

fauna & flora - 33



Transvaal Nature Conservation Division



DEPT. VAN LANDBOU-TEGNIËSE DIENSTE
BI LIOTEEK
NAV. INSTITUÛT VIR PLANTKUNDE
24. 10. 1973
PRETORIA
BOTANICAL RESEARCH INSTITUTE
DEPT. OF AGRICULTURAL TECHNICAL SERVICES

**TRANSVAAL NATURE
CONSERVATION DIVISION**

CONTENTS:

| | |
|---|----|
| Parrots — bright and beautiful | 2 |
| The regal caracal | 6 |
| Why conserve wetlands? | 8 |
| Modern trends in capture techniques .. | 10 |
| What is happening to the bateleur? ... | 12 |
| Langjan — where the gemsbok dwells | 14 |
| Raptor rehabilitation in the Transvaal .. | 16 |
| Transvaal tortoises and terrapins | 19 |
| Cancer in wild animals | 21 |
| A special tribute | 23 |

Cover photo:

The Caracal — one of the most handsome cat species of Southern Africa.
Photograph: Lorna Stanton

**Transvaal
Provincial Administration,
NATURE CONSERVATION
DIVISION**

Executive Committee Member:

D.S. v.d. M. Brink.

Chairman of the Advisory Board:

Dr. A.J. Koen.

Director:

Dr. S.S. du Plessis.

Assist. Director, Research &
Information:

Dr. E. Young.

Assist. Director, Management:

P. le S. Milstein.

FAUNA & FLORA:

Editress:

Barbara Op 't Hof.

Design:

Tienie du Plessis.

Fauna & Flora is an occasional publication of the Transvaal Nature Conservation Division and is published in English and Afrikaans at the Division's Head Office, Church Street, Pretoria.

Subscription is free on written request to: The Director, Transvaal Nature Conservation Division, Private Bag X209, Pretoria, Transvaal, Republic of South Africa, 0001.

ISBN 0 7991 0212 1

Printed in the Republic of South Africa by
Everton Offset (Pty) Ltd.

PARROTS

Bright and beautiful

O.P.M. Prozesky,
Transvaal Museum, Pretoria.

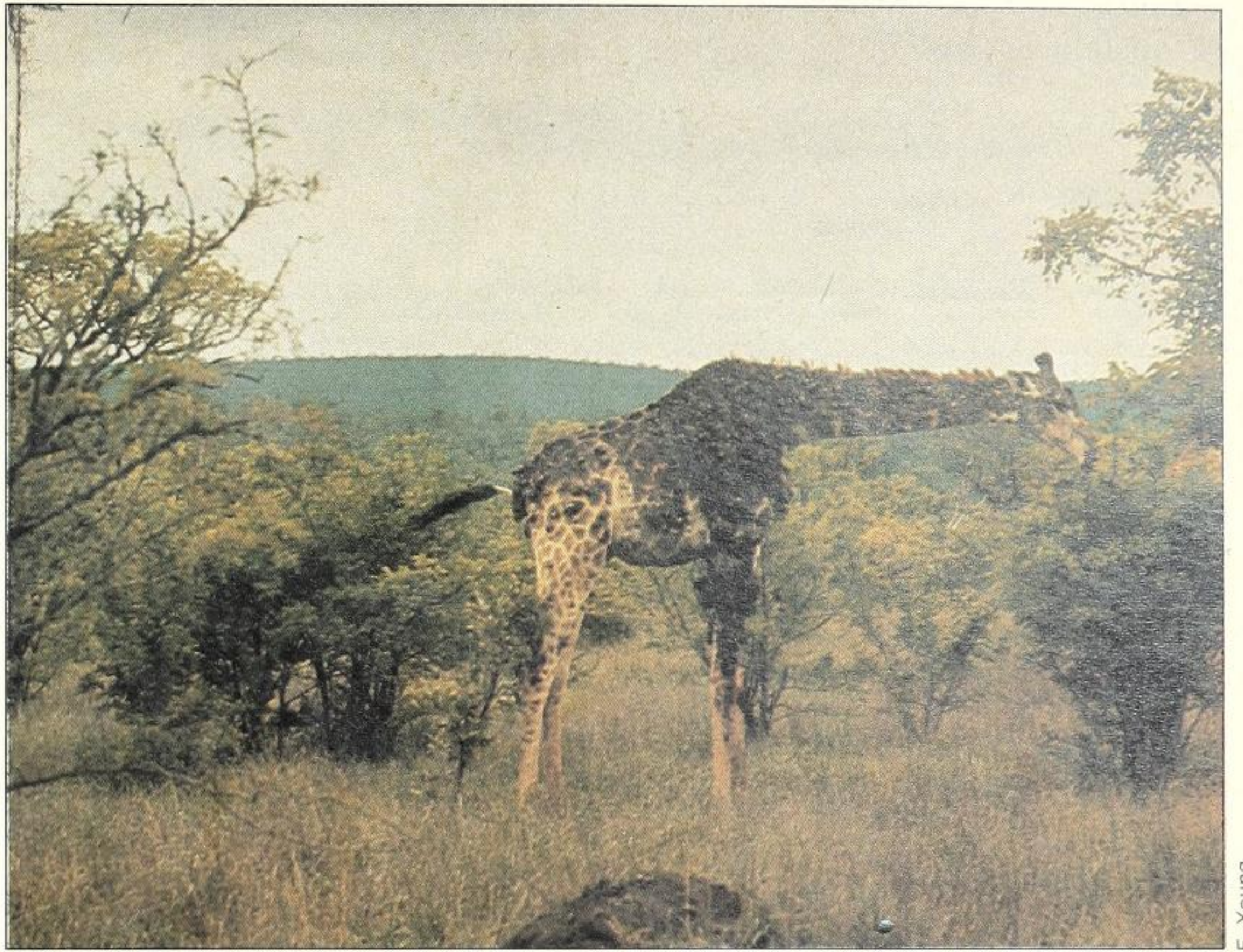
Cape parrot



L. Stanton

CANCER in Wild Animals

Professor R.C. Tustin,
Head: Department of Pathology,
Faculty of Veterinary Science,
University of Pretoria, Onderstepoort



Giraffe with warts.

Many people who have visited our game reserves may have noticed that quite a high proportion of giraffe have unsightly, somewhat horny outgrowths on the skin of their necks and may have wondered what they were. These growths are warts or papillomas which are considered to be a benign form of skin cancer and they very closely resemble those that we see in our domestic animals. The cause of these growths is unknown, but in domestic animals several types are due to virus infections which can spread to other animals by direct or indirect contact. Thus it seems reasonable to suppose that these neoplasms (or growths) in giraffes are also caused by a specific virus infection, especially if one considers how the infection spreads. Have you ever had the opportunity of watching a fight between giraffe bulls? They assume a rather solemn stance, often standing side by side, while facing in the same direction and swinging their heads and necks. This seemingly lazy action must generate considerable force, judging by the resounding thumps one hears when the adversaries strike each other. Their necks often become entwined and the infection of a wart virus could thus be easily spread by direct contact.

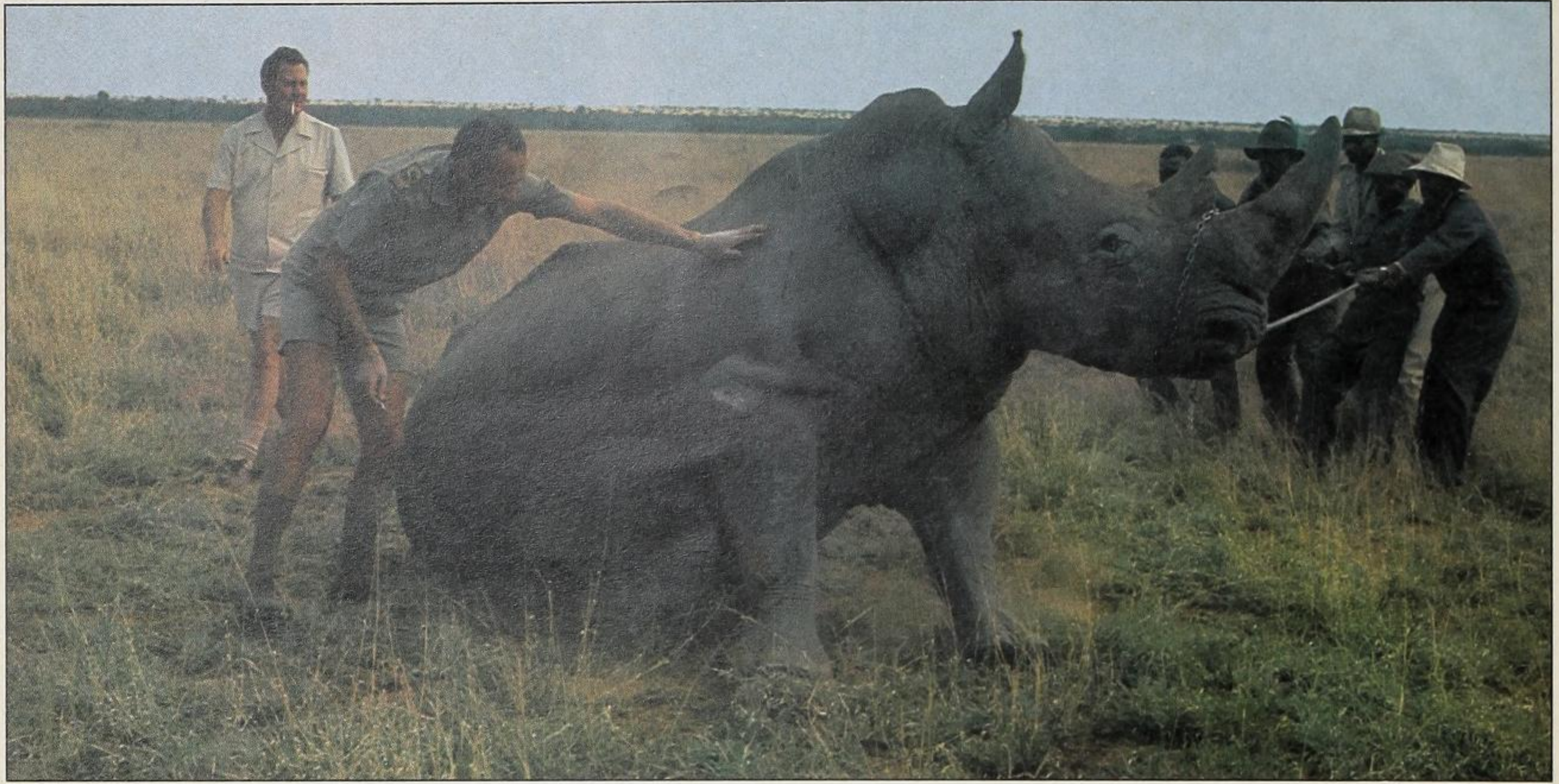
This example of a form of cancer occurring in wild animals is but one of many, although cancer is much less frequently encountered in wild animals than in the domestic species. There may be several reasons for this relatively low incidence but again the old adage of "the survival of the fittest" is a relevant point at issue. In other words, animals suffering from cancer are more vulnerable to predators. In this way, through the millennia, game populations which have a high resistance

to cancer have been naturally selected for survival.

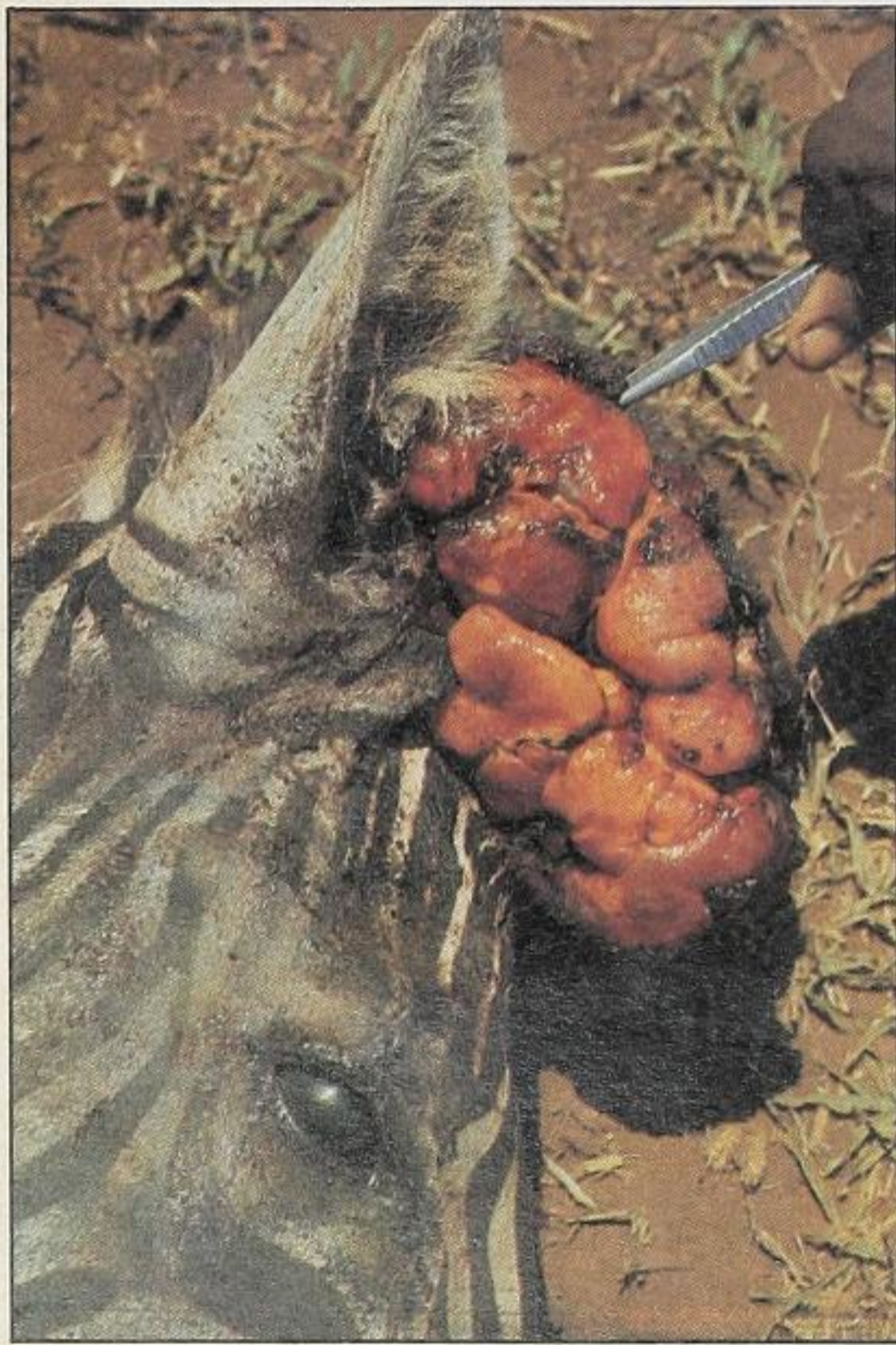
At this stage one may well ask what cancer is and what the causes of cancer are. To begin with, "cancer" is not a word which is favoured by scientists. They prefer to use terms such as "neoplasm" or "tumour". It is also popularly believed that cancer is one specific disease. It is, in fact, a term which embraces many different and distinct forms. A neoplasm arises basically when, for some usually obscure or vaguely understandable reason, a cell or group of cells begins to multiply continuously while the normal control mechanisms in the body are unable to prevent them from doing so. Some neoplasms may reach a tremendous size and may eventually weigh several kilograms. Some tend to remain localized at the site of origin — these are mainly benign neoplasms. The malignant variety, however, are able to infiltrate blood and lymph vessels. Small clumps of neoplastic cells can then break away and through the vessels be transported to other areas where the cells lodge and commence proliferating anew. Thus "secondary" or "metastatic" growths are formed.

While much information concerning the causes of certain neoplasms exists, it is regrettable that we do not know what the causes of most of the neoplasms in our domestic animals are. Still less is known about these causes in our wildlife, but it is interesting to speculate as to what they could be. In animals, the known causes of certain types of neoplasms may be divided basically into physical causes (such as the ultra-violet rays of the sun), chemical causes (e.g. various plant and fungal poisons) and viral infections.

E. Young



A malignant skin tumor on the shoulder of a white rhinoceros.



Similar types of cancer occur in man and animals.

It is interesting to note that at least three different South African plants have been proved capable of causing cancer when experimentally fed to animals. These are bracken fern, *Pteridium aquilinum*, various cycads, *Encephalartos spp.* and some ragwort or *Senecio* species. There are possibly others of which we are unaware. Some fungi which occur in South Africa and which grow on plant material may produce poisons which are potentially potent causes of cancer. Thus it is possible that at least some of the neoplasms which are encountered in wild animals may be due to environmental factors.

In addition, there are several very interesting examples of virus infections which may induce cancer in wild animals. One is a Herpes virus infection which occurs naturally in squirrel monkeys in Central and South America. It is not responsible for any significant disease in these animals but, when it is injected into certain other monkey species, it causes a disease which resembles leukaemia or cancer of the blood. Similarly an adenovirus, originating from one of our vervet monkeys, *Cercopithecus aethiops*, produces tumours when inoculated into baby hamsters but causes no apparent disease in the monkey itself.

Some very interesting types of cancer have been encountered in our wildlife. Some captive colonies of the multimammate mouse, *Praomys natalensis*, have a very high incidence of stomach cancer. This species may prove to be of great value to medical research because of the relatively high incidence of this type of cancer in humans. Several investigators have reported the occurrence of, for example, a brain tumour and two different tumours in baboons, a tumour of the vulva

of a buffalo, and teratoma in the testis of a nyala. The latter is a very rare type of cancer in animals but is nevertheless worth investigating because it consists of a variety of different tissues — in this case it contained nerve, skin, cartilagenous and glandular tissues.

Another unusual condition which is not really a true cancer, although it bears a resemblance to it, is the so-called *cornu cutaneum* or cutaneous horn. These horn-like growths have been seen in a kudu and an eland. In the latter animal it occurred on the leg and it was so large and bulky that one wonders how the animal could have escaped the attention of predators. It must have seriously hindered the locomotion and agility of the animal for a long time before it was eventually shot.

It is obvious, therefore, that nature selects and breeds the healthiest and fittest specimens, thereby ensuring a high quality of natural life.



Erratum: Fauna & Flora 28, p. 18
The photographs (uppermost and centre) of the protea, *P. rubropilosa*, were erroneously described as *P. Laetans*. The editors apologise to the author of the article, L. Davidson.