



A rare species of Great Indian Rhinoceros to be preserved in Nepal.

Photo: Dr. Boonsong Lekagul

Conservation in the land of the Churka,

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Until recently, I was almost completely ignorant of Nepal, one of several mountain kingdoms in Asia, roughly one third to half the size of respectively Japan and New Zealand. Interestingly, I discovered that these three countries also resemble each other in the roughness of their mountains, heavy rains and gushing waters and in the people who live in them: tough and resourceful.

Still in 1960 the only road that existed in Nepal, and only since a few years, was the one that connected the Katmandu Valley, in central Nepal, to India, a sharply winding road that rises from almost sea-level to some 3000 meter to drop again to 1400 meter in the Katmandu Valley. There was one air-connection to Pokhara, in another valley to the west of Katmandu (now a well-known tourist resort) and one air connection to Biratnagar, in the south-east corner of the Terai plain that separates the mountains along the whole length of the southern border from India. Today, improvements in connections with Tibet, and with the east and west of the

country, are rapidly being made, but due to the ruggedness of the terrain most commodities are still carried on men's back, as even mules cannot be used in crossing bamboo bridges over gaping ravines. It has been estimated that one fourth of the estimated population of 10 million is, at any time, engaged in this type of transportation. The inaccessibility of so much of the country has prevented the government to collect data on population, production and consumption and much of what we now know about Nepal's hinterland, we owe to a Swiss geologist, Dr. Toni Hagen, who is the first foreigner who criss-crossed Nepal on foot for almost 10 years on a Swiss and United Nations Technical Mission. His impressions have been recently become available through his beautifully illustrated book: Nepal, the Kingdom in the Hymalayas (Oxford Book and Stationary Co., Calcutta and New Delhi). It is largely because of him that we can now somewhat generalize from restricted observations in readily accessible areas.

The flat, southern part of Nepal, the Terai occupies some 14 thousand square miles or about one fourth of the total area of the country. With minor areas in inland river basins, it is the only arable soil available to the Nepalese. Yet, until recently only about one third of the population was found here. (Land Tenure and Taxation in Nepal Vol. 1 Research Series No. 3. Institute of International Studies, University of California, Berkely, 1963). This means that 2/3rd of the population lived in the steep mountains and had to grow food in this terrain.

The fact that relatively few people have settled in the Terai has been largely due to malaria, which created an image with the hill people that even the soil of the Terai was poisonous. Even Toni Hagen was prejudiced against the Terai when he wrote: "The houses often stand upon piles as a protection against floods and wild animals, for this region is the home of tigers and leopards, of bears, elephants, buffaloes and rhinoceroses, and the rivers are infested with scaly-skinned crocodiles. Cobra and Vipers, and also scorpions, make the region even more terrible".

Through concerted efforts, however, the Terai has now almost become malaria free. The beautiful forests are now burnt indiscriminately (48 separate, sizeable, man-made fires were counted within 12 hours during a visit to the Rapti Valley in April 1965) and squatters have illegally cleared and occupied areas set aside as reserve for the rare, one-horned rhinoceres. Crocodiles may have retracted from now peaceful river valleys and other wildlife must flee from their one-time sources of food to wilder areas. The Terai suddenly has become a battle ground for conservationists.

The problem we are facing here is one of preserving some of the beautiful forests and conserving sites for wildlife. Further inland, another drama develops.

Throughout the foothills of the Himalayas men has grown rice, wheat and corn for centuries by carefully shaping the land. This has resulted in stable, permanent agriculture in the flatter river valleys. For a long time in the past, people have been forced also to move up the steeper slopes to eke out a living, by terracing the mountain sides. Two types of terra-

Open monsoon forest of the Himalaya foothills in Nepal, one of the most important sites left for wildlife of the Indian Subcontinent.



(In the Land of the Gurka. cont.)

ces were built, one flat for rice culture under submerged conditions, and one sloping for millet, corn, wheat and other crops. Such terraces may extend from the river valley, one above the other for hundreds of meters, and at higher altitude right to the timber line, that is to the alpine meadows. It is known that also this terrace agriculture can be stabilized, whenever the benches bordering the terraces are made sufficiently strong and where any water runoff is canalized through rock-lined water courses.

However, for some reason, the hillside agriculture in Nepal, as in several other countries in tropical Asia, has gone out of control. According to a FAO report of July 1964 "National progress report on forestry on Nepal" on some 8,000 square mile of original forest land: "owing to the very heavy population pressure, cultivation and grazing, and lack of proper land-use practices, much of this zone is in a state of accelerated erosion, aggravated by the extremely unstable geological formation. Serious landslides are an annual occurrence and the whole area presents a series of formidable challenges to both agriculturists, foresters and soil conservationists". This situation is exemplified by the figure below.

The indicated population pressure is probably the major cause. Population statistics go back to 1953. The U.N. Demographic Year Book gave 8 1/2 million people in 1952, and 9.4 million in 1961. Today the population is estimated to be 10 million, an increase of 20 percent in just over 10 years. Taking into account the progressive nature of increase, the population has probably doubled or even trebled during this century. This population pressure has been the cause that steeper slopes were cultivated and perhaps this is combined with some breakdown in the traditions of hillside farming.

Problems like these are extremely hard to solve. Today square miles of mountain sides can be seen in central Nepal that were once forested, then cleared and terraced, and now abandoned. Many gaping gullies extend from the foot to almost the top of ridges with stony subsoil or bedrock exposed on the slopes.

Traditional terrace farming on steep mountain sides has been extended beyond its safe range. Tumbling mountains can now be seen in many places in central Nepal.



▲ Illegally settled squatters on the boundary of one of two reserves set aside for the swamp-and flatland abiding one-horned rhinoceros in the Rapti Valley, Nepal.



▲ Rivers in the Terai area once reported to be crocodile-infested are here seen as a peaceful, dry-monsoon streamlet.

