Wildlife

Official Publication of the Wildlife Society of Southern Africa. (Incorporated Association Not For Gain.)

Amptelike tydskrif van die Wildbewaringsvereniging van Suidelike Afrika (Ingelyfde Vereniging Sonder Winsoogmerk.)

Patron: The State President.
Onder Beskerming van die Staatspresident

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Layout:/Uitleg: L}'ndsay Maritz.

Advertising/Advertensie: E\·enon Offset, 62 Da,·ies Street/Straat, Doonifontein, Johannesburg. P.O. Box/Posbus 579, Tel. 23-7361.

Colour Separations/KJeursk iding: Reproductions Centre.

Head Office/Hoofkantoor,
P.O. Box/Posbus 44 189. Linden, 2104.
Republic of South Africa.
Transvaal P.O. Box/Posbus 61365 Marsha.lltow.n 2017.
Telephone/Telefoon 836-9556.
Natal Box/Posbus 2985. Durban 4000.
Telephone/Telel'oon 3 ;;32 24.
Western Province/Westelike Provinsie 12 q Regis House/Huis. Adderley Street/Straat, Cape Town/Kaapstad Hoo 1
Telephone/Telefo,,n 4:,-6041,.
Eastern Province/Oostelike Provinsie 2: Lawn.:nrc StreeL/StraaL, Central Hill. P.E. 6001.
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Northern Cape/Noo.-d-Kaap P.O. Box/Posbus 3l ti. Kimberlt:y 8300.
South West Africa /Suidwes-Afrika P.O. Box/l'osbus 3508, Windhoek 9100.
Orange Free State/Oranje Vrystaal P.O. Box/l'osbus 2099. Bluemlontein 9300.
Printed by E,·erton OfTsl't . J1il1a1111cshuq.{./(:erln1k deur E,·enon Offset. Jclllal1IH:slulrg.

For 10 years Dr. Peter Shaughnessy (34) has never been far from the song of the seal. His work has taken him from the windrocked shores of some of the world's loneliest islands, to the icefloes of the Arctic. Since 1973 Peter has been studying the history of the Cape fur seal. And that means he is in the crossfire of the seal controversy. Few research projects are under the extraordinary scrutiny which this one is, for both the sealers and the anti-sealers look for justification in its eventual results. And no matter how objective Peter's studies are, inevitably he catches flak from the heated bitterness of both sides.

Peter Shaughnessy is an Australian who was specialising in genetics when he joined the Australian National Antarctic Research Expedition to Macquarrie Island in 1966. He went to study the blood proteins of penguins, but during his year among the slamming winds and green bogs of Macquarrie, he turned his attention to seals. By 1820 fur seals had been exterminated on the island, but in 1966 they were at last beginning to return again - would a study of their blood proteins indicate where they had come from? Peter did two spells at Macquarrie before completing his Masters thesis. Then in 1970 he was offered a fellowshi'p at the Institute of Arctic Biology at the University of Alaska, and for the next 3½ years worked among the land-breeding Harbour seals of the southern Alaska and Aleutian Islands, and the ice-breeding Harbour Seals of the Bering Sea.

When he had completed his doctorate on the biochemical identification of populations of the Harbour Seal, Peter arrived in South Africa to take up the job of Senior Professional Officer with the Sea Fisheries Branch. However he had hardly unpacked before he found himself heading, yet again, for one of the world's remote corners - Gough Island. During the brief spring of the sub-Antarctic he carried out another seal study before returning to Cape Town to settle down in his present job. In the article on Page 27 he describes some of the work done since then.

Many readers will remember Hugh Berry's story of *The Great Flamingo Trek* when thousands of flightless flamingo chicks set off under a blazing sun to walk So km across the drying Etosha Pan to reach water. The story was something of a scoop for *African Wildlife,* and magazines in many other parts of the world borrowed our article. In this issue Hugh Berry is back to write about the results of a year spent virtually living on the man-made guano platforms of South West Africa. (See page 17). He was studying the habits of the Cape Cormorant, and has since obtained his Masters degree in Zoology, *cum laucle,* for tl'tis work. The desert coast is familiar territory for Hugh, as he has been researching its water birds there and inland for the past five years while working for the Division of Nature Consen<ation and Tourism in South West Africa. At present, as Chief Professional Officer in Biology at the Ecological Institute of Etosha- National Park, he is studying the ecology of the blu<c wildebeest.

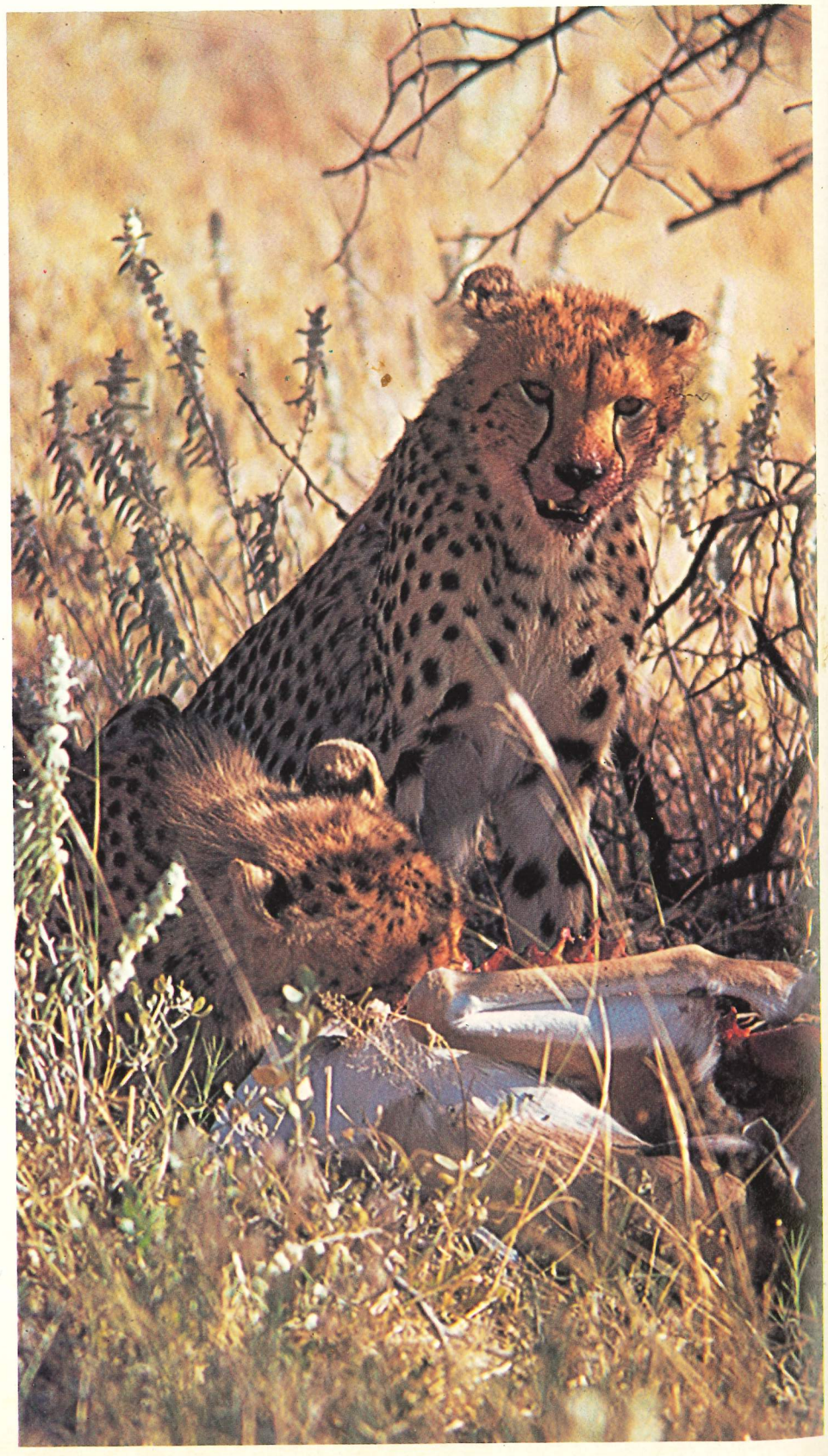
Newsmaker of the year in the animal kingdom has once again been the cheetah. For some time now this beautiful animal has been grabbing headlines as its numbers decline all over A f'ica.

"It is certainly not a neglected animal," says Andrew Lowry. Yet despite all the attention focused on the cheetah its future continues to look bleak. Andrew has spent the past 18 months at Etosha National Park in South West Africa and on Page 12 he writes about his study. Andrew won the Wildlife Society's 1973 Bursary when he was studying for his Honours degree in Wildlife Management at Pretoria University. Soon after graduating he began his cheetah research. In a project that has had its ups and downs, it has made all the difference having wife Trish with him.

What hope does Andrew see for the cheetah? "The realist forces me to suggest that we are fighting a rearguard action against impossible odds."

Countdown?

Only the super-optimist would preach hope for the cheetah, says Andrew Lowry. Here he gives glimpses of his study on the Etosha cheetah — probably the safest of the species. Andrew was a Wildlife Society Bursary Winner.



Andrew Lowry

I found Duma and her four cubs at about 8 o' clock one Sunday morning, ambling along the gravel airstrip near Fort Namutoni. I joined the end of the procession and awaited developments. After about an hour as the mother led her family through a patch of scrub to a small open plain, one of the cubs flushed a sleeping African Wildcat. The cat ran out into the open, but the young cheetahs easily outdistanced and surrounded it. They were already showing an impressive turn of speed. Then followed a half hour interlude of spitting, growling and moaning, mostly from the frightened wildcat. However, the cheetahs made no attempt to harm their tiny relative.

The wildcat's ordeal lasted until the cubs noticed their mother chasing a herd of grazing springbuck, and they trotted off to see the result. The chase was unsuccessful, and the whole family retired to a shady tree. After awhile the female cheetah again began to stalk the springbok, but before she could come within striking distance, one alert individual noticed her, and she lost interest in the hunt.

At this stage Duma was several hundred metres from the cubs, and with a series of high pitched yelps she called them to her. As they walked towards their mother a group of wildebeest bulls detached themselves from a larger herd and galloped towards the cubs, who disconcerted curled their tails between their legs and ran to their mother for protection.

The family moved on until they reached another small clearing with a grazing herd of springbok, zebra and

Chita, Duma, Eshinga, Hlosi, Felis, Jubatus . . .

Andrew Lowry

The habitat ranges from open grassland to dense woodland and the cheetahs adapt their hunting techniques to each situation.

wildebeest. Using the bush at the edge of the plain as cover, Duma began another stalk. I positioned myself and waited. After 30 minutes a band of wildebeest raced out of the scrub, disturbed by the hunting cheetah, and as the confused springbok milled about, the cheetah started her run. Before the springbok knew that danger was threatening, Duma was amongst them, bowling over a lamb.

She strangled the animal and carried it to the shade of a nearby tree where she waited for the cubs to join her. Once again they responded to her calls and trotted across to the kill, and once again a group of wildebeest galloped after them. This time, however, one cub had had enough, and he turned and charged, scattering the wildebeest in all directions.

Over the next two hours the cheetah family ate the springbok, and then they relaxed in the shade. While they were lying there a small pack of banded mongoose, came scurrying by. Two carried kittens in their mouths, but when they came upon the cheetah, they let them drop to the ground. The cheetah cubs trotted over to investigate the squealing kittens, and the adult mongoose took fright and ran off, leaving their helpless young. At this stage I decided that impartial science should sublimate itself in favour of humanity. The inquisitive cheetah could harm the tiny mongooses, so I climbed out of the truck and walked towards them. The cheetah moved away, and the adult mongoose returned to carry their offspring to safety.

I must warn budding cheetah researchers that this was an exceptional day. Compare it with another one, some months ago, when the temperature soared into the thirties while I sat in my truck and watched my five cheetah sleep for fourteen hours! And as I sit writing this article the same family have managed to elude me for over a week. We have known both excitement and frustration during the year my wife and I have spent at the Etosha National Park.

It was no mere coincidence that led us to South West Africa in search of cheetah. Although there is a difference of opinion on the number of cheetah in this territory, there is no doubt that it boasts one of the largest free-living populations in the world. The South West African Division of Nature Conservation and Tourism is determined that this situation be maintained, and so readily agreed to host a study at Etosha.

The facilities of their Ecological Institute at the administrative camp, Okaukuejo, were made available, and we have enjoyed the interest and co-operation not only of the research staff of the Division, but of many other officials. Predator conservation is no easy task in a stock farming country like South West, but the awareness and concern of the authorities, coupled with information from field investigations such as this, can only serve to ensure the survival of this spectacular animal.

In the area in which I have centred my study the habitat ranges from bare pan, through open grasslands to dense woodland. Yet the cheetah can adapt their hunting technique to each situation. Watching their high speed chases is of course one of the highlights of my study, and so far I have seen about 30, from initiation to climax, marvelling at the variety of tactics available to the hunting cheetah.

During the springbok lambing season Duma will often walk towards a nursery herd, making no attempt at concealment. Initially the herd will take to flight but without a chase they soon become inquisitive and return to stare at the cheetah. Some inexperienced lamb may eventually relax its vigilance, perhaps even lying down. This is the signal for the cheetah to use her phenomenal acceleration to reach the unwary animal.

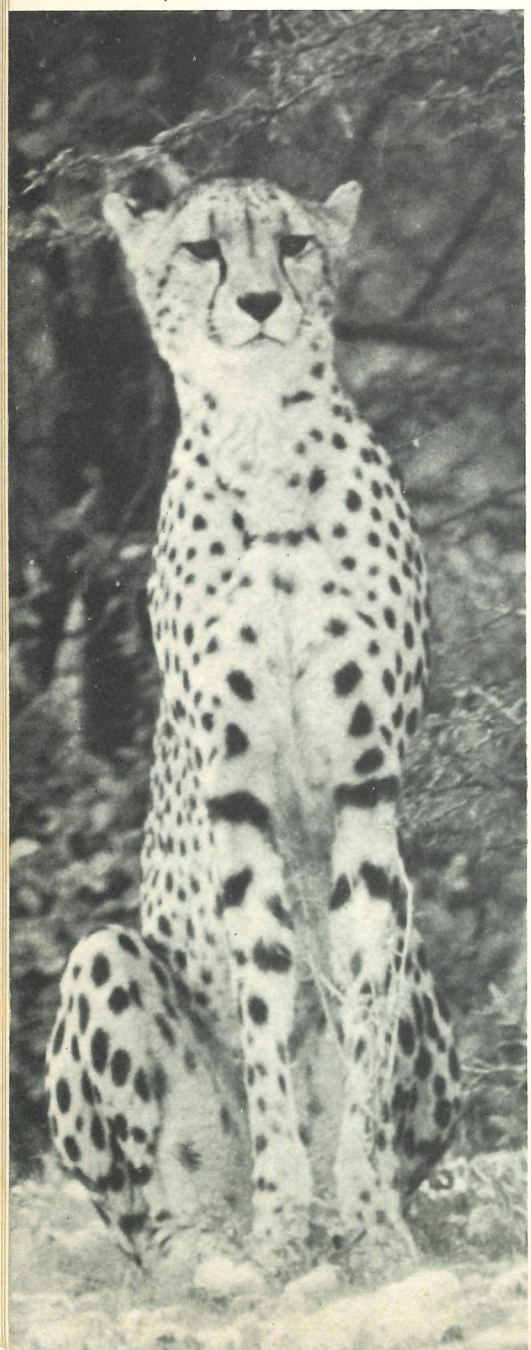
Once Duma was leading her cubs, Guepardus, Hlosi, Intermedius and Jabatus along the periphery of a large plain bordered with thick acacia scrub. Seeing a small group of grazing springbok 800 metres distant, and not 10 metres from the scrub, she left her cubs and ran into the bush. In a matter of minutes she had covered the distance, unobserved, and emerged upon the unsuspecting springbok, catching one within a few metres.

Perhaps I should explain my choice of names for the study animals. For ease of recording in the field I have allocated each animal a letter of the alphabet, and have then given them a name meaning cheetah which begins with the same letter.

Duma is the Swahili word for cheetah. Others are Chita (the original Hindu word meaning "spotted one") Eshinga

DUMA

K. M. Lowry



(Ovambo) Hlosi (Zulu) and Jabatus (the Latin species name). And let's not forget Intermedius. *Acinonyx intermedius* is an extinct species of cheetah which ranged Europe and Asia during the middle Pleistocene.

The cheetah has of late enjoyed widespread publicity and so I probably do not need to enter into too much detail on its basic life history. One aspect of its biology which I have been investigating is the role of the female animal. She has tremendous pressures on her. After mating the male cheetah leaves her to fend for herself during a three month pregnancy. When the blind and helpless cubs are born she is forced to leave them unattended while she hunts for herself and later she is the sole provider for both them and herself. Finally she is responsible for teaching her cubs the vital art of hunting.

We watched one pregnant cheetah, Acinonyx, the only female of Duma's previous litter, and her full belly definitely took the edge off her speed. Even when springbok moved to within a few metres of her, she didn't have the acceleration to catch her prey. During the short period we had her under observation I only saw her catch a hare.

It is very difficult to determine initial litter sizes in the wild, and I have never found a female with cubs younger than 1½ months. In captivity a litter of eight has been recorded, but half this number is more usual. A strange cheetah recently appeared in my study area, accompanied by three 1½ month old cubs. Within three weeks two of these cubs had disappeared, probably taken by other predators. I have at least five other records during the last year of cheetahs with only one surviving youngster. Predation and disease are the two obvious causes of cub mortality, but a variety of other factors may also play a role. Take for example the season of birth.

Cheetah in Ethosha do not appear to have a distinct breeding season, small cubs being observed throughout the year. At the onset of the rains (from November to March) many springbok herds migrate away from their dry season haunts, and female cheetah with cubs too young to follow may have difficulty in obtaining food. Any decline in the condition of a nursing mother will have a detrimental effect on her offspring. Cubs born during the wet season may be susceptible to diseases such as pneumonia, a known killer of captive-born cheetah.

On the other hand the wet season heralds the springbok lambing season, and a ready supply of easy prey. A hunting mother should be away from her helpless young for as short a time as possible. The smaller, softer bones of springbok lambs are at this time available to growing cheetah, who are often prone to rickets. Cubs old enough to be tutored in the arts of hunting are probably better trained when young springbok are available for "practice", and as a result will be more capable of supporting themselves on leaving their mothers.

Duma has proved to be an exemplary mother. Not only does the survival rate of her litters appear higher than the Etosha average, but her offspring are capable hunters on parting company with her. We watched Acinonyx and her two brothers from shortly after they left Duma. If one of these cheetah began to initiate a hunt, the other two would perform outflanking stalks on either side of the potential prey animal. A more efficient trio I have yet to watch.

Compare this group with another brother and sister pair named Felis and Eshinga. About the same age as A, B and C when they arrived in the study area, these two had a lean time for several months. They did not co-operate, one often interfering with the other's hunting activities, or else making no attempt at concealment and so alerting the animal being stalked. On the few occasions they did come within striking range they lacked the speed or technique to pull down a springbok. One incident comes to mind. The pair of cheetah lay hidden in a bush while a small herd of springbok moved to within five metres of them. Yet they could not make a kill. I suspect that the reason for their poor showing was a premature separation from their mother. Happily they have now improved their tactics and Eshinga recently produced her first litter.

I have mentioned springbok when referring to prey species of cheetah at Etosha. Springbok certainly constitute the major part of the diet but steenbok and hares are also taken. Young wildebeest and gemsbok have been recorded killed by cheetah, and I have no doubt that hartebeest young are also caught when the opportunity arises.

The Namutoni area of Etosha also supports small numbers of black-faced impala, and we therefore have the unique situation in which one threatened species (cheetah) occasionally preys on another (black-faced impala). Cheetah do not lack courage when attacking larger and sometimes dangerous prey. I have seen a series of photographs depicting such an attack on a young gemsbok, with the cow attempting to defend her calf. The two attacking cheetah proved to be far too agile and while one dodged the horns of the adult gemsbok, the other worried the calf, until the tenacious cats were successful.

My study at Etosha will continue for another six months. During this time I expect that Duma's cubs will take leave of their mother, and she might produce another litter. I hope that Eshinga will give me the opportunity of comparing her efficiency as a mother with those other female cheetah I have studied. And then of course I still have letters and names from L through to Z for any new cheetahs who might move into my study area. Roll on Latotse (Tswana) and Co.