

## THE FUTURE OF THE AFRICAN FAUNA

By E. B. WORTHINGTON

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Captain Keith Caldwell, in his admirable report of a faunal survey in Eastern and Central Africa conducted in 1947, says :  
“ . . . Were one of the old hunters who operated fifty years ago to visit Eastern Africa to-day, he would find vast districts in which he used to shoot completely denuded of game ; in fact, it is probable that the game areas have been reduced by half, and the game within many of those left by 75 per cent.”

That, I think, is a fair estimate : a reduction of the fauna of Eastern and Central Africa to between a half and one-quarter of what it was half a century ago. The same applies more or less, but mostly more, to the whole of Africa south of the Sahara. The question before us now is what will be the state of this unique assemblage of fauna, including many species found nowhere else in the world, at the end of the next half-century ?

We must face the fact that the activities of the wild fauna of Africa and those of man are, to a large extent, incompatible. The only exceptions to this incompatibility are to be found where man has found a definite use for wild animals. This has happened in the case of certain species, for example the Gemsbok in parts of the Union of South Africa, which I believe is turning into quite a useful ranching animal, immune from most diseases, and contributing to meat supplies. The semi-domestication of a good many others, such as Eland, has been tried with partial success. A use and value for wild animals is found also by the sportsman, and so long as shooting continues for sport (I emphasize sport and not slaughter) there is a future for the more highly prized species, just as there is still a future for the Grouse, Partridge, and Red Deer in the United Kingdom. Above all a use for fauna has been found in their educational, cultural, and scientific value, and hence we see that development of national parks which is of such inestimable benefit to the fauna itself and to the development of Africa.

Although Africa is still one of the least populated continents, there are already a lot of people—a conservative estimate puts the total number at about 150 millions south of the Sahara, but with a density in the greater part of the area of less than 25 per square mile. Bare figures of human density, however, do not give much indication of the room that is left for wild

animals. The fact is that human beings have now occupied, largely to the exclusion of wild animals, nearly all the more desirable parts of the continent, and in many of these the human population pressure is intense, with the result that more room is having to be found for them on "marginal land" where the climatic and biological environment make human effort somewhat risky.

To-day the fauna, having already been largely driven away from the most desirable environments in Africa, is restricted mainly to these marginal lands and to the semi-desert and real desert country.

A factor of the very greatest importance to the future generations of animals is the rate of increase of the human population, because this will control the speed at which they take the marginal lands into occupation, and at the same time turn out the animals. There is plenty of room for argument about the rate at which human beings are increasing in Africa: we are still very ignorant about the subject, and indeed we are ignorant about the numbers which exist already. To take one example which may be regarded as typical—East Africa. The 1948 census, which was more accurate than any previous census, showed that there are about 17 million people in the region comprising Kenya, Tanganyika, and Uganda, about 3 millions more than the previous estimates. As more information is gathered about other parts of the continent the same story tends to be told. There appear to be a good many more people in Africa than anyone thought, and the rate of increase, where it has been assessed, is sometimes alarming. We have to remember that the African population is only at the beginning of its upward surge, which has been made possible by the influence of the white man in preventing warfare, controlling disease, and encouraging agricultural and other forms of enterprise. I think we must assume that for Africa as a whole, the human population will have doubled itself in about fifty years, and this means that, in most parts of the continent, there will be no more good land available for development afterwards. It also means that in fifty years' time the factors operating against the fauna will have increased immeasurably in all parts of the continent outside national parks and reserves.

Taking all factors into consideration, I believe that the African fauna must look forward to a time, not more than fifty years hence, when all its larger members will be eradicated, or at least heavily persecuted, nearly everywhere except in those areas which will be devoted exclusively to their well-

being. Since everyone, even the antagonists of extensive wild life conservation, is now convinced that the fauna must not be allowed to be exterminated, the very greatest importance attaches to the creation and subsequent management of national parks.

These and other problems of the fauna have been discussed at a number of conferences in the last few years. I would mention the two fauna conferences we have had in East and Central Africa at Nairobi in 1947 and at Chilanga in 1948, and another in the series to take place at Livingstone in September, 1950; also the International African Rinderpest Conference in 1948, at which the highly important question of the relation between wild fauna and disease of stock was a prominent item; the United Nations Conference on the Conservation and Utilization of Resources held at Lake Success in August, 1949; the International Technical Conference on the Protection of Nature held there also; and the African Regional Scientific Conference held at Johannesburg in October, 1949. Discussions at these meetings between the men who are specially concerned with faunal problems in the field have revealed for the most part a marked unanimity of view. Whereas in the past there has been a tendency for people to divide into two camps, the conservationists and the controllers, and both have sometimes exaggerated their cases, in Africa to-day the balanced view is gaining much weight, and by emphasizing it one can, I believe, render the greatest service to the African fauna. There is great need for the control of undesirable animals, particularly I would mention baboons, bush-pig, and hyæna almost everywhere, and in some parts elephants and buffalo, in others monkeys. The responsible authorities, particularly the Game Departments in countries which have them, have got to go all out to reduce the numbers of these and other pests as occasion demands; unless they do so, they will meet opposition to the equally important task of conserving the fauna where it can do little or no harm, by developing and maintaining national parks and game reserves.

During rather extensive travel during the last few years, I have had the advantage of visiting many of the national parks and other game areas, and of comparing the methods adopted in regard to their animal inhabitants. I would mention the Kruger Park in South Africa, where, in the course of a day and a half, we were able to see at close quarters no less than eighteen species of mammal; in East Africa the well-known miniature national park of Nairobi, and the great Serengeti

Park of Tanganyika with their huge assemblage of plains animals; also the new Tsavo National Park of extensive area in the lowlands of Kenya; and in Uganda the area around the Murchison Falls, and another close to Lake Edward with their great numbers of elephant, buffalo, etc., both of these not yet defined as national parks, but perhaps to become so shortly. In the Anglo-Egyptian Sudan I was privileged to see this year the unique Nimule Game Reserve with its surprising numbers of White Rhinoceros, and the reserves for Mrs. Grey's Antelope in the sudd area. Perhaps the most remarkable of all are the Parcs Nationaux of the Belgian Congo, of which I have visited recently, the Parc National Albert to the south of Lake Edward, the Parc National de l'Upembe, a big area in Katanga running down to the Lualaba River, and also the Parc National de Garamba in the extreme north-east corner of the Belgian Congo with its very abundant elephant population.

It is impossible to see these places without being much impressed with the achievements in fauna conservation, though admittedly there is a long way to go before we can be complacent. One striking thing which many people have remarked on is the difference between the national park policy in the Belgian Congo and in the Union of South Africa or the British colonies. The Belgian policy has aimed at excluding man as far as possible and, with the exception of one or two small areas, excluding the tourist as well, while the South African and British policy is to develop these areas of wild life with roads, camps, etc., so that the maximum number of visitors can appreciate them. There may be good points in both these policies, but what I wish to emphasize is that, for any area of Africa to retain in perpetuity its assemblage of animals, it is necessary to apply scientific management and control of the environment. We have to remember that Africa has been inhabited by man for many centuries, so that the fauna and man have become integral parts of the common environment. Man's principal weapon in Africa has been fire, and it is not always recognized that practically the whole of Africa which is burnable is in fact burned every year. Only the deserts and the closed forests cannot be burned, and only in the relatively small areas of European settlement are serious precautions taken against fire. The effect of this annual burning on the botanical and zoological inhabitants is, of course, tremendous, and by the judicious use of fire and other forms of management the old environment of national parks can be maintained, and even improved for the benefit of the fauna.

I am entirely in favour of preserving certain small areas against fire as strict nature reserves—ecological experiments to find out what happens in Africa if you exclude all human influence; but for the main parts of national parks it is surely necessary to apply systems of management. Fire is only one form, though probably the most important. By its use under control the national parks can be arranged so that at any time there are extensive areas of grazing, and the fauna can live comfortably within the parks. Water supply is another factor of immense importance, and already in some national parks efforts are being made to increase water supplies so that an area will carry its fauna at all times of the year. It is also necessary to aid nature within these areas in maintaining a proper balance between predators and herbivores, and in some cases to “crop” those animals which are not regularly preyed upon by others, e.g. the large predators and the largest herbivores which are resistant to attack by predators. Without intervention of this sort local populations of some species are apt to multiply beyond the carrying capacity of the environment and then to suffer heavy and sometimes sudden mortality unless they are free to distribute themselves elsewhere. Without the assistance and intervention of man, it seems that the balance of nature of large animals requires areas which are greater than those feasible for national parks. Some authorities would no doubt go even further, and envisage the possibility of growing extra food in some parts of national parks and making special arrangements for those species which are less capable of standing the hurly-burly of competition.

There are many signs of the problems concerning fauna being taken more seriously by the governments concerned, for example, the new draft Tanganyika Game Ordinance, which is now available for study, proposes to give much wider powers for preventing the unnecessary slaughter of game animals. There are, however, certain major problems which, though often discussed, have not yet been the subject of much action, and of these the most important is the relation of wild fauna to the diseases of domestic animals.

Rinderpest, trypanosomiasis, east coast fever and other tick-borne diseases, foot and mouth disease, and others, are closely dependent on the links between domestic and wild animals. Since it is essential to provide for a big expansion of the animal industry, most specialists on the subject are of the opinion that these links must be broken. This implies that stock areas must be segregated from game areas in the

face of the present migrations and movements of wild and domesticated animals as they follow seasonal grazing and water supplies. Control of these diseases will certainly involve an ever increasing campaign of immunization of stock ; already millions of cattle are immunized annually against rinderpest ; and it may also involve the construction of long and very expensive barriers to the movement of wild animals. Such barriers may have to be made not only on the borders of national parks, but, for example, on a line from the south-east corner of Lake Victoria to the Indian Ocean, where there is continual risk of rinderpest being carried by wild animals into Southern Africa.

In these questions of disease, as in nearly all others concerning the wild fauna of Africa, we are still faced with a wall of ignorance. In spite of all the books which have been written about African big game, very little is yet known about them, and I would finish these remarks on a note of urgency concerning the need for organized research on the wild fauna. Such research is needed in the interests of the animals themselves as much as in those of man who, by reason of his natural increase and rising standards of life, is compelled to use for his own purposes ever more of the natural resources.

The kind of things we require to know with precision are :— What species of wild animals suffer from or are carriers of the main diseases of domestic animals ? What areas of land do the different species require for their health and happiness ? What are their feeding habits, breeding rates, and other relations to the environment ? What are the movements and migrations of wild animals in the different areas ; how can they be determined accurately, e.g. by the application of marking techniques, and how prevented ? What are the best ways of ensuring that the populations of wild animals in a prescribed area do not increase beyond the safety mark ? It is possible to arrange this by a correct balance between herbivores and predators, without the intervention of periodic heavy mortality and disease ? How can land, left mainly to nature, be managed in order to provide its maximum carrying capacity for wild life ?

In these days when so little scientific work can be done without the aid of the State, it is good to be able to report that there is much official interest in these questions, and that before long it is hoped to establish a team of research workers in a selected part of East Africa in order to study these and related problems concerning the wild fauna.

In the discussion which followed the paper there was a wide expression of agreement with the general views expressed by the author. *Capt. K. Caldwell* emphasized the growing importance of Game Departments in the East and Central African territories, and the need for their expansion, especially by the addition of qualified zoologists, to enable them to deal effectively with problems of fauna. *Professor P. A. Buxton* pointed out by example the serious lack of knowledge concerning so many of the present-day problems of African development in which wild animals play an important role. *Professor P. J. du Toit* concentrated his remarks on the balance of nature and particularly the part played by man in this balance, and how man's activity in this respect has changed from the unexplored Africa of a century ago to the present era of economic development of natural resources. *Sir William Gowers* emphasized the importance of national parks to the future of Africa and stressed particularly that they must not be limited only to waste and useless land which will carry only small stocks of animals. The Chairman (*Dr. Harrison Matthews*) wound up the discussion by mentioning the plans which are now under discussion by the Colonial Office, for conducting more research on the biology and ecology of the fauna of Africa.

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## OBITUARY

### HENRY GASCOYEN MAURICE, C.B.

The death of Mr. Henry Gascoyen Maurice on the 12th May robbed the Fauna Society not only of its Secretary but also of one of the most active supporters the Society has yet had. Maurice was a member of a well-known Marlborough family and he was educated at Marlborough and Lincoln College, Oxford, of which he was a Scholar, taking a second-class in both Honour Moderations and Greats. He was called to the Bar in 1904 and joined the legal branch of the Board of Education, subsequently becoming Secretary to Mr. Walter Runciman, with whom he later went to the Board of Agriculture. He was appointed Assistant Secretary of the Fisheries Section in 1912, holding this post until his retirement in 1938. He was created C.B. in 1916. In this capacity he took a great interest in whaling and methods of conservation. He was an original member of