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Abstract: A report presented at the annual meeting of Professional Officers of the Division of Nature Conservation and Tourism in the 1970s, Namibia. Four groups and two single males were observed in the Etosha National Park. General characteristics such as body size and coat colour were used to separate individuals within a known group, but the facial patterns remained the most reliable identification aid. Movements of individual cheetahs are presented in maps.

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CHEETAH RESEARCH PROJECT

ETOSHA NATIONAL PARK

A report presented at the annual meeting
of Professional Officers of the Division
of Nature Conservation and Tourism,
South West Africa.

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1975

A BRIEF BACKGROUND TO THE PRESENT STUDY

1. The Present State of Cheetah Research in Africa

Until relatively recently the cheetah was a much neglected species, both as the subject of research and of active protection by conservation authorities. Happily this situation has now changed.

Studies made in East Africa have to date produced the most important contribution to our knowledge of the cheetah. Recently published is a book by R.L.Eaton, the result of a short study in Nairobi National Park. The results of a more comprehensive work from the same area by R.T.McLaughlin are unfortunately not yet available in Southern Africa. Thirdly, a chapter of George Schaller's 'The Serengeti Lion' is devoted to his observations of cheetah in that area.

Locally there has been a study by W. Labuschagne, who worked in the Kalahari National Park during 1970. Unfortunately the results of this investigation have yet to be published. Concurrent with the Etosha project is a study of cheetah in captivity, being undertaken by J. Degenaar of Pretoria University. The particular emphasis of this study has been placed on breeding behavior. M. Owen and his wife commenced work on this species in the Deception Pan area of Botswana, but have recently expanded this to include the full predator spectrum.

2. The Involvement of the University of Pretoria in Cheetah Research.

During late 1973 a Johannesburg animal artist launched a fundraising campaign to support cheetah research. The money thus raised was offered to the Eugene Marais Chair of Wildlife Management, who in turn invited the writer to undertake the present project. This was commenced with in early 1974.

There has been a considerable evolution in approach and objectives since the initiation of the study. However, one need eventually became apparent, and that was for a basic, ecologically orientated study of the animal under natural conditions. With this in view a study was motivated for in the Etosha National Park, and accepted by the S.W.A. Administration.

It is hoped that the results of this study will serve as a baseline on which future investigations might be based.

METHODS OF STUDY

To date no sophisticated techniques of study have been made available for this study, and the writer has thus far relied primarily on direct visual contact with the species under investigation. Fortunately, at the onset of the project contact was made with a group of three cheetah who proved to be particularly tolerant (See Group 1) and as a result several basic procedures were evolved.

Most important was a means of distinguishing individual animals from each other. Other workers had made use of facial spot patterns, and this was found to be eminently suitable to the present study as well. While portrait photographs of all cheetah encountered have been taken,

it is often more convenient to draw in patterns on prepared face outlines. Thus far no ambiguity has been experienced with any of the 12 animals identified in this way.

General characters such as body size and coat color are used to separate individuals within a known group, but the facial patterns remain the most reliable identification aid.

The observations themselves are in all cases made from a vehicle. On the few occasions when the observer has alighted from his vehicle in view of the cheetah, their reaction has always been immediate and violent, therefore eliminating following by foot as an effective means of study.

A firm rule was initially applied when contact was made with study animals. As soon as the observer found himself in a position suitable for making observations the vehicle's engine was immediately cut. The vehicle was not again moved unless it became absolutely imperative. It was attempted to remain as far from the animals as was practically possible. It was only when the writer was convinced that the cheetah were unaffected by the presence of his vehicle that positioning for photography was permitted. It is felt that this approach paid dividends, as on later occasions sudden approaches as close as 2 meters did not visibly affect the animals.

Night observations have so far been accomplished without the use of artificial lighting. If the cheetah cannot be observed by natural available light the writer feels that the disturbing effect of following by vehicle or spotlight does more harm than good. Several observations have been made during moonlit nights.

Animals on kills are not disturbed in any way, and any data gathered from this source is done so after the cheetah have vacated the area. The skulls of springbok, the principal prey species, are collected, with a view to aging the selected prey animals. The remains of the kill are noted, and if possible the mass is also recorded.

When following moving animals it is attempted to either observe from as great a distance as is practical, or if the nature of the terrain or vegetation prevents this, to travel parallel to the cheetah, so as to avoid causing them to have to check continually on the observers whereabouts.

Observations are always continued for as long as is possible and are usually only terminated if it is felt that the animals are being adversely affected by the presence of the observer, or if such factors as terrain or darkness cause loss of visual contact.

Very few indirect methods of investigation are available to the cheetah researcher in the Etosha National Park. Spooring has been found to be impractical, and other signs are equally scarce. Faeces are collected when found, but it is virtually necessary to observe the animal defecating, as except in the case of adult males, this process takes place anywhere. Adult males do tend to defecate regularly at certain sites, and in these cases collection is feasible.

Due to the large area available to the researcher for study, the assistance of visitors to the Park was requested by the distribution of Information Brochures. (See attached) These brochures urge tourists to report their cheetah sightings at their earliest possible convenience, and save the writer valuable time and travelling. Apart from the fact that animals in the immediate study area are

soon relocated should they move out of the study area. Additionally a picture is being built up of cheetah activity in those parts of the Park where the writer is unable to be himself.

SOME OBSERVATIONS ON CHEETAH IN THE ETOSHA NATIONAL PARK

Since the commencement of the project in Etosha the following groups of cheetah have been located, identified and observed.

GROUP 1

This group consists of three subadult animals designated A, B and C, and are a female and two males respectively. From the same litter they parted company from their mother just as the study commenced, and thus afforded an ideal opportunity for the observation of a very critical period of a cheetahs' life.

This trio were particularly relaxed in the writers presence, and permitted observation from close quarters. As mentioned previously many of the techniques now used were evolved around these animals.

As was expected the group split up when the femaleA came into oestrous for the first time and was covered. Since this split the brothers have not been resighted, although reports of two young animals from Goas could well refer to them. A was resighted some one and a half months later, heavily pregnant.

GROUP 2

An adult female D and her four cubs. The mother of A, B and C littered this year in late April. From this time until the writer arrived in the Namutomi area in June all

reports had been of a female with 2 cubs. However, on the writer's first observation of this group it became apparent that there were four young.

After a short while the entire family moved to an area 20 kilometers away, remained there for some three months and have very recently returned. The cubs are now approx. 6 months old but have still to be individually identified and sexed.

GROUP 3

Designated E and F this brother and sister pair appeared in the area utilised by A, B and C soon after these three had disappeared. From all appearances E and F were also subadult animals who had recently left their maternal parent. This fact was particularly fortuitous as it enabled comparisons to be made with Group 1. At this stage E and F are still in each others company.

GROUP 4

This pair of cheetahs were the object of several days of prolonged study. Even so it could not be determined if they were a courting couple or brother and sister. No courting behavior was observed. There was a considerable difference in size between the two animals, although this has been known to occur between littermates. Contact with these animals was lost when A, B and C moved into the same area, and neither has been observed again.

INDIVIDUAL 1

What is presumed to be a single male was observed on a kill at Gemsbokvlakte. Observations on this animal have been limited by the fact that the writer has centred his area of activity on Namutoni. However tourist and other reports confirm that this animal is still frequenting the same area.

INDIVIDUAL 2

This animal has not yet been observed first hand, but by virtue of many very reliable reports and other information gained from sign etc., a picture of his activities is being compiled. A large male this animal is earmarked for future study.

Apart from those animals already mentioned, the following individuals or groups are known to occur in specific areas, and with time it is hoped to make contact with all of them.

- a. Female & 3 cubs : Okaukuejo/Gaseb
- b. Female & 1 cub : Grūnewald/Sprokieswoud
- c. Female & 1 cub : Springbokfontein/Batia
- d. Individual : Homob
- e. Individual : Rietfontein
- f. Individual/two : Etosha lookout
- g. Group : Dolomietpunt, Otjevasadu.

At this stage other sightings are being treated with great circumspection, as there is as yet no means of verifying them.

ACTIVITIES OF GROUP 1

The movements and activities of these three animals were observed intermittently over a period of some two months. While in the Namutoni area their movements for part of this time have been plotted on Figure 2. From the dates given it may be seen that periods of activity, in this particular instance movements, alternated with periods of inactivity. At no stage was the impression gained of intense activity. Part of the reason for this follows.

Although the three had only recently left their mother, they proved to be particularly efficient hunters, displaying a high degree of co-operation with each other. As a result it appeared that their hunting activities were activated by hunger only, and no opportunist hunting was observed. Thus, in between periods of activity, during which they might move some distance after prey, they were content to relax in some convenient spot. Often they remained in one place for 24 hours, moving only to keep in the shade.

All observed chases resulted in kills. Although the sample is small they appeared to show no particular preference for juvenile animals. In fact the catching of a small springbok was disadvantageous, as they probably required more meat than was available on such a carcass. It would appear that they were killing every second day.

Any one of the three could initiate a hunt, usually by means of a slow cautious stalk. The remaining two often performed outflanking movements. In the areas frequented by A, B and C springbok often utilised scrubby vegetation, and with the cover afforded by this there was a high degree of stalking success.

ACTIVITIES OF GROUP 2

Initial observations of this young family were very limited, the female being particularly wary when her cubs were small. It appears that they were born in dense Acacia scrub bordering the road to Aroë. At the age of about 2 months the cubs were regularly seen in the company of the female D, usually between 09.00 and 10.00 hrs, and walking in the grassland along the perimeter of Fisher's

Pan. After two weeks of intermittent observations the entire family disappeared, to be resighted a week later some 20 kilometers away at the junction of the main road with the E Okkerfontein access road. They remained in this general vicinity until about two weeks ago when they reappeared at Pans Edge. This was expected, as D had raised her previous litter there. The reason for their initial move remains unknown, but it could be due to the fact that a large pride of lions with small cubs were utilising an area close to the cheetah family along the Aroë road.

What was particularly striking from observations of this group was the behavior of the cubs in response to the females directives. On every occasion the most subtle communication of commands resulted in instant obedience, and this must partly explain the successful raising of this relatively large litter to their present age of 6 months.

ACTIVITIES OF GROUP 3

As stated previously, the appearance of this group afforded the opportunity of making comparisons between two groups of sub-adults utilising the same area, but at different times. E and F proved to be the complete antithesis of A, B and C. Firstly they were extremely inefficient hunters. Although they attempted a stalk at every available opportunity they only barely managed to make sufficient captures to survive. On many occasions they were very gaunt in appearance, and the inevitable loss of condition may have contributed to their continuing lack of success. Figure 3 records the movements of this pair over 24 hours, including unsuccessful stalks. Only recently have they improved their techniques and co-operation, and are now

in good physical condition. It is also interesting to note that E and F utilised many of the same areas as did A, B and C. They did differ in the fact that the former two often frequented the immediate vicinity of waterholes, particularly Klein Namutoni, while the latter three were never seen close to water. This fact may be explained by the fact that E and F were more opportunistic in their hunting techniques, and relied on prey passing near to them, while A, B and C were capable enough to actively select preferred prey.

It is expected that this brother and sister will separate in the near future, when E comes into her first Oestrus.

AREAS OF FUTURE ACTIVITY

The greatest frustration thus far encountered with this study has been that of maintaining continuity of observation. It is therefore hoped to apply radio telemetry as an aid to this research. Etosha is topographically ideally suited to the use of this equipment, and it will enable the collection of information 24 hours a day if necessary.

It is also hoped to pay particular attention to what the writer considers to be the critical stages of a cheetah's life history. This includes pregnancy, rearing of young and the subadult's initial separation from its mother.

If radio telemetry is found to be satisfactory under local conditions, application might also be made to introduce cheetah captured on farmland with a view to ascertaining their reactions on release.

FIGURES

Fig 1 : Facial and tail identification markings of A, B and C.

Fig 2 : Movements of A, B and C in the Namutoni Area during the period 3-6-75 to 12-7-75.

Scale 1:75 000

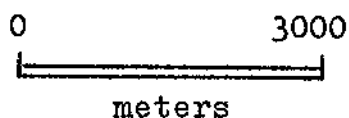
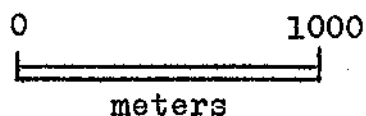
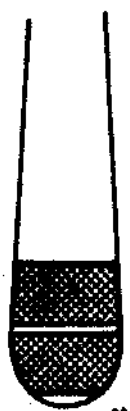
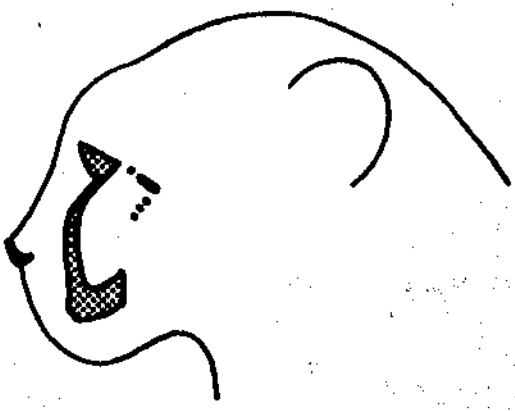
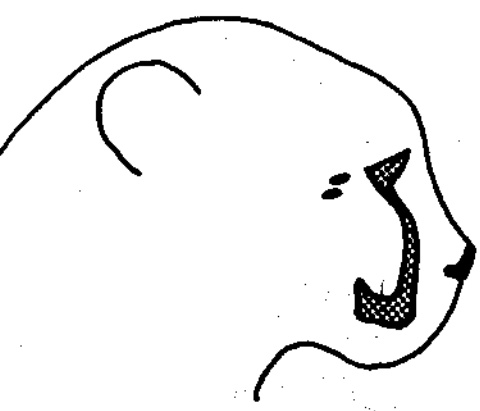
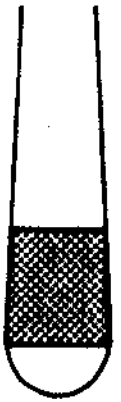
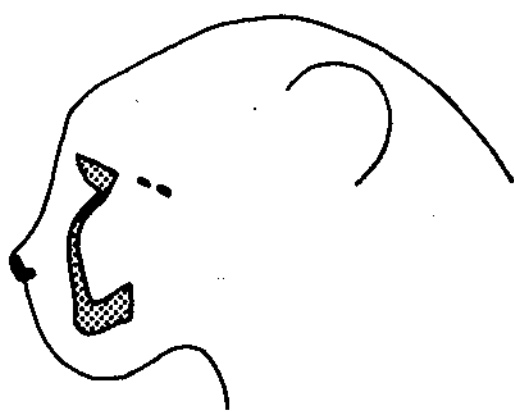
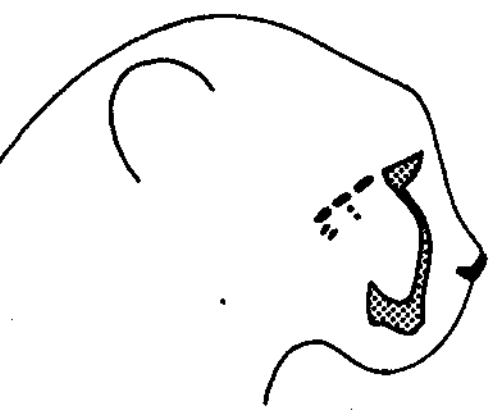
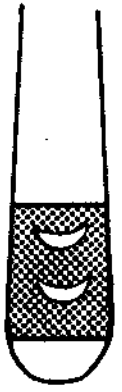
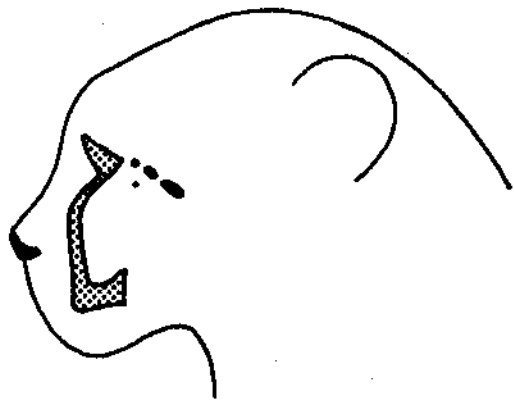
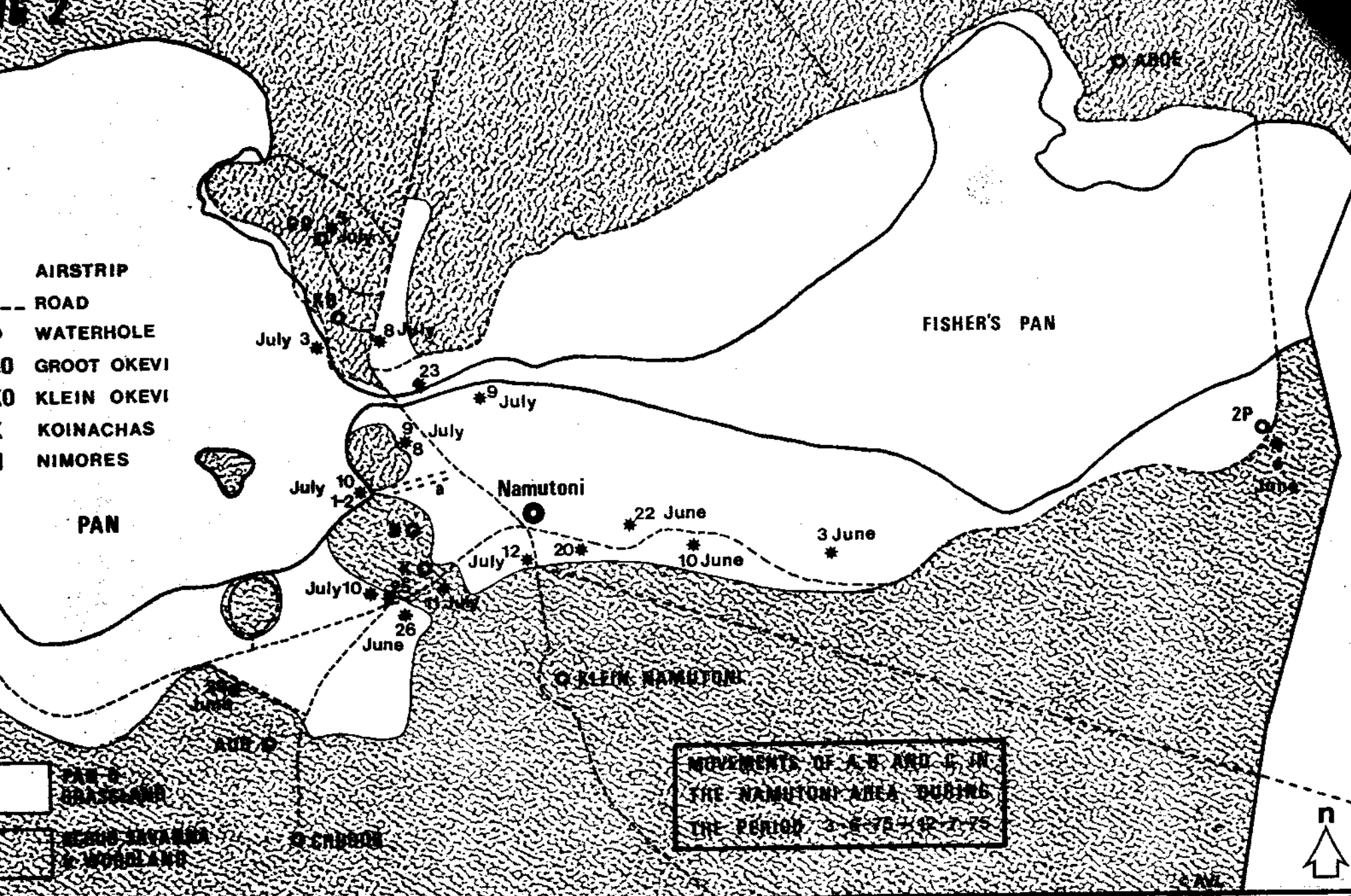


Fig 3 : Movements of E and F during the 24-Hour period from 18.00 hrs (17-9-75) to 18.27 hrs (18-9-75)

Scale 1:25 000







- AIRSTRIP
- ROAD
- WATERHOLE
- GROOT OKEVI
- KLEIN OKEVI
- KOINACHAS
- NIMORES

MOVEMENTS OF A AND I IN THE NAMUTONI AREA DURING THE PERIOD 6-75-12-75



FIG 3

