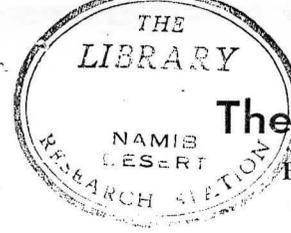


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The Namib Desert

By V. FITZSIMONS
(Transvaal Museum)

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THE Namib Desert, now regarded by most authorities as one of the oldest deserts in the world, stretches along the west coast of Southern Africa for over a thousand miles from the Orange River in the south to well into Angola in the north. It varies in width from 60 to 80 miles and extends inland from the coast to the rugged escarpment marking the edge of the inland highland plateau. It is characterised by high, moving sand dunes, open bare gravelly plains, with stark outcrops of dark jagged rock and occasional river-beds, which cross it on their way from the highlands of the interior to the sea. There is a total lack of surface water, winds (often of gale force) blow incessantly and extremes of temperature occur from over 120°F. in summer to near zero in winter. As a result of its inhospitable nature, the Namib Desert has to a great extent remained a *terra incognita* to scientific exploration and investigation. In spite, however, of the aforementioned difficulties of terrain and climatic conditions, quite a considerable amount of work has already been carried out, more especially within recent years, but this has only served to show what a vast potential there still remains for further prolonged systematic scientific research.

It may well be asked what is there to be found in such an arid and superficially lifeless region and why time should be wasted on what would appear to be a fruitless quest? In the first place, in spite of an infinitesimal rainfall and a total lack of surface water, the desert



The sea of wind-blown red sand dunes extending some 400 miles from the Kuiseb River southwards to the Orange River. (Photo: C. K. Brain).

supports an astounding abundance of life, ranging from insects and other invertebrates to reptiles, birds and mammals. This life is made possible mainly through the deposition of moisture by dense fogs, which roll in from the cold Benguella Current running up the western coast from the Antarctic. This fog comes up on most days towards dusk and, depending on its density and the strength of the winds, extends inland to as much as forty miles and deposits its moisture on the ground during the night before being dispersed again by the warmth of the sun in the course of the following morning.

Although some insects, more particularly fast-running tenebrionid beetles, and a few diurnal reptiles and birds, may be seen abroad during the heat of the day, it is at night that the desert really comes to life, when all kinds of creatures, that have taken shelter below ground during the day, emerge from their underground retreats to pursue their normal activities of food-hunting, mating, etc. It may well be asked how all these creatures find enough to eat and how the cycle of life is maintained? So far as we know at present, it would appear that the persistent winds, blowing over the desert from the more fertile hinterland, bear with them vast quantities of microscopic vegetable matter which are deposited on the dunes and in time form extensive layers of detritus along the bases of the former. This vegetable detritus supports many micro-organisms and forms the basic food for the preponderant beetle fauna, which in turn sustains other larger forms of animal life, more particularly lizards.

All animal life in the desert shows in one form or another adaptations enabling it to survive under extreme conditions of aridity. Such adaptations take a very long time to develop, often hundreds of thousands of years, and are indicative of the great age of the Namib Desert, as compared with other deserts in the world where animal life has not become adapted to nearly the same degree or extent. Among the insects, as has already been mentioned, the tenebrionid beetles or 'tok-tokkies' form the most abundant part of the desert population and display a wide range of specially developed characteristics which enable them to live and persist under the extreme conditions. The majority, for instance, are expert burrowers and can submerge themselves in the loose sand with the greatest ease and speed. Many have developed special processes on the legs, which enable them literally to swim over the loose sandy surfaces of the dunes, while others, found on the hard gravelly plains, have developed long spindly legs on which they can race from shelter to shelter with such speed that only the most active of entomologists can emulate! Among other invertebrates, found in the desert, are numerous species of spiders, of which the most striking are the so-called 'White Dancing-Spiders', whose name is derived from their uniform white coloration and their habit of dancing round on the tips of their toes in an agitated and aggressive manner when molested. These unique and interesting spiders, only recently described by Dr. R. F. Lawrence under the



A biologist setting out to collect micro-organisms in the apparently lifeless sand dunes. (Photo: C. K. Brain).



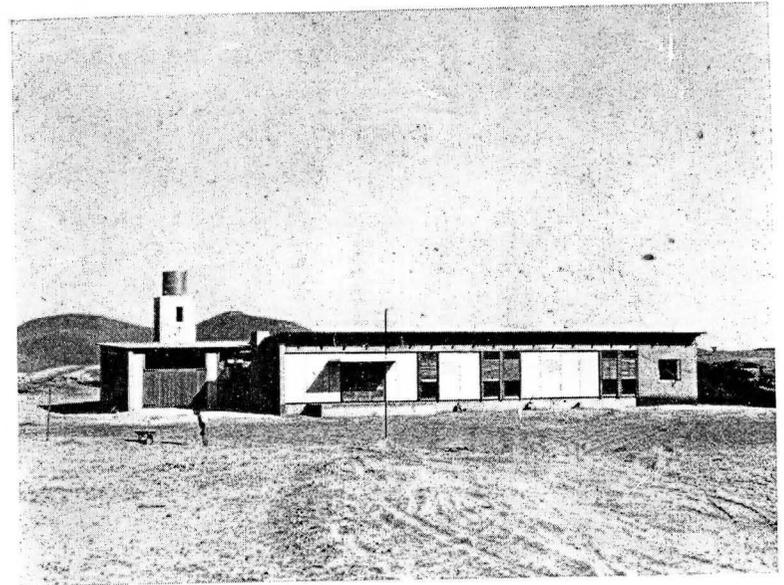
Open gravelly plains of the Namib, with fog coming up over the sand dunes in the background. The circle on the ground marks the site of the underground nest of a lark. (Photo: C. K. Brain).



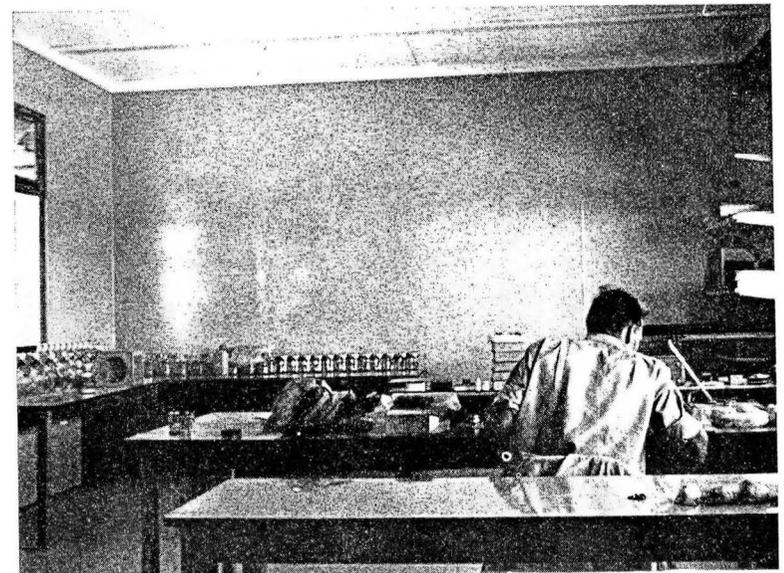
Kuiseb River Canyon of the inner Namib. (Photo: C. K. Brain).



A section of the forest in the dry bed of the Kuiseb River, in which *Acacia albida* predominates. (Photo: C. K. Brain).



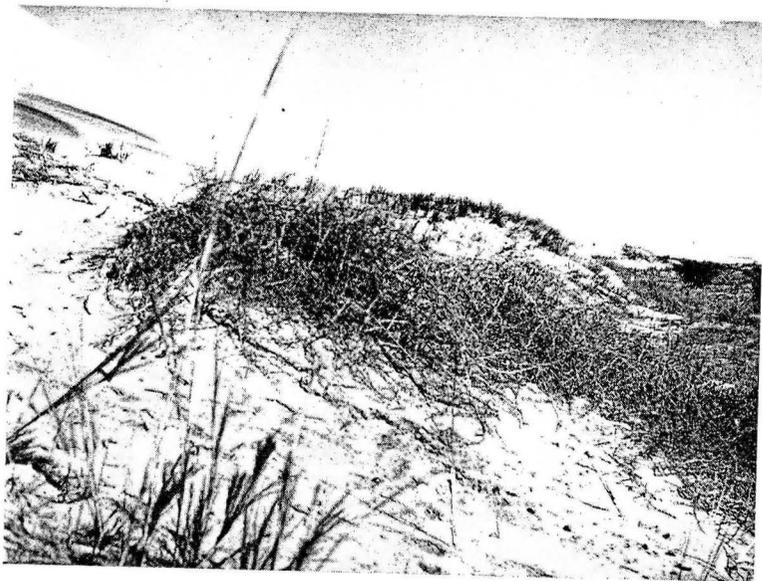
The completed Namib Desert Research Station, with high sand dunes in left background. (Photo: V. Fitz-Simons).



Laboratory at Namib Desert Research Station. (Photo: W. D. Haacke).



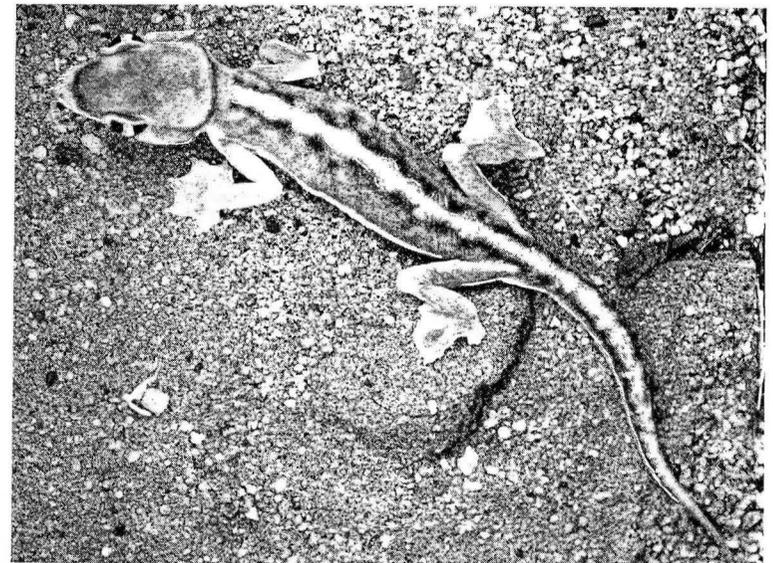
A giant specimen of the 'prehistoric' plant (*Welwitschia bainesii*) found only in the Namib and immediate environs. (Photo: W. Giess).



Narras (*Acanthosicyos horrida*), a thorny shrub found in the Namib on the round, melon-like fruit of which such desert animals as the Gemsbok feed. (Photo: W. Giess).



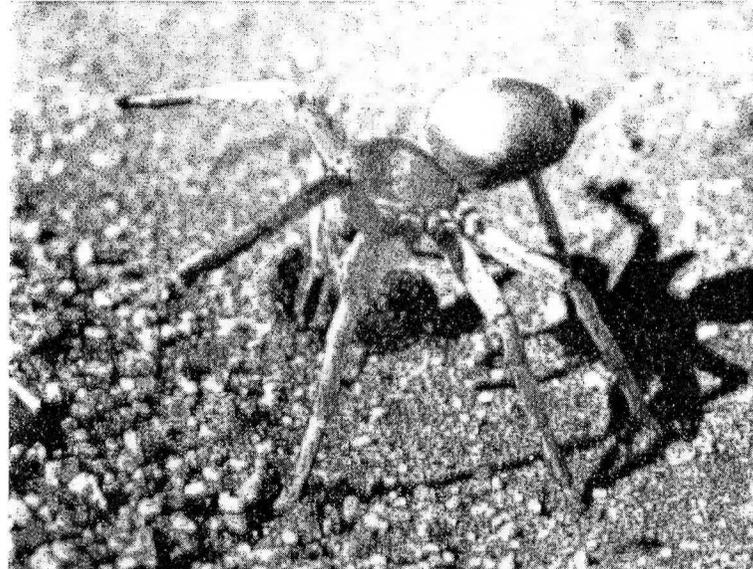
A large Ground Gecko (*Chondrodactylus angulifer*), typical of the open stony plains of the Namib. (Photo: H. Lang).



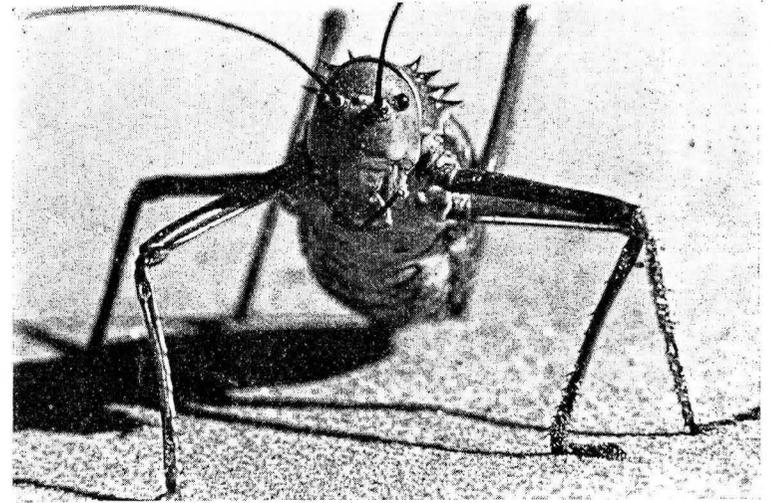
The Web-footed Gecko (*Palmatogecko rangei*), a typical denizen of the sand dunes of the Namib. (Photo: H. Lang).



An outcrop of sand-blasted rock, typical of the northern Namib. (Photo: L. Vari).



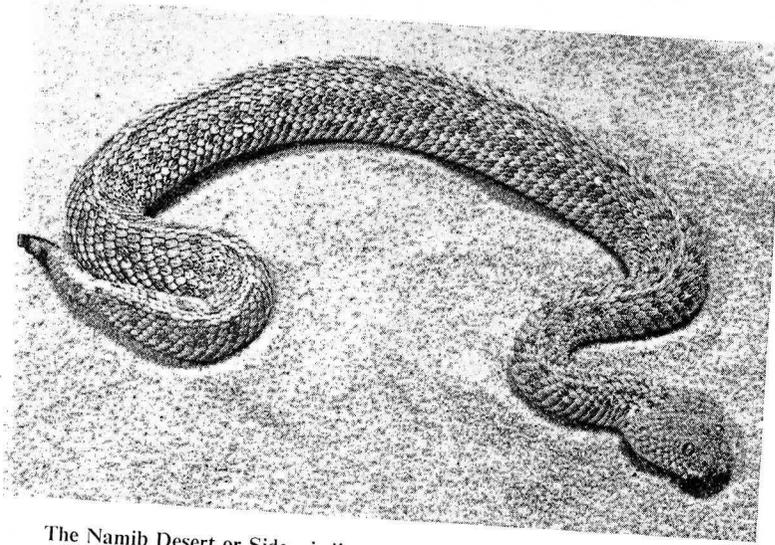
A White Dancing Spider (*Carparachne alba* Lawr.) in threatening attitude. (Photo: C. K. Brain).



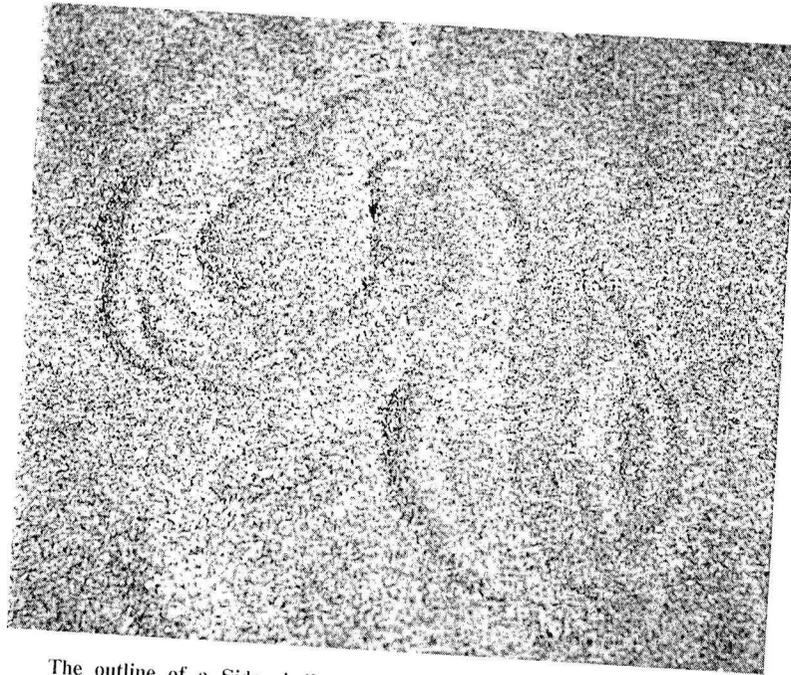
A large Corn-cricket (*Acanthoplus* sp.) found in the Namib. (Photo: W. D. Haacke).



A rare pale-coloured nocturnal cricket-like insect (*Comicus* sp.) typical of the Namib. (Photo: W. D. Haacke).



The Namib Desert or Side-winding Adder (*Bitis peringueyi*), at rest on a sand dune. (Photo: C. K. Brain).



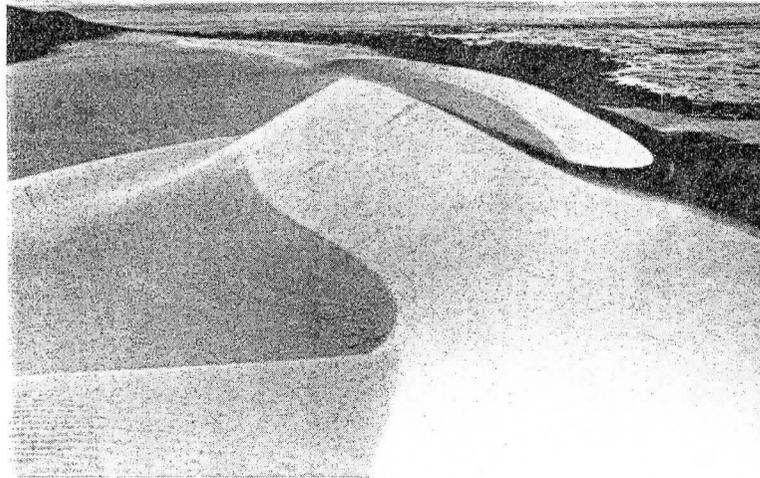
The outline of a Side-winding Adder (*Bitis peringueyi*) after burying itself in the sand. (Photo: C. K. Brain).

names *Leucorchestris arenicola* and *Carpoarachne alba*, have a body length of close on an inch and a leg span of about four inches and are essentially creatures of the dunes, where they live during the day in holes made in the loose sand and come out at night in search of their prey, which it is suspected may be nocturnal geckos.

Of the vertebrates the best represented are probably the lizards, of which the most characteristic is the web-footed Gecko (*Palmatogecko rangei*), an incredibly beautiful, semi-transparent, nocturnal creature which has developed webbing between its toes to enable it to progress with ease, in snowshoe-like fashion, over the loose sand dunes. In other nocturnal geckos, namely the Whistling or Barking Geckos (*Ptenopus garrulus* and *carpi*)—so-called from their habit of calling loudly towards dusk—the scales on the sides of the feet have become much elongated, forming thus a comb to aid their progress. There are also a number of diurnal lizards, among which one of the best known is the Snouted Lizard (*Aporosaura anchietae*) which, with its depressed, shovel-like snout and long hindlimbs and fringed toes, can race over the loose sand with great speed and, when necessary to avoid a pursuer, can literally dive head first into the sand and dig itself away out of sight in a flash. Snakes are represented mainly by two small adders, namely the Horned Adder (*Bitis caudalis*) and the Side-winding Adder (*Bitis peringueyi*); but of these two the latter only can be regarded as truly endemic. This little adder, rarely reaching as much as a foot in length, spends most of its time buried in the sand, with only the top of the head and eyes exposed, sheltering thus from the extremes of temperature and awaiting the near approach of unwary prey in the shape of geckos and other lizards. In adaptation to life in the desert this snake has developed a characteristic side-winding type of locomotion, by which it can progress sideways, in a series of jerks of its looped body, even up the loose leeward slopes of the sand dunes at a pace equal to that of a man. In this connection, it is interesting to note that a parallel development is found in the Californian side-winder (*Crotalus cerastes*) of the American desert.

Among the mammals, rodents are the most numerous, particularly gerbilles, which live underground and are characterised by their pale colouring in conformity with their surroundings. Other mammals include hares, some carnivores such as jackals and of course the gemsbok, the largest of the mammals to be found in the desert. There are also, as yet unsubstantiated, reports of the occurrence of a golden mole and other small mammals. Probably the most characteristic of the birds to be found in the desert are the larks which, like the gerbilles, are also very pale in colour and have been reported to nest underground in abandoned holes of the latter on occasion.

From the foregoing it is obvious that there is much life in the desert and, to enable scientists to carry out closer and more detailed studies on this peculiar fauna, the Transvaal Museum some years ago conceived the idea of setting up a permanent research station in the midst of the desert to provide comfortable living and working



Typical Namib sand dunes looking north over the Kuiseb riverine forest to the open plains beyond. (Photo: C. K. Brain).

conditions for research workers to undertake more extensive and long-term studies on the fauna in this otherwise inhospitable region. With this end in view, an approach was made to the South West African Administration, which materially assisted the project by granting a lease for 50 years over a piece of suitable ground, situated on the north bank of the Kuiseb River, some 70 miles south-east of Walvis Bay. This site, called Gobabeb, was selected only after extensive surveys as providing close access to the three main desert biotopes, namely the open, gravelly plains lying to the north, the ocean of barren, moving sand-dunes to the south and the riverine forest in the dry bed of the Kuiseb River.

After the acquisition of the site, plans for a suitably functional building were drawn up and, following the accession of financial support from various interested industrial organisations, scientific bodies and individuals, a start was made on the actual erection of the Station Building towards the end of 1962. In spite of many difficulties, occasioned mainly by unprecedented rains in South West Africa, which brought the Kuiseb River down in spate during January, 1963, it is pleasing to report that the Station Building has now been completed and is ready for use by approved research workers. The building has been so constructed and orientated as to provide the most comfortable living and working conditions possible, including adequate provision for the supply of water and electric current. In addition, a radio inter-communication unit has been installed, a landing strip for light planes laid down and a

weather station set up by the Weather Bureau. The Station itself is under the direct supervision of a full-time, resident officer, who is well experienced in local conditions and will act as guide and mentor to visiting scientists who may be unfamiliar with such conditions.

With the growth of interest, both local and overseas, in the potentialities for research which the Station can now provide, the whole project has been expanded, from its original concept of merely a zoological field station of the Transvaal Museum, to embrace all other scientific disciplines concerned with research in true desert. To this end the control of the station has now been vested in an independent body, known as the Namib Desert Research Association, which has been incorporated as a non-profit making association, under the Companies Act, with its own Board of Trustees or Directors, on which various interested and responsible bodies and individuals are represented.

Enquiries for permission to make use of the Station may be directed to: The Secretary, Namib Desert Research Association, P.O. Box 413, Pretoria.

Cape Province Department of Nature Conservation

THE Cape Provincial Department has recently issued the under-mentioned reports on its research activities:—

Cape Kurpur (*Sandelia capensis* C. and V.): Report No. 3.

This report deals with the reproduction and feeding of these fish, the research work on which was carried out at the De Hoop Lake, Bredasdorp, during the period February, 1959, to March, 1960.

Corvidae (Crows): Report No. 4.

“A Preliminary Evaluation of the Economic Status of *Corvidae* and their Control on Sheep Farms in the Great Karoo.” Data were collected by means of official questionnaire to all land-owners in the Beaufort West, Victoria West and Loxton areas in regard to population status, breeding, feeding of the Pied or White-breasted Crow (*Corvus albus* Müller), the Black Crow (*C. capensis* Lichtenstein), and the Cape Raven (*Corvultur albicollis* Latham) and the conclusions and recommendations should be of considerable interest to all sheep farmers.

Increased Junior Subscriptions

WITH effect from 1 January, 1964, the Annual Subscription for Junior Members (under the age of 21 years) will be increased to R2.00 as against R1.50 in the past. This has been found necessary in view of the rising costs of production of *African Wild Life* and the increased facilities now available, e.g. Branch Newsletters, Fieldwork activities, reading room, etc.