27th January, when her family was joined by two large males at home range. Several males were obviously interested in her and a certain amount of fighting was noticed amid peculiar squealing noises. In February, she was observed to have left the cubs for three days. She returned to them later but she left them for good early March. She is now observed to be Pregnant. The family members and three cubs remained together throughout the year.

### **Rhino:**

The speared rhino which was recuperating at Boma by the Warden's house was released in February, the wound having completely healed. A young rhino was born in the Mokoyeti gorge below Kamp ya Shimba and has been seen with the mother on several occasions in the vicinity of No. 16.

### **Buffalo:**

The heard of 22 buffalo remained quite peaceful, and was normally seen grazing below the Forest in the vicinity of Nos. 30 and 30A.

### **Plains Game:**

Several young wildbeest were born around end of March in expectation of the rains during which peak period there would be adequate grass following the long rains, as opposed to the Kongoni calving peak which was, about the end of November, after short rains. The average census for the three months i.e. December to March 1969 was as follows:

Baboons	65	Vervets	3
Lion	7	Cheetah	9
Wild Dogs	2	Jackal	1
Grant Gazelle	281	Thompsons Gazelle	341
Water Buck	92	Impala	416
Bush Buck	12	Wildbeest	212
Kongoni	1473	Eland	49
Dik Dik	2	Wart Hog	141
Rhino	5	Zebra	254
Ostrich	154	Secretary Birds	4
Giraffe	515		

Average Total of Animals — 3,722

### **OL DONIYO SAPUK NATIONAL PARK:**

At Ol Doinyo Sapuk a road  $3\frac{1}{2}$  miles long was cut up to the side of the mountain. To complete this new road three sets of 24" culverts and 11 sets of 18" culverts were laid out. The completion of the work was facilitated by the National Youth Service machines which worked on improving the old road to the summits. Patrols around the mountain were carried out regularly by our skeleton ranger force. Our Askaris were often called upon to attend to the many complaints that had been received from the local resident about leopards and buffalo that were constantly destroying their live-stock and crops. The main animals regularly seen on the mountain throughout the year are bushbucks buffalo and impala with occasional glimpses of rhnio, leopards, colubus monkeys, skyes monkeys, tree hyrax, red francolin, pig (bush pig) porcupine, duicker, baboon and waterbuck, cervical cat and genet cat.

### **ORPHANAGE**

Honorary Wardens assisted throughout the quarter at week-ends. The vets, Vluasen and Harthoorn arranged visits twice a week. Mrs. Harthoorn has successfully reared a young genet kitten and is at present rearing a female leopard kitten which was born in the Orphanage on 19th March.

The change-over to the new Orphanage is now almost complete. The bears, one leopard, one chimpanzee, a few baboons and the rhino are still in the old Orphanage.

### **ANIMALS HANDED IN**

The inmates of Animals Orphanage increased tremendously during the entire period under review and the influx is amply reflected by the sampled three months animal intake recording as indicated hereunder:

## January

One blue monkey  
One male duiker  
Two female duiker  
One vervet monkey  
(returned to owner after 14  
days)

## February

Three crocodiles  
(sent from Snake Park by  
James Ashe)  
Three turtles (also from Snake  
Park)  
One female wildbeest  
One grey heron  
(brought in with broken leg:  
subsequently died)

## March

Two otters  
One female chimpanzee  
One female Uganda kob  
One Patas monkey  
One oryx (brought in with  
broken leg: subsequently  
died)

During the same period three males and two female leopards were brought in, and four of these animals were later released in Amboseli National Reserve: but the 5th one had escaped from the animal orphanage hospital and the tracks indicated that she fled into Nairobi Park Forest area.

One female bushbuck was born in January. There were no births in February. In March, a leopard gave birth to two kittens — reported gestation period 96 days. Unfortunately, the male was left with the new mother, and she shewed off her kittens, damaging one in the process. This kitten was taken away from the mother and given to a foster mother — a white miniature poodle — under the directions of Dr. Sue Horthorn. Presently the kitten is being reared successfully, its milk being supplemented by extra bottle feedings, and it should be returned to the Orphanage at a later date. A male bushbuck was also born in the Animal Orphanage later in the year.

## ANIMAL MORTALITIES

### (a) Within the Orphanage:

A male reedbuck was killed by a male bushbuck during a territorial fight. The cheetah (Kitkat) died and a post-mortem report revealed that the intestine and stomach were full of earth and we suspect she died of salt or vitamin deficiency. A leopard kitten was eaten by the mother.

## **(b) At the Hospital**

An oryx that had earlier arrived from Amboseli with a broken leg died — generalised infection from a severe penetrating wound through the olecranon and the elbow joint contributed to the animal's death. A wildbeest died of fungal lung infection. In mid-May 1969, a serval cat brought in by visitor from the Nairobi Park was treated for a broken pelvis having been hit by a vehicle but died from shock several hours latter.

A donation of £350 was received from Cussons Limited for the leopard pens. We started feeding some of the carnivores a mixed mincemeat dried containing bone meal, dried egg and other proteins, and we are waiting to see if their digestive systems accept this diet but the experiment had to be varied later on. During the year we opened up more intensive Orphanage Shamba in the Park by the River below the camp. This shamba is doing very well. We use weed-killer to keep the produce clean and overhead irrigation in drought periods. We hope to be able to produce all the green fodder necessary for the Orphanage and we also reckon that we will have a great deal of the other horticultural products that we have had to buy from the town in the past.

## **MOUNTAIN NATIONAL PARKS**

Though truly one of the most attractive Parks in terms of its diversified topography, only 22,121 paying-in visitors visited Aberdare National Park and Mountain Parks up to the 30th June, 1969. Most of our roads remained closed for several months during the year. The rain started in mid-October and stopped in late December, only to start again in January, 1969, through almost to the end of January. Though the rains were not unduly heavy there were very few rainless days throughout the period under review. This resulted in severe deterioration of the approach roads to the Naro Moru route and particularly the upper part of the route and the Sirimon track, and the hampering of the building operations at Naro Moru Gate. Any idea of constructing the proposed lodge in the Teleki valley or at the head of the Sirimoni had to be shelved indefinitely, until such time as major repairs could be carried out on the roads both in and outside the Park, and particularly (outside) through the Settlement Schemes. A pump house built of stone was constructed beside the northern side of Naro Moru River housing a Lister engine and Blakes pump which pumps to a height of 245 feet to four one thousand gallon storage tanks mounted on a cedar upright stand from where the water is gravity fed to the camp.

One of the main occupation of our Officers and Rangers in-charge of Mountain National Parks is mountain rescue and we had two serious incidents in the early part of the year:—

(i) On the 10th February, word was received from the Top Hut rescue radio that a Germany climber on one of the Snow-line Safari expeditions was taken seriously ill, apparently suffering from pulmonary oedema. A team of Rangers under the command of the Accountant Mr. Jaswaran Singh, proceeded immediately to the head of the Sirimon track with the object of walking on up to the track after dark to intercept the party carrying down the sick climber on mule back. Mr. Singh's team were accompanied by a doctor from the Naro Moru River Lodge. The Warden attempted to fly up that evening to drop oxygen but low cloud and mist prevented him from getting into the upper reaches of the Makinder Valley. Next morning he succeeded in making the oxygen drop on the party at about 14,200 feet on the side of Makinder. Slow progress was made as the sick man was exceedingly heavy, but luckily with the aid of the mule, roadhead was reached in the later afternoon and the sick man was taken to Nanyuki Hospital. He made a complete recovery from pulmonary oedema, but suffered from brain damage which fortunately turned out to be of a temporary nature. This is the first case of a climber being taken ill with this complaint and surviving on Mt. Kenya.

(ii) On 23rd February, a report was received at Naro Moru Police Station that another climber, had fallen on Midget peak and broken an ankle and arm. Sgt. Kamau led a group of Rangers to Klarwills hut in the Teleki Valley and succeeded in carrying her down where she was taken to Tumutumu Mission Hospital. In this case the Rangers were lucky as the lady only weighed approximately one hundred pounds; albeit the operation and experience was far from honeymoon undertakings.

On the Aberdare National Park the highest recorded rainfall for the year 1968 was 100.96 inches at Kiandongoro Gate on the moorlands.

	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE
Meiga HQ	1.58	5.86	4.24	2.62	3.09	3.38	1.80	7.88	.82
Queens Gate	4.10	5.2	1.56	2.58	2.31	2.41	2.37	7.40	1.54
Kiandongoro									
Gate	13.04	16.26	4.67	5.05	5.71	7.72	7.75	16.67	1.98
Rohuruini Gate	4.08	8.63	4.41	2.01	2.75	3.56	3.86	10.72	1.78
Treetops Gate	1.80	6.30	4.45	3.30	1.95	3.94	1.24	6.04	1.28
Culvert Camp	6.00	9.00	4.00	3.00	2.00	GD	4.00	10.00	2.00
Rionge Hill	8.00	13.00	4.00	3.00	4.00	8.00	1.00	11.00	3.00
Magura River	10.00	13.00	4.00	4.00	4.00	9.00	6.00	11.00	2.00
Ft. Jerusalem	8.25	11.25	4.50	3.00	3.00	5.00	4.00	8.00	2.00
Nyeri Chania	9.00	12.00	4.00	4.00	3.00	9.00	5.00	11.00	3.00
Karuru River	9.00	14.00	6.00	GD	4.50	8.00	8.00	11.00	3.00



The code GD indicates that the gauge was disturbed by game and thereafter no measurement recorded.

The heavy rain records generally on the Aberdare National Park did not hinder visitors from entering some portions of the Park particularly Treetops. One of our best periods was the first quarter of 1969 whereby 3,279 adult visitors paid to enter Treetops; 4,356 in the month of February and 256 went there in the month of March.

### **GAME NOTES:**

In early December, one mature rhino was rescued from the mud at Treetops — accidents do happen though infrequently.

On the night of 19th February, a large male bongo was killed by another in a fight. Apparently there was a small group of cows and calves nearby and the two bulls stood together a short distance away. Two buffaloes approached them and were immediately seen off by one of the bongo bulls, who on returning was promptly attacked by the other bull and pierced through the chest and fell promptly on the spot. The victor stood guard until the vanquished died some two hours later. Hyenas were quickly on the scene.

The horns which were an impressive 32 inches were presented to Treetops where they now hang next to a series of framed photographs depicting the fight. The fight obviously occurred over rivalry for favour of the cows and as is usually the case in fights, both bulls were equally matched in size, weight and length of horns.

Two leopards were trapped on nearby farms for stock killing and released in the Park.

Two buffaloes and one elephant were shot in May on the Endarasha Settlement Scheme for crop raiding. This particular section of our common boundary with the Sheme is not ditched.

The three lion cubs reared by the Warden's wife were sold to Mr. John Seago and taken to Nairobi on 19th April, for final shipment to the United States and England.

On 25th May a young male baboon was observed on the roof of Treetops clutching a baby colabus monkey. Efforts were made to rescue the colabus because the young baboon was obviously unable to rear it, but to no avail, as he was too fond of his adopted infant.

A ranger patrol operating on the moorlands counted a pride of 16 lions on the Mwathe River. Another patrol was mounted

and counted a single congregation of 28 rhinos in the salient at Karunaini.

Sgt. Kamau, on 9th June, on a patrol on the Rohutie river saw three groups of bongo totalling over a hundred animals.

Cpl. Ngatia on 5th October walked onto a sleeping cow buffalo in thick bush, which knocked him down violently, in its urgent efforts to get away. Fortunately, Cpl. Ngatia was not injured apart from a few bruises and a shaking up. A similar incident involved Cp. Munyeri on 19th March whilst leading a patrol near Fort Jerusalem, with a rhino, which ploughed through the patrol scattering Rangers in all direction, and actually knocking Cp. Munyeri down; again, fortunately he only suffered bruising and a shaking up.

On 15th November, Cpl. Ndegwa, leading a patrol on the Itha river in the salient, walked onto a sleeping buffalo bull, which knocked him down and continued to trample and gore him. Two other armed Rangers acted quickly and under great difficulties due to thick bush and mix up of man and beast, managed to fire several shots which killed the buffalo. One of the bullets, however, missed the buffalo and hit Cpl. Ndegwa and passed through his left shoulder. On hearing the report the Warden's wife together with the Warden went to the scene where morphia and medical aid was administered and later Cpl. Ndegwa was taken to Nyeri Hospital where he very quickly recovered; fortunately the bullet missed the shoulder bones and caused a minor flesh wound. The bruising from the buffalo was far more painful and took longer to heal. Cpl. Ndegwa was given the buffalo horns, which hold a place of honour in his home.

A herd of 19 elephants, comprising of cows and calves migrated from Mt. Kenya to the Aberdare on 24th June, passing through the Amboni Valley past Mweiga township and through the Settlement Scheme, where they came to a halt on the outside of Treetops ditch, which they were unable to cross. On the first day Sgt. Kamau enlisted the aid of the Mweiga Police to control traffic and crowds and was able to keep the elephants contained in the safety of a patch of bush. The following two days the Divisional Game Warden, Mr. Jack Barrah, and the Warden, controlled the operation and with the help of Game Scouts and Park Rangers, numerous attempts were made to drive the elephants across several breaches prepared on the ditch, with no success. One elephant did, however, dig his own way across. Early in the morning the remaining 18 animals passed through the new Ark Gate across the ditch, at this point, unfortunately, before we were able to close the gate, one elephant cow followed by six others turned about and came out again. She promptly charged Sgt. Kamau who licked her with a frontal brain shot at

a distance of seven yards. The other six elephants run along the outside of the ditch back to the Amboni river. At this point another cow elephant and a large calf were shot in the process of attacking some cattle. The remaining four animals were driven back again to the Mweiga river, past all the breaks in the ditch and the Ark Gate, which they failed to cross. During the afternoon in view of the excited crowds of people and the danger that existed, we had no alternative but to shoot these last four elephants. Cpl. Kisige attempted to catch the smallest one, which very quickly knocked him down and lay on top of him during the process of which it had to be shot. The whole operation was indeed a success, as 12 elephants were saved and only seven shot — when one bears in mind the dangerous circumstances that existed, we could so easily have had to shoot all 19 animals.

### **FIREPLAN**

The early burning carried out in September, 1968, on the moorlands combined with the fact that periods of rain occurred during the dry season January to March and resultant high temperatures at night, created a low fire risk. The flowering was very poor with the result that there was little honey and few honey hunters.

### **CRIME**

A total of 19 men and 6 women were arrested and convicted for various offences against the National Parks Ordinance during the period under review. Offences included trespass, firewood cutting, possession of meat, trophies and weapons and hunting with dogs..

### **VISITORS:**

Amongst the important visitors in the Park was His Excellency the President and Mrs. Tubman of Liberia who spent a night at Treetops on 3rd October, 1968; His Excellency General and Mrs. Ankrah on 14th February. Twenty students from Ngorongoro Conservation Unit studying at Mweka accompanied by some Instructors spent two nights visiting the Park. Besides Volkswagen African Conference was held in Nyeri in late January and the Warden personally conducted the delegation through the Park. Heavy rain fell on the moorlands during the tour and it was fortunate that a Park Landrover and Toyota were

## **TSAVO NATIONAL PARK (E)**

### **1. WORK CARRIED OUT**

#### **(a) Aruba Dam**

The dam wall was becoming seriously eroded by wave action and there was a possibility that it could be carried away if heavy

rain fell in the Taita Hills. Much of the soil used in the construction of the dam is very sandy and does not bind well with the result that it is very difficult to maintain the correct slope to the banks. The entire dam was therefore re-shaped and reeds planted along the water's edge. The reeds have now become well established and we should experience no further trouble in this respect. This dam which consists of very scenic view to our clients who spend nights at Aruba Lodge has proved very popular ever since it was first constructed and in an attempt to build up the fish population we had in the preceeding Financial Year nearly 900 *Tilapia nilotica* fingerlings introduced at Aruba dam from Lake Baringo with a joint assistance of the Fisheries Department and the Police Airwing who did the actual flying of these fingerlings. They are gradually being reorientated in the new habitat and it is hoped that these fishes will thrive in Aruba dam well because the conditions of the climate is similar to that experienced at Baringo.

#### **(b) Staff Houses**

The building of the Accountant's House that had already been held up for sometime (as priority had to be given to the construction of Aruba Lodge that cost the Trustees over £3,000 to give a more revitalized outlook) was completed towards the end of June and this consisted of two bedroom, dining room, sitting room, bathroom, kitchen, store and verandah. The house was made of concrete blocks and covered with an Ardex roof.

Renovation works were also carried out for the Assistant Warden (Mechanic) house. He was on long leave which gave us an opportunity to carry the new repair to this house. The house which is of prefabricated construction was purchased second hand from Mowlems for the sum of £450 way back in 1953 to provide temporary accommodation for the Assistant Warden.

Regretably no money was voted for the construction, expansion or renovation of Subordinate Staff houses for Tsavo National Park (East) which as at now are most inadequate and are generally in very poor shape. It is hoped that money will be available for this work in the forthcoming financial year. It was found that the roof over the N.C.O.'s Quarters in the Ranger Lines, which was erected by a contractor was leaking very badly. All the Ardex had to be removed and then relaid allowing a greater overlap between sheets.

## **2. ROAD CONSTRUCTION**

(i) The prolonged heavy rains early in the year caused considerable damage to the roads in the Northern Area. At one time visitors to the Tsavo Tsafaris tented camp were unable to

travel more than a few miles from the camp itself because of the state of the roads. What were once dry watercourses have now become permanent streams and it will be necessary to make concrete drifts across most of these places. In the mean time temporary repairs have been done and the road from Gazi to Tabangunji is once again open to traffic. The first heavy rain will, however, almost certainly wash out the drifts again, and it is doubtful if Tsavo Tsafaris can continue to operate during the wet season unless the roads are brought up to an all weather standard. This, of course, means the expenditure of a considerable sum of money; possibly £5,000 or more, to do up the 90 miles or so used by visitors to the camp. A very deep water course across the road between Melka Faya and Tambongunji which always becomes impassable during the rains was built up with gabions filled with rock, and the whole structure wired together to avoid any possibility of it being washed away. This section of the road is not included in the Tourist Road Development Programme and therefore had to be repaired from our own resources.

#### **(ii) Tourist Roads — Southern Area:**

The roads from Voi to Sala Gate and Voi to Lugard Falls as well as the road from Lugard Falls to Manyani have been completed according to the specifications laid down. Work continues on the road from Sala Gate to Lugard Falls. This route, which follows the Galan River closely, presents many problems, as innumerable watercourses have to be crossed many of which are quite sizeable rivers during the rains.

#### **Sobo/Sala Road**

Work continued on this road up until the end of May, 1969. Culverts have been installed in some of the smaller watercourses and concrete drifts constructed across the larger ones. Low lying areas which are subject to flooding in the wet season have been raised and drainage ditches dug where necessary. The money for Tourist Road Development was exhausted at the end of May, 1969, and work on the road stopped. All the casual labour on this project were discharged and the road plant brought back to Headquarters at Voi.

#### **(ii) Other Roads:**

Most of the roads in the Park have been graded during the past nine months, but with so much of the road machinery tied up with the Tourist Development Programme, it is not easy to keep the existing roads in good condition. We anticipate that when the amount of work scheduled for Tourist Road is completed our machinery will be diverted to look into and properly

regrade other essential road tracks in the entire Park system. We might mention here that a concrete bridge was completed over the Mbololo watercourse in the early part of 1968 calendar year. The new Road commencing from Kono ya Maharage to Hunter's boma was made during the period under review. This road passes a chain of waterholes at the edge of flood plain. It also passes the country that is very popular with plains games and a great many species of antelopes. Lions too, and a number of cheetahs were often to be found in this road and several different prides were seen along this road in the period covering 1st October, 1968, to 30th June, 1969.

### **3. SURVEY OF THE NORTH-WEST BOUNDARY**

During the latter half of August, John Alexander started the survey of our N.W. Boundary from the junction of the Kibwezi and Athi Rivers to Umbi Hill. The boundary goes through thick bush on top of the Yatta with the result that progress was slow to begin with. During the early part of the survey, the party had to operate from a camp on the West bank of the Athi River which meant that they had to wade across the river and climb the Yatta escarpment before commencing work each morning. Unfortunately, John Alexander had to leave at the end of August, but he continued work again at the latter half of April, 1969. The boundary has now been completed from the Athi river to a point approx.  $1\frac{1}{2}$  miles East of Kimathena. When the line was cut Kigali Dam was found to be a few yards inside the Park. The dam was important to the Wakamba tribesmen living in the area and the fact that this dam had now clearly been established to be in the Park created a problem and a meeting had to be urgently arranged between the District Commissioner, Kitui, Mr. J. P. Bonyo; the Deputy Director, Kenya National Park, Mr. J. A. Njiri and the Warden, Mr. David Sheldrick, and local Kamba tribesmen representatives besides the County Council Authorities to examine the matter and evolve a compromise formula.

This meeting was held on the site of the dam on the 17th June, and after detailed negotiations on all parties concerned it was agreed that the Wakamba could be allowed to continue to use their traditional watering rights at Kigali dam until such a time that alternative arrangements could be made for them to get water both for their own domestic use and also for their livestock. This agreement was based on several conditions amongst which the Kamba tribesmen living around Kimathena area promised not to go beyond a rock barrier that overlooks the dam to the south. In the same meeting it was also agreed that certain shamba owners whose shambas were found to be within the National Park — a fact that they were not aware of until the

actual boundary had been cut by Messrs. Alexander — were given a temporary permission to continue cultivating their crops and to wind up the whole cultivation exercise on their first harvest and in any case they would cease any further cultivation by the 1st October, 1969. The tribesmen on the request of the District Commissioner also gave solemn promise that they would cease to have any future illegal access into the Park either on honey-hunting adventures, kuni-cutting or poaching activities and they further promised that they would send any information relating to any member of their clans who violated this promise to the appropriate authorities for the necessary actions.

#### **4. FIELD FORCE AND FIRE INCIDENCES**

By August the grass had started to dry out and the control of fires became our major preoccupation. It was realised that if a fire reached unmanageable proportions, the entire southern portion of the Park, which is open to visitors, could be burnt out. Although the Railway Staff were warned of the danger of starting fires in the Park, little effort was made to co-operate and the first fire was started by one of the Ranger's wives tipping out a brazier of live coals in the grass bordering the firebreak round a Ihandi. This fire raged for a week burning about 200 square miles of country between Buchuma and Aruba. All work came to a standstill while every available man, as well as some of the road machinery was employed fighting the fire. As the Warden was away on leave, Dr. Glover was faced with the responsibility of getting the fire under control, a task he performed very skilfully, often staying up to 2 and 3 o'clock in the morning directing and encouraging the labour. We are also grateful to the Warden, Tsavo West for spending so much of his valuable time flying Dr. Glover over the area and generally assisting with fire fighting operations.

The second serious fire occurred in September after the Warden's return from leave and was caused by a passing train. The Warden was able to read the name of the engine from the air and reported the matter to the Railway Police and the Station Master at Voi. Unfortunately, the only result was the receipt of an accident report from the Railway the next day saying that a fire had been observed in the Park between Maungu and Ndara, and that as this might constitute danger to passing trains, would the Warden arrange to put out the fire, forthwith! This was something the Warden was unable to do, for by this time high winds had fanned the flames and it was impossible to approach the available to pull the fleet of Volkswagen out of mud.

fire, let alone put it out. Fortunately a previous fire prevented it spreading eastwards, and it finally burnt itself out on the Voi

River. Nevertheless there was much waste of valuable grazing and this could have been serious had the rains failed.

Yet a third fire was started by a lorry driver employed by the Water Development Department making dams in the Galana Ranching Scheme. This man, for some reason best known to himself, during a journey from Lali to Lugard Falls, decided to set fire to the grass bordering the road. Little traffic uses this road normally, so the fire could have reached unmanageable proportions before it was noticed, but fortunately the Officer in charge of the Dam Construction Unit happened to pass on hour later and reported the fire. Thanks to quick action on the part of the Sergeant Kiberech and a Section of the Field Force, the fire was soon extinguished.

Loss of grazing was not the only result of these fires. Several elephants found themselves surrounded by one of the fires and in their efforts to break out, a number were severely burned by the high flames. Four later died and two had to be shot. Some were blind and all were in a pitiful state, with the skin sloughing off in patches on their legs and flanks a few covered in maggots.

One creature that had a miraculous escape, however, was a cock ostrich sitting on eggs, who despite the approach of the raging fire, refused to leave the nest. The fire was seen to sweep over him, but when the smoke cleared, the ostrich remained apparently unhurt. This incident was witnessed by the Warden from the air.

During the first week of October, the Field Force staged an anti-poaching demonstration at the Agricultural Show at Jamhuri Park in Nairobi. The same demonstration had been staged in the Voi and Mombasa Agricultural Shows and had proved extremely popular with the crowd. Nairobi was no exception, and all three performances were well received. The team taking part was awarded a Silver Medal by the Agricultural Society of Kenya.

Poaching appeared to be on the increase outside the Park, but we experienced very little trouble in the Park itself. This is almost entirely due to the constant vigilance shown by the Field Force throughout the period under review. Sergeant Kiberech must be singled out for particular mention for the way he has handled the sections under his command in the northern area.

A dead rhino was found on the Itito watercourse with a poisoned arrow embedded in its side, but as the horns had not been removed it is possible that the animal was shot in the Reserve and had escaped into the Park before dying. An ambush was laid over the carcass for two consecutive days, but no poachers were seen, which would seem to indicate that they had



either lost the spoor or that they were not prepared to run the risk of entering the Park.

A railway employee was arrested at Kenani Station for being in possession of game meat, which he claimed he had taken from a lion kill near the Station. He was handed over to the Railway Police for prosecution.

May, 1969, was a busy month for the Field Force Rangers who spent much of their time fighting fires. The very good grass cover to be found over much of Tsavo East today has greatly increased the fire hazard. There has also been a very marked increase in the number people burning charcoal near the borders of the Park. As soon as the grass is dry enough to burn, fires are started by these charcoal burners, and within a few days all the country outside the Park is ablaze. In May, this coincides with the South East monsoon and accompanying strong winds which carry the fires into the Park. It is extremely difficult to burn the Eastern firebreak because the inner track is too narrow and does not provide an effective barrier. The usual procedure is to burn the grass between the inner track and the boundary at night when the winds die down, but often the fires start up again at about midday when they cannot be controlled, with disastrous results. This happened on the 10th May when the fire jumped the firebreak between Kulaly and Mackinnon Road, and raced towards the Voi River unchecked. That evening, the Warden and all available machinery and labour rushed to the scene, and only by working throughout the night finally managed to get the fire under control at dawn.

## 5. GAME NOTES

The exceptionally heavy rain experienced in March has resulted in greatly increased vegetative cover throughout the Park. Many areas, which, a few years ago, consisted of bare soil, are now covered with good perennial grasses. The country around Aruba, for instance, which for many years resembled a desert, now supports pure stands of *Cenchrus ciliaris*, and *Chloris myriostachya*.

For the first time since 1961, *Ipomea mombassana* appeared in certain parts of the Park, particularly in the area East of the Yatta between Lugard Falls and Ntharakana. Large numbers of elephants moved into this region in July to feed on this plant.

Plains game such as Eland, Zebra, Oryx, Hartebeest and Grants gazelle continue to increase and quite spectacular concentrations could be seen at times. If present trends continue, a rapid build up in numbers can be expected. This development would undoubtedly enhance the popularity of the Park. Impala

also appear to be on the increase and have been seen many times round the Park Headquarters; an area in which they have not been found in the past.

Early in October, a 3½ year old elephant was sent down to Voi from Nairobi to take the part of a tame elephant in a film being made by Bill Travers and Virginia McKenna. Unfortunately, the young elephant was far from tame and did its best to kill anyone attempting to get into the pen with it. However, after three days of constant attention, the Warden and some Field Force Rangers succeeded in taming it sufficiently to allow it out of the pen, and by the end of a week it was following anyone about quite happily, and the Film Company were able to get some outstanding material. The film has yet to be released, but we understand the title is going to be "An Elephant called Slowly", Pole Pole being the young elephant's name.

In December, Dr. Harthoorn and Mr. Baldwin were given permission to immobilize an elephant in one of the shooting blocks bordering the Park. The object of the exercise was to fit a radio transmitter to the animal's neck for the purpose of providing information concerning body temperature. The Provincial Game Warden, Mr. Smith, accompanied the party on the ground, and the Warden, Tsavo East, helped to control the operation from the air. The first elephant to be darted collapsed after about 10 minutes and the ground party was directed to the animal by the aircraft. While preparations were being made to fit the radio, the effects of the drug wore off and the elephant suddenly got to its feet and made off. The next day a second elephant was successful immobilised and a radio attached to a piece of belting fastened through the operation, but Dr. Harthoorn was ready with second dart and succeeded in re-immobilising it. When the instruments had all been fitted, the elephant was given an antidote and allowed to wander off into the bush. Unfortunately, the radio only worked for a short period and contact was soon lost. We understand similar operation carried out in the Serengeti proved more successful and the Scientists were able to follow the animal for some four days.

At the request of Dr. Glover a bulldozer was used to expose the root systems of various species of trees and shrubs. These included *Delonx elata*, *commiphora baluensis*, *Acadia*, *tortilis*, *Molia Volkensii*, *Sterculia*, *rychocarpa*, *Boscia*, *coraces*, and *Bauhinia*, *taitensis*.

In January, the Warden was watching a herd of elephants bathing in Kiasa waterhole when they suddenly took fright and rushed out of the pool. It was then seen that the cause of the disturbance was a Hippo, which, objected to being trampled on by the elephant, had proceeded to attack some of them. This

hippo must have travelled a considerable distance over land to reach Kiasa waterhole.

The Hunters' antelope were seen on several occasions and a herd of 9 was found in the vicinity of the Kono Ya Maharage waterholes, while a single bull was seen on the Sala Road nine miles from Aruba. This animal was with a herd of Coke's hartebeest.

A number of reports had been received from time to time of lion killing young elephant. In June a section of the Field Force came across a freshly killed elephant with tusks 1 ft. long near Sobo rocks. The elephant had obviously put a stout resistance because the ground round about had been churned up over a considerable area. From an examination of the spoor, it appear that several lions had been involved.

During April, an aerial count of elephant and buffalo in the Park was undertaken. A total of 20,302 elephants were counted and 4,469 buffalos in Tsavo East and West. The figure for buffalo is undoubtedly very low. Most observers were concentrating on looking for elephant and almost certainly missed a lot of buffalo.

A breakdown of figures show that there were 13,545 elephants in Tsavo East as compared with 13,455 counted during the 1965 count. The count for Tsavo West was 6,758 as compared with 2,232 in 1965. In 1965, most of the southern portion of Tsavo West was burnt and large numbers of elephants were found outside the Park. This time a reconnaissance flight revealed very few elephants out of the Park. This would account for the spectacular increase in Tsavo West elephant population during the period under review.

## **TSAVO WEST NATIONAL PARK WORK CARRIED OUT**

During the period under review road works in Tsavo West went on successfully. The construction of the new road from Tsavo Station to Ngulia Lodge progressed rapidly and was completed before the opening of Ngulia Lodge which was carried on to the end of 22nd May, 1969, by the Minister for Tourism and Wildlife Hon. S. Ayodo. It was, however, necessary in the latter part of 1968 to keep off all traffic from using it during the construction period and more so because the recent October-November rains had tended to make construction work rather cumbersome. At the end of the Financial Year this road has been made all weather road and is completely suitable for heavy commercial vehicles. Work on the road from Ngulia Lodge which will join with the Kilaguni — Mtito Andei Road was completed.

The Chyulu Hills Road was also completed and re-aligned and a similar part of the road was particularly re-designed to avoid a two-way traffic on a steep section.

Other roads included (a) The servicing of Ngulia Road to Tsavo New Gate; (b) Ngulia to Ndare Road and (c) Ndawe to Kilaguni road. Other construction included the grading of both the old road from Kilaguni through Rhino Valley to Ngulia and from Kilaguni to Mzima Springs which section was also murrammed and graded to all weather standards. Culverts 4' x 24' were fitted on Ngulia Tsavo Gate roads and the section between Ngulia to Kilaguni new road.

### **AIRSTRIP**

Work that had commenced early October, 1968, on the construction of the Airstrip which would serve the new Ngulia Lodge was completed. The site had been passed by the Director of Civil Aviation as being suitable; but unfortunately this work which was scheduled to be completed by February, 1969, had been held up due to shortage of plant. Nevertheless, concrete side markers were pre-cast at Tsavo West Headquarters and were carted to site, immediately on completion. By the end of the year this new Airstrip was ready and a mast for wind sock was erected.

### **MZIMA SPRING TANK**

In the early part of the Financial Year work on this important project had been held up owing to the delay in obtaining glass for the eight windows which glass had been ordered from England but construction of the tank was later completed. Great skill and workmanship had to be utilised in placing it in position.

### **STAFF HOUSES**

Great concentration was put in the construction of Staff Houses throughout the Park system during the period under review i.e. 1st July, 1968, to 30th June, 1969, the Trustees spent £4,510.75 on the construction of the much needed Staff Houses. It is forecast that additional money will be available in the next Financial Year to diversify and expand the much needed accommodation for our Junior Staff. Besides the Junior Staff houses off New Gate were constructed and completed which is just a few yards from Tsavo River and this New Gate proved to be extremely valuable particularly on people driving from Mombasa wishing to spend a night at Ngulia Lodge. It is only about 25 miles from this Gate which is stationed on the main Mombasa-Nairobi road to Ngulia Lodge.

## GAME MATTERS

With the heavy rain the period November-December it was recorded on the latter part in 1968, calendar year that there had been an increased concentration of game and a notable example in this respect was Kilaguni Lodge Water Hole where a large number of animals were seen both during the day and at night. Mr. G. J. Goddard who carried out a ground count of rhino in the Manda around the Tsavo River area concluded that there was an indication that the percentage of young animals was above average in the area. Outside the Park north-west of Mtito Andei, most animals were frightened because considerable amount of poaching still went on around that region to say nothing of the grass buring and charcoal making which took place sporadically in the same region.

Within the first quarter of 1969, it was generally recognized that some animals that are regularly seen by visitors were in the increase and the increase is more easily found in species that live in herds such as buffalo, impala, zebra and giraffe. It is not so much the increased number of herds that one notices but more so the increased number of animals in the herd. Some certain categories of species of animals seem to be decreasing particularly, the eland, oryx, hartebeest and water buck, in the range management though no scientific reasons could be given by our Field Officers for this real decrease. However, it is a common opinion that these animals do carry out local migrations, and it is hoped that with the good rains that have been enjoyed at places like the Western site of Tsavo West National Park for a consecutive period of several years had kept these animals generally happy inside the Park and their invisibility could only be explained in that they perhaps had scattered about or receded into deeper sections of the Park under impenetrable camouflage. It is also speculated that elands and oryx seem to prefer grazing on similar grass as that used by large herds of cattle and could have very easily migrated to the Range Management zones adjacent to the Park.

We forecast that in the forthcoming years that with availability of adequate money we can carry out well-phased out controlled burning in large sections of the Park so that the species of animals that have scientifically indicated that they have greater preference of habitat at shorter grass pasture can then be contained for more permanent days within the Park.

The Game birds, for some years now have not really enjoyed a really good breeding season. Heavy out of season rains may have accounted for a high mortality to chicks. Large flocks of Guinea fowl and Yellowneck which were so common in the past are seldom seen these days. It is possible that controlled burning could help the game birds of the Park.

Without going into details regarding all possible games in Tsavo West National Park, I would like to relate a few factors

observed by the new Warden who took over the management of the Park within the last quarter of the Financial Year under review. These notes are based on the 5 categories of games that he observed within his short stay in the Park.

**(a) Elephant:**

It was noticed that the elephant are still very scattered, as most of the water pans are still full. They are, however, beginning to dry out in the southern area, and there was a large concentration of elephant in the swamp below the junction of the Mwatate and the Bura.

The Warden had to shoot one elephant which was trapped, with a broken back under a fallen baobab tree. This incident occurred on the day Mr. Marshall left.

**(b) Rhino:**

A dead rhino was found between Tembo Peak and the Tsavo River. The rhino appeared to be of middle age, and the cause of death is unknown. A lot of rhino calves have been observed, and the Warden estimates that the calf ratio of the population as the result of the last breeding season is quite high.

**(c) Buffalo:**

During the month of May, five buffalos died between Kamboyo and Mtito Andei, and three in the Ngulia area. Ages and cause of death are unknown. However, the warden does not consider there is any cause for alarm about this, since in the Ngulia Area it has been observed that there are at least three herds of over 100 heads each, and in the Kamboyo area, two herds of over 100 heads each and these deaths could, therefore, quite easily be natural ones.

**(d) Lion:**

Lions are regularly heard around Kamboyo at night although they are not seen during the day.

**(e) Plains Game:**

Zebra and Impala are observed to be reasonably common in the Kamboyo area. The Warden is hoping to get some population density figures for the Murka area from Mweka students and staff who have carried out several transects in this region.

A few Grant's Gazelle have recently been seen at Kitani and Mzima Springs, although this is uncommon.

Oryx are nearly always observed on the new Ngulia Airstrip throughout the period under review.

The following chart gives rainfall record on monthly basis commencing from 1st July, 1968, to 30th June, 1969.

July, 1968	.02 inches	.06 inches	NIL	NIL
August, 1968	NIL	NIL	NIL	NIL
September, 1968	.02 inches	NIL	NIL	NIL
October, 1968	1.31 „	.35 inches	19.7 mm	1.00 inches
November, 1968	13.21 „	6.72 „	192.1 mm	6.76 „
December, 1968	7.41 „	2.40 „	153.7 mm	1.27 „
January, 1969	.27 „	1.33 „	NIL	.05 „
February, 1969	4.59 „	.42 „	NIL	4.55 „
March, 1969	4.32 „	1.18 „	NIL	3.22 „
April, 1969	.83 „	.89 „	NIL	.66 „
May, 1969	.31 „	.94 „	NIL	.42 „
June, 1969	.06 „	.26 „	NIL	.26 „
<b>TOTAL</b>	<u>32.35 inches</u>	<u>14.55 inches</u>	<u>365.5 mm</u>	<u>18.19 inches</u>

#### **AUDITED ACCOUNTS**

Finally, the audited Balance Sheet and Accounts for the year ended 30th June, 1969, are attached and submitted herein.

PROF. D. P. S. WASAWO

Chairman

BOARD OF TRUSTEES OF KENYA NATIONAL PARKS

## KENYA NATIONAL PARKS

## BALANCES/PROVISIONS AT 30th JUNE, 1969

## BANK

M.C.B.	Nairobi — Main Account	700390.70
L.C.B.	London Account	5950.76

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 706341.46

## CASH

P.26	Headquarters	4237.15
P.27	Education (Nairobi)	2120.75
P.29	Nairobi	29323.46
P.30	Tsavo East	11279.50
P.31	Tsavo West	16548.95
P.32	Marsabit	2779.05
P.33	Aberdare	26835.32
P.34	Mount Kenya	3905.90
P.35	Lake Nakuru	5508.45
P.36	Meru	7647.85
P.38	Mount Elgon	4689.05
P.39	Shimba Hills	2484.90
P.41	Marine	5298.95
T.R.P.	Tsavo Research Project	1609.95

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 124269.23

## STOCK ON HAND

P.3	Kitani Shop	1255.45
P.4	Nairobi Park Filling Station	6886.40
P.5	Aruba Shop	3409.60

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 11551.45

## RAILWAY DEPOSIT ACCOUNTS

P.89	Tsavo East	3513.20
P.90	Tsavo West	126.75

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 3639.95

## INVESTMENTS

P.2	Land & Agricultural Bank of Kenya	1120000.00
P.2	Agricultural Finance Corporation	880000.00

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 2000000.00

## LOAN

P.19	Kenya Government	209756.60
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 446.70

## DEPOSIT ACCOUNT — STAFF

P.116	A.E. Billingsley	446.70
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**INCOME TAX (PAYE) — EMPLOYEES**

P.121	Employees	11450.00
T.R.P.	Employees — Tsavo Research Project	125.00

**NATIONAL SOCIAL SECURITY FUND — EMPLOYEES**

		<u>11575.00</u>
P.122	Employees	9379.00
T.R.P.	Employees — Tsavo Research Project	95.00
		<u>9474.00</u>

**UNION DUES — EMPLOYEES**

P.124	Employees	2645.00
T.R.P.	Employees — Tsavo Research Project	25.00
		<u>2670.00</u>

**PROVISION FOR INTEREST ACCRUED ON LOAN**

P.109	Provision	<u>14920.45</u>
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**PROVISION FOR AUDIT FEE**

P.103	Provision	<u>8000.00</u>
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**PROVISION FOR GRATUITIES (SENIOR STAFF)**

P.20	Balance	<u>33178.60</u>
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**PROVISION FOR GRATUITIES (SUBORDINATE STAFF)**

P.21	Balance	<u>187732.60</u>
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**PROVISION FOR BONUSES (SENIOR STAFF)**

P.22	Balance	<u>1379.15</u>
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**SURPLUSES ON TRADING**

P.104	Kitani Shop	3452.65
P.105	Nairobi Park Filling Station	4247.25
P.106	Aruba Shop	6277.05
P.107	Aruba Dam — Fishing	236.80
		<u>14213.75</u>

**SUNDRY DEBTORS**

P.94	Kenya Hotels Ltd.	18517.70
P.94	Game Lodges Ltd.	14616.00
P.94	Kenya Safari Lodges & Hotels Ltd.	10000.00
P.94	Glen Cottar Camps Ltd.	620.00
P.94	Bunson Travel Service Ltd.	12324.40
P.94	Bethany Bookshop	750.00
A.21	African Marine & General Engineering Co. Ltd.	405.00
C.43	Coastal Bottlers Ltd.	585.00
		<u>57818.10</u>

**SUNDRY CREDITORS**

P.119	J. H. Minet & Co. (E.A.) Ltd.	41.40
P.119	Hogg, Robinson & Colin Hood (Kenya) Ltd.	62.00

		Shs.
P.119	G. Campagnola Ltd.	35100.00
A.18	Aberdare Timber & Construction Co.	8107.50
B.5	Bondeni Road Service Station	81.40
B.6	Bhadresa Tailoring House	3136.00
B.23	Bhugal's Garage Ltd.	130.50
E.2	East African Power & Lighting Co. Ltd.	69.20
E.3	East African Railways and Harbours Corporation	180.00
E.10	East African Wild Life Society	1447.45
K.7	Kenya Shell Ltd.	677.40
K.20	Kenya Shell Ltd.	2212.25
K.24	Kenya Bunduki Ltd.	25.50
K.64	Kwale Water Supply	117.90
L.13	Latema Road Service Station	39.20
M.3	Meghji Rupshi & Co.	2776.10
M.7	Machinery Services	2910.25
M.8	Mombasa Pipeline Board	1573.40
M.34	Ministry of Works (Airport Manager)	13.80
M.55	Mohamedali Mulla Abdulali	182.25
N.3	Nairobi Cycle Mart	68.00
P.7	Puran Singh (Electrician) & Sons	910.00
P.8/g	E.A.P. & T. Administration	440.90
P.8/1	E.A.P. & T. Administration	65.10
P.8/m	E.A.P. & T. Administration	260.75
R.1	E. Robson Ltd.	144.00
T.5	Tsavo Inn	29.45
T.14	Total Safari Service Station	63.80
W.4	Wilken Aviation Ltd.	2706.00
		63571.50

# KENYA NATIONAL PARKS

## BALANCE SHEET AT 30th JUNE, 1969

	1967/68 K.£ Sh. Cts.	1967/68 K.£ Sh. Cts.	1967/68 K.£ Sh. Cts.	1967/68 K.£ Sh. Cts.
<b>LIABILITIES</b>		<b>ASSETS</b>		
<b>FUND ACCOUNTS:</b>				
<b>Fort Jesus Reconstruction Fund —</b>				
As per attached account	2,827. 6.55			
<b>Development Fund —</b>				
As per attached account	46,330. 6.78			
<b>Water for Wild Animals Fund —</b>				
As per attached account	8,148. 7.67			
<b>Donations Funds —</b>				
As per attached accounts:				
General	1,336.6.35			
Gedi National Park	—			
Fort Jesus National Park	—			
Animal Orphanage (Nairobi)	373.4.80			
<b>Less:</b>	<u>63,949. 9.15</u>			
<b>General Fund —</b>				
Balance at 30th June, 1968,				
brought forward	2,565.7.91			
<b>Add: Balance on General Income and</b>				
Expenditure Account attached	4,111.13.39			
	<u>6,677. 1.30</u>			
<b>Add: Tsavo Research Project</b>				
(see Note IV) Balance as per attached				
account	3,701.19.11			
	<u>10,379. 0.41</u>			
				120,308.14.40
				<u>147,443.19.00</u>
				<u>115,191. 1.69</u>
				<u>18,040. 0.96</u>
				<u>15,778. 2.15</u>
				<u>2,261.18.81</u>
				<u>100,000. 0.00</u>
				<u>74,000. 0.00</u>
				<u>23,150. 0.73</u>
				<u>1. 0.00</u>
				<u>181.19.95</u>
				<u>2,890.18.10</u>
				<u>3,650. 9.50</u>
				<u>35,317. 1.46</u>
				<u>6,213. 9.23</u>
				<u>56,000. 0.00</u>
				<u>44,000. 0.00</u>
				<u>18,040. 0.96</u>
				<u>15,778. 2.15</u>
				<u>2,261.18.81</u>
				<u>100,000. 0.00</u>
				<u>74,000. 0.00</u>
				<u>23,150. 0.73</u>
				<u>1. 0.00</u>
				<u>181.19.95</u>
				<u>2,890.18.10</u>
				<u>3,650. 9.50</u>
				<u>35,317. 1.46</u>
				<u>6,213. 9.23</u>
				<u>56,000. 0.00</u>
				<u>44,000. 0.00</u>
				<u>18,040. 0.96</u>
				<u>15,778. 2.15</u>
				<u>2,261.18.81</u>
				<u>100,000. 0.00</u>
				<u>74,000. 0.00</u>
				<u>23,150. 0.73</u>
				<u>1. 0.00</u>
				<u>181.19.95</u>
				<u>2,890.18.10</u>
				<u>3,650. 9.50</u>
				<u>35,317. 1.46</u>
				<u>6,213. 9.23</u>
				<u>56,000. 0.00</u>
				<u>44,000. 0.00</u>
				<u>18,040. 0.96</u>
				<u>15,778. 2.15</u>
				<u>2,261.18.81</u>
				<u>100,000. 0.00</u>
				<u>74,000. 0.00</u>
				<u>23,150. 0.73</u>
				<u>1. 0.00</u>
				<u>181.19.95</u>
				<u>2,890.18.10</u>
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				<u>35,317. 1.46</u>
				<u>6,213. 9.23</u>
				<u>56,000. 0.00</u>
				<u>44,000. 0.00</u>
				<u>18,040. 0.96</u>
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				<u>100,000. 0.00</u>
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				<u>15,778. 2.15</u>
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				<u>44,000. 0.00</u>
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				<u>56,000. 0.00</u>
				<u>44,000. 0.00</u>
				<u>18,040. 0.96</u>
				<u>15,778. 2.15</u>
				<u>2,261.18.81</u>
				<u>100,000. 0.00</u>
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				<u>23,150. 0.73</u>
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				<u>2,890.18.10</u>
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				<u>2,261.18.81</u>
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				<u>35,317. 1.46</u>
				<u>6,213. 9.23</u>
				<u>56,000. 0.00</u>
				<u>44,000. 0.00</u>
				<u>18,040. 0.96</u>
				<u>15,778. 2.15</u>

**KENYA NATIONAL PARKS**  
**BALANCE SHEET AT 30th JUNE, 1969**  
**(CONTINUED)**

	1967/68 K.£ Sh. Cts.		1967/68 K.£ Sh. Cts.
72,830.12.69	Brought forward	120,308.14.40	147,443.19.00
12,730. 7.25	Kiligumi Lodge Cost Redemption Reserve — Amount transferred from General Income and Expenditure Account Less: Transfer to Kiligumi Lodge Extensions (II)	15,778. 2.15 15,778. 2.15	115,191. 1.69
26,265.18.75	<b>DEFERRED LIABILITIES:</b> Provision for Gratuities (Senior Staff) Provision for Gratuities (Subordinate Staff) Provision for Bonuses (Senior Staff)	1,658.18.60 9,386.12.60 68.19.15	
3,364. 3.00	<b>LOAN:</b> Kenya Government (see Note I)	11,114.10.35	
	<b>CURRENT LIABILITIES AND PROVISIONS:</b> Sundry Creditors National Social Security Fund Kenya Union of National Parks Employees Paymaster-General — PAYE Income Tax Deposit Account — Staff Provision for Interest accrued on Loan Provision for Audit, Fee	3,178.11.50 473.14.00 133.10.00 578.15.00 22. 6.70 746. 0.45 400. 0.00	
<u>3,364. 3.00</u>	<b>TOTAL OF CURRENT LIABILITIES AND PROVISIONS</b>	<u>5,532.17.65</u>	

*(NOTE I — During the course of the year, an additional sum of £15,000 was repaid against the Loan arranged from the Kenya Government. This Loan — which amounted initially to £27,000 and which bears interest at the rate of 6 per cent per annum — was utilised to meet (in part) the cost of further extensions to Kiligumi Lodge. The Loan was repayable in twenty equated annual instalments of principal and interest, the first and second of these instalments having been paid on the 31st December, 1967, and the 31st December, 1968, respectively).*

*(NOTE II — Provision has been made in the General Income and Expenditure Account to cover the loss of cash, amounting to £1,680, which arose as a result of armed robbery at Nakuru whilst the cash was in transit to the Bank. Information has been received, however, that the insurance claim which, at the 30th June, 1969, was still under investigation by the Police and the insurance assessors, will be met in full by the Insurance Company).*

*(NOTE III — With the concurrence of the Ministry of Tourism and Wildlife and the Ministry of Natural Resources, the Trustees agreed to transfer their authority over the Historic and Prehistoric Sites to the Museums Trustees of Kenya (Centre for Prehistory and Palaeontology). For administrative purposes, the transfer was effected as on the 31st December, 1968, on which date all unspent balances and other assets held by the Trustees for the account of the Historic and Prehistoric Sites were transferred to the Museums Trustees of Kenya).*

	K.£		K.£
<u>115,191. 1.69</u>		Carried forward	<u>147,443.19.00</u>
		Carried forward	<u>115,191. 1.69</u>

# KENYA NATIONAL PARKS

## BALANCE SHEET AT 30th JUNE, 1969

(CONTINUED)

1967/68  
K.£ Sh. Cts.  
115,191. 1.69

**LIABILITIES**  
Brought forward

K.£ Sh. Cts.  
147,443.19.00

**ASSETS**  
Brought forward

1967/68  
K.£ Sh. Cts.  
115,191. 1.69

K.£ Sh. Cts.  
147,443.19.00

(NOTE IV — The balance of the grant made available for the Tsavo Research Project was received during the year from the Ford Foundation. It is understood that further funds are unlikely to be forthcoming from this source for the Project in the immediate future and, in view of the fact that, at the 30th June, 1969, expenditure incurred on the Project exceeded the total amount of funds made available by the Ford Foundation for it, the excess expenditure — amounting to K.£3,701.19.11 — has been reflected in the Balance Sheet amongst the Fund Accounts and not as a separate item as hitherto).

DAVID P. S. WASAWO, *Chairman of Trustees.*

P. M. OLINDO, *Director.*

A. E. BILLINGSLEY, *Chief Accountant.*

115,191. 1.69

K.£ 147,443.19.00

K.£ 147,443.19.00

115,191. 1.69

### AUDITORS' REPORT

We have examined the above Balance Sheet with the books and vouchers of the Kenya National Parks and we have obtained all the information and explanations we have required. The Balance Sheet is, in our opinion, properly drawn up to show a true and correct view of the state of affairs at 30th June, 1969 of the Kenya National Parks according to the best of our information and the explanations given to us, and as shown by the books produced to us.

NAIROBI, 31st October, 1969.

GILL & JOHNSON  
*Chartered Accountants*

# KENYA NATIONAL PARKS

## STATEMENTS OF INCOME AND EXPENDITURE FOR THE YEAR ENDED 30th JUNE, 1969

### FORT JESUS RECONSTRUCTION FUND

EXPENDITURE	K.f. Sh. Cts.	REVENUE	K.f. Sh. Cts.
To: Expenditure during the period — Frescoes	1,537.14.15	By: Balance at 30th June, 1968, brought forward	2,827. 6.55
Balance, transferred to the Museums Trustees of Kenya as at 31st December, 1968 (see Note III)	2,593. 7.15	Donation (balance) — Calouste Gulbenkian Foundation — for Frescoes	1,273.14.75
	<u>K.f. 4,131. 1.30</u>	Interest received on Investments	30. 0.00
<b>DEVELOPMENT FUND</b>		<b>DEVELOPMENT FUND</b>	
<b>EXPENDITURE</b>		<b>REVENUE</b>	
To: Roads	16,889. 1.05	By: Balance at 30th June, 1968, brought forward	46,330. 6.78
Tourist Road Programme	27,521. 6.80	Kenya Government Grants (per Ministry of Tourism and Wildlife)	40,000. 0.00
Housing/Staff Quarters	18,522.15.65	Kenya Government Grants (per Ministry of Works)	115,757. 0.00
Entrance Gates, etc.	3,757. 1.90	Donation — Frankfurt Zoo — for Biologist — Marine	6,000. 0.00
Aircraft — Meru	5,660. 0.00	Donation — C. W. Ennis — for Game Blind/Camp Site — Tsavo East	35. 8.35
Firebreak — Tsavo East	521.10.50	Donation — Geographical Club of Nairobi — for Game Blind/Camp Site — Tsavo East	10. 0.00
Survey of Boundary — Tsavo East	1,500. 0.00	Donation — Elsa Wild Animal Appeal — for Vehicle — Meru	2,153. 8.75
Game Blind/Camp Site — Tsavo East	180. 0.00	Donation — World Wildlife Appeal — for Aircraft — Meru (part)	178. 7.40
Tree Planting — "Treetops" — Aberdare	416. 2.00	Donation — Elsa Wild Animal Appeal — for Firebreak — Tsavo East	625. 0.00
General Development — Marine	826. 5.25	Donation — African Wildlife Leadership Foundation — for Firebreak — Tsavo East	625. 0.00
Education Centre — Voi — Tsavo East	7,000. 0.00	Transfer from General Fund Account — for Land — Malindi (part)	6,546. 9.62
Observation Tank — Mzima — Tsavo West	2,996. 14.00	Interest received on Investments	2,735.15.36
Access Road/Airstrip — Ngulia — Tsavo West	3,339.10.00		
Ordinary Shares (100) in Kenya Safari Lodges and Hotels Ltd.	100. 0.00		
Vehicle — Meru	2,153. 8.75		
Water Supplies — Meru	1,477.15.50		
Biological Survey — Marine	98.10.25		
Land — Malindi — Marine	7,801.15.60		
<b>Balance, carried to Balance Sheet</b>	<u>120,234.19.01</u>		
	<u>K.f. 220,996.16.26</u>		

### WATER FOR WILD ANIMALS FUND

EXPENDITURE	K.f. Sh. Cts.	REVENUE	K.f. Sh. Cts.
To: Balance, carried to Balance Sheet	8,743. 4.65	By: Balance at 30th June, 1968, brought forward	8,148. 7.67
	<u>K.f. 8,743. 4.65</u>	<b>Donations:</b>	
		Donations received during the year	236.17.40
		<b>Sales:</b>	
		Ivory Souvenirs (less Expenses)	37. 0.00
		<b>Interest:</b>	
		Interest received on Investments	320.19.58
			<u>K.f. 8,743. 4.65</u>

# KENYA NATIONAL PARKS

## STATEMENTS OF INCOME AND EXPENDITURE FOR THE YEAR ENDED 30th JUNE, 1969

### DONATIONS FUND — GENERAL

EXPENDITURE	K.£ Sh. Cts.	REVENUE	K.£ Sh. Cts.
To: Balance, carried to Balance Sheet ... ..	1,336. 6.35	By: Balance at 30th June, 1968, brought forward ...	1,286.15.74
	<u>K.£ 1,336. 6.35</u>	Interest received on Investments ... ..	49.10.61
			<u>K.£ 1,336. 6.35</u>

### DONATIONS FUND — GEDI NATIONAL PARK

EXPENDITURE	K.£ Sh. Cts.	REVENUE	K.£ Sh. Cts.
To: Adjustment ... ..	—.—.01	By: Balance at 30th June, 1968, brought forward ...	310. 0.76
Balance, transferred to Museums Trustees of Kenya as at 31st December, 1968	310. 0.75		<u>K.£ 310. 0.76</u>
(see Note III)			

### DONATIONS FUND — FORT JESUS NATIONAL PARK

EXPENDITURE	K.£ Sh. Cts.	REVENUE	K.£ Sh. Cts.
To: Adjustment ... ..	—.—.05	By: Balance at 30th June, 1968, brought forward ...	9. 0.18
Balance, transferred to Museums Trustees of Kenya as at 31st December, 1968	9. 0.15		<u>K.£ 9. 0.18</u>
(see Note III)			

### DONATIONS FUND — ANIMAL ORPHANAGE (NAIROBI)

EXPENDITURE	K.£ Sh. Cts.	REVENUE	K.£ Sh. Cts.
To: Expenditure during the year ... ..	5,822.17.20	By: Balance at 30th June, 1968, brought forward ...	5,037.11.47
Balance, carried to Balance Sheet ... ..	373. 4.80	Donations received during the year ... ..	1,086.15.95
	<u>K.£ 6,196. 2.00</u>	Interest received on Investments ... ..	71. 14.58
			<u>K.£ 6,196. 2.00</u>

# KENYA NATIONAL PARKS

## GENERAL INCOME & EXPENDITURE ACCOUNT FOR THE YEAR ENDED 30th JUNE, 1969

1967/68	1967/68	EXPENDITURE	REVENUE	K.£ Sh. Cts.	K.£ Sh. Cts.
K.£ Sh. Cts.	K.£ Sh. Cts.				
38,570.13.50	To: Salaries and Allowances	...	By: Grant-in-aid from Kenya Government	69,000. 0.00	69,000. 0.00
2,628.12.25	Pension Fund Contributions	...	Donation — Elsa Limited — for Meru National Park	—	1,280. 9.75
245. 8.34	Medical Insurances	...	Donation — World Wildlife Fund (per Elsa Fund) — for Meru National Park	—	4,219.11.70
1,643. 9.90	Leave Passages	...	Donation — East African Wild Life Society — for Mount Elgon National Park	—	5,000. 0.00
770. 6.50	Provision for Gratuities (Senior Staff)	...	National Park	60. 0.00	60. 0.00
71.17.45	Provision for Bonuses (Senior Staff)	...	Donation — C. Winnington Ingram — for Aberdare National Park	—	7.10.00
3,789. 7.75	National Social Security Fund	...	Donation — Bethany Bookshop — for Lake Nakuru National Park	—	5. 0.00
2,160. 0.00	Rents — Housing (Senior Staff)	...	Donation — J. Gallacher — for Education Centre	25. 0.00	—
3,368. 0.50	Wages — Office and Clerical Staff	...	Donation — African Wildlife Leadership Foundation — for Education Centre	—	—
294. 8.10	Expenses — Office and Clerical Staff	...	Centre	25. 0.00	—
2,065. 7.75	Printing and Stationery	...	Donation — African Wildlife Leadership Foundation — for Meru National Park	—	—
191.16.60	Postages and Telegrams	...	National Park	5,000. 0.00	—
1,279.10.50	Telephone	...	Donation — Munitalpa Foundation — for Mount Elgon National Park	—	—
162.13.42	Bank Exchange and Charges	...	Entry Fees — Car Passes	6,837. 0.00	5,116.10.00
1,774.14.93	Insurances — General	...	Entry Fees — Persons	123,985. 6.50	71,267. 2.70
35.16.00	Legal Expenses	...	Entry Fees — Vehicles	27,368. 0.00	18,453.12.00
35.17.75	Land Rent and Rates	...	Entry Fees — Animal Orphanage (Nairobi)	7,991.13.50	8,430. 5.00
1,301.14.59	Publications and Publicity	...	Accommodation Fees — Aruba/Kitani Lodges	6,971.10.70	3,824.18.60
4,075.10.60	Travelling, Subsistence and Attendance Allowances	...	Camping Fees	1,554.13.95	1,240. 2.50
164. 4.55	Entertainment Fund — Chairman	...	Ranger Guide Fees	714.10.00	1,066.15.00
863. 1.50	Training Expenses (Staff)	...	Photography Fees	1,700. 0.00	1,006. 3.00
1,865. 2.30	General Expenses	...	Prospecting Fees	50. 0.00	175. 0.00
—	Agricultural Showground Expenses	...	Rent — "Treetops"	8,928.10.55	7,620. 8.80
5,860.10.60	Expenses — Animal Orphanage (Nairobi)	...	Rent — Voi Lodge	1,750. 0.00	—
1,061. 2.65	Maintenance of Animal Orphanage	...	Rent — Ngulia Lodge	750. 0.00	—
1,095.17.00	Wages — Animal Orphanage Staff (Nairobi)	...	Rent — Aruba Lodge	—	495. 0.00

Carried forward

Carried forward









**KENYA NATIONAL PARKS**  
**FORT JESUS NATIONAL PARK**

**STATEMENTS OF INCOME AND EXPENDITURE FOR THE YEAR ENDED 30th JUNE, 1969**

	K.£ Sh. Cts.	REVENUE	K.£ Sh. Cts.
<b>To:</b> Salaries and Allowances	...		
Provision for Gratuities (Senior Staff)	...		
National Social Security Fund	...		
Printing and Stationery	...		
Postages and Telegrams	...		
Telephone	...		
Bank Exchange and Charges	...		
Insurances — General	...		
Publications and Publicity	...		
General Expenses	...		
Licence — Vehicle	...		
Insurance — Vehicle	...		
Maintenance of Vehicle	...		
Petrol and Oils — Vehicle	...		
Maintenance of Buildings	...		
Wages — Subordinate Staff	...		
Expenses — Subordinate Staff	...		
Library and Exhibits	...		
<b>Balance, transferred to Museums Trustees of Kenya as at 31st December, 1968</b>	<b>2,779. 6.55</b>		
(see Note III)			
		By: Grant-in-aid from Kenya Government	5,000. 0.00
		Entry Fees	1,123. 6.30
		Guide Fees	14. 5.00
		Hire of Vehicle	10.17.60
		Sale of Books and Guide Books	214.17.60
		Sundry Revenue	47. 8.00

K.£ 6,410.14.50

K.£ 6,410.14.50

# KENYA NATIONAL PARKS TSAVO RESEARCH PROJECT

## INCOME & EXPENDITURE ACCOUNT FOR THE YEAR ENDED 30th JUNE, 1969

EXPENDITURE	K.£ Sh. Cts.	REVENUE	K.£ Sh. Cts.
<b>To: CENTRAL RESEARCH UNIT — DEVELOPMENT</b>		By: Balance at 30th June, 1968, brought forward	11,446.11.45
Buildings	1,285.10.00	Ford Foundation — Grant (balance) received during the year	4,828. 3.75
Household Furniture and Fittings	11. 5.00	Wildlife Services Ltd. — Share of cutting and loading elephant carcasses	300. 0.00
Vehicles	928.13.00	Hire of Aircraft	304. 9.15
Field Equipment	752. 8.70	<b>Balance, being deficit, carried to Balance Sheet (see Note IV)</b>	<b>3,701.19.11</b>
Laboratory Equipment	2,952. 5.85		
<b>CENTRAL RESEARCH UNIT — RECURRENT</b>	<b>5,930 2.55</b>		
Salary and Allowances — Zoologist	2,454.18.15		
Salary and Allowances — Botanist	3,125. 0.00		
Salary and Allowances — Warden (Administration)	139. 8.50		
Salary — Typist/Librarian	450. 0.00		
Wages — Junior Staff	780.12.95		
Expenses — Junior Staff	89.12.00		
<b>GENERAL — RECURRENT</b>	<b>7,039.11.60</b>		
Passages	131.11.40		
Travelling and Subsistence Allowances	345. 6.80		
Postages, Telegrams and Telephone	49.14.40		
Insurances — General	36. 5.66		
Printing and Stationery	386.13.35		
General Expenses	220. 3.10		
Maintenance of Vehicles	2,129. 0.10		
Petrol and Oils — Vehicles	2,131. 1.40		
Licences and Insurances — Vehicles	225. 7.20		
Maintenance of Aircraft	341.18.25		
Petrol and Oils — Aircraft	411. 9.00		
Expenses — Flying	75. 6.60		
Consumable Stores	710.14.05		
National Social Security Fund	66.18.00		
Accountancy Charges	500. 0.00		
Provision for Audit Fee	50. 0.00		
	<b>7,611. 9.31</b>		