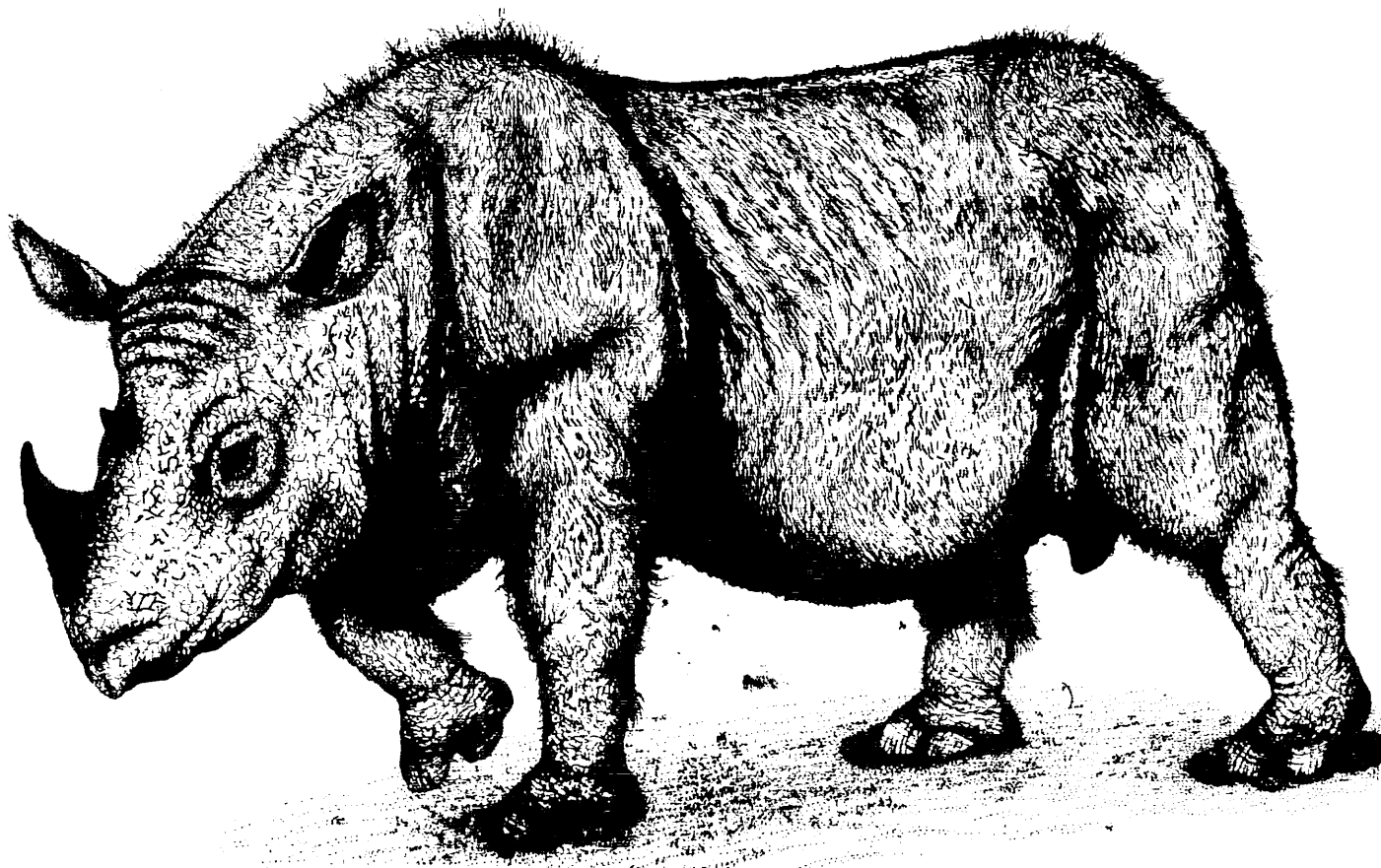


PROGRESS REPORT nr 8 Annual Report 1978
Eleventh to thirteenth Mamas expedition.



N.J. van Strien



NATUURBEHEER

IUCN/WWF Project nr. 884/1972 C/I/55.1:
Sumatran Rhinoceros International Conservation Programme-
Intensive Programme.

PROGRESS REPORT nr 8

Annual Report 1978
Eleventh to thirteenth Mamas expedition.

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Introduction.

In 1978 the research on the distribution and ecology of the Sumatran rhinoceros in the Mamas area of the Gunung Leuser reserve was continued on a part-time basis. The original project, financed by the Netherlands Foundation for the Advancement of Tropical Research (WOTRO) and the Agricultural University Wageningen, ended on 1 December 1977, but the research could be continued in 1978 as a part of an employment with the World Wildlife Fund for project 1514 - Gunung Leuser Management Programme.

In the first half of 1978 all available time, except for one expedition in February, was spent on the drafting of a comprehensive management plan for the Gunung Leuser Group of Reserves, which was finished in August. Later some time could be spent on the evaluation of the data.

The generosity of Indonesia Air Transport, Mobil Oil Indonesia and Asamera Indonesia, who only charged nominal rent for their helicopters, made it possible to save substantially on the field expenses in 1977, so the fieldwork in 1978 could be financed from the remainder of the grants for the first three years of research.

Since the programme is part-time now, only annual reports will be produced with brief interim reports for LIPI.

Fieldwork in 1978

In 1978 three expeditions were made to the study area in the upper Mamas. For all three expeditions the IAT-helicopter, under contract with Asamera Indonesia, could be used. One expedition, in May, was made unsupervised.

Eleventh Mamas expedition (1 February - 21 February 1978)

After being flown to the Mamas on 1 February camp was moved successively to Camp Aceh (3/2), Camp Uning (6/2), Camp Central (10/2), Camp Lukluk (13/2), Camp Pawang (15/2), Camp Pinus (17/2) and Camp Pawang (19/2). On 21 February Kutacane was reached in one day. No camps were destroyed by elephants, but in January 4, or 5 people, most likely rhino poachers prospecting for new hunting grounds had entered the area from the south and had stolen everything from two of our camps (Camp Pinus and Camp Pawang).

The weather during the expedition was rather good, with heavy rains only on the eleventh day and at the end of the expedition. A large number of fresh tracks was found all over the area and about 70 plastercasts, mostly of good quality, were made.

Twelfth Mamas expedition (12 May - 7 June 1978)

On 12 May Pawang Husin and three of the regular field assistants were flown to the Mamas, to control the area and to make plastercasts. Two men returned to Kutacane on 1 June, because of illness. Pawang Husin and M. Jasa left camp Pawang on the 6th and reached Kutacane on 7 June.

Camp was moved successively to: Camp Aceh (15/5), Camp Uning (19/5), Camp Central (22/5), Camp Pawang (23/5), Camp Pinus (24/5), Camp Pawang (26/5), Camp Central (29/5), Camp Pawang (30/5), Camp Lukluk (31/5) and Camp Pawang (3/6).

Although the patrolling of the study area during this unsupervised expedition was not as intensive as on other expeditions, the results were satisfactory. Several fresh tracks were found, including tracks of a new calf, and the plastercasts (about 30) are of good quality. The weather was not very good, with only a few short dry periods.

Thirteenth Mamas expedition (10 September - 2 October 1978)

After the end of the Islamic fasting month the usual party was flown in the Mamas area on 10 September. Additional supplies were dropped on the landing-site near Camp Uning.

From Camp Central the party moved successively to: Camp Aceh (12/9), Camp Uning (14/9), Camp Aceh (17/9), Camp Central (20/9) and Camp Pawang (23/9). On 1 October Camp Pawang was left for the return to Kutacane, which was reached around noon the other day.

Camp could not be moved to Camp Pinus and Camp Lukluk, because of illness of one of the assistants. Most of the southern part of the study area was patrolled from Camp Pawang.

Weather during the expedition was very good, with rain only the ninth day and at the end of the expedition. Because of the long dry periods a very large number of fresh tracks was found and about 80 plastercasts were made.

New maps.

In 1978 a new photogrammetrical map, scale 1:50.000 of the study area was obtained from the Topographical Service in Jakarta. Based on this map and the existing sketch-map, a very accurate map of the topography of the study area and of the trails that are used for patrolling could be made. Also the distances walked along the patrol trails were computed accurately with the help of the new map. Simplified contours at 250 meter interval are shown on map 1.

Coverage of the study area.

Since the sixth expedition only minor additions were made to the study area. The biggest game trails, following rivers or ridges were selected for patrolling the area and this developed in a network of patrol trails that covers the area. The network is too long to be covered completely during one expedition. The most interesting trails are often walked more than once and others are omitted. Therefore the frequency of patrolling is very variable in different parts of the network.

On map 1 all patrol routes and the frequency of patrolling is shown.

To facilitate the elaboration of the data the whole network of regular patrol trails has been divided into blocks. For the division of the blocks the 1200, 1400, 1600, 1800 and 2000 meter contours and marked places, like rivercrossings and wallows, were chosen. The length of trail in each block could not be the same, but too great a variation was avoided and the blocks were chosen to form more or less natural units and to fit the usual patrolling pattern. The blocks cover all trails that are more or less frequently patrolled during the expeditions. routes that were followed incidentally, while following a rhino, or accidentally when the right trail was lost, were excluded. A large part of the blocks, those along the most important game trails are visited at least once every expedition, the rest only every few expeditions.

With the help of the sketch map and the new topographic map the length of trail in each block was measured, taking into account the curvature of the trail and the differences in altitude. The total length of the regular patrolling network (RPN) is 158.790 kilometer divided into 204 blocks. The average length of the blocks is 778 meter, with a standard deviation of 328 meter.

Two different workmaps were produced and multiplied. One shows the rivers and the trails and the other shows the blocks and a kilometer grid. The first map is used to draw in the routes of patrollers and rhinos and the second map is designed for the numerical elaboration of the data. For every expedition the total length of the patrols were established and these, together with some other basic data, were summarised in Table I.

The preservation of the plastercast collection.

About 400 plastercast of 190 different tracks are now available for further study. About 80 casts of the 13th expedition are still in the study area awaiting transportation to Kutacane. Together with the crates the whole collection measures about 8 cubic metres.

The plastercast collection forms the basis of the research and loss or damage would be very serious. To reduce the danger, especially in view of the possible future transportation of the collection, stereoscopic photographs are made of all plastercasts.

A special instrument was constructed for this purpose. The casts can be positioned so that the tips of the nails are all in the plain of focus, after which two photos are made with a camera that is mounted on a rail so that it can be moved in one direction parallel to the focal plain. The photos are made 2,5 cm left and right of the vertical through the centre of the installation. Normal black and white film is used and lighting is done with an electronic flash. The photos are printed on postcard format and the left and the right pictures are mounted together to form a stereo pair that can be looked at with a simple stereoscope.

Also a special form has been designed and printed for the registration of the dimensions of each plastercast. All significant measurements, e.g. distances between fixed points on the casts, angles between certain lines and the profiles of the nails, can be filled in on these forms. These data will also be used for refinement of the results obtained from the further study of the plastercasts.

Distribution of the rhinos.

From the plastercasts 15 individual rhinos can now be recognized. Three are calves, still at heel, and three others have been found only once and are not further considered here. The other nine adult rhinos are regularly present in the area and are generally encountered on each expedition.

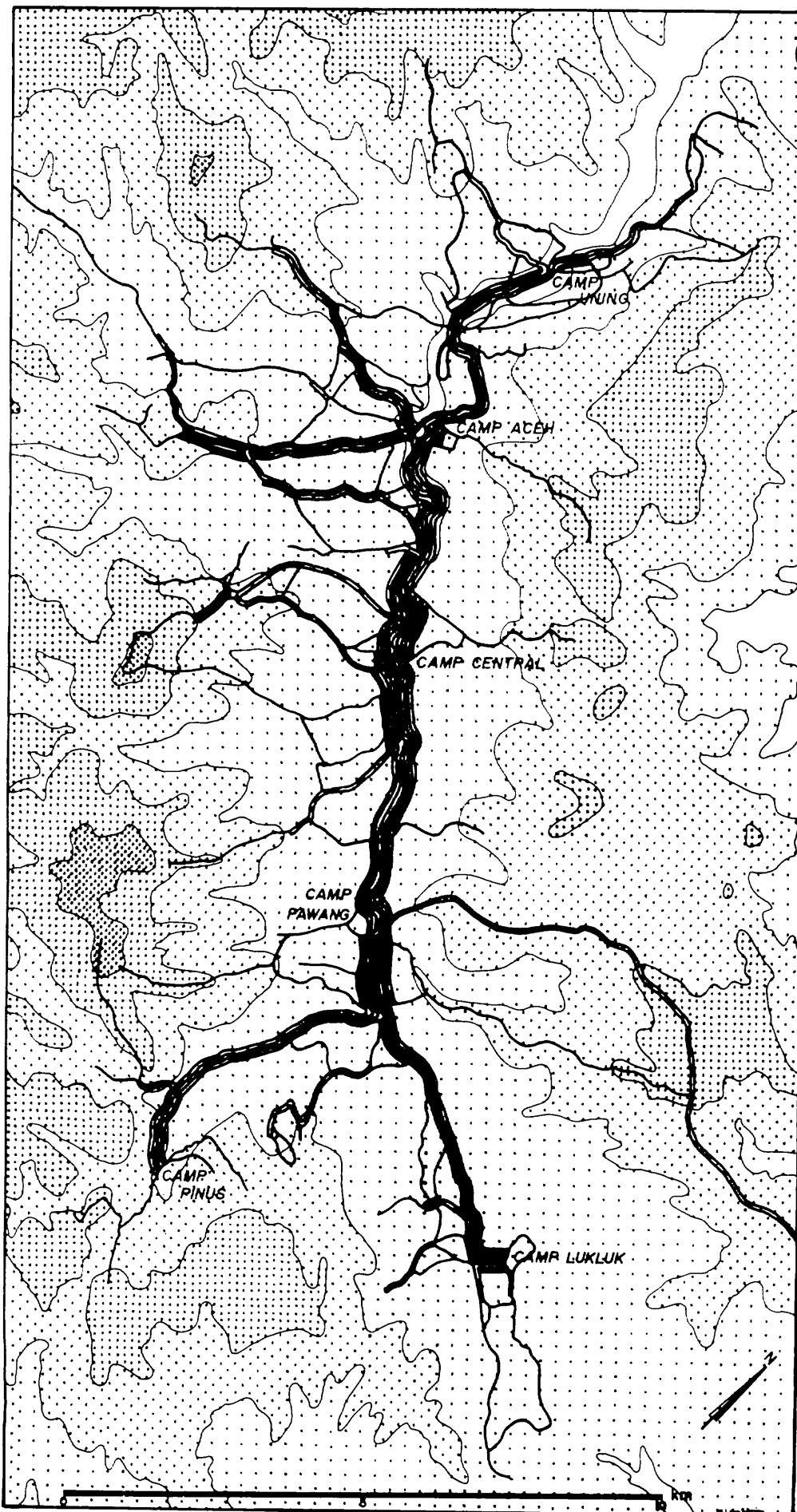
The areas in which tracks of each animal are found are shown on map 2, by a different shading. Also the drainage and the saltlicks are shown. From this figure it can be noted that the individual ranges overlap to a great extent, that each rhino has at least one saltlick in its range and that the rhinos are not evenly distributed over the area. Five individuals live in the northern part, concentrating in the area east of Camp Aceh, and four individuals are living in the southern part concentrating along the southwestern tributaries of the Mamas river. In the central area, between Camp Central and Camp Pawang, only two rhinos were ever recorded.

The striking absence of rhinos in this area is undoubtedly caused by poaching. In 1974 and 1975 between three and six animals were killed in this area. Dispersal from animals from other areas has not been able to fill this gap in three years time.

Table 1

| Exp. nr. | Date | Camps | | | | | | Length of patrols in km. | | |
|-------------|------------------|-------|----|----|-----|----|-----|--------------------------|------------------------------|--------|
| | | KC | KA | KU | KPa | KL | KPi | in study area on RPN | outside st. area outs.RPN | |
| 1 | 12/7 - 30/7/75 | x | - | - | x | - | - | 144.67 | 5.00 | -- |
| 2 | 19/9 - 4/10/75 | x | x | - | x | - | - | 120.10 | 5.40 | 20.00 |
| 3 | 6/12/75 - 1/1/76 | x | - | - | x | x | - | 190.53 | 0.70 | 20.00 |
| 4 | 10/2 - 3/3/76 | x | x | x | x | x | - | 161.99 | 1.20 | 40.00 |
| 5 | 11/4 - 4/5/76 | x | x | - | x | x | - | 190.64 | 19.80 | 20.00 |
| 6 | 11/6 - 4/7/76 | x | x | x | x | x | - | 278.38 | 4.50 | 20.00 |
| 7 | 8/10 - 1/11/76 | x | x | x | x | x | x | 263.14 | 4.30 | 20.00 |
| 8 | 29/1 - 27/2/77 | x | x | x | x | x | x | 317.73 | 9.70 | 20.00 |
| 9 | 3/4 - 28/4/77 | x | x | x | x | x | x | 249.84 | 5.50 | 40.00 |
| 10 | 16/6 - 5/7/77 | x | x | x | x | - | x | 191.95 | 7.70 | 40.00 |
| 11 | 1/2 - 21/2/78 | x | x | x | x | x | x | 227.80 | 1.60 | 20.00 |
| 12 | 12/5 - 7/6/78 | x | x | x | x | x | x | 177.79 | 3.50 | 40.00 |
| 13 | 10/9 - 2/10/78 | x | x | x | x | - | - | 281.83 | 8.30 | 20.00 |
| | | Total | | | | | | 1988.46 | 77.20 | 320.00 |
| | | | | | | | | 2065.66 | | |
| | | | | | | | | 2358.66 | | |

- KC - Kamp Centraal
- KA - Kamp Aceh
- KU - Kamp Uning
- KPa - Kamp Pawang
- KL - Kamp Lukluk
- KPi - Kamp Pinus
- RPN - Regular Patrolling Network



**PATROLLING
FREQUENCY
AND RELIEF
(1-13 MAMAS
EXPEDITION)**

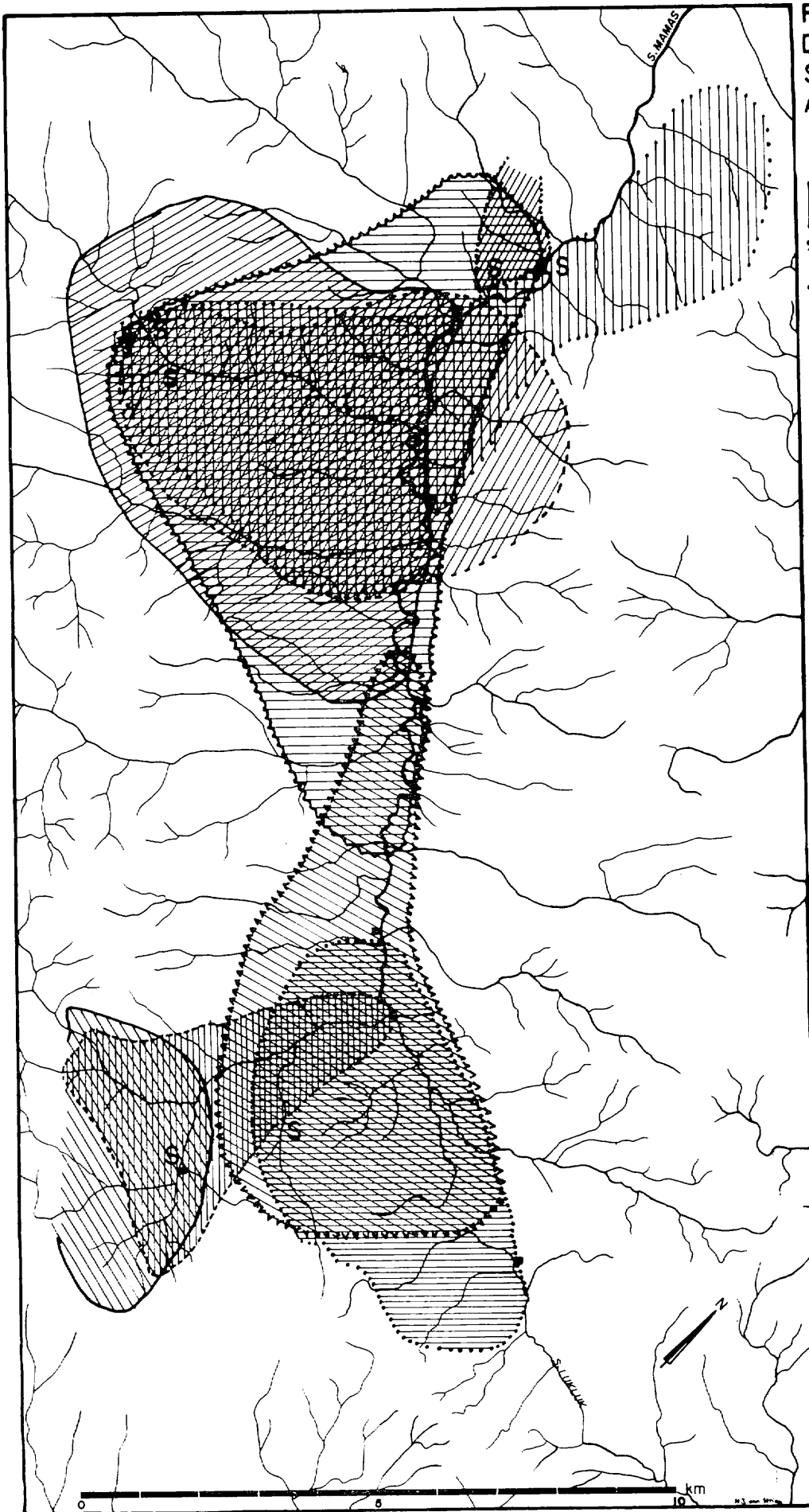
**PATROL ROUTES
AND FREQUENCIES**
 — 1-9 patrols
 — 10-19 patrols
 — 20-29 patrols
 etc.













RELIEF
 contour interval 250 m

- 1000-1250 m
- ▤ 1250-1500 m
- ▥ 1500-1750 m
- ▧ 1750-2000 m
- ▨ 2000-2250 m

MAP I

RHINOCEROS DISTRIBUTION, SALT-LICKS AND DRAINAGE



-  MIEP / MOPPIE
-  TIBA / MANIS
-  MINI
-  FLATFOOT
-  SQUARE
-  UMAR
-  SHARP / SUKKEL
-  PERNIS
-  MEDAN
-  camp
-  salt-lick
-  river

MAP 2