THE WELWITSCHIA MIRABILIS
(Plant of Hykamkop), South-West Africa
By T. BAINES, F.R.G.S.
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ON the desolate coast of South-West Africa, the sand, drifting from any projecting point before the prevalent southerly wind, forms shoals running northward nearly parallel to the coast, and inclosing bays which afford secure anchorage to vessels of almost any size, and lagoons into whose still waters countless myriads of smaller fish are chased by sharks, porpoises, and many varieties of the smaller whales. Their shallows are frequented by long lines of flamingoes, so numberless that, when upon the wing a rose-coloured cloud seems quivering in the air. Here snow-white pelicans — their forms lifted to an enormous height by the mirage — loom like the canvas of some distant vessel: there duikers, or cormorants, similarly distorted, look like stranded hulks; cover the surface of the bay with long, dark lines, as they wheel in many evolutions; or blacken patches of sand for many hundreds of yards when they settle.

Upon the shores of some of these bays, fisheries have been established by merchants of Cape Town, who send, for the use of those employed, supplies of food and stores, and sometimes fresh water, by the vessels which call occasionally to collect the produce of their industry. Some serve as points of departure for traders or travellers to the interior. Of these Walvisch (or Whale) Bay (Lat. 22° 57' S.) is the most important, and here upon the broad flat formed by the estuary of the Kuisip River — overflowed by every spring tide, and flooded with fresh water perhaps once in ten years — stood, when I arrived in 1861, the unpretending wooden dwelling of Mr. Latham, in which goods requiring protection were stowed till they could be forwarded to the interior. Neither grass nor water was to be found there, and waggons were either loaded up at once, or the cattle sent to graze at a distance till again required. After crossing this dreary flat — odorous with the remains of flat fish drying in the sun — the dry bed of the Kuisip winding between shifting sandhills, served us for a road. Our wheels sank deeply, and the sand flew from their spokes as they revolved, like water from the paddles of a steamer; while the dense, hot dust-cloud so raised, rendered it impossible to breathe to leeward. The small patches of samphire gave place to a semi-saline vegetation. Stunted dabbies or tamarisks, ganna bushes, and a few thorns appeared; and the “nara”, a half-creeping thorny shrub, bearing a no less prickly fruit, somewhat bigger than an ostrich's egg, clothed, and helped somewhat to bind together, the sides of the loose sandhills. The fruit which is about the sole vegetable food of the few poor natives during nearly a third part of the year, is, when ripe, of a yellowish green colour. On breaking the thin, gourd-like shell, a deep yellow or orange coloured pulp appears, which may be eaten with a spoon, and tastes deliciously; but is apt, if too freely indulged in, to bring on nausea, and soreness of the lips and gums. The seeds, which are numerous, and not unlike those of a melon, are scattered through the pulp, but are not eaten with it. The natives collect them carefully, dry, and keep them in bags of skin, either for future use or for sale to Europeans, who find amusement in cracking and eating them as after-dinner nuts. A cake is made of the pulp by evaporating the mixture. It will keep; is rich, well-tasted, and looks something like coarse sugar. As Andersson remarked very truly, "Without the nara this barren land would be almost uninhabitable;
with rare exceptions it grows only in the bed of the Kuisip, within a few miles of the sea. All animals, from the field-mouse to the ox, the feline and canine races, birds, especially ostriches, devour it. Even the white Egyptian vulture feeds on it — the only instance, save one, in which this kind of bird is known to partake of vegetable food.

The first day's journey from the bay is generally very short. The cattle are sent to refresh themselves as they can; and on the next, the waggons “climb out” to the elevated Nariep desert. This is a barren plain of loose sand, quartz, and other pebbles. It has rocky ridges, destitute of grass or verdure, where the few leafless shrubs, breaking like rotten seaweed, have insides — like the apples of Sodom — full of nought but ashes; and where, if anything green should meet the eye, it is more likely to prove a trace of metallic tint upon a rock, than a vegetable.

We halted late in the evening to make coffee, the ruddy firelight gleaming on the white waggon-tents and on the oxen as they stood patiently in their yokes awaiting the finish of our short refreshment, and seeming to know as well as we that it was useless to outspan them on such a desert plain. We crossed the Dupas river, a little stream, which like the Kuisip had not run with water for ten years, and outspanned before daybreak, with some low hills of weathered granite on the north, indicating the commencement of the ravine, inclosed by barren pyramids, cones, and precipices of fantastic shape and arid hue, by which we were to descend more than five hundred feet to the valley of the Swakop.

The yellowish grey of the generality of the rock was relieved by darker tints, banded by light pink veins of quartz, crossed by lodes of black ironstone, or speckled by black micaceous substances, splitting easily into thin glittering laminae. The whole surface seemed to be undergoing complete disintegration, and in places it was almost dangerous to step on what seemed a solid block of granite, lest it should crumble underfoot. In this manner caves, holes in the rock, arches, and blocks of fantastic shape, some like gigantic human features, or other grotesque resemblances are formed — and names more graphic than poetical are applied to many of them.

The deep ravine of the Swakop, cleft thus in the solid rock, has been partially filled with sand brought down by the periodical torrents, and this has become a level bed of, it may be, five hundred yards in breadth, and of almost unknown depth. The brief flushes of the rainy season, deep enough to make the crossings dangerous, and sometimes impassable for waggons, soon pass away; but meantime this bed of porous sand has been saturated with water, which remains permanently screened from evaporation, or from pollution by wild or domestic animals, and may be reached when required by digging, or in some places by merely scratching in the sand; while in others, as at Hykamkop, it appears on the surface, and after flowing a short distance again finds the sand in sufficient volume to entirely absorb it.

Here, about seven years previous to my visit, a tree called the wild tobacco had been introduced, and spreading rapidly with its cool green leaves and yellow tubular flowers, became quite a feature in the landscape; while the tamarisk, the mimosa, the kameel doorn, and in favourable places the ana, a gigantic thorn-tree, much used for building purposes, grew upon the low secondary bank that had formed along the base of the hills.

Mr. and Mrs. Eggart, of the Rhenish Mission, who were respectively turning out the goats and preparing early coffee, gave us a hearty welcome to their little house, which was built of reeds, rather as a cooling screen from the sun's rays than a protection from any possible rain. A poor fellow was lying ill of fever and bowel complaint in another hut and I was glad to be able to promise him a little quinine, to which one
of my friends kindly added a small quantity of spirit. Mr. Dixon presented me with two buffalo heads, now in the Museum at King's Lynn, and led me to the waggons by a more direct, but less picturesque ravine, partially filled with sand, forming a broad, flat bed, and in this my attention was drawn to a singular plant of immense size. Whether it were new to science I could not tell; a vagrant artist can neither afford nor carry the necessary books of reference. I saw that it was new to me, and determined to secure the best sketch and specimen I could before I rejoined the waggons.

The two leaves, nine or ten feet in length, and of a pale green colour, except where somewhat withered at the ends, were split by the wind and drought into ribbons. Some of these were fourteen inches or more in breadth, lying curled in every direction upon the sand, and conveying at first sight the idea that there were four, instead of two original leaves. These issued from the circumference of a woody mass, with a rough bark or cork-like surface, rising a foot or more above the ground, and bearing round its edges, just within the insertion of the leaves, an assemblage of small stems about six inches long dividing into smaller branches, each of which bore from three to five cones, three inches in length, and ½ inch thick, of an elongated oval form and crimson colour, tinted with green in the less developed specimens, and marked with scales like those of a fir-cone. Numbers of insects — a kind of field bug — fully an inch in length, and prettily marked with red and yellow, sheltered themselves beneath the leaves, but in the lapse of years my specimens have gone adrift, and though I could from memory sketch them sufficiently well for artistic purposes, I could hardly pretend to scientific accuracy in the delineation.

My drawing was made on the 9th of May, 1861, and on the 25th of the same month I had the good fortune to fall in with a splendid specimen of the gigantic yellow-flowering aloe, of which, as Dr. Hooker has very kindly granted me access to the drawings I presented to the national collection at Kew. I hope shortly to be able to furnish you with a figure.

On my return to Walvisch Bay I entrusted my specimens to Mr. Latham, for conveyance to my friend Logier, who, on the 18th of December, received permission to hand them over to the Colonial Office to be forwarded to the Royal Botanic Gardens at Kew.

In due time my friend received the following letter, which, however, from the difficulty of communication, I had no opportunity of seeing till my young friend, E. Barry, met with it, in a parcel of newspapers forwarded to me, at Lake Ngami, on my return with Mr. Chapman from the Zambesi in 1863:—

"To F. Logier, Esq.
"Dear Sir,—I am extremely obliged to you for so kindly forwarding me the excellent drawings and specimens of plants from my friend Mr. Baines. The specimen of the aloe was quite dead and rotten, but the other plant has given me uncommon pleasure, inasmuch as, old a botanist as I am, I never saw it before, nor has more than one person ever done so; that person is Dr. Welwitsch, a German botanist, long resident at Loando. He made a journey south of that territory, and, in a letter to me, described the new plant so accurately that, the moment my son, Dr. Hooker, and I saw Mr. Baines's specimens and drawings, we both said that must be Dr. Welwitsch's new plant. We shall now be able to publish an account of it.

Mr. Baines has not done me the favour to write to me, so that I take the liberty to enclose my note of acknowledgment to you, as I have no idea in what part of Africa he is.

"The drawings of the great tree-aloe are also most interesting; but the species is cer-
tainly not the dichtoma, as Dr. Ecklon suspects, but probably a new species. *Ex Africa semper aliquid novum.*

"Yours very faithfully, and with many thanks.

"W. J. Hooker."

Sir William also wrote a letter requesting farther information, and in my absence, Mr. Logier forwarded it to Mr. C. J. Andersson, then in Otjimbengue, requesting him to forward a perfect specimen. This was brought down on the 15th of September, 1862, planted with its native soil in a flour-barrel by Mr. Laham, who, finding my friend at that time an invalid, very kindly conveyed it on aboard the mail-steamer on the 22nd.

In reference to this specimen, Mr. Andersson, dating from Otjimbengue, February 12th, 1862, gave me the following interesting particulars:

"The plant which you inquire about, and which has so awakened your curiosity, is well known to me. Indeed it is so peculiar as scarcely to be mistaken even from the rudest description.

"It is only found in one single locality, which is exceedingly scribed; that is, as regards Damara Land. It grows in sandy places, and luxuriates when it can find a few stones to fix its extraordinary tap-root, penetrating often several feet deep, so that it is indeed a work of labour and patience to extract one single plant. I have been thus occupied more than an hour, and even then have come away with only part of the root.

"The leaves attain a length of several feet, a small portion only of the point being withered, in other respects they are evergreen; they are straight-grained, and you can tear them from top to bottom without deviating a single line from a straight course.

"Rain rarely or never falls where this plant exists. I have crossed and recrossed Damara Land through its entire length and breadth, but only found it growing on that desperately-arid flat stretching far and wide about Walvisch Bay, or between the 22nd and 23rd degrees of south latitude.

"It is most common about the lower course of the River Swakop; but my description is very inadequate, and I shall endeavour to procure the plant itself, and forward it an early date to England.

"Indeed I would have sent it years ago, had I not been under the impression that you already had specimens; for I assisted Mr. Wollaston once to excavate a couple, which I thought he purposed presenting to Kew. I know that they were received at the Botanical Garden at Cape Town, for I saw them there only the other day."

In the *Botanical Magazine* of March 1st, 1863, it is thus noticed:

**WELWITSCHIA mirabilis.** (Tabb. 5368, 5369.)

**AFRICAN WELWITSCHIA**


**WELWITSCHIA mirabilis.**

**WELWITSCHIA mirabilis.** Hook. fil. in Trans. of Linn. Soc. v. 24, p. 1, cum tabulis I. — XIV.

"The old adage, 'Semper aliquid novi ex Africa provenire,' holds good in the present day as in times long gone by. It is little more than two years and a half since the first knowledge of this singular plant reached Europe, in a letter addressed to myself by its discoverer, Dr. Frederick Welwitsch, a talented naturalist, then on a botanical mission at St. Paul's, Loando, on account of the Portuguese Government. The account was soon published, and excited, as may be supposed, an interest among the most eminent European botanists which has never been exceeded, if equalled, since the discovery of the *Rafflesia*.

"Nor did it want an historian to describe fully its character and affinities, and external
and internal organization, in the work above quoted.

"Having, however, actually received living plants at Kew (though in a dying condition), besides copious dried specimens, through the kindness of two gentlemen still residing in South-Western Africa — Joachim Monterio, Esq., of Loando, and C. J. Andersson, Esq., of Damara Land — we are justified in giving it a brief notice in the Botanical Magazine, and thus extending a knowledge of it among many who have not the opportunity of consulting the Linnean Society’s ‘Transactions’. As to the cultivation of the plant in our stoves, we despair of it altogether, as much as we do of rearing the Rafflesia Arnoldii. Climate, soil, and native locality are all against success. Yet trials should, and no doubt will, be made to raise it from seed when opportunity may offer.

"Dr. Welwitsch found the plant, in 1860, inhabiting the elevated plateau near Cape Negro, Western Tropical Africa, in lat. 15° 40' S.; and Mr. Thomas Baines, the able artist in Gregory’s exploring expedition across North Australia — and who accompanied Dr. Livingstone on the Zambesi mission — while travelling, the following year, in the Damara country, between 22° and 23° S. and five hundred miles south of Cape Negro, was so struck with its appearance that he made coloured drawings of it and others, and sent them to me, with some cones — but these being more than a year en route, not dried, and packed with the succulent leaves of a gigantic aloe, were much decayed.

"Happily the cones contained ripe seeds, which, by hardening in alcohol, enabled Dr. Hooker to satisfy himself of their great similarity in development and structure with those of Cycadaceae and Gnetaceae. The native name Tumbo* was communicated both by Dr. Welwitsch and Mr. Baines; but as the same name is given to the gigantic aloe of the country, it is a generic rather than a specific name among the natives, for to the branch of cones Mr. Baines had written, ‘Called by the Hottentots Glories, and by the Damara Nyanka Hykamkop’. As we were now in possession of specimens, however imperfect, of this wonderful plant, from Mr. Baines, and very anxious that its discovery should be announced, Dr. Hooker wrote to Dr. Welwitsch, reminding him of a request he had made that a full account of his discovery should appear in the Linnean ‘Transactions’, and urging him either to make the plant known himself to the scientific world, or to send his specimens here for publication, proposing at the same time that it should be called Welwitschia mirabilis.

"Mr. Monteiro also sent us plants collected at Mossamedes, or Little Fish Bay, in 1862. These were gathered on a journey of thirty miles from the coast, in ground of hard quartzose character, and generally near little ruts worn in the plain by running water in the rainy season. Several Portuguese of Cape Negro assured him they had seen specimens measuring, as Dr. Welwitsch also said, six feet across the apex of the trunk, and even larger, and with the ribbon-like leaves two and even three bracas (fathoms) long.”

The letter of Mr. C. J. Andersson, previously quoted, is then given, and the notice concludes with the following description: —

"Descr. — In this we shall confine ourselves to the more popular portion of Dr. Hooker’s, referring for the more scientific history to the Linnean ‘Transactions’.

"It is a woody plant, said to attain a century in duration, with obconic trunk, about two feet long of which a few inches only rise above the soil, presenting the appearance of a flat, two-lobed, depressed mass, sometimes, according to Dr. Welwitsch, attaining fourteen feet in circumference, and looking like a round table. When fully grown it is dark brown, hard, and cracked over the whole surface much like the burnt crust of a loaf of bread. The lower portion forms a stout tap-root, buried in the soil, and branching

* Otjitumbo, a stump.
downwards at the end. From deep grooves in the circumference of the depressed mass, two enormous leaves are given off, each six feet long (and probably often much more), one corresponding to each lobe of the trunk. These are quite flat, linear, very leathery, and split to the base into innumerable thongs, that lie curling upon the surface of the soil.

"Its discoverer describes these two leaves as being present from the very earliest condition of the plant, and assures me that they are in part developed from the two cotyledons of the seed, and are persistent, being replaced by no others. From the circumference of the tabular mass above, but close to the insertion of the leaves, spring stout dichotomously branched cymes, nearly a foot high, bearing small erect scarlet cones, which eventually become oblong, and attain the size of those of the common spruce fir. The scales of the cones are very closely imbricated, and contain, when young and still very small, solitary flowers, which in some cones are hermaphrodite (structurally, but not functionally), and in others female.

"The hermaphrodite flower consists of a perianth of four pieces, six monadelphous stamens, with trilocular globose anthers, surrounding a central ovule, the integument of which is produced into a styliform sigmoid tube, terminated by a discoid apex. The female flower consists of a solitary erect ovule, contained in a compressed utricular perianth. The mature cone is tetragonal, and contains a broadly-winged fruit in each scale. Every part of the plant exudes a transparent gum. Welwitschia is a dicotyledonous plant, belonging to the gymnospermous group of that class, and having a very close affinity with both Ephedra and Gnetum, but differing from all previously known gymnosperms in having hermaphrodite flowers, and in wanting the disk-bearing wood-cells. Notwithstanding these peculiarities, Dr. Hooker places it the Nat. Ord. Gnetaceae, of which it is the only South African representative."

Of course this plant, common as it is in its own limited localities, must have been seen long ago by many persons. The only wonder is that no one had previously sent it home.

Mr. Chapman took stereoscopic views both of it and the great tree-aloe. As we did not effect a junction till far beyond the boundaries of Damara Land, neither of us knew what was being done by the other. In 1863 he sent, and in 1864 conveyed personally, specimens to the Cape; and, in reference to these, received from the Rev. J. C. Brown, LL.D., the Colonial Botanist, a highly complimentary letter, which has since been published, and from which I take the liberty of making a few extracts:

"Wynberg, 11th November, 1864.
"James Chapman, Esq.

"My dear Sir,—I rejoice to find that you have brought down from the interior another specimen of the Tumboa or Welwitschia mirabilis; and I feel obliged to our mutual friend, Mr. Layard, for bringing it under my attention. Before I left England I found the interest awakened by the descriptions given of this plant to be very great... The plant was found by Dr. Welwitsch, whose name it bears, in 1860; but I am informed by a gentleman in this neighbourhood, that, long before 1860, he had seen these plants in Damara Land, and, in one of his journeys, endeavoured to uproot some specimens for a near relation in the colony, a lady taking an interest in the cultivation of rare plants; but he never imagined, he says, that plants so abundant as these could be unknown to men of science: and thus may it be with many travellers in regard to plants which, from their abundance, have ceased to interest them, but of which botanists know nothing. About the time of either Dr. Welwitsch first writing of the plant to Sir Wm. Hooker, or of Mr. Baines forwarding to him his drawings, a specimen was brought to Cape Town by Mr. Wollaston, and given to his friend, Mr. M'Gibbon, the Superintendent of the
Botanic Garden. It was dead; probably in consequence of the means which had to be adopted to transport it to Cape Town; and it consisted, I am told, only of one half of the plant, with dry withered remains of the leaf attached. This was sent to England in the beginning of 1863, and must have been obtained not later than 1861; and I have testimony that it was pondered over again and again by, at least, one of the Commissioners of the Garden, who has spent much time, labour, thought, and money, on the South African flora. In 1862, Joachim Monteiro, Esq., of Loando, collected some plants at Mossamedes or Little Fish Bay, and these he sent to Kew. In the same year specimens were sent by Mr. Andersson. Last year, 1863, a living specimen sent by you to Mr. Rawson, then Colonial Secretary at the Cape, was forwarded to England, and now you have brought with you another living specimen.

“Dr. Hooker describes it as a woody plant, said to attain a century in duration, presenting the appearance of a flat, two-lobed, depressed mass; sometimes, according to Dr. Welwitsch, attaining fourteen feet in circumference, and looking like a round table.

“Some of the specimens seen by you seem to have been of a corresponding magnitude, their weight being estimated by the hundredweight, and a hogshead being spoken of as necessary for their conveyance.

“Let any one look at that you have brought, and imagine what such gigantic specimens must be. This looks like two immense clam-shells, or two lobes of an immense bean, measuring some 18 inches across, partially opened with the intermediate space so filled that, when viewed edgeways, it presents an elongated heart-shape, being less deeply situated in the ground than Dr. Hooker describes, appearing somewhat wedge-like, and having rounded edges forming the sides of a depression running along its upper surface in its longitudinal direction. This depression, and a considerable portion of its upper surface round the extremity of the depression, is covered with solid circular ridges about half an inch in diameter, the nature of which may be conjectured and described but does not at first appear.

“In the specimen brought by you, the place where the leaves proceeded is like a crack or rent, such as would appear if two layers of a monstrous clam shell had separated to allow the protrusion of the leaves. These rents close in moist weather, and open in dry, when the interior surface presents the whitish appearance seen between the leaves of some species of the blood-flower (Haemanthus), and the candelabra flower (Brunsvigia); and it is so suggestive of a bulb-like structure, that I do not wonder that this portion of the plant is generally spoken of as a bulb.

“Dr. Welwitsch states these leaves are never renewed or replaced. To this also, should you revisit the country, may I ask you to give your attention, as the fact may be indicative of much besides. From your observation of the leaves being more withered at one season than another, there seems to be, at times, a fresh vigorous growth at their base.

“I am glad that you sent, some time since, a small case of these cones to Kew, as parties in England and elsewhere may be desirous of examining them.

“I have used throughout the designation, Tumboa. Dr. Hooker says, the native name, Tumbo, was given both by Dr. Welwitsch and Mr. Baines; but to the bunch of cones Mr. Baines has written, called by the Hottentots, ‘Gories;’ and by the Damara, ‘Nyanka Kykamkop’.

“Dr. Bleek confirms the interpretation you have given of the latter name, the bulb or plant of Koom Kop. Nyanka being the Damara designation applied to a plant, or, if I understand you rightly, to a flowering bulb; and Koom’ Kop being the name of the
Welwitschia drawn by Thomas Baines, F.R.G.S., in 1861.
locality where it is found.

"The Damara name supplied by you, *Otjitumbo otjihoro*, or stump with a head, embodies the previous designation given by Dr. Hooker. *Nyanka*, *Otjitumbo*, and *Otjihoro*, I understand to be Damara words; and *Koom' Kop*, to be a corruption of a Seroan or Hottentot word, implying some reference to three rivers."

It is impossible, even in the quotations I have taken the liberty to make, to do justice to Dr. Brown's complete and exhaustive scientific description of this plant. My object has been rather to extract what more particularly refers to the labours of my friend and I trust that when his journal is published, facsimiles of his stereoscopic views of these and other objects of interest, as well as much valuable information will be laid before the public respecting the Ethnology, Zoology, and Botany of Southern Africa. Several of his specimens are in the museum at Kew, and others brought from the west coast by Sir A. P. Eardley Wilmot, R.N., may be seen in one of the conservatories, where every effort is being made to maintain their vitality.

NOTE: *Welwitschia mirabilis* has been renamed *Welwitschia bainesii*.

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