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## 1. INTRODUCTION

In the period of August to December 1973 I surveyed the province of North Sumatra together with the Kapi - Utang area in east Aceh. Due to a very heavy rainy season life and travelling in the forest was sometimes difficult. Because the rivers were flooded it was not possible to follow the riverbeds and sometimes even difficult to build a bridge to cross them. As a result of the cold and wet weather several of my carriers became sick in the forest.

I was therefore sometimes forced to alter my plans.

## 2. EXPEDITIONS

(see Fig. 2+3)

### 2.1. Upper Kompas 23.8.73 - 12.9.73

For the second time I tried to collect some data on the ecology of the Rhino. I stayed 13 days and nights in a treehide. Although I took every precaution not to disturb the animals (the base camp was situated in a distance of three walking hours, and only every third day I was supplied with food). I had no chance to see a rhino and therefore was restricted to analyse all kind of tracks.

I stayed 20 days in the forest and walked about 80 km.

### 2.2. Bohorok - Kotacane 9.10.73 - 17.10.73

Following the Bohorok-river up to 2000 m and climbing down to the Alas-valley we crossed the southern part of the Langkat Reserve. Especially the second part of the Expedition proved to be very difficult. On this trip I was accompanied by Mr Bangun Mulya, Head of the Nature Conservation Departement, Provinz of North Sumatra, Mr Sihombing, Kepala Rayon Langkat Selatan and my wife Monica.

We spent 9 days in the forest and covered about 60 km.

### 2.3. Gunung Perkinson 1.11.73 - 5.11.73

On this Expedition I tried to survey the middle part of the Langkat Reserve. To penetrate this area I had to climb Gunung Perkinson (2000 m a.s.l.). Due to heavy rainfalls and extraordinary thick rotan jungle I got stuck in an altitude of 2000 m and was forced to return to Kotacane.

#### 2.4. Blangkejeren - Kapi-Utung - Sikundur - Blangkejeren

6.11.73 - 2.12.73

On this trip I surveyed the Kapi-area near Blangkejeren and the northern part of the Langkat Reserve (formerly Sikundur reserve). My original plan was to walk right through to the east coast. From Gunung Mesjid and the upper Sikundur-river I already could see the coastline. After a terrible flood which destroyed my pondok one night, the Sikundur-river became impassable to walk and I was forced to walk all the way back to Blangkejeren. As we did not have enough food I had to ration the rice. In addition three of my carrier became sick. Two day trips from Blangkejeren, one of the sick men broke down and I had to leave him in the Canabis-ladang of Rusip. We spent 23 days in the forest and walked about 250 km.

#### 2.5. Torgamba 11.12.73 - 21.12.73

I had information, that the rhino is still occurring in the south of the province of North Sumatra, at the border to Riau. With the help of the Dinas Kehutanan (Forestry Dep.) and the local timber concessions I could penetrate some of the lowland and swamp forests of Torgamba. A five day trip was made from the basecamp of the Asahan-timberconcession, several short trips were carried out from the Limba-jaya and from the Kudjur basecamps.

Altogether I walked about 460 km in the forest, traveled 3400 km by Jeep, 230 km by trucks or logging tractors and 120 km by motorboat.

### 3. EAST ACEH, the KAPI / UTUNG AREA

(see Fig. 2)

#### 3.1. Topography and Vegetation

The Kapi and Utung rivers are joining at Lesten, forming the Lesten river and further downstreams the Simpang Kanan river. The catchment area of the Lesten river is known as the Kapi/Utung area (Kapi terroirin). This mostly inhabited forest area is reaching from Blangkejeren in the west to Gunung Mesjid in the east and from Lesten in the north to Gunung Bandahara in the south.

Most of the central Kapi area is relatively flat and at an alti-

tude of 1000 to 1100 m. The watershed to the Alas valley is formed by hilly mountains with an altitude up to 1900 m. In the south and east the flat basin is going over into rough and steep mountains up to the peak of Gunung Bandahara with more than 3000 m altitude.

The Kapi river is running in its whole length through the relatively flat area around the Kapi volcanos. The Utung river is coming from the steep regions of Gunung Bandahara, crossing in its middle part a large basin with an altitude of 400 to 1000 m and reaches Lesten in a steep gorge.

Hill forest, submontane and damp moss forest can be found. (Definition see progress report No.2)

- Central Kapi area: Primary submontane forest. Around Kapi volcanos relatively few big trees, upper canopy not closed. In higher elevations roten abundant. Secondary growth in abandoned ladangs (cultivation fields).
- Plateau between Kapi and Utung rivers: Primary submontane forest. Part of this region is covered with bamboo forest. In this forest the big trees are missing, there is no upper canopy. Therefore much light is reaching the ground which is thickly covered with bamboo.
- Mountain ridge west of Utung river: With an altitude around 1400 m the ridge is covered with a forest representing the change from submontane to damp moss forest, similar to the rhino habitat in the Gunung Leuser area. (see P.R. No.2)
- Middle Utung basin: Primary lowland and hill forest, characterized by big trees, thick canopy and thin undergrowth.
- Eastern mountain ridges: (G. Kaji / G. Sikundur) Primary moss forest with dense root system, which makes it very difficult to penetrate the forest.

### 3.2. Rhinoceros

According to local informations and previous reports the Kapi area was supposed to be the second big rhino area in Aceh. On my survey I found only one old rhino track. No other signs like trails, wallows, feeding marks or faeces could be found. Nothing indicates that the rhino is still regularly occurring in the Kapi/Utung area. Even on the mountain ridge west of Utung river which offers a similar habitat as the Gunung Leuser no sign of rhinos could be found. S. Rijkssen found old rhino tracks in the western Kapi area as did K. Holmkamp from P.T. Aceh Mineral at Gunung Penemon north of Blangkejeren.

These findings, together with my own, indicate that only very few rhinos still occur in the huge forest areas of south-east Aceh. The fact that no trails, wallows or saltlicks can be found, suggests that those few animals are wandering around with nearly no chance of meeting each other and therefore probably are lost for the population.

Near the ladang of Rusip I found big traps for pigeons. These birds are dried and sold in Blangkejeren. Besides bird-trapping there don't seem to be any hunting activities.

### 3.7. Addition of the Kapi / Utung area to the Gunung Leuser group of reserves

Regarding the richness of wildlife, the unique landscape and the importance of the area as a buffer zone of the Langkat reserve, I strongly support the suggestion of H. D. Rijksen to include the Kapi / Utung area in the Gunung Leuser group of reserves.

## 4. THE LANGKAT RESERVE

(see Fig. 3)

### 4.1. Topography and vegetation

Most of the Langkat reserve is situated in the province of North Sumatra. The western boundaries along the Alas valley and the northern regions near the Kapi / Utung area are located in Aceh. The reserve consists of three parts, the Sikundur, west and south Langkat, and it covers an area of about 200'000 ha. To the east the reserve includes hilly lowland. Westwards the topography is gradually changing to rough and steep mountains reaching the highest peaks along the Alas valley (Gunung Bandahara 3000 m, Gunung Perkinson 2200 m). The mountain slopes descending to the Alas are extremely steep. About two third of the reserve is situated in an altitude below 1500 m.

The vegetation changes from lowland and hill forest in the east to submontane and damp moss forest in the west.

Lower and middle Bohorok river: Lowland and hill forest. Fruit trees are abundant. Along the lower part of the river secondary vegetation in places of former logging activities. In the middle part natural secondary vegetation on landslides.

- Upper Bohorok river: Forest changing from submontane to damp moss forest. Similar to the rhino habitat of the Gunung Leuser area.

- Mountain slopes to the Alas valley (Gunung Perkinson, Lawe Bulan / Lawe Lingo): The steep slopes are covered with a dense rotan forest, which makes it very difficult to penetrate the area.

- Upper Sikundur / Gunung Mehid: Submontane and damp moss forest. A thick tangled root system covered with moss makes walking troublesome.

- I did not survey the lowland forest at the north-eastern peripheries.

#### 4.2. Rhinoceros

A few years ago, fishermen reported the sighting of a rhino in the lower part of the Bohorok river. I found fresh tracks and feeding marks of one rhino in the upper Bohorok river at an altitude of 1300 m. I found no signs of rhinos on the slopes of the Alas valley nor in the northern region of the reserve near Gunung Mesjid / Gunung Sikundur. As I did not succeed to cross Gunung Jerkinson and to penetrate the northern central area of the reserve I have no information of this region. It may be that the higher central regions of the Langkat reserve still harbour some rhinos. However the poorly maintained paths found in the upper Bohorok river indicate that the population might be very small. I personally doubt strongly that this population is numerous enough for survival.

Given the time and money, I shall try to penetrate the northern central part of the reserve at the end of my survey in an attempt to clarify the chance of survival of these few rhinos.

#### 4.3. Elephant

I found elephant tracks only at the northern peripheries of the reserve in the Utang area (see 3.3.). The elephant definitely vanished from south Langkat. A big herd is reported from the lowlands of Sikundur in the north east of the reserve. The group which is said to consist of about 30 animals was destroying new rubber and oil-palm fields a few months ago, by uprooting young trees and piling them all along the road.

#### 4.4. Primates

- Orang Utan (*Pongo pygmaeus*). Direct observation could be made in the lower Bohorok valley, on the slopes of the Alas valley at Lawe Ringo and Gunung Penomon as well as in the northern peripheries near Gunung Mesjid. Nests were seen frequently up to an altitude of 1860 m asl. The orang utan is probably occurring all over the Langkat reserve with the exception of the higher mountain ridges in the north-west.
- Sianang (*Symphalangus syndactylus*) and white handed gibbon (*Hyllobates lar*) are abundant.
- Banded leaf monkey (*Presbytis ailan*) is abundant but the
- silvered leaf monkey (*Presbytis cristata*) was only observed once in a rubber plantation near the village of Bohorok.
- The pig tailed- (*Macaca nemestrina*) and the long tailed macaque (*Macaca fascicularis*) were only observed in the lower Bohorok valley; they were never found in higher elevations.

#### 4.5. Other animals

The occurrence of the following animals could be proved:

- .. rusa (Cervus unicolor): direct observation, tracks
- .. barking deer (Muntiacus muntjak): tracks
- .. serow (Capricornis sumatrensis): direct observation, warning call, tracks.
- .. mouse deer (Tragulus napu): tracks
- .. wild pig (Sus scrofa): direct observation, tracks
- .. tiger (Panthera tigris sumatrensis): tracks
- .. bear (Ursus malayanus): tracks
- .. yellow throated marten (Martes flavigula): direct observation
- .. musang (Viverridae), otter (Lutra sp.): direct observation
- .. mud turtle (Trionyx sp.), burmese brown tortoise (Testudo emys): direct observation.

#### 4.6. Conservation Situation

The reserve is fairly well protected. In the west to the Alas valley, steep mountain slopes, covered with rotan-jungle hinder human intrusion, the Kapi / Utung area in the north is functioning as a buffer zone. Established boundary-paths in the east give the legal background to protect the reserve. However the lack of funds for regular maintenance and patrolling of the boundaries pose similar problems to the Nature Conservation Departement, as I stated in Progress Report 2 from the Gunung Leuser Reserve.

### 5. TORGANBA (see fig. 4)

#### 5.1. Topography and Vegetation

The forest of Torgamba is situated in the south of the province of North Sumatra, at the boundary to the province of Riau. The nearest town is Kotapenang, south-east of Belituprapat. From the river Barumun it extends eastwards to the province of Riau, covering about 200'000 ha. The whole area is flat lowland with its highest elevation around 150 m a.s.l.

The original vegetation is primary lowland forest with patches of primary freshwater swamp forest. The lowland forest is characterised by huge trees, a closed canopy and relatively thin undergrowth. The ground of the fresh water swamp forest is most or covered with fresh water. Many trees have a typical root system.

As most of the area is under timber cutting, the vegetation has changed considerably. Along the Barisan river people started to burn down the forest and to plant rice. In vast areas, where timber companies have already extracted wood, secondary vegetation is dominating.

### 5.2. Rhinoceros

I got information, that the rhinoceros might still occur in the lowland forests of Torgamba. People working with the timber-concessions reported sightings, but it was not clear, whether they had seen a rhino or a tapir.

Two daytrips north of the Asahan-basecamp I found the fresh track of a rhino which I could follow for about 2 km. in an area near by I found more tracks which were very old. Furthermore I found a wallow which showed tracks from rhino and tapir. All these tracks were in primary undisturbed forest. I found no evidence of the rhino in forest, where selective timber cutting had been done a few years ago and secondary growth was abundant.

Interviews with workers of the timber concessions showed that people had either no knowledge of the occurrence of the rhino or had heard about it from other people. Nobody could give first hand informations.

Evidently some rhinos have survived in the forest of Torgamba. However this short survey doesn't allow to give an estimation of their number which is probably very low.

As all the area is granted to timber-concessions and plantation companies, the primary forest is vanishing rapidly. With the destruction of the rhino's habitat, its survival in Torgamba is severely threatened.

To prevent the isolation of rhinos in forest pockets, Mr Bangun Mulya and I will work out a proposal to coordinate timber cutting in Torgamba. To get more background data I shall first visit the adjacent forests in Riau.

### 5.3. Tapir

Previous to my survey in Torgamba I studied the tapir tracks in the Medan Zoo. In the field it may be difficult to determine whether an old footprint is from a rhino or a tapir, but it proved to be very easy to distinguish rhino and tapir tracks.

I found the skull of a tapir and fresh tracks of at least four different individuals. Three of these tracks were in the secondary vegetation induced by former timber cutting activities and only one in the undisturbed primary forest. In contrast to the rhino the tapir seems to be attracted by secondary growth.

Several times its feeding marks were found on old tractor roads which are covered with secondary growth. The presence of humans doesn't seem to disturb the tapir much. I found fresh tracks of a tapir, feeding on an old timber road only 200 m. from the base-camp of Sahar, where about 100 people are living. The animal must have been in the area during daytime, when the saw-mill was working.

With their adaptability to secondary growth and human disturbance the tapirs of the Morgamba area might have a much better chance for survival than the rhino.

#### 5.4. Elephant

I found tracks and dungheaps from elephants which were all at least a few months old. According to local information the animals which probably come over from Riau are only seldom in the area. No big herds seem to occur.

#### 5.5. Primates

- Despite some local rumors I found no evidence that the orang utan is occurring in Morgamba.
- The dark handed gibbon (Hylobates arilis) is abundant in primary as well as in already disturbed forest.
- A leaf monkey, which I could not yet classify was frequently seen in primary and secondary forest. The local name of this leaf monkey is "Cekrah". In its habitus it resembles the silvered leaf monkey (P. cristata) but its vocalization is more like that of the banded leaf monkey (P. alula) and its infants are grey, not yellow like the ones of the silvered leaf monkey. The animal is dark grey, with paler grey on its underparts. The face is uniformly dark grey. This leaf monkey might be P. femoralis. (Wilson W. and Wilson C. 1972)
- A pig tailed macaque (M. nemestrina) was observed on a timber road.
- No signs were found of Hylobates lar, Symphalangus syndactylus and Macaca fascicularis.

#### 5.6. Other animals

- Beside the above mentioned, the occurrence of the following animals could be proved:
- rusa (Cervus unicolor): not abundant, direct observation, tracks
- barking deer (Motacilla muntjak): tracks.
- mouse deer (Tragulidae): tracks
- wild pig (Sus scrofa): tracks, warning sound, nests, direct observation.
- tiger (Panthera tigris sumatraensis): tracks, faeces.
- leopard cat (Felis bengalensis): direct observation
- bear (Holarctos malayanus): tracks
- musang (Viverridae): tracks, faeces.

### 5.7. Human disturbance

All the area is granted to timber concessions which are working from four basecamps (see fig 4). A net of truckroads, tractor paths and exploration lanes is covering the region. Near the river, the forest is burnt down and people start to plant rice. Negotiations with the Anglo-Indonesian Plantation company to build a vast rubber and palm-oil plantation are under way. As the forest is easily accessible hunting and animal capturing is frequent. Shortly before my survey a tiger was shot in the area.

### 5.8. Animal trade

With the opening of the forest hunting and animal trading are increasing. I have seen a captured bear in the basecamp of Rimba Bard and was offered to buy two in Kotabenang. Foreigners are inciting the animal trade. Especially the Japanese seem to be keen to buy any animals and pay the highest prices. A hornbill can be sold for the equivalent of about 30 % US and a young gibbon is worth up to 200 % US.

## 6. THE SITUATION OF THE RHINOCEROS IN ACEH AND NORTH SUMATRA

Fresh rhino tracks were found in the central area of the Gunung Leuser reserve, in the higher regions of the Langkat reserve and in the forests of Torgamba.

No evidence was found of the occurrence of the Javan rhino (*Rhinoceros sondaicus*). (see progress report no. 2).

Poorly maintained rhino trails in the Langkat reserve suggest that only very few animals are still occurring.

In Torgamba the survival of the remaining rhino population is threatened by timber exploitation and plantation projects.

In south-east Aceh the few rhinos that probably still occur are scattered over such a huge area that reproduction is more than questionable.

Only in the Gunung Leuser reserve rhino trails, wallows and salt-licks can be found. This indicates that the region is still regularly used by rhinos. However the animals are thinly scattered over the area. In Progress report no. 2 I gave a minimal estimation of 8 animals. For practical reasons it is not possible to make an accurate estimation in the Gunung Leuser as it was done in Ujung Kulon. (Schenkel A. and B. Schenkel 1969).

If I take into consideration the frequency of fresh tracks I found and the ecological data I was able to collect until now I would give a maximal estimation of about 40 to 50 animals, corresponding to a density of one animal per 2'000 to 3'500 ha. This is a provisional estimation which needs more ecological background. The rhino habitat in the Gunung Leuser needs no management. As human disturbance is one of the main reasons for the vanishing of the rhino, the most important task is to keep out all human intrusion. If the Gunung Leuser reserve is well protected, the still occurring repopulation of rhinos might have a chance of survival.

## 7. SUMMARY

The remaining rhino areas in Aceh and North Sumatra are described, leaving the Gunung Leuser reserve as the most probable place for the survival of the rhinoceros.

## 8. ACKNOWLEDGEMENTS

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