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GARDEN CITY
LONG ISLAND

GR Biog

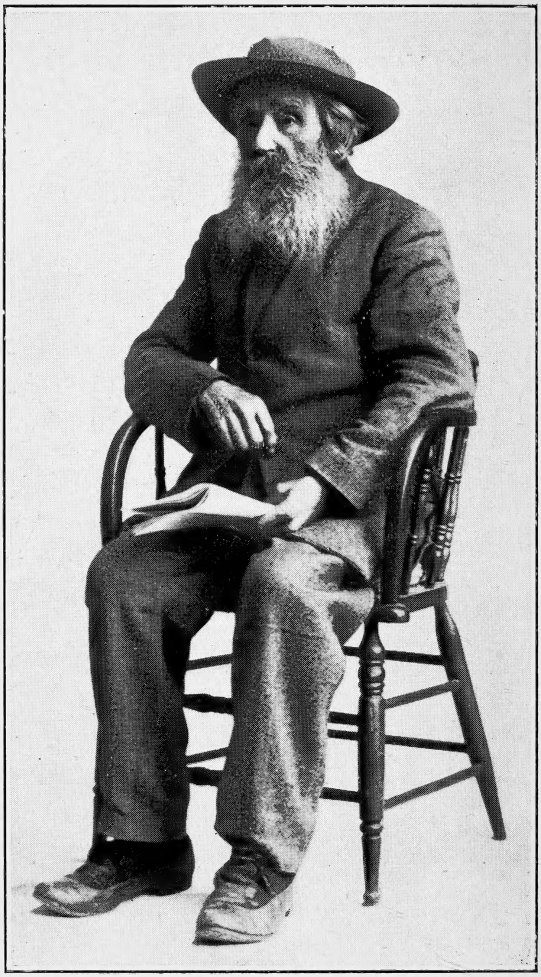
A. Wetmore

To Mr. & Mrs. Hunter
in memory of the night at the
Empire State Building

R. Brown

Victoria St.
July 1939

GOGGA BROWN



ALFRED BROWN.
Born 1834—Died 1920.

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GOGGA BROWN

The life-story of Alfred Brown, South Africa's Hermit-Naturalist

Told from his Journal

(Matthew Robertson)

BY

M. R. DRENNAN,
M.A., M.B., F.R.C.S.E., F.R.S.S.Af.
Professor of Anatomy in the University of Cape Town; Member of the South African Commission for the preservation of Natural and Historical Monuments, Relics and Antiques

WITH A

PREFATORY NOTE

BY

General the Right Hon. J. C. SMUTS,
P.C., C.H., K.C., D.T.D., L.L.D.

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TO

MY BROTHER-ANATOMIST

PROFESSOR RAYMOND A. DART,

WHO, BETTER THAN ANY MAN I KNOW,

CAN TEMPT THE TYRO

TO TRY HIS

WINGS.

CONTENTS.

PREFATORY NOTE.

We must feel grateful to Professor Drennan of the University of Cape Town for the following memoir, in which he has rescued from oblivion one of the most curious characters in South African science. The book is full of both scientific and human interest. Brown came to South Africa as a young man, and in a long life of great obscurity, and even penury, spent himself in collecting specimens in geology, prehistoric archaeology, and natural history in the neighbourhood of Aliwal North, a town on the Orange River in the north-east of the Cape Province. Without a technical scientific training he had yet an insatiable thirst for knowledge, and succeeded in making unique collections of specimens. At first he tried to pass his finds on to institutions and museums in London, Paris and Vienna, but encountered many disappointments. Gradually he seems to have changed from the disinterested collector into the scientific miser. He kept his finds for himself and enjoyed his own collections as a sort of private hoard.

It was a stroke of great good luck that Dr. R. Broom, F.R.S., could finally coax him into a more

friendly spirit and secured some of his fossil finds for scientific description. In establishing his own world-wide fame as a palaeontologist, Broom was thus able to do some measure of justice to Brown by attaching his name to some of the more striking of his finds. Nobody could get his archaeological collections from him, and as a result the probably priceless labours of fifty years have been rendered largely valueless. I know of no more striking case than Brown's of the tireless scientific collector at last turned miser of his finds—to his own disadvantage and the loss of science. He has left an enormous diary kept over a period of sixty years, and from this mass of evidence Professor Drennan has compiled this account of a man who both psychologically and scientifically richly deserved this extended notice. He is a sort of Silas Marner of science, but with no after-ray of sunshine, and only deepening gloom to the end. But for his bad luck in not getting recognition for his work in his earlier years, Brown's name might have ranked with the greatest of the princely collectors in South African science.

Professor Drennan's story is well worth telling, and loses nothing in the manner of his telling.

J. C. SMUTS.

INTRODUCTION.

Of all the birds of human feather the Naturalist is the rarest, and it is not easy to get a glimpse of him, for he likes to hide himself away amongst the trees and bushes. The most also that one ever hears of him is the little chirpy-chuckle of satisfaction that he utters, as he catches that big fat early worm which others miss by sleeping. But this wild-bird of science, when one is lucky enough to get a good specimen of him, is a much more interesting and a much more lively fellow than the tame-bird of the same species, with which every one is familiar from seeing him caged up in his laboratory.

It is common knowledge also that the wild creature pines away and ultimately dies under the artificial conditions of captivity, for what sort of a bird is it that is content to repeat the tricks it has been taught by someone else? How can one expect any really vigorous spirit to be kept alive, when it is fed on the dry refined seed of science, which, no matter how good it may be, has never enough of that roughage and of those elusive vitamins which are so essential for mental growth?

Out in the open, however, where he can enjoy the freedom of his natural state, the scientific bird is at his best. There he has to use his wits and develop his eyes to see the various fruits that come with every season. As he must needs quench his thirst, he usually elects to stay close by a river ; failing that he has to become a weather prophet and watch for showers or falling dew. But he is no bird of passage, for he remains all the year round on the one spot, where he finds more than enough within easy reach to satisfy his hungry crop.

I had the good fortune recently to find the nest of this rare species of the human bird family, replete with all its eggs. As the habits of this bird were somewhat curious, and seemed to me to hold within them some interest and even some example for other human birds, I decided to put them on record in this little memoir.

Not to anticipate too much at this stage, let me just say that the specimen which I have studied had become acclimatized to the rather bare conditions of the South African veld, to which the colour of his coat had become singularly well adapted. I found also that, like most of our birds, he had lost his song, but that unlike the magpie, which is supposed to covet those glittering things that humans love, he took no notice of such

vanities. On the whole he seems to have resembled most the owl with his keen observant eyes, but he was not quite so nocturnal, in as much as he also stole about by day preying on locusts, toads and lizards.

Altogether asocial he flitted about by himself and obviously preferred a type of hunting ground that other birds despised. To the casual observer there is no sustenance at all to be derived from the bare rocks on which he liked to scratch about. He, however, extracted from them quite a rich diet of that hard gritty matter without which even human birds cannot digest their softer pabulum. At times also he soared majestically into the high heavens, surveying all things in the sky above and everything on the earth below him, and hovering hazily there I intend now to leave him and proceed with my study of his habits.

This I can do the more readily, seeing that a pen of greyer steel has already sketched out a close-up view of this strange bird. With a few deft strokes a master-hand has limned the lights and shown the shadows in the life of this extraordinary man. All that I need now do is to fill in the detail. I am very grateful to General Smuts for the kindly way in which he has thus illuminated and graced my pages. He has done more, for by paying a generous tribute to the work and character

of this humble man of science he has helped me to make a hero out of what has hitherto passed as common clay, and he has made me feel that my own task has been worth while. He has answered in anticipation the obvious question, who is this Alfred Brown?

At the end of this little volume I have set out a list of the many new fossil-animals that Brown discovered in the Stormberg Rocks and in the immediate vicinity of Aliwal North. As this is not a scientific memoir, I must apologize for the amount of Greek in which these credentials of his are necessarily couched. Fortunately these tongue-twisting names need not be read in connection with my story, the text of which is, through the courtesy of the South African Museum, interspersed with several illustrations which show the nature of Brown's exploits in the fossil world.

Almost every one of the animals which he discovered is remarkable in one way or another, and each find represents a victory for Science in her search for Truth. The sum total of his discoveries, moreover, constitutes a most creditable achievement for one man, especially when one knows the handicaps under which he worked. For this contribution to knowledge, happily, he has already become immortalized by having his name

tagged on to most of the queer beasts that he brought from the strange fossil-world into the one we are more familiar with. What is not known is the story of his struggles and of his self-sacrifice in the pursuit of his researches.

That is the tale of trials, of triumphs and of tragedies that I have tried to tell in this little book, and I sincerely hope that it will prove of interest.

M. R. D.

Anatomy Department,
University of Cape Town,
CAPE TOWN.

Chapter I.

WHAT HE WAS.

The English language, that great snowball of a tongue which gathers foreign words on prairie, steppe or veld, has licked up in South Africa a rich layer of expressiveness. Of these borrowed words no one suits its purpose better or has a greater wealth of meaning than 'gogga', that nickname which, applied to my hero derisively in life, I propose shall stick to him in death and do him honour.

For there has hitherto not been any true equivalent in English, with all its richness, for this interesting and comprehensive Afrikaans word, whose g's are all pronounced, be it noted, with that type of gutturality which we find in the Scottish word 'loch'. Just imagine what it means! It stands alone to signify the millions of creatures that crawl and creep and sometimes fly, and it even includes that low grade of living things called vermin. It is indeed the first and most convenient symbol with which we satisfy the babbling babe, as he grubs about amongst the stones, wondering what on earth are all these scurrying things he is disturbing. They are all

goggas, things animate as opposed to the inanimate. But at the same time the word is taught to convey an element of mystery and fear, of warning against the danger of a bite, and it is not without its sense of loathsomeness. Used figuratively it means almost as much, for a gogga is a bogey, the embodiment of a fantasy, the bee in any bonnet.

Such is the somewhat dubious nature of the title that was bestowed upon this elfish bogey-man by his village contemporaries. Like most nicknames, however, it caricatures him with a good deal of appropriateness, for in life he was a hermit, spurning, modern Diogenes as he was, most of the comforts and conventions of ordinary life, and caring for no one more than for his reptile pets and geological pursuits. But when I have drawn aside the veil of cobwebs, behind which this our greatest South African Naturalist lived and worked, there stands revealed the real Gogga Brown, a man deserving of respect and honour. It would in fact appear that we have been monkeying with a Darwin in our midst, for this wonderful man has a sufficient number of scientific discoveries and achievements to his credit to place him amongst the *élite* of Naturalists.

With regard to surname, my hero bears the somewhat plebeian patronymic of ' Brown ', for

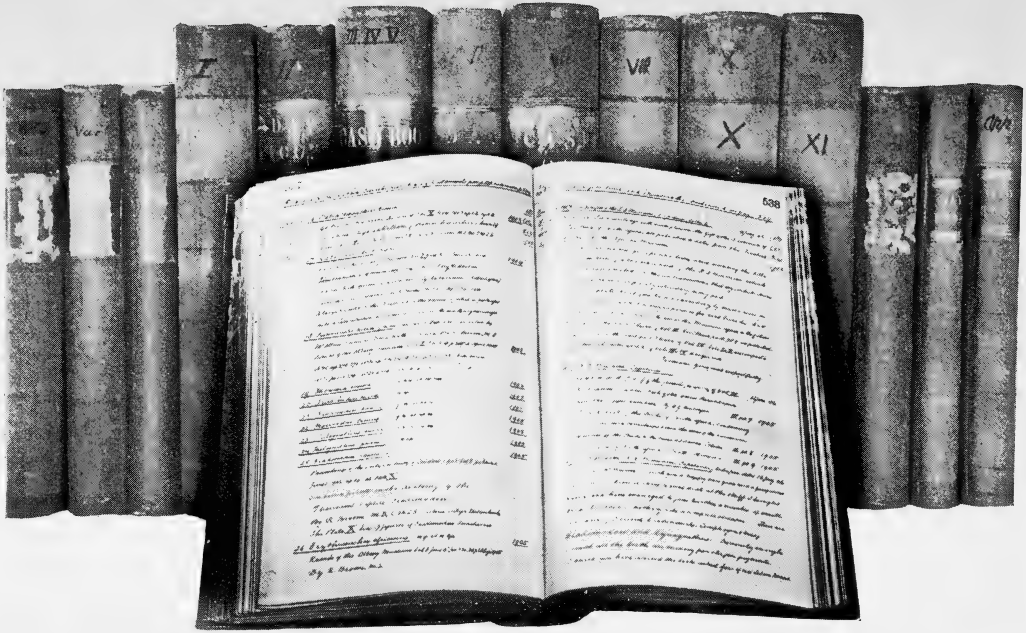
which this much can at least be said that it is as likely as any other grouping of the human chromosomes to give that shuffle of the genes that makes for greatness. Brown certainly had that infinite capacity for taking pains that counts for genius, and to what good purpose he put his talents the sequel goes to show.

Alfred Brown was born at Cirencester, England, on the 26th of April, 1834, and he died at Aliwal North, in the Province of the Cape of Good Hope, on the 29th of June, 1920, at the ripe old age of 86 years. There on the banks of the mighty Orange River would sleep on this village Darwin, almost unknown to fame and quite forgotten. But some presiding Genius bids me play the Resurrectionist with his memory, and lay fresh laurel on his tomb, for it is not right that South Africa should forget her scientific heroes.

It is recorded that Defoe's great tale of the *Adventures of Robinson Crusoe* was founded on the vicissitudes which Alexander Selkirk had to undergo when shipwrecked on the lonely island of Juan Fernandez. But what that story lacks in truth it gains a thousandfold by an imaginative telling. A strange Chance has put a somewhat similar log into my hands, in the shape of the *Journal of Alfred Brown*, the facts of which alone must be the garnish of my particular tale.

My story cannot even deal adequately with all the achievements of this remarkable man, who was stranded in South Africa in the year 1858. Then, as everyone knows, this new country was still almost a desert with regard to science, and still something of an island cut off from the outer world of thought. It will tell something, however, of what this scientific Crusoe did in his lonely surroundings, how he was not long in setting up such equipment as he needed for the life he proposed to lead, and how he adapted his outlook to the place in which his really fortunate lot was cast.

For Brown had been born with an Aladdin's key in his hand, and he had the 'open sesame' with which to unlock the gates of Nature's secret hiding-places. Where you and I see only scrubby parched-up veld and sunburnt koppie, he could see that he stood on the age-long sands of old lagoons. He already knew that he could gather ferns by old Triassic shores, albeit mountains now, hurled heavenwards by earth's convulsions. In the architecture of these olympic sandstone tables, in which, at the best, you and I discern artistic shapes now gilded by the rosy morn, now curtained by the purple mists of sunset, he could read the rich inlay of the earth's encrustment and follow the sequence of Life's changing forms. What to you and me are but the deep cool



Above are shown the fifteen folio volumes of Brown's Journal on which this short biography is based.

shadows of ravines and kloofs were to him a million years of carving by Time's sharp chisel.

Such then is the Martian prehistoric world into which this young Englishman was flung, and in this fantastic country and amongst its queer denizens he was content for over sixty years to dwell in exile self-imposed. Not for him the busy haunts of men, when he could roam those pristine glades, where lava rivers ran but now stand petrified! Not for him the puny chase of wily fox or nimble hare, when he could leap basaltic dykes, and, like a Titan, tame the megalosaure! Not for him effeminate sport, when he could wrestle with giant ten-ton reptiles, wrenching them limb by limb from the firm grip of adamantine rocks, and leading them captive into the glass cages of Museums! No need for him of gun or snare, when, with nothing but a keen eye and a toylike geologist's pick, he could track down and bag the fearsome cynodonts with their doglike tusks, sporting with them in his drawing-room not so much as trophies but more as one might with playful puppies!

But this curious and most successful hunter had yet a modern eye for all those gems that strew the floor of that fairyland in which he dwelt, and he gathered loads of agates, cornelians, serpentines, topazes, jaspers and amethysts with

which to deck his shelves and excite the envy of his privileged visitors.

For Alfred Brown was a miser, to the extent that he hoarded and was jealous of his treasures ; but at appropriate times he could be generous and make up his mind to part with his prizes. He was altogether prodigal when it came to spending money on the pursuit of knowledge and the furtherance of science. To a certain extent also, as I have already indicated, he was a recluse, preferring to cut himself off as much as possible from human companionship, seeking only for communion with the Great Architect of Nature.

Brown was in fact intensely religious, but this scientific saint was as reverent towards the Revelation of the Rocks of Ages, and towards the Inspiration that lay in their fossil contents, as he was to that which, to him, was the Book of Books. His broad enlightened outlook on Science and Religion is therefore worthy of a special study.

We must remember that Brown began his work of fossil-hunting before the publication of Darwin's epoch-marking *Origin of Species*. He was therefore quite early in the field in quest of the very data which his illustrious contemporary was busy hewing into the shape of his great Theory of Evolution. The great bulk of Brown's work, however, was done during the heat of the

debates which followed Darwin's startling announcement of a new Creation. Yet throughout the diary there is hardly a reference to this aspect of Darwinism, about which, to judge by the breadth of his reading, he must have known more than most people.

This reticence is all the more remarkable, seeing that he had struck such a rich seam of evolutionary material, and that he was actually pouring out the thunder for Huxley's Darwinian guns. He makes no secret of the fact that he was quite consciously intent on forging that link in Darwin's chain which would knit the Order of Reptiles with that of Mammals. He even takes pride in the fact that, in the curious mammal-like reptiles that he discovered, he came so near to realizing this one of his many high ambitions.

It is curious, then, that he should show no signs of having ever recoiled from the implications of his discoveries, and that his faith was not at all shaken by a bombardment that shocked and stunned every devout theologian of his day. I use the term theologian advisedly in reference to Brown, for he was a great Bible scholar with a magnificent library of books on Higher Criticism and Exegesis. It is thus clear that, monkish recluse as he was, it was not the bombs of Darwinism that drove him into his dugout. The truth

is that Brown was a greater man than most of his contemporaries, having the right perspective to see ahead of the times in which he lived.

I will not say that he had a contempt for the crudities of the evolutionary theory, for he does not discuss the matter at all. From the way in which he ignores the issue, however, although knowing all about it, I think it is safe to say that, big as the theory bulked in other minds, it was to him nothing more than a ripple, not even a wave, on the ocean of his thoughts. He was indeed so overawed by the might and majesty of his Creator, that he was scared abjectly out of taking up any stand with man-made opinions concerning the interpretation or significance of His works. He refused in fact to contemplate any theory regarding natural phenomena that did not take account of the all-pervading Spirit that lay behind them.

He seemed to realize intuitively that there might be some truth in the great new Natural Law that was being propounded, namely, that Survival goes to the Fittest, but he knew that, like all such laws, it was merely descriptive, and explanatory only to a limited extent. It did not get down to the bedrock of Causation. How could he regard it as a universal proposition, when it did not give

the full answer to the question what is the 'fittest,' which no man can define?

He knew that victory does not always go to the fleet of foot, and he had discovered that the mighty dinosaur had had to give way to beasts of lesser stature. Had he not his own picture of how the ranting reptile rears his tiny head erect, and hissing, spits defiance, when lo! there croaks a challenge, and he drops, felled by the lightning lash of rival tail? Was he not busy exploring those very catacombs that lodge the bones of just such a battle royal, where Might had once contested Right, and failing, sliddered lifeless deep into primeval slime?

Thus brooding, Brown took stock of human things and watched the pageant pass. In fancy he sat beside the Lists, and saw two warring knights come prancing in to settle their accounts and court his favour. The first of these was clad in the dull hereditary armour of his forbears, full of the dents and ominous blood-stains of many a previous challenge, but on his sure-shield burned a fiery Cross. The other knight was somewhat younger, and he wore a shining coat of mail, obviously new and not yet tested, and on his banner was blazened Truth. The first spoke of rich rewards and of his House of many mansions and high authority. The other, more

in doubt, wooed him with words of chivalry, and he talked of new fields to conquer and high adventure in the quest for some unholy Grail and hidden caskets.

But Brown had made his firm resolve, which specious pleadings could not move. How could he pay fealty to one and not the other, when he had sworn a twin-allegiance to both their emblems, when he had promised secretly to each Cause to be true? So clashed the haughty baron of Religion and the irate lord of Science in deadly combat, Imposture versus the Devil incarnate, so they viewed the bout, and they fell, transfixed by their sharp lances in tragic stalemate, biting the dust in their high dudgeon!

When the tumult ended and the pall of peace was spread, Brown meditated on his vision; with his humble spirit and discerning mind he saw that this was how the mills of human turmoil grind their grain and separate the substance from the shadow that is vanity. So he rose up, and, like the good Voortrekker he was, hitched his own waggon to the double star of Faith and Fortitude, which led him through the narrow rugged pass between the mountains out into the broad prospects of his Promised Land.

Chapter II.

HIS BEGINNINGS.

Most biographers like to tell of their hero's school-boy days and of the parental and other influences that shaped his inborn spirit into the character that had to be portrayed. This I cannot do to any extent in the case of Brown, whose Journal is somewhat secretive regarding his early years. Not that it matters very much, for he flatters himself who thinks that he can correctly read a cup of human destiny, that has been drunk, from the random pattern its early flotsam and jetsam leaves. Who, for instance, can really explain why flowers may bloom on stony ground, whose seeds would rot in better soil, why genius likewise can flourish in adversity, but often perishes in the midst of plenty? What is to be gained, therefore, by probing into the privacy of human lives, unless perhaps the natural consolation that is got from sometimes finding that the divine spirit can share a temple with flesh of baser fibre and thrive upon it? All these questions are too inscrutable for human minds to answer.

Brown certainly did not himself set much store by what had happened in his school-boy days. It was by his work and not by the accidents of birth and rearing that he, like most men, wanted to be judged. He even went so far as to destroy the first forty-seven pages of his *Journal*, considering the facts contained therein, however much they might have interested us, as quite immaterial to his own record. A short note, entered late in life in his diary, merely mentions the fact that, at the age of ten, he was at school under a loving mother's care, and that when a little older he had two teachers, not honoured by having their names recorded, but significantly well qualified to teach in that they were 'Christian.' All that we can say about his boyhood then is that it was cast within an English mould, and that probably a fairly humble one with strong religious influences.

In this connection there is a reference made to Brown in the *Life and Letters of T. H. Huxley*, which is worth repeating. Adverting to his father's scientific activities in the year 1866, Leonard Huxley makes the following statement:

"In palaeontology he published papers on the 'Vertebrate remains from the Jarrow Colliery, Kilkenny'; on a new 'Telerpeton from Elgin,' and on some 'Dinosaurs from South Africa.'

The latter, and many more afterwards, were sent over by a young man named Alfred Brown, who had a curious history. A Quaker gentleman came across him when employed in cleaning tools in Cirencester College, found that he was a good Greek and Latin scholar, and got him a tutorship in a clergyman's family at the Cape. He afterwards entered the postal service, and being inspired with a vivid interest in geology, spent all the leave he could obtain from his office on the Orange River in getting fossils from the Stormberg Rocks. These, as often as he could afford to send such weighty packages, he sent to Sir R. Murchison, to whom he had received a letter of introduction from his official superior. Sir Roderick, writing to Huxley, says 'that he was proud of his new recruit,' to whom he sent not only words of encouragement, but the no less welcome news that the brother of his 'discoverer,' hearing of the facts from Professor Woodward, offered to defray his expenses, so that he could collect regularly."

Brown alludes to this quotation in his *Journal*, but he says nothing about the truth or otherwise of the statement that he saw the inside of a College as a laboratory assistant, a humble but honourable vantage point from which, if the above be true, he would not be the first to have risen to greater

scientific heights than any of his collegiate contemporaries of higher status. Even if he did at one time wash scientific bottles, he lived to make ample amends by filling them with the choice wine of discovery. As regards his Latin and Greek there is no need to make any guesses ; it is clear from his command of words that he was an excellent classical scholar.

His foot-note limits itself to an expression of his just indignation at the patronizing support Murchison claimed to have given him. Murchison certainly wrote long encouraging letters to Brown inviting him to send specimens, but they unfortunately contained rash promises to send books, memoirs and addresses in return, only a paltry few of which were ever fulfilled. He thus failed to provide Brown with that intellectual food for which he craved throughout his life, and which scientists of a later date found was the only incentive he required to make him continue his researches. Not only that but Murchison was somewhat remiss about acknowledging receipt of his fossils, and actually appears to have mislaid a batch of them, considering them presumably, if not just rubbish, at least of no great value.

With regard to the offer of money, which Brown would have welcomed in his early days but could not stoop to ask for, he is equally

annoyed, and pours scathing scorn on the suggestion that Murchison had ever at any time said anything about payment in his letters to him. Then he closes his sardonic comments on the proud note that his own outlay on the two batches of fossils he sent to London was fourteen sterling pounds.

Murchison and the other London experts, who later on fell foul of Brown, may have had reasons for their failure to understand and to offer real encouragement to this mysterious and somewhat exacting man. How were they, at that distance, to know that they were not dealing with an ordinary collector, who, if he did not stipulate for immediate payment, could not expect poor scientists to run after him with money? After all there were many enthusiastic amateurs about, who were flattered at having their nests despoiled, so long as it was a big enough scientific cuckoo that dispossessed them! Could Londoners really have been expected then to know that they were dealing with a one-man University in South Africa, which considered that it was entitled to a few books for its embryo library, and more especially any book or pamphlet that dealt with discoveries which had been made within its own walls? Could anyone at all at that time have guessed that a miniature British Museum was

being set up on the banks of the Orange River, the scientific curator of which would not have been averse to a few suitable exchanges?

I have been digressing, but this is almost unavoidable in any attempt to portray the life of this extraordinary man. The puzzle he was to the Londoners may serve the purpose, however, of reconciling us now to leaving his youth in the mystic wrappings of silence that he himself obviously desired.

There is less uncertainty about the motives which drove him to leave England and to seek his fortune under sunnier skies. In one of his folio volumes he enters some notes from those early pages of his *Journal* which he had personally destroyed. It would appear that in June, 1854, at the age of twenty, he had his fortune told, and it was prophesied "That he would be induced to go to a foreign land, where he would prosper. That on the point of starting he would be prevented from going through foolishly listening to the persuasions and empty promises of friends. That this putting confidence in friends and listening to their persuasions would cause him to suffer, for a space, great hardship and trials. That after his sufferings he would send his box by rail and afterwards go to a foreign or other

land. That when there, after a time, he would see the dawn of ease, comfort and prosperity."

In August, 1854, the prophecy began to be fulfilled to the letter, for he writes: "Having the money in hand and being free from all hindrances and engagements I packed up my box and made arrangements to go to the United States of America. But friends advised me not to leave England. They did their utmost to persuade me not to go, and promised to get me a situation, which promises they failed to keep. Work became scarce. I lived on my means till all my money was gone. The lesson taught me how foolish I was to trust in friends. For two years after this I was in great difficulties and living under many evils of this life. In 1858 through unforeseen circumstances I received an offer of a situation at the Cape of Good Hope. At this time I owed fifty pounds, and had not a single penny to call my own, but through a gentleman named R. J. Brown, no relation of mine, all came right. There were also others who helped R. J. B. in this matter, viz. Thomas Brewin, Thomas Brown, and Robert Brewin, who all belonged to the Society of Friends in my native town."

Clear as this account may appear to be regarding the motive which prompted Brown to come to Africa, it does not seem to me to give the whole

story. There is not even any record that he ever took up the post which was the stated object of his journey to the Cape. Nor do I believe that he left England solely in search of worldly wealth, although he certainly was in dire straits as regards money for his immediate needs. In later years there were Diamond and Golden will-o'-the-wisps in plenty beckoning him with their dazzling and shimmering rays, yet he took no notice of them. Not that these precious things had no interest for him, for, as a geologist, he wrote much about them later on with typical serene detachment.

His whole life shows clearly that it was not primarily for material gain that he sought these shores, but rather that he came in order to fulfil some ill-defined spiritual mission and get such attendant rewards as were his due. At any rate, whatever the motive, it was a lucky day for South African science when he was led southward on his voyage of discovery. It is equally clear that he himself, in spite of his many trials and disappointments, lived to reap the richest of all recompense, the joy of inward satisfaction.

The first entry in Brown's self-mutilated Journal gives a faint clue as to something else that was in Brown's mind before he left England. Therein he recounts his righteous indignation at

having been unjustly accused of canvassing the town of Penrith with a view to tempting pupils away from other schools, so that they might be sheltered under his own denominational wing. There was thus also some trouble of the indwelling spirit, some little local tea-pot storm, but it at least helped to tear up his weakened English roots. After all, a touch may launch an ocean liner, so why should this gentle ' breeze ' not have been enough to waft that tiny bark across those Permian seas !

The second entry in his Journal minutes Brown's last solemn day in Penrith, a day of church attendance, of prayer and parting meetings, and a dedication to some High Calling.

In the third entry he plunges into his *magnum opus*, " Memoranda on a species of Monitor or Varan, styled by me ' The Cape Monitor,' and being either the Monitor albogularis or a variety of it."

This is the high resounding title he adopts for the record of his sixty years of research into the habits of that rather large South African lizard, popularly known as the iguana or likkewaan. Thus bluntly are we introduced to one of the major passions of Brown's life, his love for reptiles. But he is too impetuous, far too impatient to expound the virtues and, with charity, the vices

of his loathsome pets. He surely cannot have expected the ordinary reader to share his queer repulsive taste so suddenly.

Had he been a Botanist, he could have proceeded at once to enlarge upon the beauty and perfection of any new flora he might have discovered, and every Tom, Dick and Harry would have followed him sipping nectar from flower to flower. Had he been a lover of birds and butterflies, he would have been sure to have a number of good companions, chasing about with him or listening to the warblers. Had he stooped to study ants and bees he would still have earned the generous toleration of the multitude. He might even have found a select circle of readers sufficiently interested in his researches to peruse them, including probably a poet to point that moral to the sluggard, which is usually drawn from these industrious creatures. But to dote on reptiles, that is another matter, that is quite beyond the human pale. Verily he must have been a gogga !

Yet the real truth is that this low Order of the Animal Kingdom has a strange fascination for a rare intellect here and there. Moreover, it is usually to an exalted type of mind that these despised creatures make their appeal, for it is only a character combining nobility and humility of soul that is prepared to understand and to

learn from the meanest things in Creation. In short it would appear that, whilst any one of us might become a Naturalist in the realm of flowers or birds or even insects, it is only he who is ordained by God himself who is qualified to minister in that rejected Kingdom of creeping things.

We talk glibly of Recording Angels, never pausing for a moment to contemplate the amount of clerical work that is involved, if such a Hansard has to be kept going for every day in every life. But if anyone is curious to see what such a record actually looks like, he should have a peep at Brown's amazing folios. For therein are minuted to the last detail the observations of a long lifetime on the loves, the hates, the hopes, the fears, the every move of his weird reptile wards.

'What a waste of effort,' you may say, 'on such degraded emotions!' But do not forget that he was recording such sentient life as breathed upon this world for millions of years before it was as we now know it. These were the low vertebrate passions that once held majestic undisputed sway, scornful of the lesser spineless things that had preceded them, oblivious of the mighty fall that was in store for them. Let us not be too sure that there is no similar purgatory

waiting round the corner for humans who lounge as lizards or lie await as snakes in grass!

It is easier, however, to moralize on Brown's imperious infatuation than it is to condense his long tale of tireless constancy into a few fitting words. And, if I hesitate at this stage to fly off the little circle I have planned to follow on to this one of his many infinite tangents, I have a good excuse. I have not yet brought my hero out from England to South Africa.

Chapter III.

HIS JOURNEY TO SOUTH AFRICA.

An account of a voyage to the Cape in the late fifties of last century would have been as the cool waters of an oasis to those who travel with me through this desert of the fossil world, but Brown's pressing caravan had no time for such refreshment. He did actually make notes on his journey to South Africa, but, whatever the impressions of this observant man might have been worth to us, they ultimately lost all value to him, and were destroyed with those early pages in his Journal to which I have already referred.

We do not therefore know what effect the sight of that first stark mountain, which he saw from Table Bay, had upon him. Why should he keep the picture post-card of it which he had made in words, when he had painted for posterity his more massive canvas of the Stormberg mountains, when he could see from his back door the thrice prouder peaks of the distant Malutis in Basutoland? Was this voyage not just the drab and dreary means by which he reached what was to him his infinitely more important end?

I have, however, been able to drag some details of the journey out of him. These I have culled from a letter which he wrote to a banker friend in England, seven years after he had arrived in South Africa. Brown evidently attached great importance to his correspondence, as he copied methodically into his Journal all the letters he received and all the replies he sent out in return. This is very fortunate, for there is nothing so revealing and at times so damning as a letter, and that is what is needed by the biographer. It is not that there is anything in Brown's letters but what is to his everlasting credit, and they were of studied phraseology and content, but by their very nature they divulge where he seemed inclined to conceal, and they certainly illuminate a great deal that would otherwise have seemed mysterious.

In the above-mentioned letter Brown relates how he first of all took ship to Holland, where he stayed ten days before embarking on a Dutch ship bound for the Cape of Adventure. He says not a word about the weather or the navigation, nor does he mention that great new constellation of the Heavens, the Southern Cross, to which he fell heir, as his ship headed towards the warm and genial South. He did not enjoy that at all; his mind was too full of the discomforts of the

voyage, and it was not that he was a bad sailor or had the usual grouse about the food. No, hermit as he was by nature born, he just could not stand the close companionship of the life that one must lead on ships.

So in genuine and unforgiving disgust, but just possibly that callow youth might impress his straight-laced banker with his moral stability against temptation's storms—for he is at pains to impress him with his financial soundness—at any rate, whatever the motive, this early-Victorian, seven years later, gives his good but rough Hollander companions away. In his eyes they had committed the unpardonable crime of smoking both before and after meals and all day long. What was still worse to this lifelong teetotaller, they were too fond of drinking what he politely calls their 'ardent spirits.'

Brown's ship called at Cape Town, and between that port and Port Elizabeth, where he was disembarked, he contracted confluent smallpox. It is clear also that he must have had a very bad attack, as he states that he had four doctors looking after him. Whatever gratitude he may have had for their services is, however, not expressed; it was completely overshadowed by the fact that he had again exhausted all his money, and even bore a load of fifty pounds of debt.

As soon as he had completely recovered from this fell scourge he set out for the interior, making presumably for Aliwal North, and probably on foot, for there were no trains, and he had no money to pay for post-carts.

It is pleasing to note that on his journey inland he enjoyed that wonderful hospitality from the Cape Dutch farmers, which every early traveller has recorded, and which even modern ones know that they can still expect to receive in these lonely widely-separated homesteads. There the trekker knows that, as the sun goes down, he has only to make for some little whitewashed gable or some dimly lighted window to be sure of sharing the evening meal and getting one of the best rooms in the house to sleep in. In these days of motor cars and modern hotels this delightful feature of the olden days is not so often taken advantage of, but the Karoo is still a good place for anyone who chances to be benighted. It still happens there that the children are turned out of their warm beds on to the hard floor, in order that some passing stranger may sleep softly on down and yielding springs. Early-morning coffee is still on tap for every guest, followed by a good breakfast, even if the larder should be strained and others go hungry. Then a firm grip of the

hand settles all accounts, and the traveller starts refreshed upon another lap of his long journey.

Such were the good Samaritans that this young Englishman encountered on his northern trek, and to whom in later years he was so much indebted for generous hospitality on his numerous scientific expeditions. At this time he was specially obliged to them, for he could not, like most other callers, give these intelligent people the value of a newspaper in return by telling them what was happening in the big outer world. He did not even have that minimum of Afrikaans which gives access to the Afrikaner's heart, let alone his mind, but he carried an open passport to his soul. For, as these upright people were shrewd enough to see, he was a man of God, and as such just one of their own selves.

Why was Brown heading for Aliwal North? To-day one could understand this choice, for Aliwal is the most attractive inland town in the whole of the Cape Province. It has an almost perfect climate, and a magnificent setting on the southern bank of the Orange River. The town is beautifully laid out with wide tree-lined streets, bordered by rich gardens whose thirst is quenched by water from ever-running furrows. Aliwal is not only a busy little commercial township easily reached by rail or national highway: she is also

a famous Spa. Nature has lavished a permanent gift upon her in the shape of Hot Mineral Springs, medicated with all the best healing salts, and heated to the right temperature of the human body. Certainly Aliwal North to-day has many attractions for the visitor.

But in 1859, when Brown arrived there, the township had only been laid out five years previously. It had not even a church, that foundation-stone of most South African villages. I doubt if it had a school, to found which seems to have been one of Brown's main objectives. It was, however, the centre of a large magisterial district with a Resident Magistrate, and there were a number of private houses and one or two stores, as these emporium shops of Africa are still called.

Fate, however, was as usual playing her strong hand in man's affairs, and she had determined that this was the place where Brown should pitch his tent and unload his scientific caravan. Where else in the wide world could she have been so sure that her Colossus would meet with his colossal affinity? She knew that he was bent on studying the earth's crust, and that he was more interested in forgotten worlds than in the present one. What would have been the use then of taking him to those ordinary places, where humans

do their piffling little digging and achieve no more than a hen can do by scratching?

So she brought him where some great Vulcan-smith with awful force had crushed that little nut-ball earth between his mighty pincers, cracking its hard shell and spewing through its crevices the soft kernel of molten metal matter that maggot-man now feeds and fattens on. She introduced him to that Old Man, Orange River, who showed him the deep gash he had made on the face of Africa, as he scooped out his terraced million-year-old bed. This old rascal also pointed out to him the sluits and dongas from which he had carried whole mountains on his back down to his distant sea. Where else could Brown have got so near to fathoming the unfathomable than here where Hot Springs bleed bubblingly from the very bowels of this earth? Where was his Elysium, if not in this land which lodged the living Monitor and the dead Dinosaur of his beloved Reptile World?

Chapter IV.

HIS EARLY STRUGGLES.

To describe Brown's struggle with adversity during his early years in Aliwal North, and especially the extent of self-denial to which he subjected himself, particularly in regard to food, might harrow my readers' feelings, but would not make much headway with his story. We will content ourselves with an extract from that letter, dated 1st January, 1866, which he wrote to his banker friend and in which he says: "In February, 1859, I opened school at Aliwal North at a salary of £120. (His income never at any time exceeded £160.) In 1860 a library was started which I have been librarian of until this day (actually until 1901). At the end of 1860 I was inadvertently considerably in debt, but at the end of 1862, by living on bread alone for a month at a time, with denial in clothes, by Divine blessing I surmounted all my difficulties, and sacrificed all my books in so doing.

"In January, 1863, I was appointed postmaster and postman (which post he retained until 1882). In 1864 I received presents to the amount of

£120, as a testimonial of the regard of the townspeople, and managed to save enough to bring me to England, intending only to wait until I had a small sum clear of all expenses. In March I received a letter from one in England which threw me into a state of despondency and dashed all my hopes, intentions and prospects to the ground. But now was manifested the good will of the inhabitants (through the Almighty) towards me in an unlooked for manner, which acted as balm to my wounded spirit and rescued me from despair. In March I received the letter which was the downfall of my hopes in the future; in June I sold most of my books, which realized £22 10*s*. At the end of 1864 I voluntarily gave up the school, and found myself reduced to £50 for 1865, but from this, with debts which were due to me, I managed to live to the wonder of the townspeople. As it now stands this is my position—piece of ground worth £150, salary postmaster and postman £81, Acting Resident Magistrate's clerk £42, cultivation of land £21, making for the year 1866 an income of £143.

" I have also collected about three thousand specimens, illustrative of fossil teeth, jaws, bones and skulls nearly entire, of extinct mammalia and reptilia. Two hundred and fifty specimens of teeth, jaws and skulls of recent mammals and

reptiles. Four hundred and fifty agates, etc., minerals and peculiar stones, Kaffir curiosities, etc. In fact, six years of spare time of my life in South Africa have been devoted to researches in geology, and according to some scientific men here my collection of teeth, jaws and woods of other ages is unique and superior to many large collections in the Colony."

The above letter makes reference to some great tragedy which was the turning point in his life. In a previous letter he laments the loss of that Quaker Maecenas who had helped him so materially when he was in difficulties, and, what was just as important, with good counsel and advice. But what was this second calamity that left him so disconsolate? It can only mean that he had been jilted by some village Venus, with whom it was a case of 'out of sight out of mind,' or she may have been a Siren of whom he was well rid.

This certainly was a 'bolt from the blue,' and it was sufficient to make him break forever with his English home, but it did not quite kill his interest in the fairer sex. For, a few years later, he had evidently begun to eye at least one girl over his Post Office counter, and, shy as he was, he actually had the courage to write to her. This is the only love-letter in his Journal, and in as

much as it is quite typical of such mid-Victorian epistles I have decided to divulge it.

Letter of 22nd July, 1871. "Permit me to forward you the enclosed contribution to Natural History, being the result of studies of former times, but discontinued and abandoned for more than two years, having disposed of all conveniences for the purpose. I enclose also an extract from a letter sent to me by a Professor of Science in Cape Town, who gives the views of a lady, personally unknown to me, on my essay. As it has evidently given pleasure to one unknown lady, perhaps another lady who is known may find something in it to appreciate. Also pardon me, if I have done wrong in writing to you, which I sincerely hope I have not, and kindly let me know as early as possible whether the paper is acceptable, and whether I can send you any more magazines etc. Had your departure not been so sudden, I should have availed myself of the first opportunity to ascertain your sentiments on my conduct in sending you the magazines, but having no opportunity, except at the office, I thought it not fair to take advantage of your calling on business, lest I should prevent you coming again.

"As I am anxious you should receive this letter, or in the event of any accident it should be returned to me, I have for security registered

it, so that it will not fall into other hands. Hoping you receive it safely at your present destination, and that you will favour me with a reply consonant with my desires,

" I beg to subscribe myself,

Yours faithfully,

A. B."

Scientists at the best of times are not ideal husbands, in that they are more apt than other men to carry their work as well as their worries home with them. An amateur scientist is even less qualified for matrimony, for he has no place but his own house in which to carry out his investigations ; but a Naturalist who wants to make his home both a Museum and a Menagerie at the same time, well, he has no right to think of marrying at all.

This the lady knew more about than Brown imagined, so she helped him to make his final renunciation by not replying to his registered letter. Without a doubt this is the pivot on which Brown's life turned. From now onward his back was to the modern world, his face towards Nature and the Eternal in perfect sublimation. But, if I may be permitted for once to read between Brown's cryptic lines, I think I see some evidence that the

lady never forgot the constancy which he had shown to her by lavishing it on other things. Years later, she seems to have sent him a complimentary cake on his birthday. Like the stupid male he still was, Brown took this to mean, if not a change of heart, at least a tinge of regret, and he makes a fatuous entry in his diary, which shows that he was still living in the Land of Might-Have-Been.

Chapter V.

HIS RESEARCHES ON FOSSILS.

In the previous chapter I gave a quotation from one of Brown's letters, in which he referred with some pride to those fossils that he had collected during his first six years in South Africa. He may, like many an amateur, have been unduly pleased with his first efforts ; let us see therefore what Huxley, the great palaeontologist and comparative anatomist, thought of them. In a letter written to Sir R. I. Murchison, and dated 2nd Oct., 1866, Professor Huxley wrote :

" My Dear Sir Roderick, Mr. Brown's box was unpacked on Saturday. Of the three hundred and fifty specimens, the majority consists of vegetable remains with numerous fragments of Dicynodonts and (I suspect) Labyrinthodonts. None of these, however, are sufficiently perfect to enable me to make any addition to our present state of knowledge, and I was beginning to be a little disappointed with my ' haul', when I discovered that, in Mr. Brown's box, as in Pandora's, hope lay at the bottom.

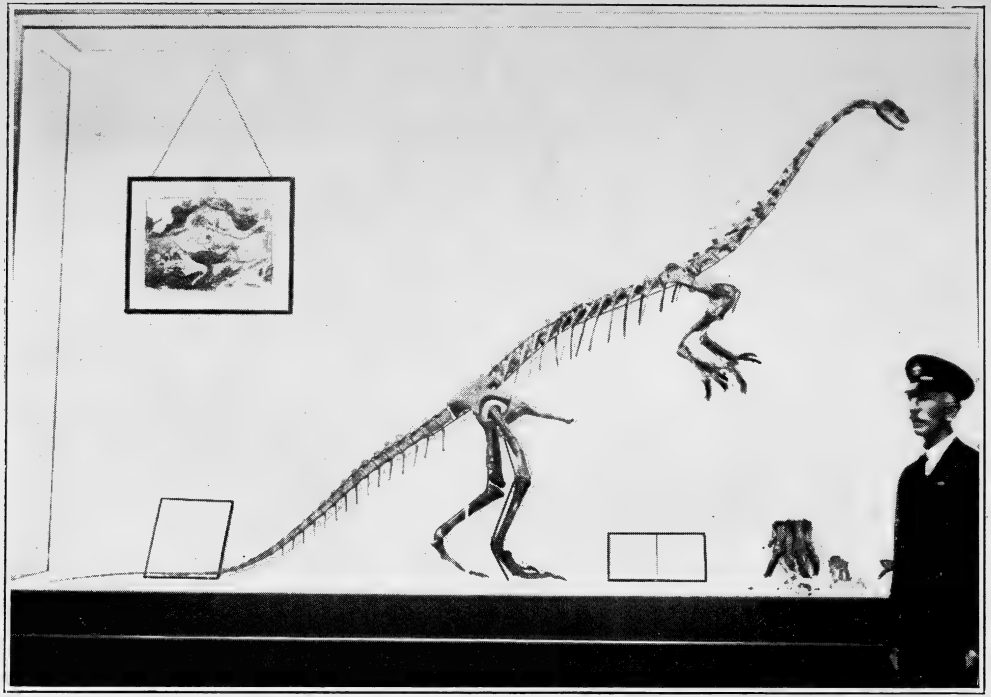
The great fragments from the Stormberg range are portions of the thigh-bones of a great Dinosaurian reptile as big as Megalosaurus and probably nearly allied to it.

This is the first time that any reptile of this group has been found fossil in South Africa, and as in Europe Megalosaurus and its allies are essentially mesozoic, it is highly probable that careful exploration of the Stormberg beds, and careful tracing out of their connexion with the dicynodon-bearing strata, will throw great light on the geology of South Africa. Mr. Brown says he can get more bones from the Stormberg rocks. I earnestly trust that he will do so, keeping a particularly sharp look out for teeth, vertebrae and articular ends of bones. In the meantime I will send a notice of the new beast to the Geological Society, giving Mr. Brown all the credit so energetic and intelligent a worker deserves. The account he gives of the fossil discovered on the 24th May is highly interesting, but at the same time perplexing. I trust he will send it as soon as possible."

Brown was elated when he received this letter of Huxley's from Murchison, for it showed in the handwriting of the reigning master of Comparative Anatomy that he had begun to deliver the goods. Accordingly he wrote directly to

Huxley a few months later telling him how he had got five days' leave and, having procured a wagon and oxen and the services of four natives and three white men, he had gone to the Stormberg rocks in search of more of the dinosaurian remains. The expedition had been fairly successful, and he had obtained a number of bones of the foot. He also offered to send Huxley the skulls of any recent South African animals in which he might be interested.

For some reason or other Huxley never replied to this letter. He was busy, of course, and he may have hesitated to poach on what were clearly Murchison's preserves. Brown had also written in the above strain to Murchison, telling him of the specimens which he had now sent off to him in a second box, and, as if to whet his appetite, informing him that he had a marvellous ' principal animal ' which he proposed to send in a third box. About this important specimen Brown anticipated a later scientific verdict upon it, when he wrote " If my immature judgment does not deceive me, I have every reason to believe that the animal possesses characters appertaining to the Saurian and the Mammal." Of the contents of a fourth box which he intended also to send he wrote : " I shall have, when finished, a most singular animal of moderate bulk, but having extraordinary



[*By courtesy of the S.A. Museum.*

Massospondylus harriesi. Broom. From the Red Beds of Blikana, Herschel, Cape Province. This is one of the smaller dinosaurs that lived in South Africa near the beginning of the Age of Reptiles.

spinal processes, bifid ribs and medullary cavities in the limbs. This singular animal is from a bed of shale at the base of the Drakensberg."

The contents of the second box were acknowledged tardily, and for years could not be traced. The third and fourth boxes were never sent, to the great loss of British science. Murchison was not nursing his protégé with suitable tact, far less encouragement. Brown was prepared to continue to send fossils, but he expected at the least to get help and guidance in his own studies in return. He would indeed have been grateful for some financial assistance to enable him to carry out his excavations on a more suitable scale, and to make it easier for him to pack and forward his giant parcels to London. He was, however, too proud to ask for money, although he got his chief, the Magistrate of Aliwal North, to write to Murchison explaining how he was only a poorly paid clerk in his office, but the hint was never taken.

There was thus at this early stage in Brown's career some concatenation of circumstances that went against him. There is good evidence even that he was the victim of a cruel piece of deception, for it would appear that some wicked impostor posed in London in scientific circles as being the discoverer of the Stormberg fossils. If such a rascal did get the ear of either Murchison or

Huxley, one can well understand how quickly they would see through him and hesitate to have any further dealings, especially financial ones, with such a person.

A London scientist of a later generation, namely, Professor H. G. Seeley, the famous palaeontologist, was no more successful in his handling of Brown. In 1889 he paid Brown a visit, and took away on loan a large collection of fossils for examination. Fifteen years later the Keeper of Geology at the British Museum, in whose charge the Seeley specimens had been left, suffered some prick of conscience, since he wrote to Brown asking him whether he would care to become enrolled among the benefactors of the Museum or alternatively, would he take £40 for his specimens? Before deciding upon which of the alternatives he would accept Brown wrote to the Keeper and facetiously asked him just what was meant by becoming 'enrolled as a benefactor'? Did it mean that his name would appear somewhere, for he had noticed that the first fossils he had sent over were entered in the catalogue under Huxley's name? This he thought was the least form of encouragement and recognition that amateurs, like himself, were entitled to. Upon being reassured on this point, namely, that henceforth his specimens would be entered as belonging to the 'Brown

Collection,' he did what he was now well able to afford to do and what he had long intended doing, namely, he presented the specimens to the Museum as a gift.

On the whole, therefore, the Londoners had proved themselves to be broken reeds. In the early days the last straw, that broke the connection, was their failure to send Brown a single reprint or record of what had been published concerning his discoveries. He saw notices in the local press and in oversea magazines about the discovery of dinosaurs in South Africa, but he had to pay 32/- for a bound copy of the Quarterly Journal of the Geological Society in order to see what Huxley had written about the anatomy of his own fossils, and in point of fact to see the names of his first big offspring, namely Euskelesaurus Browni, and Orosaurus (later changed to Orinosaurus).

These rather galling experiences and disappointments that Brown encountered in the pursuit of his researches were bad enough in themselves ; but he felt them all the more because he was so badly in need of some support to bolster up his self-confidence, which was always at stake amongst those village associates who were inclined to ridicule his work. As an example of the sort of criticism and fooling which he had to endure, and

because a caricature, even if somewhat malicious, is not without its value for the way in which it exaggerates characteristics good and bad, consider this contemporary picture of Brown. It appeared in the *Aliwal Pioneer* in 1861, under the heading "Sketches of men, institutions and manners," and purporting to have been written by Brown himself, proceeds as follows :

"The first in order is myself, Horatio, my height is about five ells from the soles to the top of my wide-awake. My hair is brown, my clothes are brown, my face, nose and hands appear as if I had been done brown somewhere and by something. My gait is quick and business-like, and my eyes are ever in the heavens, unless a flying Dutchman or fossil extraordinary trips on my path.

"When spoken to, my eyes (green as they ever are) are directed to my Chinese hookers, and I make it a rule to coincide in all that is said, let it be good, bad or indifferent. Although devoted in my calling as Secretary of the League, curiosity invariably leads me into many dangers. Sometimes I stand chin-high in the Orange River, then ford it by climbing those fearful precipices ; then angling for reptiles, then hewing rocks for fossil remains of Bushmen, toads and lizards, and after this dreaming horrible and nasty dreams. I use

snuff and mustard to stuff my birds and fish and monkeys with. My consulting rooms will be found at No. 300, Sadler's Hall, at the back of the Library, the other end of the terrace."

Brown fortunately was not one to be dissuaded either by discouragement or buffoonery. Besides, he had had a sufficient initial success to make him proof against all hostile and ill-informed opposition. More important still, he had a few select and very intelligent backers, who were confident that he would ultimately achieve great things, and who were ever ready to assist him with their own hard labour and by presenting specimens to him. Notable amongst these were Mr. A. W. Higgins and Mr. A. Alcock. Brown therefore threw himself with renewed vigour into his work of fossil-hunting, and his diary abounds in records of countless rambles and expeditions with varying success. Space, however, does not permit me to refer to more than two of these, which I now propose to give in Brown's own words :

The Stormberg Beds.

" Notes on a journey to the ' Stormberg beds ' in search of Dinosaurian remains, from Tuesday, 24th December, 1867, at 6 a.m. to 7 p.m. of 27th December. Also on an ensuing journey from

Monday, 6th January, to Thursday evening, the 9th of January, 1868. Being the fifth and sixth journeys to the Stormberg Mountains.

" *Miles travelled.*—During the six journeys, to and fro, and walking from the nearest point of outspan, and searching the localities, amounts to at least four hundred miles.

" *Journey No. 5 of 24th December.*—Persons to form the party, T. Dean ; Sweetman ; P. Murphy; Bull and two Kaffirs. Steward gives three horses. Lloyd one horse. L. Norden gives a wagon. Powder, fuse, crow-bar, two hammers and a jumper from C. Hockey. A large jumper from D. F. Webber. Other tools provided by me. T. Dean and Sweetman did not go according to their promise.

" *Expenses.*—Repairs of tools. Food 27/-. Powder etc. 8/-. Paid Bull 12/6. Total £2 13*s.* 6*d.*

" *Conveyance, etc.*—An ill-conditioned wagon with broken spring and shaft, band of wheel very loose and liable to come off at any moment, bed of wagon not very sound, and the wagon itself nearly worn out. Four horses very weak and with sore backs. A very saucy driver, and two Basutos who could do nothing in the rain.

" *On the Mountain.*—Tuesday about 2 p.m. went up to the mountain, about one hour's walk from Mollentzie's dwelling, and made a commencement.

Wednesday worked hard from 5 a.m. to 4 p.m. Peter Murphy bared the rocks and blasted them to about 12 feet, but found no fossils. I and Tehan's two boys, Piet and April, searched the talus of the rock and found several fossil bones in an imperfect condition. About 4 p.m. thunder weather—threatens to rain—return to Mollentzies. About 6 p.m. began to rain and lasted till midnight. Thursday awoke about 5 a.m.—clouds heavy—the whole sky covered—start for mountain—thunder the whole day—the surrounding mountains covered with mist and rapidly moving clouds—worked at the rocks—baboons. The fossiliferous rock just laid bare, when we were driven to the base of the mountain by a heavy storm. There were triple flashes of lightning to one peal of thunder. Baboons come near the wagon. After storm return to the mountain. Just secured a mass of rock containing three fine specimens of portions of two large ribs and portions of two massive vertebrae, when we were again driven from the mountain. Returned to Mollentzie's—rain all night—bad prospect for the morrow. Friday—heavy clouds—started for the mountain—just arrived to within ten minutes walk of the wagon, when the rain began—got wet. On the sky clearing a little, ascended the mountain, which was surrounded by mists—return with

tools—leave Kaffirs to bring the others—rain commences—arrive at the house of Mollentzie at 9 a.m. wet through. Heavy rain from 9 a.m. till leave Mollentzie's for town about 1 p.m. with bad travelling in front of us. From Mollentzie's to Alwyn Vorster's about two-thirds of the road homeward—heavy driving through the rain—having to go through thick mud and occasionally through large sheets of water. After leaving A. Vorster's, drove through a large sheet of water in a kind of marsh. On the opposite side found the water bounded by a sluit, having about three feet of mud at the bottom, and more than two feet of rapidly running water—obliged to return. The anxiety about being late for this evening's post put one to all the succeeding inconveniences. At 4 p.m. I and P. Murphy walked about in the water to find a passage for the wagon, but could not. Wet and cold—occasional heavy rains—turned with the wagon into the open country—managed to double Melkspruit—helped by Jacob Venter who came to guide us and three others. Two drifts were made with difficulty in the rain—at last reached the main road. The horses worn out. In order to be in time for the post I and P. Murphy walked the last nine miles in the rain. "*Result of the journey.*—Had just exposed the fossiliferous bed, when the weather put a stop to

further operations. Brought home a large number of bones; about one hundred and fifty in a fragmentary state—found in the talus—consisting of portions of limbs, ribs and foot bones. Also secured a large block of rock, 2 ft. 6 in. long, 18 in. broad, and 12 in. thick, containing the remains of three finely preserved ribs and portions of two vertebrae. The mass of rock was secured just as broken from the strata.

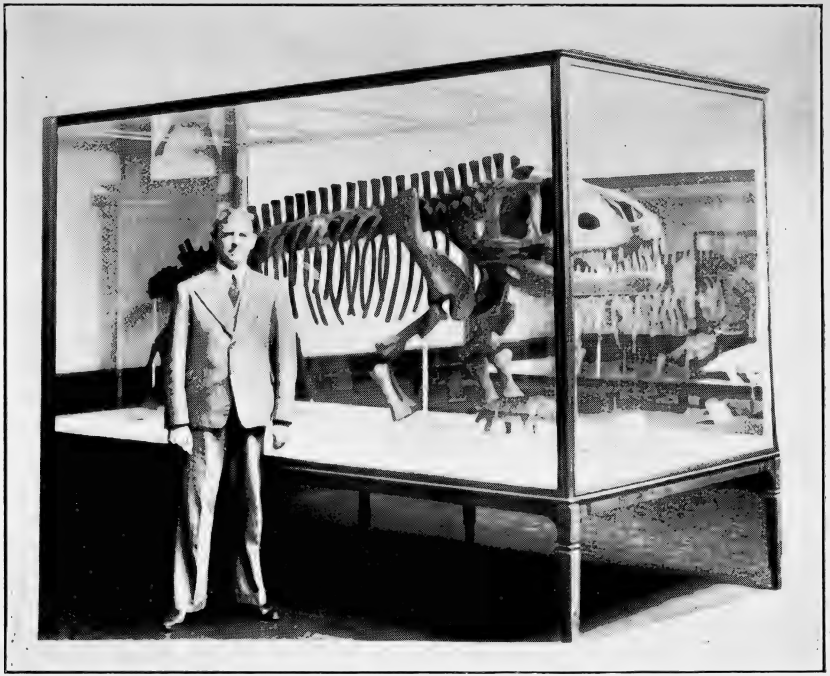
" *The ribs and the vertebrae.*—The ribs are very large, resembling a stout crow-bar in dimensions and strength. The vertebrae are worthy of the ribs, being about five inches in diameter, of massive proportions, and having the spinal canal about two inches in diameter.

" *The bed containing the fossils.*—The sandstone is a compact freestone rock. P. Murphy, who has travelled hundreds of miles in Africa and opened several quarries, says that it is the hardest stone of its kind that he has ever seen, and that it much resembles freestone. The bed is very compact, without lamination, and breaks in any direction. The stratum containing the bones is highly indurated, as if trampled by the feet of reptiles engaged in a deadly combat. The stratum is for a few feet curved in every possible direction—not after its formation by volcanic disturbance, but while still in a soft state by the

agitation of the monsters and subsequent irregular and interrupted covering up of the bones. This peculiar state of the stratum I observed more than once, and I then realized the idea of there being here the remains of more than one reptile, before I received Professor Huxley's report as given in the Quarterly Journal of the Geological Society which I bought . . . .

" *The sixth journey to the Stormberg beds.*—Left Aliwal on Monday evening, 6th January, 1868; went with me Peter Murphy, and Henry James Wright. A cart from Thomas Butler. Horses from P. Crowley. Brought home a fine collection of fossils. Found no fossils except in the wedge-like mass. Tuesday 7th, Wednesday 8th and part of Thursday 9th on the rocks. Thursday evening arrived in Aliwal after a three and a half hours ride. This journey was got up for the express purpose of bringing home the fossils which were exposed on the fifth journey, and to supplement it by further researches. The fossils are carefully stored and will be examined at the first spare time I have . . . ."

There is no need to adorn this simple yet thrilling tale of personal sacrifice and no small degree of human hardihood, all offered up so freely on the altar of science. Yet it is my privilege to tag on its moral, and it is this. If



[*By courtesy of the S.A. Museum.*

Erythrosuchus africanus, Broom. A large fossil crocodile discovered by Alfred Brown, near Aliwal North, Cape Province. The author occupies the foreground.

a mere clerk with a miserable pittance of a pay could conceive and carry out such a mighty assault upon the secrets of the Stormberg mountains, why cannot our scientists do the same to-day? Why do they sit waiting for grants that never come, instead of being like Brown and fitting up an expedition to get on with the job?

If poor villagers of long ago could, for the cause of science, lend their ramshackle wagon and that cavalcade of lean tired horses with which they earned their livelihood, why cannot those with racing stables and motor cars see that the duty is no less to-day? If Mollentzie could give the warm shelter of his humble homestead to this band of drenched explorers, surely those who dwell in mansions will not forget that men who hew the wood of knowledge and draw water from the well of truth still need a sheltering roof. Those heroes who gave up their Christmas dinners for the bare bread of science, who defied the angry Stormberg gods and stole their dragons, those men of men, where are they now? Surely Chivalry did not die with them!

Chapter VI.

PARIS AND VIENNA.

After his disappointment with the Londoners Brown cast about in search of a new anchorage, for he was drifting hopelessly in that still uncharted sea of palaeontology. Through the kind offices of several members of the French Mission in Basutoland, with whom he kept up a lifelong correspondence on scientific matters, he was put in contact with the authorities of the Museum of Natural History in Paris.

The Director, Professor A. de Quatrefages, wrote to him saying how delighted he was at the prospect of getting a batch of fossils for examination. He nominated Professor d'Archiac as the expert who would describe the specimens, and he promised (1) that he would communicate the results of his investigations to him, (2) that he would consider it more a favour than a due to send him some books on geology, etc., and (3) that the Imperial Museum would bear completely all charges and expenses incurred in sending the specimens and fossils.

Brown was pleased at getting this definite promise in black and white, and he set about fulfilling his side of the contract. At the first

opportunity he packed and shipped a good collection of fossils, most probably those which he meant to send to London, had things gone better. These were addressed to Professor d'Archiac, but they never reached him; an accompanying letter was returned marked "gone, left no address." Professor d'Archiac, he found out later on, had become a monk in the Monastery of La Trappe!

After correspondence lasting over a year the box was ultimately located in Paris, and put into the good hands of the famous E. Lartet, who had been chosen to succeed d'Archiac in the Chair of Palaeontology in the French National Museum of Natural History. Lartet was then an old man and thoroughly engrossed in revealing the artistic culture of the Reindeer Age of Europe, so that he could have been excused from taking any very great interest in fossil reptiles. Besides, it was 1870, and the Germans were overrunning France. Nevertheless he wrote long encouraging letters to Brown, his last one being an apology for dilatoriness in replying to Brown's letters, which had been unavoidable on account of failing health. In the midst of this correspondence Lartet died without giving his first lecture in his new Chair, and without Brown knowing what had happened to his new-found friend.

Time passed and Brown's patience with the Parisians was naturally becoming severely taxed. It is not surprising, therefore, to find that at this period he was beginning to accept overtures on behalf of the Imperial Museum in Vienna. He was being overwhelmed by the amount of new material he had collected in the interval, so that he had to get some outlet for it. Besides, the arrangement with the Parisians had not worked too smoothly or too satisfactorily from Brown's point of view. All the correspondence had to be translated, for Brown was no French scholar, and he was not the man to do his letter-writing in such fierce lime-light. He certainly had received from Paris a fine collection of fossil shells from the beds of the Seine, and, what pleased him most of all and practically satisfied him, a set of ' choice volumes ' on geology and palaeontology. But he had not had any report on his fossils nor any repayment of his outlay in forwarding them. It is true that he eventually received an excellent account of his specimens, which had at last been studied by P. Fischer, but this took the unconscionable time of eight months to reach him. Addressed to him in 'Afrique-Australe,' it had gone on a trip to Australia, before it was finally delivered to him !

Meanwhile the Austrian Consul in Port Elizabeth had been dangling various baits in order to land Brown's collection in the Imperial Mineralogical and Geological Museum of Vienna. Although a business man, he never tried to negotiate in terms of money, for he knew that the Imperial purse had to spend too much money on those armaments that alter the course of present-day history to be able to afford much of a contribution towards the elucidation of pre-history. So he baited his trap with promises of Imperial favour, pointing out how the Emperor himself had presented a diamond tie-pin to one who had brought back specimens from an Arctic expedition, but Brown was not biting this bait.

He therefore tried another one for which Brown fell. He promised to get him a Diploma. Accordingly the Consul wrote to Professor F. V. Hochstetter of the Imperial Museum requesting him to nominate Brown and see that, in return for sending specimens, he was elected as a corresponding member of the Imperial and Royal Geographical Society of Vienna. The reply was favourable, so, in his anxiety to close the deal, the Consul caused a notice to be put in the local Press announcing that " the respected postmaster of this town could now style himself as Mr. Alfred Brown, F.G.S.V.," and he wrote asking for the

specimens to be sent on. Brown replied that he had read the rumour in the press, but, as he had not yet received his certificate, he was not prepared to send the fossils in the meantime. Still importunate the Consul wrote to Brown assuring him that he was not only a F.G.S.V., but a F.I. and R.G.S., and asking incontinently " when is your collection coming ? " In due course the piece of paper that was to Brown an " honour and a source of keen delight " arrived, and he immediately sent off the box which he had ready waiting ; but it was never acknowledged or reported upon, and that was the end of Vienna.

For twenty-five years Brown had thus pursued his thankless task of collecting fossils and sending them oversea to be described. It is not surprising therefore to find in his letters of this period indications that he was thinking of " abandoning this anything but paying work of searching for specimens " ; but that he was " hoping almost against hope that he would meet with some encouragement yet ". Two interests helped to tide him over this difficult phase and prevented him from lapsing completely into despair. On the one hand there were his researches in Natural History which he had commenced about the same time as his geological ones. These were steadily progressing, and he was filling volumes with notes

upon his reptile pets, which were a never-failing source of joy and comfort to him. On the other hand he had entered into a new world in his rambles on the veld. He had begun to explore the human period of pre-history. All round about him and conveniently close to his very door he was discovering the implements and other traces of the pre-Bushman inhabitants of South Africa. In 1897 he wrote : " The excitement of finding specimens illustrative of the antiquity of man has given me a fresh impetus in research."

Chapter VII.

RECOGNITION AND COMRADESHIP.

He did not need to rely on these two consolations for very long. There were signs all around of a liveliness in the South African beehives of science, and quite a number of these busy bees came buzzing round Brown's sugar-pot of crystallized saurians. But he shooed them all away except one business-like fellow named Broom, to whom Brown took quite a liking. Once, however, when Broom took a fancy to sample another of Brown's sugar-pots containing anthropological 'preserves', even he got a swatting that he remembered.

On the whole Broom got on very well with Brown, and he seems to have been the only scientist who ever gained anything of the small confidence Brown had in human beings. The reason for this is that Broom set about gaining his confidence in the right way. He did not make the mistake of writing a preliminary letter, which other scientists had all done in their keenness to get some privilege or other in connection with his

specimens. He thus avoided a certain snub, for Brown replied to all such letters in the same strain, pointing out how his collection had been got together at great labour and expense and could not be removed from its setting, but it was open for inspection by suitable arrangement. Instead of making this initial *faux pas* Broom paid him a telling compliment: he visited him. He took the further precaution to get his medical colleague, Dr. Kannemeyer, to go along with him and introduce him to Brown. For Kannemeyer, that other great South African Naturalist whose praises have still to be sung, was a life-long friend of Brown's, albeit something of a rival.

These two cronies shared the same pursuit of fossil-hunting and implement-collecting, and they met on frequent occasions to compare notes and finds. It is very amusing to read Brown's obviously naive account of these interviews. First of all they exchanged genuine compliments, and with good reason, for the one had nearly always a bit of a new beast, that no other human eyes but theirs had yet beheld, to show the other. Then they fell to slightly jealous remarks about the richness or poverty of their respective hunting-grounds, the one in Aliwal, the other in the neighbouring district of Burghersdorp; and there was something of an understanding that

they should not trespass on each other's preserves. This is succeeded by a complete reticence or at the best a most cryptic indication as to where the great find had been made.

At one stage in Brown's correspondence the question of poaching does actually arise, for the British Museum thought that the head of a new animal, that had been sent to that institution by Kannemeyer, belonged to the same individual as a tail-end which Brown had sent to the South African Museum. Commenting on this Brown wrote that he did not think that the two parts could have belonged to the same animal, because he had made it a rule to cover up, as far as possible, all traces of his working at the spots where he had found his fossils. A stranger would therefore have to rediscover the site. Besides, Kannemeyer had always been very friendly, and would probably have told him of any discoveries on his terrain. Kannemeyer for his part was also able to satisfy the experts that there was considerable discrepancy in the localization of the two finds, so that it was happily decided that the parts did not belong to one animal after all.

This secretiveness on the part of Brown was a regular obsession, and it is one of the few bad traits in an otherwise very fine man. It has also rendered his records much less valuable than they

would otherwise have been. When asked for exact details of the site of his discoveries he always seems to me to have hedged and kept some little essential back. In his later years he must have suffered some self-recrimination for this weakness, for with all his methodicalness it turned out in the end that he had actually hidden from himself some information about his earlier specimens which had grown in value with the years.

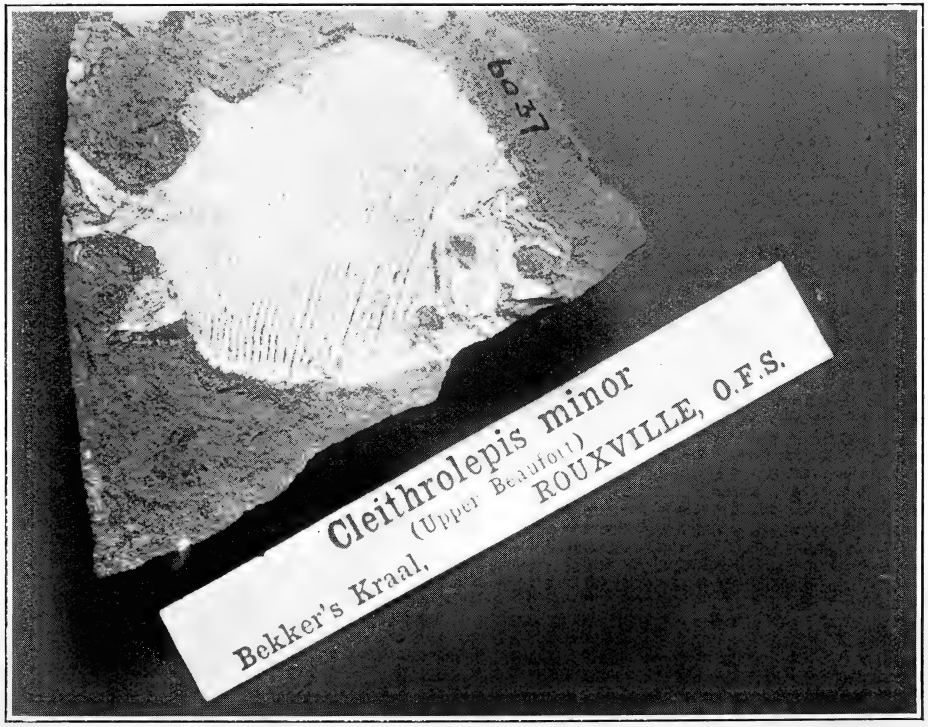
He was also taught a humiliating lesson in this direction, before he died, by more than one visiting scientist. Brown thought that he had acquired a complete monopoly of the knowledge of the secret hiding-places of the fossil plants and animals in his area. He was flabbergasted, however, to find that his visitors, with their expert knowledge of the strata, enjoyed quite good sport in his part of the world without needing to use him as a gillie.

I have had to show the kind of reception that was waiting for Broom, and how carefully he would have to play his cards, if he was to get that access to the fossils for which he hoped and had travelled a thousand miles. Broom was fortunately well suited for the game he had to play with his ultra-cautious host. He even had that useful trump which Kannemeyer had often

played to relieve the scientific tension. He was a medical man and could give a tip or two about what was good for the health, hints which Brown jotted down as eagerly as he did pronouncements upon the genealogy of his fossils, for the old man evidently had an occasional minor ailment, and no wonder, after all his earlier privations.

But it was when Broom set to work upon the specimens in earnest that Brown realized that he had a fellow Trojan as his guest, yes, a Trojan with the sleight-of-hand that charms a rabbit from a hat. For, taking off his coat, Broom fell upon his fossils with chisel and mallet, and hey presto! to Brown's delight, a wondrous face, with skull and jaws and teeth complete, gazed at him out of that two-hundred-million-year-old rock.

After this good beginning Broom got his own way with things for a few days, and the partnership of Brown and Broom was thoroughly established. But, although Broom had filled his own note-book with copious notes, illuminated with those truthful sketches which he is so good at making with his lightning hand, he had merely scratched the surface of Brown's stupendous collection. He had seen enough, however, to satisfy him that it would take ten years to describe Brown's fossils scientifically, so he made his plans accordingly.



[*By courtesy of the S.A. Museum.*

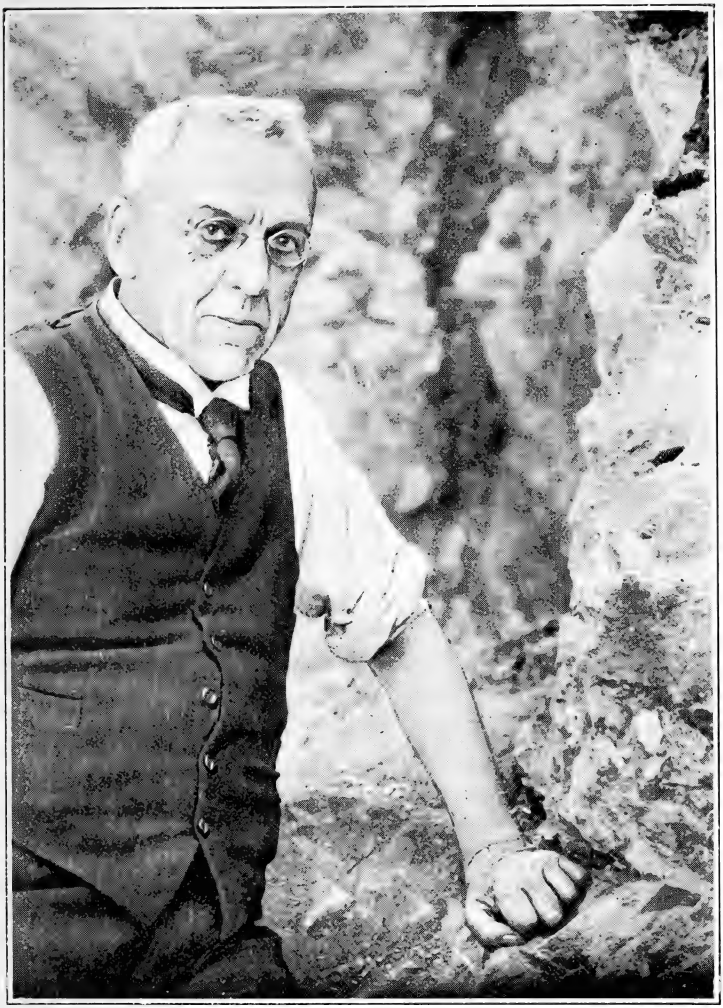
A fossil fish discovered by Alfred Brown.

He knew that Brown would not now require very much persuasion to lend his fossils, but he also realized that he had his limits and would enforce his stipulations. He was soon to learn what a stickler Brown was for the paraphernalia of registered post, which was an expensive item for these heavy stone parcels—how he would insist on getting receipts, and would not fail to send reminders when the period of the loan had been exhausted.

Broom therefore began cautiously by asking for some little ' jaw ' that he needed to complete the story of some fossil he was writing up. Then he would ask for the bones of the skeleton of one of Brown's new beasts, which he wanted to describe and name after him to his everlasting honour. Finally and without too much trouble he was able to coax Brown to send him his whole big kettle of fossil-fish.

It is true that it paid Broom to nurse his protégé with all this care, for he undoubtedly added tremendously to his own scientific stature by thus standing on Brown's back. But, if by so doing he was helped to get on to the pinnacle of fame where he now stands, he gave more than he got, for he pulled Brown up to the same height as he then stood at and rescued him from utter oblivion. This is not the place to enumerate the

dozens of scientific papers in which Broom described all Brown's fossils that came his way, faithfully tagging on his patronymic to most new and legitimate members of the Brown family. All I ask here is that South Africa should take off her hat to Broom for saving this her greatest Naturalist.



DR. ROBERT BROOM, F.R.S., one of the greatest authorities on the Mammal-like Reptiles of South Africa, is here seen getting down to business amongst some fossil-bearing rocks.

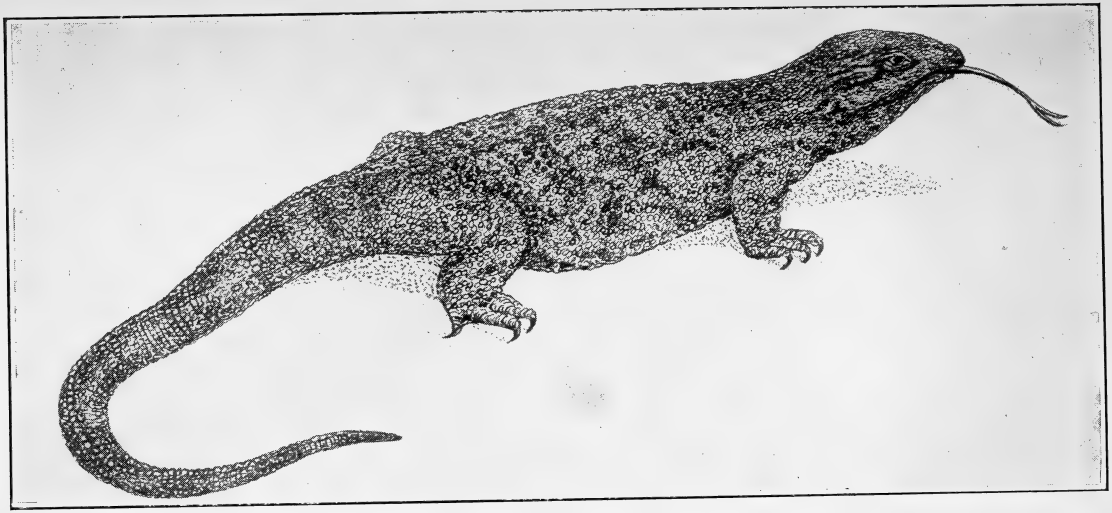
Chapter VIII.

HIS RESEARCHES ON LIVING REPTILES.

It is a relatively easy matter to make an assessment of the extent of Brown's success in the field of fossils. One has only to glance at the long list of scientific publications dealing with his specimens to see that his reputation is securely built in this respect. These are from the pens of all the leading palaeontologists of his day and have thus the scientific hall-mark. It is altogether different with regard to his researches upon living reptiles, regarding which we only have a few semi-popular publications by Brown himself. The great mass of undigested data that fills so many of his folios has not yet been studied. It is impossible therefore to say whether he was or was not equally successful in making a contribution to science in this direction. This will have to await the verdict of someone with the time and the ability to study this mighty inventory of the Reptilia. One thing is quite certain, and that is that he devoted even greater assiduity to this study of living reptiles than he did to that of fossil ones.

He was very conscious all his life of his lack of that essential training in anatomy which would have enabled him to make a direct contribution to palaeontology. His letters abound in references to the fact that, as regards fossils, he was just groping his way in the dark. He is much more sure of himself when he discusses living reptiles about whose habits he knew as much as any expert. This was a field in which he could work to his heart's content without requiring any guidance, free from the trammeling domination of authorities. Here was a subject on which he could make those numberless observations that Naturalists delight in; it was just the job for one of his calibre. So he set down his notes, day in day out, for almost fifty years. There must surely be some crystals of knowledge in them, even if in weak solution.

It is important to get a correct idea of what Brown had in mind when he planned and began these lengthy researches concerning the habits of our big lizard, Varanus albogularis, or as he preferred to call it, "The Cape Monitor." It certainly was not just the whim of an eccentric mind anxious to find some hobby to while away its idle moments. Brown had a contempt for hobbies, and never in his long life had a minute to spare for anything but work. No, it was



Varanus albogularis, a big South African lizard popularly known as the iguana or likkewaan, but Brown preferred to call it "The Cape Monitor." The largest of them grow to three or four feet in length. Brown kept a colony of these reptiles for forty-six years, and he devoted much of his spare time to a study of their habits.

something much more important than a pastime that he was after ! As in other matters, so here, one gets the best idea as to what was in his mind from the papers he published about these reptiles in the *Cape Monthly*, etc., and from his letters. In the course of his correspondence with Professor Lartet, there occurs the following letter :

" To Monsieur Lartet, Museum of Natural History, Paris. 11th June 1870.

" Sir,—I have lately forwarded to you, in charge of the Rev. L. T. Cachet of the French Mission in Basutoland, who is now en route to Paris, the skin with head and feet attached of a South African terrestrial reptile, the Varanus or Monitor albogularis of Gray, a species of the family of Saurians which, according to a number of authorities, is somewhat closely allied to the ancient colossal reptiles, the Megalosauridae, similar species of which are now found in the Stormberg beds of this district.

" I hope the specimen may prove interesting and of service, as the reptile was in my possession for 170 days, during which period I accumulated certain facts regarding its singular and interesting habits. Since then, the creature having died, I have endeavoured to procure all the information I could concerning it, both fabulous and probable, and I have received some singular accounts on

trustworthy evidence. Although the aquatic species of Varans is very numerous in many parts of the Colony, yet the land species are very rare south of the Lattakoo, and even there they are by no means common.

"I would be thankful if you could please inform me succinctly, whether anything is specially known of the power of the tongue of snakes or of Varans. Should you favour me with some information on this point, I shall feel myself honoured in your accepting a paper embracing the result of my researches on the habits of the South African terrestrial monitors. The following points are the subject of my researches: they comprise its fabulous as well as its most probable history, such as its love of milk, its venomous character, its power over the weather, over man; mode of capturing prey, its tenacity of life, counterfeiting death, power of adhering to irregularities on rocks; the dread dogs show at its presence, and its food. The effect its forked tongue produces on the unprotected and most sensitive parts of birds, such as the eyes and under the wing. Whether the power may be electric or narcotic, the tongue used offensively towards insects and birds, and defensively when in the presence of mammals, and to use the words of a French gentleman of reputation who was in

their neighbourhood for many years, its power of copying the snake. Whether the tongue is an organ of exploration and touch, and whether it is not in some respects analogous to the antennae of insects, the long bristles on the sides of the mouth of animals, also its tail which is invariably used defensively, when in the presence of mammals of large size, and probably even as small as a mouse."

He might have added that he was interested in their mating and in their egg-laying. He even took their body temperatures and examined their excreta, which last procedure is very important in connection with the undigested teeth of coprolites. On all these points Brown has left copious and careful notes and records.

We now see what Brown was after, when he was supposed to be keeping a miniature menagerie. It was nothing less than a gigantic one-man effort to re-stock a controlled world of his own, just as it had been millions of years ago. He had set himself the task of writing millions of years of pre-history in one short lifetime. If this lizard is actually, as it is supposed to be, related to the Dinosaurs, how futile he thought that scientists should waste their own time and that of others on guess-work, from the bones and teeth of these monsters, as to what they did and ate! Was it

not far better to plan and carry out an actual experiment with their somewhat pigmy three-foot-long descendants, and see just how they behaved and led their daily lives?

So with this laudable but ambitious object in view this modern Noah built an Ark, and he gathered into it the birds of the air, such as the hawk, the owl and the sparrow; the beasts of the field, including the hyrax, the hare and the rat; and everything alive that creeps upon its belly. And in this Vivarium, as he called it, which he had built to elaborate plans and specifications, he kept a series of these large lizards from 1868 to 1914. He sometimes had as many as 40 of these brutes in captivity at the same time, all suitably numbered and registered, and he watched the behaviour of certain individual monitors for as long as 17 years. During the whole period he noted the number of eggs, rats and plucks of meat they ate, and the small fortune he paid out to his grocer and his butcher on their behalf is all on record.

Although Brown saw to the comfort of his strange pets, and was worried to death when they fell ill or refused to eat, he did not let them forget that they were there to give him useful knowledge in return. So they had to put up with the nuisance of a hawk or an owl to peck at them

a dog or a cat to scratch them, and a hyrax or a hare to sleep with them, for he had to find out for himself just what Darwin's 'struggle for existence' and 'survival of the fittest' really meant. Some of his experiments in this direction were disastrous, for his ravenous monsters would on occasion swallow up and decimate his collection of frogs, toads, locusts and other lesser lizards. He did succeed in proving that the mammal and even the insect would again prevail over the reptile, if left to work out the fight to a finish, for he himself had to join battle for the reptile against a plague of rats and red ants. Nor were these lethargic beasts altogether unresponsive to his attentions. They got to know the hand that fed them, and they recognized his voice and saluted him, when he went near them. In the presence of strangers they might be curious, but they were usually suspiciously shy and would hide away in their dens or even under water.

Chapter IX.

GEOLOGY AND METEOROLOGY.

What I have just said about the extent of Brown's researches into the habits of his monitors, and about their undigested nature, applies equally well to his studies in Geology. Brown may have been a 'Jack' in some of his many trades, but in this one he seems to have been a master. His 'Notes and Researches on the conformation and structure of all the rocks, and especially the volcanic dykes, around Aliwal North,' cover many pages of his Journal, but this is not the place to dwell upon them. Suffice it to say that he measured foot by foot and at times inch by inch the thickness of every stratum of rock from the bed of the Orange River to the summit of the Stormberg mountains.

This is, however, an appropriate stage at which to make mention of another kind of fossil for which Brown had a particularly good eye. I refer to his wonderful collection of fossil plants, which was one of the best and most beautiful in the country. In his search for these he was fortunate in being in Aliwal North at a time of great

[*By courtesy of the S.A. Museum.*

One of Brown's fossil plants.

expansion, when quarries were being opened up on all sides for building material. At one time he made rich finds when excavations were being carried out on an unusually big scale to make a reservoir. To all such excavations Brown paid regular visits, seldom returning home without some fossil leaf or stem, some cycad, fern, or palm. Without knowing it Brown was living in the Golden Age of fossil-hunting, soon to be followed by the sterile modernity of reinforced concrete. Yet he was always complaining about the poverty of his particular milieu, and he notes jealously how Kannemeyer had informed him that in his area the railway sleepers were ballasted with fossils !

Brown was also a great lover of shells, both recent and fossil, and for a time he collected and studied these interesting and beautiful animal remains. But he ultimately gave up this study, for there are few recent and no fossil shells at Aliwal North, and the competition of other major interests deprived him of the opportunity of displaying the great knowledge of conchology that he undoubtedly possessed.

There are some callings, such as that of the light-house keeper, which have become surrounded by a halo of glamour, because of the steadfastness with which these reliable men keep their lonely

vigil, and trim their lamps to light the mariner on his treacherous way. We are apt to forget that in our meteorological observers we have other watchmen of the day and night, whose services to their country and to their fellow-men are of incalculable value. These are the men who, day in day out, winter and summer, year in year out, take faithful readings of all those elaborate instruments with which the weather is now recorded and forecasted throughout the Union of South Africa.

For over forty years Brown took daily temperatures and barometric readings, measured the rainfall, noted the direction and velocity of the wind, and sent his findings to Headquarters without a single intermission. This unique record is not all. He had a Meteorological Bureau of his own, and between the years 1866 and 1912 inclusive he measured every drop of rain that fell in Aliwal North to the second decimal point. He also noted the various shapes of such clouds as changed the sky by day, and he recorded every meteor that he saw speeding through space by night. It is not easy to do justice to such a long story of tireless devotion to duty. I cannot do better than quote the striking tribute to Brown's services paid by the Chief Meteorologist of the Union in a recent letter to me.

Meteorological Office, Pretoria,
2nd February 1938.

" Dear Sir,

" The late Mr. Alfred Brown started taking meteorological observations officially in January 1876, being supplied with instruments by the Cape of Good Hope Meteorological Committee. The meteorological equipment at that time consisted of a barometer, dry and wet bulb psychrometer, maximum and minimum thermometers, a Robinson anemometer and a raingauge. Observations were made by Mr. Brown personally, and it transpires from his records that he was always a most painstaking observer.

" In December 1916, then in his 83rd year, he decided to discontinue his meteorological observations owing to infirmities consequent upon advancing age.

" Thus for 41 years continuously he devoted part of his time to enriching the meteorological records of this country. I have not been able to look into the records of all our observers, but I feel sure that this record of 41 years' unbroken observations at one and the same station is unparalleled in South Africa and is probably equalled only by very few single observers in the world.

"The fact that his meteorological work was done entirely voluntarily proves that he was genuinely desirous of contributing towards our further knowledge of South African weather conditions.

Yours faithfully,
T. Schumann."

Chapter X.

HIS RESEARCHES IN ARCHAEOLOGY.

It would have been very surprising if a geologist of Brown's standing had not eventually come to take an interest in stone implements. Not that it necessarily follows that a man who can recognize the mineral content of a stone can tell whether it has had its shape altered by human hands. Stone implements were in fact just ordinary natural stones to many generations of geologists, until the French Naturalist, Boucher de Perthes, published a paper in 1846 which gradually convinced the world that they were really the handiwork of prehistoric races of mankind.

As was to be expected in a country like South Africa, where the prehistoric actually overlaps the historic even up to the present day, stone implements were recognized as such at an even earlier period than they were in Europe. Thus Lieut. W. Peterson in his *Narrative of four journeys into the country of Hottentots and Caffraria, in the years* 1777, 78 *and* 79, says that when travelling near Kibiskow on the Camdinie River he " found a species of flint (actually chert for there is no flint

in South Africa) which is used by the Hottentots in making their harpoons, and is esteemed by them as preferable to iron for this purpose." Spaarman also mentions the use of the bored stone by Bushmen in 1786. It was only in 1855, however, that spears and arrow-heads made of stone were first discovered by Col. T. H. Bowker buried deep in the soil near the Fish River. In 1870 Sir Langham Dale published a paper on *Stone Implements in South Africa* in the *Cape Monthly*. This was the first archaeological article to be printed in the Colony, and to it was appended *Notes to Dale's Stone Implements in South Africa* by Alfred Brown.

Brown was, therefore, a pioneer in the field of Archaeology, and, from the moment when he began to take an interest in it until the end of his days, he became gradually more and more absorbed in it. I have already pointed out how this new science came to his rescue when, on account of his disappointments with his fossil studies, he was inclined to give up his researches on the veld. In his later years this study became his main activity. In ramble after ramble he picked up now a bored-stone, then a spear-head or scraper of excellent workmanship, until he built up one of the largest and best collections in the Colony. He even undertook the excavation

of several caves, to which with five or six hired native-boys he resorted on sixteen occasions, noting the stratigraphy and bringing back a varying assortment of stone and bone implements.

In this branch of his work he was greatly stimulated by the success of his friend and rival, Dr. Kannemeyer. Kannemeyer was a medical practitioner, but his medical work and the locality in which he practised it were subservient to his researches in Natural Science. A medical visit was always a good excuse for exploring the veld round the farm to which he had been called. Not infrequently he held up the train in which he was travelling as Railway Medical Officer, so that he could have his one and only opportunity of seeing what was to be found on some not too near-by koppie. Engine-drivers soon know the man for whom time, if not the tide, can wait, and they adjust their time-tables accordingly. All honour then to those wide-awake men who nodded conveniently whilst Kannemeyer did his best to mend the maimed or save a fossil !

Kannemeyer is perhaps best remembered to-day for the excellent work he did for Archaeology in the Smithfield District of the Orange Free State. Here he preserved for posterity the fading story of just how and for what purpose the surviving Bushmen used those types of stone

implement which in his honour have now been classified as belonging to the ' Smithfield culture.' A somewhat curious thing about the Brown and Kannemeyer collaboration is that in his own particular area Brown was almost blind to the presence of the Smithfield culture, whilst in his own district Kannemeyer took little interest in those earlier and equally interesting types that Brown had specialized in. Yet any archaeologist, with the knowledge of these things which we have to-day, can collect in quantity specimens of both these cultures in both their areas. Another interesting thing is a ' cache ' of 200 tiny pygmy implements that Brown discovered and described with special care, intrigued as he no doubt was by the idea that there might have been misers like himself in Bushmen days.

About the year 1903 Broom learned about Brown's archaeological collection through visiting him in connection with the study of his fossils. Having enjoyed such good hunting amongst these latter specimens and being a good sportsman, Broom wrote to ask him for the same facilities as he himself enjoyed on behalf of Dr. Péringuey, who was busy writing his great work on ' The Stone Age of South Africa.'

Brown, however, was quite indignant and was not slow in telling Broom that he had only a

limited permit to bag his fossils ; that his stone implements were Royal game, which he reserved for his own delight and edification. Was he himself not an acknowledged authority since 1870, when he wrote a paper on the subject ? Had he not spent many pounds on the hire of carts and horses to take him as far afield as Basutoland to study Bushman paintings ? Did the fact that he himself had bent his back in dusty caves to dig up history really count for nothing ?

Broom got a shock and hastened to make peace with his difficult laird, sending him a double-barrelled apology in the shape of two letters posted one after the other. In these, with his usual tact and kindness, he assured Brown that neither he nor Péringuey wished to deprive him of any of the credit for his discoveries, but rather wished to pay him a compliment by drawing attention to some of his rarer specimens in the forthcoming publication. He even flattered him by telling him that " Dr. Péringuey like yourself has been collecting for many years, and the collection of implements which he has got together in the South African Museum is the best in the Colony. Yours is, I think, the second best. Of course in one respect yours is the most valuable, namely, that you have careful records of all the finds." He then went on to advise Brown

to publish something about his more valuable specimens himself, and he generously offered to assist Brown with the writing-up and publication of his valuable story.

But Brown heeded not Broom's good advice, and he missed his only chance of becoming famous as an archaeologist. For fifteen more years he dillied and dallied, his insane jealousy preventing him from coming to a sound decision regarding the ultimate disposal of these and his other specimens. In the end he was undone, and retribution followed.

In 1920 he died intestate, and his collection went to the highest bidder, the South African Museum. But, although Brown had entered meticulously numbered notes about each stone-implement in his Journal, he had omitted to put a corresponding number on the stones themselves. This was no oversight: he just would not spoil their natural beauty by putting a disfiguring mark upon them. By some misadventure on their journey to their new home they all slipped off the velvet-lined trays on which Brown had gloated over them, and they became inextricably mixed up. Thus at one fell swoop one of the finest collections of stone implements in South Africa and fifty years of painstaking work went up in smoke.

Chapter XI.

HIS LIBRARY.

I have already mentioned the fact that for over forty years Brown was librarian of the Public Library at Aliwal North, but I have no record as to how he spent such leisure as he had when on duty there. He probably dusted the volumes with some disdain ; I don't think he was greatly interested in many of them. He evidently did not share the Aliwal public's reading taste, for he must needs set up a huge private library of his own. All that I know of this is what I have gathered from the catalogue of its contents, and he must have had a wonderful collection of books. It was stored in fourteen big presses with suitable shelving to hold the two thousand odd books that he possessed. These cover an amazing range of interest, including Travel, especially early South African travel ; History and especially Egyptian, Classical and Biblical history ; hundreds of books on Literature, Art, Science, Philosophy and Religion ; and I think every popular encyclopaedia that was ever published.

The acquisition of this library must have cost him a tidy sum of money and much self-denial in food and other things less essential to him. It is just possible that he may have regarded it as his Savings Bank for a rainy day. Had he not previously to make the supreme sacrifice and sell all his books to help to pay his debts? Fortunately he did not have to do this a second time, for he became 'passing rich' on £150 a year. But not a penny of that ever came in return for his services to science, and he never sold a single specimen. No, books were the coins of currency in the intellectual realm in which he dwelt, and if those who had dealings with him had only realized that to owe him money was to owe trash, but to pay him with books was to pay cash, the course of scientific history would have been different.

I have thus indicated briefly the extent and the profundity of the larder from which this intellectual gourmand fed his greedy grey matter, and how it was stocked with select delicacies to provide for his special dishes, for he was a literary gourmet as well. There are also signs in plenty in his Journal that here again, like so many other book collectors, he was something of a miser, and gloated over his 'choice volumes' with all the joy of possession. In his later years

he must often have wondered what was going to happen to them when he died, but he could not bear to think of their falling into other hands or ornamenting other shelves, so he took them with him to his grave.

Chapter XII.

HIS WRITINGS.

A Naturalist is in a difficult position as regards the publication of his writings, because he is denied direct access to scientific periodicals ; on the other hand, his subject matter is too technical to be of any interest to the average reader of the daily paper. Brown was fortunate in not falling completely between these two stools, for, since its inception, the South African Press has pursued an unusually enlightened policy in this respect, catering at times for the small minority as well as for the majority, giving publicity to every good Cause, and offering sanctuary to all who have some Message to deliver.

Brown had his fair share of this generous hospitality, and he was specially beholden to Professor R. Noble, who gave him the freedom of the *Cape Monthly* in which to disport himself. He was even lucky enough to have articles from his pen published in the daily press, reporting such salacious topics as the nuptials of Mr. and Mrs. Monitor Albogularis.

What he published, however, is as naught compared to what he actually wrote and usually

entered in his Journal. Although I have tried in the preceding chapters to give an account of the contents of his folios, the few quotations I have given fail to do justice to his literary style. For that one must go to his publications, but as these are not very accessible I propose to give a few examples from his writings to complete my picture. Never was there a better example of the truth of the *bon mot*, '*le style c'est l'homme*,' than in this particular instance.

The following paragraphs have been extracted, with an occasional slight modification, from the manuscript of his series of articles entitled 'Thoughts of the Hour,' published in the *Aliwal Pioneer* in the year 1860. These extracts show his earlier imposing style and give a taste of his rich ideation, too rich, in fact, for ordinary punctuation. They were also prophetic, for they were written before he had made his own magnificent contribution to the sublime story that he tells.

"The world of nature is a book wherein the most mighty and wise, as well as the most humble and unlearned, may find rich food for mental enjoyment. The clouded heavens—the falling rain—the limpid stream—the roaring torrent—the sun which shines by day—the moon which shines by night—the lion roaring for his prey—

the spider preparing her snare—each and all are funds of rich instruction and amusement. . . .

"The morning breaks forth with cloudless sky—the birds are singing merrily—all nature is clothed with richness and inimitable beauty—while the sun pours forth his genial but not oppressive heat. Come let us take a ramble among those charms which can be found in every nook and corner of this glorious Creation of the Deity, and partake of those enjoyments which fall to minds prepared to receive them . . .

"Let us in imagination, schooled by study and personal observation, gather a few random notes among the mountains. Those mountains which lift their proud peaks to the skies, and are long anterior to the time of the Deluge. No beauties of vegetation, of modest flowers, of majestic trees are found on their summits, but all is sterility and barrenness, while through their deep fissures majestic waterfalls, unfathomable precipices and large valleys meet the wondering gaze. At these mountains various agencies of nature are manifest—the lightning stroke, with awful power, rends huge fragments of rock asunder—the wind in fury scatters lesser parts—while, through the agency of water, deep gullies are formed, and the replenished torrent rushes onward in its irresistible course . . . .

"Among the several agencies employed to alter the face of the world is that destructive and dreadful agitation known as the earthquake. By this awful power cities have become a mass of ruins, rocks have been overthrown, and rivers have been altered in their course. The seas have encroached upon the land, and the land has become a bottomless lake . . . .

" One thought must pervade the mind of every intelligent man respecting the world which he inhabits, the animals which surround him, and the heavens which encircle the globe like a curtain—that all and everything in the external arrangement of the earth, and in its internal formation and conditions of life, are under the control and guidance of immutable laws—that naught is by chance or the insipid offspring of a moment, but that all fresh from the hands of the Eternal is continually progressing onward to a purer state . . . .

" While the telescope opens to us fields of wonder and admiration in the heavens, manifesting to our view myriads of stars, the revolution of the solar and planetary systems, and disclosing worlds upon worlds, stretching from earth to heaven ; the microscope teaches that, beneath, above and around us are myriads of creatures so small that millions would not cover a square inch, and yet

so perfect that the gigantic elephant excels them not in completeness of structure and in the adaptability of the members of its body for subsistence and defence . . . .

" So science spreads open the secrets of the past and unfolds the pages of nature, impressed with traces of her pristine inhabitants—footprints of birds of gigantic size—raindrops showing the direction in which they fell, though the waves which have caused them have long ceased to exist; and the bones of huge monsters are stamped and preserved in the strata of the earth, which, like the leaves of a book, are placed above each other in consecutive order.

" Let us take a glance at the animals which walked the earth previous to the creation of man. One of the most remarkable denizens of the land was the pterodactylus, which was half-bird, half-mammal and half-reptile. With the head and teeth of a crocodile its power of destruction was tremendous—having the neck of a swan it could seize the helpless fish—with wings of a bat it might be found clinging to the rocks, while its feet were so constructed that it could run over land or swim in water.

" How many feel disgust and repugnance at the sight of a frog, yet with what dread and terror would we behold the iguanodon, whose

legs were six feet high, and his length fifty feet. Again in the sea we have the ichthyosaurus, a creature half-fish, half-reptile and half-whale, having the head of a crocodile, eyes eighteen inches across, a tail similar to a whale, and a body thirty feet long. Yet the most powerful of all was the cetiosaurus, a monster a hundred feet long with jaws extending a full twenty feet—guided in its course with large fins armed with powerful claws to catch its prey, and how ravenous must this creature have been, which required food in bulk of twenty oxen to satisfy its ravenous appetite.

"The further we go back the more terrible the animals become, the nearer our times the more they decrease in might. Generations have come and gone, the earth has become enriched by their existence. Mighty forests have been upheaved and humbled in dust, other changes have gradually covered them with mud and sand, which in time has become one solid mass buried in the bowels of the earth. This is the rich substance known as coal, the secret of man's greatest strength, the motive power of his vast machinery."

The next extract is the introduction to his 'Essay on Diamonds,' published in the Christmas Number of the *Aliwal Observer* for 1870.

" Now that the name of diamonds is as familiar to the people of South Africa as ' household words,' and reports have gone forth, not only throughout the length of the Colony, but into the uttermost parts of the earth, of untold wealth and immense treasure scattered profusely on the surface of the ground, a few thoughts upon the subject may not be uninteresting to the readers of the first Christmas Annual published in Aliwal North.

For Africa is already noted for its unique and protean forms in the Animal and Vegetable Kingdom. Africa—the mysterious, the unknown, replete with wonders and prodigies of nature, the survivor of the wreck of continents, the first born of the present distribution of land and water ; the land of immense antiquity, which has for ages been raised far beyond the power of the ocean's mighty waves ; the land whose evidences of great duration are impressed on the degraded and worn-out mountains ; the land whose rivers are cut deep into the earth, and whose channels bear evidence of bygone impetuous streams ; the land of desiccated lakes, wherein once disported fishes and reptiles of wondrous form, whose banks were fringed by noble trees, since turned to stone and transfixed to the spot in which they flourished.

"Africa—the land lately despised among the nations of the earth, the victim of misrepresentation and evil repute; the land flowing with milk and honey, but over large tracts refusing to repay the labourer or the husbandman; the land subject to the scourges of locusts, droughts, pestilences, pitiless storms and terrible displays of electricity. Such in physical, civil and political aspects has been the past of Africa. Viewed from every side she has been the scene of disaster and evils innumerable, her path covered with clouds dark and lowering, with scarcely a ray of light through which a glimpse of the future could be discovered. The scene changes. A glimmer of bright prospects and a glorious future appears on the distant horizon. Suddenly without apparent law or order, in the depths of the earth, in the most modern deposits, yes, on the surface of the rocks and ground, treasures are revealed, which rival the most incredible fables of antiquity . . ."

In conclusion I should like to give in Brown's own simpler words a well-known native parable of which he seems to have been particularly fond, for he wrote it out twice in his Journal. And no wonder he liked this story of the Lightning Bird, since he himself had learnt its lesson all too often and too well.

The Lightning Bird—A Basuto Myth.

In days long past the birds met to choose a king and to find out in what way they should do so. As the affair was of very great importance, it was agreed that on choosing the king they would have a great feast, and preparation was made for it. On the opening of the meeting the ostrich proposed that the one which could run farthest should be king, thinking he would outrun them all. He had no sooner spoken than the birds made fun of the ostrich and said, "How can you run? You have no wings. We birds don't run with legs, we go swiftly with wings. You are a fool! You are a fool!" they said, and the ostrich has been called a fool ever since.

After a great palaver, one proposing this and another proposing that, the small birds proposed that the one should be king who could fly straight up the farthest. On hearing this the eagle made sure he would win, for who could fly so straight up and so high as he. "But," thought the lark, "I see a chance of getting higher up than the eagle," and he decided to watch his chance and get on the eagle's tail. The birds agreed that the one which went the highest up should shout, and they started off. On this the lark contrived to hide himself in the eagle's tail and away they

went, higher and higher. At length the eagle vanished out of sight and soared well above all the other birds. He was just getting ready to shout, when the lark flew up higher still, shouting " twirr, twirr, twirr " ; the eagle could go no higher for his strength was done.

The smaller birds said that the lark must be king, but the eagle and the other large birds said no, for he was a cheat. The small birds would not have this, and said that the lark beat the eagle by his cleverness, and that wit always was the best. Still the larger birds would have it that the eagle must be king, but the smaller birds said " No, you want the eagle to be king so that he can eat us up the way the chiefs do. You want to eat us up, but the lark won't do this."

The birds then got into a great dispute, when a falcon, who was sitting on an ant-heap, spoke up and said : " You don't know what you are doing. You agreed what to do, and now, because the lark won, you can't agree. You put me in mind of those things with two legs that they call men. They are always talking, always squabbling, and can never agree. I am so ashamed of your long talk that from now on I will never speak again," and this is the reason that the falcon has never been heard to speak from that day.

After this the birds agreed to have their feast, but first made a prisoner of the lark, and after that they looked for a prison and put him in a hole. As they wanted some one to look after him, while they were feasting, they said to the owl, "You have the largest eyes and must be able to see well. Now you look after the lark and mind that he does not escape." The lark got a bit of reed and began poking and poking at the eyes of the owl, and at last he said, "Oh! you can't see, I shall go." On this he flew off into the veld, and did not dare come back again for fear of the big birds. From that day the lark always stays in the veld, and makes its nest there, and not on a rock or on a tree as other birds do.

After the feast the birds came to get the lark, but, on coming to the hole, they found the lark was gone. The owl knew nothing about it; the place was searched well, and some of the birds went into the hole, but no lark could be found. The big birds said to the owl, "As you let him go, you will have to die," but, as they had filled themselves with food, they were not able to kill the owl. They therefore told the small birds to peck the owl to death, and this is the reason why, from that day, whenever the owl stirs about he is followed by the small birds.

During the clamour the sky got black, and the thunder was heard, and the lightning bird swiftly appeared and in wrath cried: "Who keeps up this row? Who is proud? I strike down the proud. I am your king." From that time the lightning bird with its huge wings strikes down the proud, and every jutting piece of rock, and everything that lifts itself up!

APPENDIX.

LIST OF FOSSIL ANIMALS DISCOVERED BY ALFRED BROWN.

1. *Euskelesaurus browni, Huxley.* A large carnivorous Dinosaur from the Stormberg Mountains, allied to *Megalosaurus*, a giant reptile found in England and elsewhere.

2. *Orosaurus, later called Orinosaurus capensis, Lydekker.* A doubtful group of 'terrible' reptiles, founded on an imperfect bone. Von Huene believes it to be a second species of Euskelesaurus.

3. *Massospondylus browni, Seeley.* A Dinosaur allied to *Thecodontosaurus*, from the Trias of England and the Continent.

4. *Diademodon browni, Seeley.* A *Cynodont* reptile with crushing molars, quite mammalian in character and suited to a vegetable or mixed diet. The first of this group to be discovered.

5. *Diademodon mastacus, Seeley.* Allied to *Diademodon browni.*

6. *Trirachodon kannemeyeri, Seeley.* Another of the group of *Cynodonts.*

7. *Microgomphodon oligocynus, Seeley.* A *Bauriamorph*, that is to say a type of reptile allied to the earlier mammal-like reptiles, but with a secondary palate as in the Cynodonts and Mammals. According to Broom it is probable that the remote mammalian ancestor was a Bauriamorph rather than a Cynodont.

8. *Karoomys browni, Broom.* A jaw with a few teeth in it, belonging to a very small animal, believed originally to be a mammal, but it is possibly a reptile.

9. *Howesia browni, Broom.* A very important *Gnathodont*, allied distantly to the little lizard-shaped Tuatera (*Sphenodon* or *Hatteria*), now living on islands off the coast of New Zealand, and generally regarded as the sole survivor of an important group of reptiles of the Permian and Triassic periods. Howesia is also allied to *Rhynchosaurus* of Owen, from the English Trias.

10. *Trirachodon minor, Broom.* A smaller species of *Trirachodon*, represented by a lower jaw.

11. *Sesamodon browni, Broom.* A very important new type of *Bauriamorph*, possibly near the early mammalian ancestor.

12. *Melinodon simus, Broom.* A smaller *Bauriamorph*, only known by a fragmentary skull.

13. *Thelegnathus browni, Broom.* A Procolophonian, closely allied to *Procolophon*, a primitive lizard-like reptile.

14. *Thelegnathus parvus, Broom.* Possibly also a Procolophonian, represented by a fragmentary mandible.

15. *Aelurosuchus browni, Broom.* A *Bauriamorph*, showing the first good palate.

16. *Erythrosuchus africanus, Broom.* A giant *Phytosaur* or primitive crocodile, the most remarkable ever discovered.

17. *Palacrodon browni, Broom.* The jaw of a primitive lizard-like *Rhynchocephalian.*

18. *Batrachosuchus browni, Broom.* A fine skull of a new type of *Labyrinthodont*, a division of extinct Amphibia.

19. *Euparkeria capensis, Broom.* A diminutive *Thecodont* reptile. This and the succeeding fossils, although belonging to the 'Brown Collection,' were, I understand from Dr. Broom, presented to Brown by Mr. A. W. Higgins, who in later years greatly assisted Brown in all his work.

20. *Mesosuchus browni, Watson.* A small *Gnathodont* type.

21. *Browniella africana, Broom.* Another *Thecodont* reptile, allied to Euparkeria.

22. *Hybodus africanus, Broom.* A fish.

23. *Oxygnathus browni, Broom.* „ „

24. *Helichthys browni, Broom.* „ „

25. *Helichthys tenuis, Broom.* „ „

26. *Pholidophorus browni, Broom.* „ „

27. *Coelacanthus africanus, Broom.* „ „

28. *Cleithrolepis minor, Broom.* „ „

These fossil fishes, which Brown acquired mainly, but not entirely, through the instrumentality of others, all came from Bekker's Kraal in the Orange Free State. They gave a good idea of the Triassic fish fauna of South Africa, and enabled comparisons to be made with the somewhat similar fishes of Europe, America and Australia.

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