

PRESERVATION OF WILD-LIFE IN INDIAN FORESTS—A PLEA FOR NATIONAL PARKS*

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I. INTRODUCTION

The forest wealth of India comprises three chief items. These are: first, the plant wealth; secondly, the animal wealth; and lastly, the rôle which forests play in regulating climate, enhancing rainfall and conserving soil. Unfortunately for forest conservation, emphasis has been laid on the destructive aspect of animals, e.g., on insect pests of forests and forest products. Too little attention has been paid in India to wild-life (especially birds and mammals) which play a not negligible rôle in the economy of forest conservation, not to speak of a variety of other purposes that wild-life serves. Birds play an important rôle in the control of insect numbers and the pollination of forest flowers, and, besides, can be a source of perpetual joy to the observant forest officer and members of the public who visit forests. Rodents, such as rats, bandicoots and rabbits, can be highly destructive to forest plantations, but also serve to loosen up the soil by means of their burrows. Yet, very little scientific information is available on these matters, although forest officers have unlimited opportunities to observe and to collect both birds and mammals. Some of our species, such as the rhinoceros and the lion, are practically on the verge of extinction through overhunting, and hardly a few hundred heads are left in isolated areas.

One of the best ways of serving the ends of wild-life conservation for the benefit of man is by the establishment of National Parks which should be both extensive and numerous if they are to serve their purpose. National Parks are national assets. This simple dictum has to be realized before national enthusiasm can be roused to demand national parks. Every major civilized country outside those in southern Asia has a large and growing number of such preserves. The U.S.A. has perhaps outstripped all other countries in the number and variety of its national parks, while the parks

of Africa are famous all the world over for abundance of big game.

The value of national parks is five-fold (Chart I). First, they serve to preserve areas of exceptional scenic beauty from being spoiled by exploitation. Here the poor and the rich all may repair, have a quiet holiday and enjoy the natural beauties of our country. Secondly, they serve to preserve the important elements of our fauna and flora for posterity. Here the wild animals may live in peace, and here too we can watch them in their natural habitat. Thirdly, they serve to provide the scientist with excellent field laboratories for studying at leisure the natural habits of wild animals, without the gnawing fear in his heart that what he is studying is not natural, or that the objects of his study might soon disappear from the land, never to return again. Fourthly, they serve to preserve those species of animals and plants which are on the verge of extinction. We give them, so to speak, a sporting chance to recover their lost potentiality and to increase in number. In some species the speed of extinction may have gone so far and the species-vigour reduced to such desperately low proportions that the species can perhaps no more survive. Others, however, which have not yet reached too close to the bottom of this steep decline, recover by protection and are normal again in course of time. And fifthly, national parks are economic assets of the nation. They serve to increase the actual, and much more so the potential, animal- and plant-wealth of the country. Much of this wealth means more food. Take the ducks and geese that leave every winter their northern homes in Siberia and migrate down south to India in millions. To the ignorant their welfare is not his concern, and he only thinks of shooting them by the thousand. They would come next winter in any case, he argues: so why bother. But that is the road to disaster. The numbers of the migrants are

* For the purpose of the present article, India, Pakistan, Ceylon, Burma and Nepal have been treated together as a single geographical unit. No political significance need be attached to this unity.

not inexhaustible, and the more the number of dead in this country, the fewer the number of those that will return next year. In short, we must provide them with sanctuaries, like lakes and large tanks, along the migration routes,

so that the birds may live undisturbed at least in those areas. The U.S.A. has made a great success of this plan, and has provided hundreds of such sanctuaries, both big and small. Let us emulate this wise example.

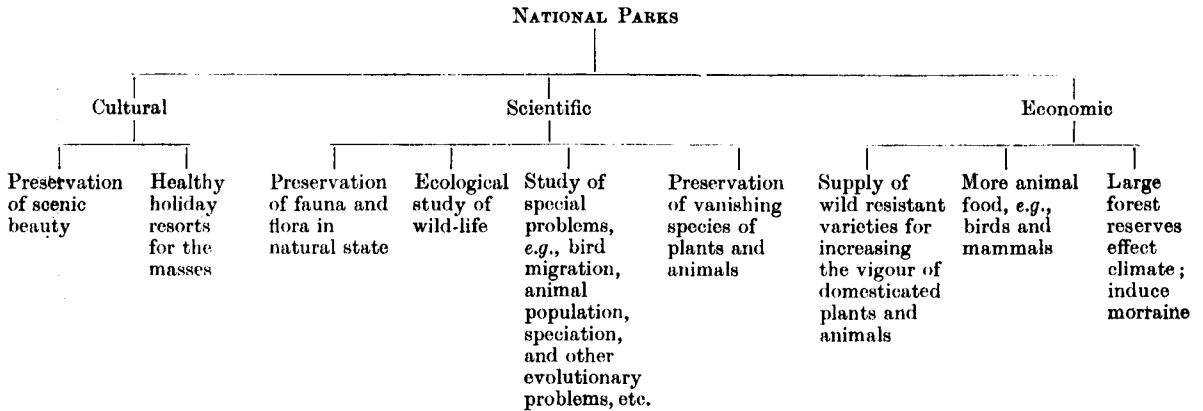


CHART I—The utility of National Parks to the nation.

II. BIOLOGICAL ASPECTS OF NATIONAL PARKS

A variety of multi-purposes Ecological Laboratories can be established in the national parks for the study of their fauna and flora in the natural state. Here the specialist can go and also the young students who need training. These laboratories would provide excellent training ground for future ecologists and field scientists.

The ecological laboratories should have special sections for the study of particular problems like speciation and other evolutionary problems in nature, bird migration and animal populations. The importance of these studies, both to national welfare as well as for the advancement of fundamental science has in recent years been emphasized by the writer (Roonwal 1940, 1945)—an emphasis that has received support from a variety of sources, e.g., from Husain (1946, pp. 16-17; 22), Sewell (1946, pp. 10-11; and 46) and *Nature** (1946). Thus, Husain wrote (pp. 10-11): "Investigations carried out in America indicate the importance of wild-life. It has been shown that where marshes have been reclaimed for cultivation, the benefit gained has not compensated for the loss sustained through the

destruction of wild fowl. We have approximately 200,000 square miles of forests. Can they not be stocked with eatable birds? There is immediate need for a thorough survey and population study of the wild-life of India as a preliminary to a national planning of game improvement. "Hitherto we can study these problems only in zoological gardens and hot houses where conditions are far from natural. Migration Observatories and Animal Population Stations ought to form an integral part of the programme for the creation and development of national parks.

III. THE VANISHING SPECIES

Nearly a dozen species of our animals are vanishing fast and are in immediate danger of extinction. The only remedy to prevent this irreparable loss to the national fauna is the establishment of national parks in those areas where the vanishing species have survived and need protection. Remember that only a century ago many of these animals, e.g. the lion, the rhinoceros, etc., were to be found in vast areas of the country (pl. 1). Below is given a list of the vanishing species, together with the most suitable areas [written within square brackets] for the establishment of national parks for their preservation.

* Review of Roonwal's (1945) article on Animal Population Problems.—*Nature*, London, vol. 157, pp. 156-157 (1946).

(a) MAMMALS

1. All the 3 Indian species of rhinoceroses, viz, the Great One-horned Rhinoceros (*Rhinoceros unicornis* L.), the Smaller One-horned Rhinoceros (*Rhinoceros sondaicus* Cuv.) and the Sumatran Two-horned Rhinoceros (*Rhinoceros sumatrensis* Cuv.). [Bengal (?), Assam, Nepal, Burma].
2. The Indian Wild Ass or Ghor-Khar (*Equus onager indicus* Bly.). [Baluchistan, Western Sind and Cutch].
3. The Sind Ibex or Wild Goat (*Capra hircus blythi* Hume). [Barren hills of Baluchistan and Western Sind, chiefly the Kirthar Range].
4. The Musk Deer (*Moschus moschiferous* L.). [The Himalayas].
5. The Thamin or Brow-Antlered Deer (*Rucervus thamin* Thos.). [Burma, Malaya].
6. The Wild Buffalo (*Bubalus bubalis* L.). [Grass jungle of the Terai in Bengal and Assam; also Orissa (?). Once occurred in Central Provinces, but probably now extinct there.
7. The Indian Pangolin (*Manis pentadactyla* L.). Widespread in India; but vanishing in Assam. [Assam].
8. The Caracal (*Caracal caracal* Müll.). [Western and Central India].
9. The Cheeta or Hunting Leopard (*Acinonyx jubatus venaticus* Gr.). Probably now extinct in India, though 50 years ago it occurred all over North India.
10. The Indian Lion (*Panthera leo persica* Mey.). Formerly occurred all over North India. [Now reduced to less than 200 heads, confined to a few miles in the Gir forest in Kathiawar].

(b) BIRDS

1. The Pink-headed Duck (*Rhodonessa caryophyllacea* Lath.). [Assam].

2. The White-winged Wood Duck (*Isacornis scutulatus* Müll.). [Assam].

It will be noticed that most of the areas required for the preservation of the vanishing species lie in Northern India. We have to-day about half a dozen small parks in India, but they are neither extensive enough nor numerous enough. They also need to be more effectively publicised. A good example of what protection can do is provided by the Indian lion. Reduced to less than 20 heads in 1913, protection in its last surviving place (the Gir forest) has now increased their number to about 200.

IV. CONCLUSIONS

It should be clear by now that without a discrete organization the efficient protection of wild-life, whether through the agency of National Parks or by other means, is hardly possible. The burden of wild-life protection to-day rests on the already well loaded shoulders of the provincial forest officers. To co-ordinate and plan the work, however, there is need of a central authority which would take a broad all-India view of protection-problems and lay down general policies which the provincial forest officers can follow.

There would appear to be two prime needs of the moment. First, the establishment of a Board of National Parks (Chart 2). Secondly, a machinery for popular education on wild-life protection, by such means as the production of popular, attractively illustrated pamphlets for the use of school children and of the lay public.

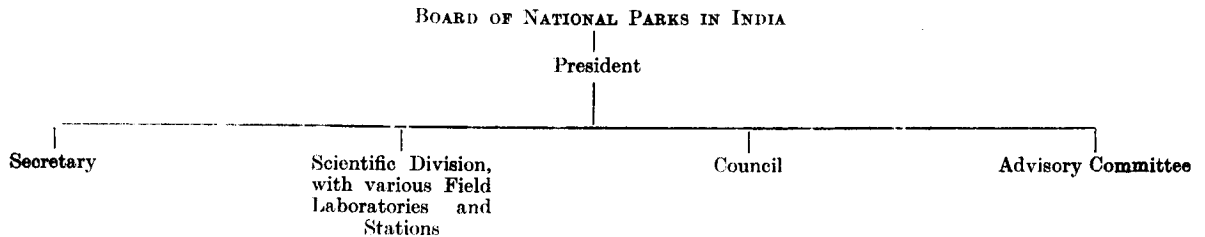


CHART 2—Proposed organization for National Parks.

In both these activities the existing organization of the Forest Research Institute, Dehra Dūn, especially of its biological branches, can and perhaps should play a dominant rôle.

The needs of economy and efficiency demand that an entirely separate organization need not be created. For instance, the President of the Forest Research Institute might well become the

ex-officio President of the Board of National Parks. The proposed field laboratories would also serve the Forest Research Institute. In fact the two organizations must work in the closest possible *liason*. In addition to the President, the Board will consist of a Secretary, a council of experts consisting of perhaps 20 members (mostly scientists), and an advisory committee of 40 members consisting of both scientists and those representing various public interests.

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EXPLANATION OF PLATE I

Animals like these will soon disappear from India, if no immediate and rigid protection is given.

FIG. 1.—The Indian Lion, *Panthera leo persica* Mey.

FIG. 2.—India, showing the part (about 1800) and present distribution of the lion. (From various sources). The extreme shrinkage of range is due to want of protection.

FIG. 3.—The smaller One-horned Rhinoceros, *Rhinoceros sondaicus* Cuv.

FIG. 4.—The Sumatran Two-horned Rhinoceros, *Rhinoceros sumatrensis* Cuv.

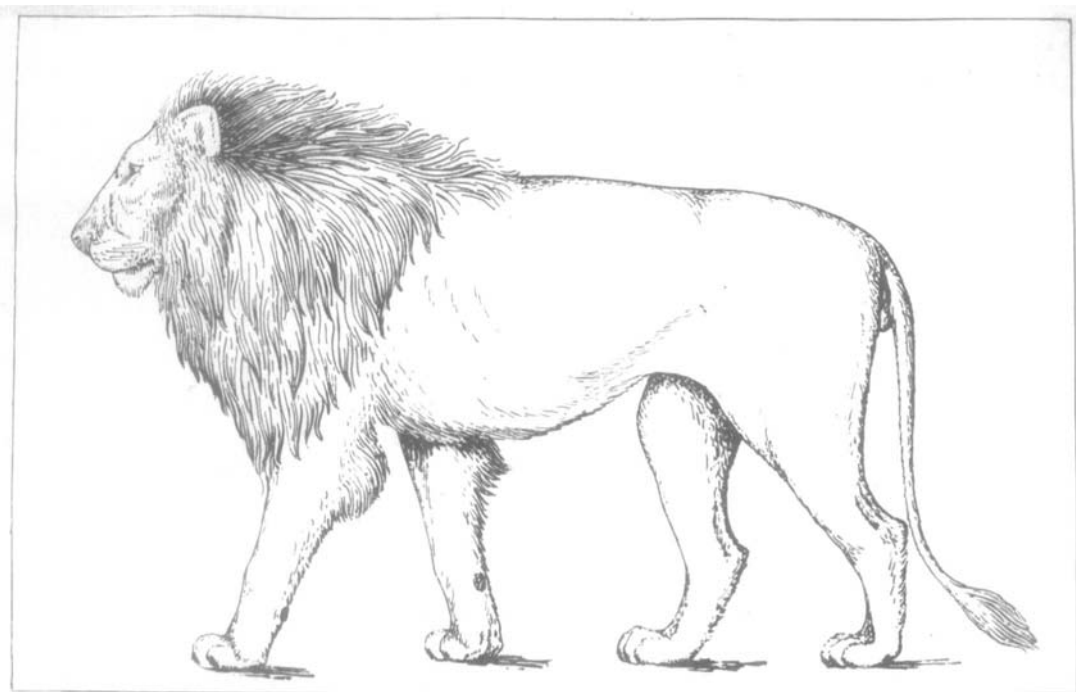


FIG. 1

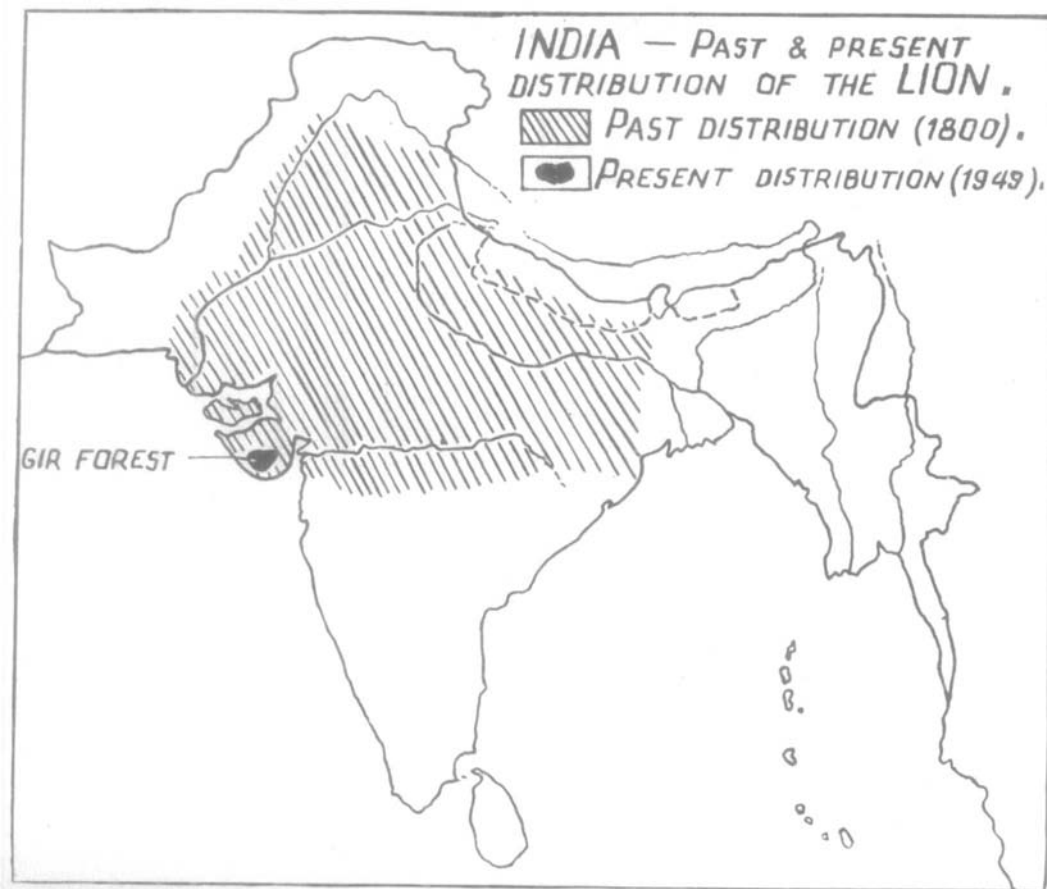


FIG. 2

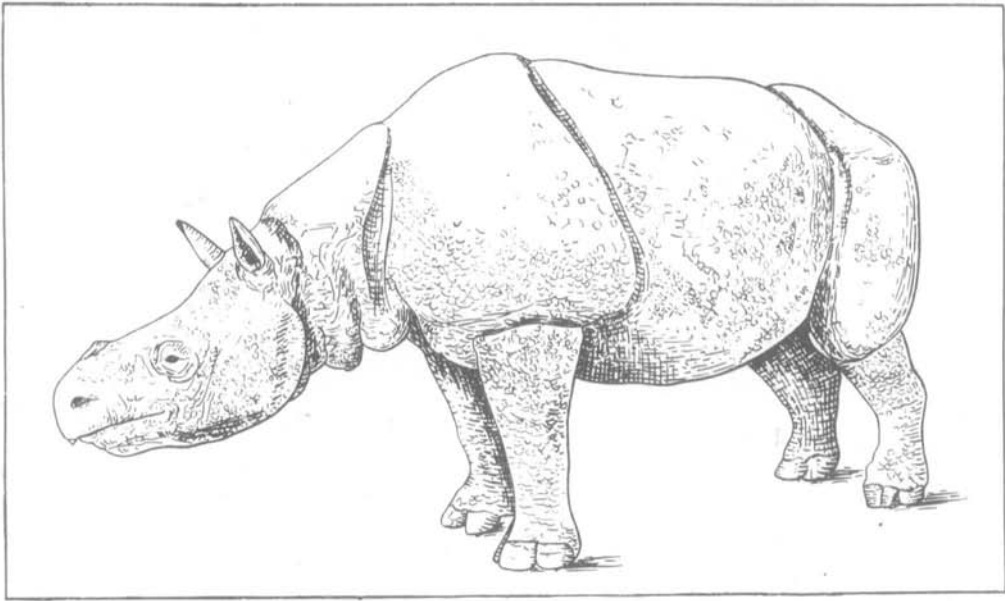


FIG. 3

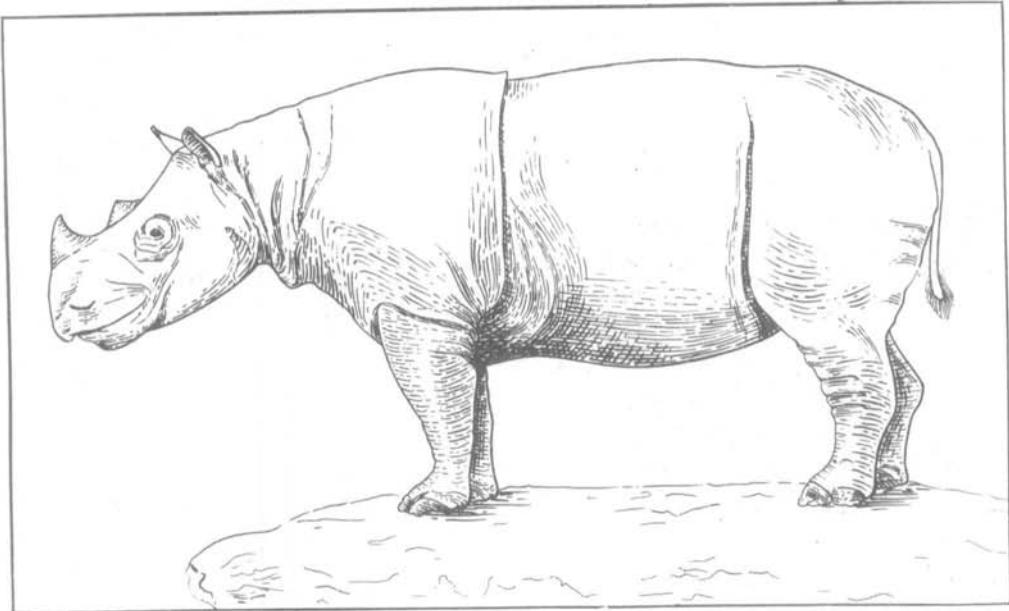


FIG. 4