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Two Recent Journeys in Northern Somaliland

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Source: *The Geographical Journal*, Vol. 11, No. 1 (Jan., 1898), pp. 15-48

Published by: geographicalj

Stable URL: <http://www.jstor.org/stable/1774849>

Accessed: 27-06-2016 14:13 UTC

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useful work may be done on other lines. Whatever the plan may be, I sincerely trust that the Society will flourish and become a centre of humanizing influences, collecting information, spreading geographical knowledge, promoting education, and guiding and encouraging youthful talent.

In conclusion, I may mention that the Royal Geographical Society will have pleasure in welcoming the members of the Southampton Society when they visit London. They will have the use of the Society's rooms, the privilege of consulting the library and map-room; they will be given tickets on application to any of the Society's meetings; and they will be allowed to purchase the Society's publications at the Fellows' prices, which is less than those paid by the general public. It only remains for me to express my warmest wishes for the success of the Southampton Geographical Society.

TWO RECENT JOURNEYS IN NORTHERN SOMALILAND.*

I. BY F. B. PARKINSON, ASSOC. R.S.M., AND LIEUT. BRANDER-DUNBAR,
2ND CAMERON HIGHLANDERS.

It was in October, 1894, returning from Australia with my friend Mr. Brander-Dunbar, that, on entering the Gulf of Aden, our conversation naturally turned to Somaliland. We had both of us read scraps about it sufficient to whet our appetites. We had heard of the high and healthy plateau of the interior, of luxuriant mimosa forests, of lions, of elephants, of semi-wild natives mounted on semi-wild horses, and of such-like things, that made us vow that if ever opportunity occurred we also would visit Somaliland, and see if there was anything left for us to discover.

Such opportunity came in the autumn of last year, 1896; but before commencing the record of what we saw and did, I take the opportunity of thanking the Society for the material assistance given us in the form of a loan of instruments, which enabled an accurate survey of the route, and also of the adjacent country, to be made. My best thanks are also due to several gentlemen for valuable advice and information, namely, Dr. Scott Keltie, Secretary of the Society; Mr. Coles, the Society's Instructor; Mr. Ravenstein; Prof. Howes, of the Royal College of Science; Dr. Woodward and Dr. Gregory, of the British Museum; and the Hon. Major Talbot, of the Department of Military Intelligence at the War Office. Also our trip would not have been so easy of

* Maps, p. 112.

accomplishment, had it not been for the kind and courteous assistance of Colonel Ferris at Aden, and Captain Mereweather, the Political Resident at Berbera.

On glancing at the general map of Somaliland, it is evident that, eastwards from Berbera, very little has been mapped beyond the forty-sixth meridian, except along the ninth parallel of latitude by Captain Swayne's trip to the Dolbahanta in 1891. At the same time Colonel Padget was working to the south-west of the Bur Dab range, and had a brush with the natives near Kirrit. It was, then, our main object to visit as much of this north-eastern portion of the country as we could, and how far we were able to carry this out will be seen at once from the annexed sketch-map of our route. For good reasons, which will be shown as we proceed with the narrative, we were unable to get as far east as we had hoped, and were obliged to turn southwards and content ourselves with exploring a bit of the Haud, or waterless plain of the interior. But there is nothing to regret in this, as we were more than repaid for any disappointment we might have felt by the observations we were able to make of the geological structure of the country, many important points of which we must have missed had we continued our easterly course.

Passing over the heat and dust of packing at Berbera, we found ourselves ready to start from that town on October 29, 1896, with twenty-two camels and twenty-six men. The hiring of these is not, after all, such a very arduous task, especially if one has read the concise hints on the subject in the Appendix to Swayne's 'Seventeen Trips through Somaliland,' a most valuable book, and our constant companion throughout the journey. The feeling of triumphant delight on setting out baffles all description, and brought forcibly to my mind those words of Dr. Livingstone's on beginning his last journey up the Rovuma—"Now that I am on the point of starting on another trip into Africa, I feel quite exhilarated." If an old hand like the doctor employs such an expression to describe his excitement, it may in a measure be imagined what the feelings are of those who start for the first time. It is impossible to ride for long; one is constantly jumping off one's pony's back to examine more closely some tree, insect, bird, or beast. This part of the maritime plains is known as the Guban. It is bounded by the Gulf of Aden on the north, and the wall of the great plateau on the south. We crossed it in a south-easterly direction, and it consists here of a limestone and shale country, more or less covered by low scrub, and traversed by numerous watercourses, which come down from the great wall. Several of these streams were running at this season. Large areas of this country are thickly covered with detritus, subangular fragments chiefly, and pebbles along the watercourses, which make very rough travelling. All along this route the escarpment of the plateau resembles a range of mountains running east and west. Viewed from Karingabile, it reminds one of the

Alps as seen from Turin; though on a smaller scale, it is just as imposing, because there is nothing visible by which the actual size may be compared.

Determining to ascend the plateau through the Miriya pass, we reached Huguf on November 5, a place immediately at the commencement of the rise, and already 2000 feet above sea. The next morning we began the ascent, and a magnificent gorge it is. We were much troubled by the midges, which, although they do not bite, yet fill one's eyes, ears, nose, and mouth, buzzing and crawling, so that without a bunch of twigs with which to whisk one's face, it would have been really impossible to proceed. It requires a bit of silk gauze, as trans-

CAMP AT DONGORREH, LOOKING WEST, SHOWING BAND OF CAVE-FORMING LIMESTONE IN THE HILLS.

parent as possible, to put over the hat and under the coat collar; this would entirely prevent the annoyance in these gorges. By 9 a.m. they had all dispersed. I believe it is only for a few weeks in the year that these midges occur, and on our return journey down the Sheikh pass, in January, we saw nothing of them.

The geological section exposed in the Miriya pass is typical of the whole country which we visited, and all the principal horizons are here represented. On a bed of gneiss rest some 1800 feet of limestone, with less important layers of shale and sandstone. The band of hard limestone, some 250 feet in thickness, appears very generally over the country, and is everywhere eaten into caves at its outcrop. These caves are of all sizes, and afford a secure retreat to leopards, hyenas, and baboons. The photograph shows this formation above our camp

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at Dongorreh, where we remained for a few days to rest the camels and take observations, as I intended to make this the starting-point of the survey. The air is splendidly cool and bracing up here, and it is really hard to realize that one is in the tropics. The thermometer sinks to 65° in the early morning, making a good fur coat most welcome.

We ascended the hills to the west of camp, passing up one of the numerous ravines cut by the streams. The section was identical with the Miriya pass, though the cut was not deep enough to reach to the gneiss; and as this valley is at right angles to the pass, it proves the uniformity of the strata in this part. At one spot, where the torrent bed had been cut through the very compact hard limestone at an angle of about 30° , it was evident that at times the force of the water must have been tremendous. There were abundant proofs that a freshet filling this gully to a depth of at least 20 feet had passed down, but not recently, as there were trees growing from cracks in the rock at the bottom of the gully which measured 9 inches in diameter. They must have been at least forty or fifty years old, and had such a freshet come down within that time, they must certainly have been swept away. As the area drained by this gully is very small, it must have been a great and sudden downpour of rain to cause such a rush. On the top of the hill we found evidences of kudu and wild ass, and took a round of angles at a point 1600 feet above camp. This is a spur of the Negegr plateau, which lies to the north and forms the west wall of the Miriya pass. The well at Geba Geba is important, as it is the highest permanent water near the Miriya pass, and much used by the Habr Toljaala people when bringing their folds to pasture on the upper plateau.

Our next camp was at Gallol Dobleh, which we made on the 12th, near to a large gudá tree in the plain, where a number of Toljaala shepherds were encamped with flocks of sheep and camels. We found no permanent water here, the nearest being Geba Geba. The bold outline of mountains to the north and east made good marks for the survey, so at night I took observations for latitude and azimuth, using Habrje peak as the referring-mark. The latter is a rugged mountain lying 17 miles to the north-east. It was at Gallol Dobleh that I obtained my first specimen of Clarke's gazelle. While encamped at this same place, I one day observed a vulture sitting on her nest in a low flat-topped mimosa. A colony of yellow weaver birds had built in the same tree, and some of their nests were actually attached to that of the vulture. I dare say they found this a great protection to them, as the smaller birds of prey would hesitate to approach such a formidable fortress. All the waters of this plain find their way southwards to the Tug Der; indeed, none of the streams flowing into the Gulf of Aden drain more than a few miles of the northern edge of the general plateau.

A march of 15 miles brought us to our camp near the base of the

Habrje peak : the central rock has a total height of 5079 feet. We pitched our tents at the foot of the peak, 500 feet above Gallol Dobleh. The first part of this march up to the low limestone ridge of Artalla lies over grass plain, pleasingly relieved with belts of small trees. But the moment the Artalla ridge is passed, quite a dense forest is seen to stretch up to the base of the mountain, and as far beyond it as the eye can reach, both east and west. This change in the vegetation is due to a change in the soil, which on inspection is seen to consist of the decomposed detritus of the intrusive rocks which form the axis of Habrje. I believe this is the only instance of a mass of granitic rocks, large enough to form a respectable mountain, known to exist in the explored parts of

HABRJE PEAK SEEN FROM CAMP, LOOKING EAST.

Northern Somaliland. I surveyed a closed polygon round the base, and found it 12 miles in circumference; the central peak rises 1500 feet above this. Our Malvern hills are a good example of a similar formation. The view from the top is magnificent. Eastwards, in the direction of Cape Guardafui, the wall of the rift extends as far as the eye can reach, and the most distant peaks must certainly be on or beyond the forty-seventh meridian; nearer are Gulhigluh and Morisman, apparently the exact counterparts of the Miriya pass. To the west can be seen all the country we passed through from Dongorreh. To the south the Bur Dab range is plainly visible, blue and shimmering in the heat; often the mirage makes this range appear as though it were the opposite coast of a large lake. To the north the prospect is limited by the range of gneiss hills that here bound the plateau. For 7 or 8 miles in all

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directions, except north, stretches a sea of rich green forest, which shows well how far the fertilizing influence of the detritus extends. Felspar and apatite, two very conspicuous minerals in this mountain, are no doubt responsible as the fertilizers. My friend Dunbar, who had been somewhat ailing since we left the coast, now developed an attack of jaundice, which necessitated our making permanent camp here until he should be able to march. This misfortune, though tantalizing in many respects, yet enabled me to make a more thorough investigation

HEADMAN OF OUR CARAVAN, ABDI ATTAYEH OF THE HABR GERHAJIS TRIBE.

of the immediate neighbourhood, and it also probably saved us from running into a "hornet's nest" unawares that might have crippled the caravan.

After reading Swayne's most accurate description of the Somali people and their ways, it would be mere repetition to attempt anything general here, especially as my experience was only of a few months' duration, whereas Swayne has worked amongst them for several years. However, we had rather a unique experience at this camp, which serves

well to show the behaviour of the Somali when on the war-path. I had gone out in the early morning to shoot meat; Dunbar was in camp, ill. We had been following the fresh tracks of an oryx through the forest for a couple of hours, when shots were heard in the direction of camp. Wondering what this might mean, and finding that our quarry had been scared, we rounded for our zeriba, and had not gone far when we saw a mob of camels coming at a brisk trot down a glade towards us, and heard the clatter of horses' hoofs behind. Doda, my gunbearer, touched my arm and whispered, "Thief steal your camels, sir; shoot! shoot!" I at once exchanged the single rifle I was carrying for the heavy double, and bobbed down out of sight in the bushes. We had not many seconds to wait before the camels came straight up to us. We stopped them, and at the same time the heads of a score or two of horsemen appeared behind. Without further introduction, Doda dropped on one knee and deliberately fired amongst them, whereupon they dispersed in all directions, making the jungle crash splendidly. I ran 50 yards to my right to get clear of the bushes and opened fire; then, quickly reloading, gave them a parting salute. Doda had been blazing away all the time, but I don't know whether any of his shots took effect; he did his best, and behaved very coolly.

We now ran back to the camels, and were just congratulating ourselves upon their rescue, when the headman arrived with ten of our people. Aden, my butler, had had the foresight to bring me a fresh supply of cartridges; and the cook also appeared in warlike attitude, with a large enamelled iron basin for a shield, and brandishing a butcher's cleaver. A hurried conversation with the headman then ensued, from which it appeared that the raiders had driven off thirteen of our camels. He was delighted that we had rescued them; but, as the raiders had also taken one of our ponies, I allowed the headman and six armed men to go on in pursuit to try and recover it, while we returned in triumph to camp with our camels. The raiders, when attacking, galloped past our camp to where the camels were feeding, 800 or 900 yards distant, and, in spite of the shots from the two men who were grazing the beasts, succeeded in rounding off the thirteen camels and a pony. By this time they were under a pretty hot fire from the party who made a sortie from the camp, but before they could get within reasonable range camels and raiders had disappeared into the forest, where our men, who were of course on foot, had but little chance of overtaking. However, our people ran well, and most fortunately drove the enemy into our ambushade, and being met here at close quarters, they at once disgorged their booty. Had they known how small a force we were, I have no doubt they would have endeavoured to run the gauntlet, as they are brave fellows, and don't at all fear a fight, even against odds in the open. Later on, when we were at Eil Dab, we were able to send a messenger to these people, and found they bore us no ill will at all for having baulked them, and I have no

doubt they will ultimately return our pony. Their whole sentiment seems to be that they are delighted to see us in their country, to go where we like; but if we are not strong enough in numbers, we must not mind the young men making a dash now and then to lift a camel or two. On sending out scouts to the east, we found that the Dolbahanta were in great force there, grazing ponies, so that, although we should not have been in any personal danger, yet probably, with our small force, we should have got a lot of our kit smashed, and lost camels. Dunbar also was sufficiently recovered to march to Berbera, and the necessary escort sent with him further reduced our force, so that I determined to remain where I was till they returned.

The Habrje well, from which we obtained our water at this camp,

HABR TOLJAALA NATIVES COMING TO "DIBALTIG."

lies 7 miles to the north, on the edge of the rift. It is a pool in a torrent bed, and with a little excavation might be much improved, or by building a dam across the gully quite a lake might be formed, which would enable a large number of people to stay here during the dry season and cultivate the rich soil. The true Somali would be offended if set to cultivate; so that, unless settlers from other parts could be induced to come, it would be waste of time and money to start public works for the improvement of the water-supply in such an isolated district. I am sure, as time goes on, additional wells will be made along the caravan routes; but it must be remembered that this offers an inducement to raiding-parties to harbour near such wells. For this reason many watering-places, which are opened by the herdsmen when they take

their flocks up into the Haud, are carefully closed again when they retire. If it could be managed to close such wells with a cast-iron collar and locked door like the manhole of a sewer, it would certainly be a benefit to the people, and have a great tendency to check raiding, as the keys would only be in the possession of the elders whose people had a right to use the water. The eastern slope of the Habrje system is drained by quite a considerable river; it only has a definite channel for the first 9 miles of its course, but abreast of the peak it is 150 yards broad, and by the flood marks it must be chest-deep in the rainy season, and strong enough to transport large trunks of trees. A few miles to the south it splits up into many channels, the waters spreading over

CAVE AT SHIMBER BERRIS, LOOKING TOWARDS INTERIOR.

the plains, and finally joining the Tug Der. None of our people knew any name for it.

These volatile, song-loving Somalis form a great contrast to the stolid, practical Chinese with their iron memories, among whom I have lived so long. It has been observed by several people that the Somalis, when beckoning to any one at a distance, hold the arm extended, slightly raised and the palm down, and then bring the hand and arm with a sweep towards the ground. I am inclined to think that this is a more general form of beckoning than our English method with the forefinger slightly bent, holding the palm of the hand towards the face. I know both the Italians and the Chinese use the arm extended like the Somalis, and Dr. Livingstone mentions the same of the people in Central Africa. It was interesting to observe that my men, when drinking from a vessel,

looked straight into the faces of their comrades, and showed no tendency to turn aside, as the British workman almost invariably does when treated to a pot of beer. One would have expected that this act to protect the throat would have been more strongly inherited by a semi-wild people. The Somalis are very keen in the chase, and brave to rashness.

One afternoon we hunted two lionesses. I had shot the first, and severely wounded the other as she galloped between two thickets, and so excited were the men that I could not stop them from at once following the lioness into the cover. She sprang on my gunbearer with such impetus that she turned a complete somersault with his leg in her mouth. The other two men, who were close by, did not yield an inch, but deliberately fired their rifles into the beast, and by good luck did not hit the man who was lying beneath her. Fortunately her next move was to charge at me, and enabled me to finish the encounter with a ball delivered into her chest at close quarters. My gunbearer was severely bitten in the leg and arm, but subsequently recovered. He seemed to think the matter rather a fine joke, and never deigned to show any symptoms of pain when his wounds were being dressed, not even when I had to enlarge one of the fang-marks to extract a piece of bone that had been splintered off the tibia. I found that carbolic acid, one in sixty, would not combat the deeper wounds; but a solution of mercuric chloride, one per thousand, applied with a syringe twice daily, at once checked the suppuration. In ten days granulation had set in nicely; but, owing to the large internal surface of the wounds, sufficient mercury had been absorbed to produce very slight symptoms of salivation, so I resorted again to the carbolic acid, which now proved effectual in completing the cure. For all wounds in tropical climates mercuric chloride is by far the safest and surest antiseptic, and even when it is not actually used upon the wound itself, a piece of lint soaked in it should be placed over all, to keep out the larvæ of flies, which are not killed by carbolic acid. Another great advantage is its portability, and perhaps the best way is to have it compressed into tabloids with a little ammoniac chloride, which increases its solubility. The shepherds sent us a present of milk as a thankoffering for slaying the lionesses. A message also came indirectly from the raiders, apologizing for their rude disturbance.

On December 14, Dunbar joined me again in high spirits; he had quite recovered, and bagged a fine lion on his way from the coast. He came over the Sheikh pass, and down to Ber on the Tug Der. We decided that it was now best to go south, and crossed the plains to the foot of the Bur-Dab range at Shimber Berris. On this route there is rich vegetation the whole way, grass alternating with thick belts of trees and open park-like country. Dunbar reports that on his way to Habrje from Ber there are two marches of rather sterile country, with

no trees and poor tussocky grass, due no doubt to over-stocking near the wells. Shimber Berris is 1000 feet below our camp at Habrje, though to the eye these plains seem as level as the sea. Game is plentiful here, but wild. Fine rocky gorges in the range show the same section as the Miriya pass, but the cuts are not deep enough to expose the gneiss.

The photographs show the interior of one of the large caves which we found in this part of the country. In it were the remains of many fires and camels' bones strewed about, showing it to be one of the resorts of robbers. It is a stiff climb to reach these caves, and no camel could ever get there unless cut up and carried on men's backs. About halfway

CAVE AT SHIMBER BERRIS, LOOKING TOWARDS THE MOUTH.

up the gorge is a deep cleft among huge boulders, with water at the bottom, forming a natural well. It is known as the Shimber Berris well, and has evidently been used for a long time, as the hard rock is worn in furrows 6 inches deep by the ropes that have been used for drawing water. This well, like the many cairns on the hilltops and remains of ancient buildings, is universally ascribed by the natives as being of Galla origin. Needless to say, the Bur Dab range is composed of limestone, and there is no evidence of volcanic origin.* We found here an old man living entirely alone, subsisting on gum and snared

* Swayne, 'Seventeen Trips,' p. 97.

game. He was very clever at catching gerinouk, or Waller's gazelle, by means of a cord made of the fibre of the "hig" aloe. At one end of the cord a running noose, 6 inches in diameter, was laid round the rim of a cup-shaped hole scooped in the ground, and supported by a series of small pegs. Near the noose was attached a fine but strong thread, the other end of which was fastened to a springy branch of a tree, bent down for the purpose. The noose was prevented from being dragged out of the hole by two pieces of wood laid crosswise. The loose end of the cord was either tied to an adjacent tree or pegged firmly

BUR DAB RANGE, LOOKING SOUTH-EAST.

to the ground, and all traces of the trap neatly covered with leaves and sand. The gazelle is, of course, caught by the leg, and once the noose is drawn tightly round above the hoof there is no escape; but it must need large experience of the haunts of the game to know where to set these gins. The old man had thirty or forty constantly set, and said he got a gazelle once every four or five days. Opinions in camp were divided concerning this old man; some looked upon him as a knave, and others as a fool. I incline to the latter view, as he was mentally deficient in many ways, but there did not appear to be anything vicious about him.*

The Tug Der river has no permanent channel anywhere along here, but the water extends in a belt several miles wide, and nowhere more

* An old man of this description was found near this place by Swayne in 1891. I have no doubt it was the same.

than a foot or 18 inches deep, as seen from the high-water marks on the tree-trunks. At this season the surface of the ground is perfectly dry, but a view from the top of the range shows at a glance the extent of these flood waters, as the trees are stunted and the grass luxuriant.

One morning I had wounded an oryx and followed the track for 6 or 7 miles, finally losing it on some hard ground; on returning we found the spoor of a large lion, which had been stalking us. It was evident that he had followed till we came to an open place, and, having sighted us, turned aside. Shortly after we met Dunbar, who had also discovered the track. We followed till nearly sundown, but he fairly beat us in some

GIANT ANT-HILL AND EUPHORBIAS AT ARRI BOB.

heavy jungle, and we returned to camp rather fagged by a hard day's work in the hot sun. A long march brought us to the top of the pass in the Bur Dab range called Bah Lardis, or, as Swayne has it, Laba Gardai. About halfway up on the northern slope were the fresh tracks of a rhinoceros across the path, but the rocky nature of the ground and horrible thorn thickets made it impossible to follow. It confirms the fact of these animals existing in the Bur Dab range, and the Dolbahanta people at Eil Dab told us there were three, two old ones and a younger female, that had been in this district for many years. At Eil Dab we found a considerable karia or collection of flocks and herds at the wells, and the young fellows who came to "dealtig" before us were the finest men and had the best horses we had yet seen in the country.

Filling all our water-barrels at Eil Dab, we set out on January 2 for Bohotle, 45 miles to the south. Passing through an undulating country of conglomerate with patches of sandstone, we camped the first night at Arri Bob by a grove of giant euphorbias and anthills. A leopard jumped over the zeriba in the night, and took a sheep's head out of the pot only a few yards from the tent. The Haud proper begins here, and stretches away to the south as far as the eye can reach, like a bush-covered sea studded with enormous anthills of dark chocolate-coloured earth, reminding one of the crumbling monuments in a deserted cemetery. No game here at this season, except the little "dik dik;" all is silent and desolate; even the hyænas did not follow us to make night hideous

THE HAUD, LOOKING NORTH FROM DO GOBLEH.

with their howls. The impression was forcibly brought home to one, that to be stranded here without water would be certain death. Wherever the rich dark soil has been blown away horizontal strata of limestone appear. The country slopes gradually away to the south-east, and one by one the upper strata of the Bur Dab range crop up, till at God-la-Yareh the appearance of the cherts show the top bed has been reached; that is, the top bed which now remains on the Bur Dab and Golis ranges, there being beds overlying this at Kirrit and other places, consisting of shales and marlstone containing gypsum, hæmatite, and flint, and whose decomposition forms the ferruginous soil of the Haud.

On the morning of the third day from Eil Dab a belt of forest appeared above the horizon to the south, making us hasten our steps as

we entered the welcome shade, and in half an hour we emerged into a fine open spot covered with green grass, in which scores of wells have been dug, and good water is everywhere within 6 or 8 feet of the surface. It is a shallow basin in the Haud, which in the rainy season floods to a depth of 8 or 12 inches, forming a lake about 2 miles in diameter and almost circular. This, in drying up, passes through the various stages of a swamp, until (as when we saw it) the surface is quite dry and hard and covered with rich herbage. The surrounding belt of forest marks the limit of the flood, the big trees only thriving where the water does not stay too long upon the surface. These wells of Bohotle form a most important outpost in the Haud, affording

LOADING WATER-BOTTLES AT BOHOTLE.

a permanent water-supply to thousands of horses and cattle. Also caravans coming from the Merehan country in the south can water here before proceeding to the coast, either *via* Kirrit or Eil Dab. Countless doves roost in the belt of forest surrounding the wells, coming down every evening to drink. Wherever one of these birds is seen in Somaliland, it is a sure sign of water within 7 or 8 miles, and its direction can be found by watching their evening flight. Guinea-fowl and plovers are also plentiful here.

Bohotle was our farthest point south, namely, lat. $8^{\circ} 15' 45''$ N., and on January 7 we took a north-westerly course for Kirrit. A well-worn caravan route leads all the way across the Haud, and there are, no doubt, many places where water could be obtained by digging wells, notably at Do Gobleh, two marches from Bohotle, where a similar "pan" exists,

though on a smaller scale. It is evident that water remains on the surface here long after the rains have ceased. Somewhere to the west of this part of the Haud, Colonel Padget offered to dig a well and present it to the people; but they begged him not to do so, as it would offer an inducement for raiders to establish themselves in the Haud during the dry season. Footprints of lions were visible in the mud, which was now baked hard, showing that there is game here in rain-time. Of all the antelope, the dik dik (*Madoqua phillipsi*) appears to exist with the least amount of moisture. They were here in the open Haud, not in great numbers, it is true, but everywhere some half-dozen would be sighted in the day's march, even where the herbage was so dry that it crumbled to dust when rubbed between the fingers, and such distances from water that it was quite out of the question for these little animals to reach it. Moreover, when at the wells, it was certain they never came to drink there. At the time of our visit a scanty dew was only apparent on one or two mornings, yet, although all the other quadrupeds had retired, these little antelope not only subsisted, but were in good condition.

Nothing of importance occurred during the remainder of the journey across the Haud, and it was with a feeling of relief that we sighted the hills near Gorroreh, where there is a well of horrible water, smelling strongly of sulphuretted hydrogen, and possessing marked tonic and aperient properties. However, it did not appear to be unwholesome either to man or beast, and in this respect differs from the well at Kirrit (one short march to the north), which made Colonel Padget's people so ill. The Kirrit well is a natural cave in a gypsum bed, which runs through the base of a conical hill. The bottom of this cave is filled with the most foetid water, and they told us that only the day before we arrived two men, who were handing up the water to their friends at the mouth of the cave, fell insensible from the gases emanating from the water. Fortunately, we had loaded up the camels with Gorroreh water, which was the lesser evil of the two. We had to make this last to Burao, as at Idoweino there were only three bucketsful to be got after digging out the sand at the bottom of the well, and we found the wells closed at Eil-ka-dalanleh. This was annoying, as we had promised the camels a day's rest and ourselves a lion hunt at Idoweino.

It was with a feeling of regret that we entered the well-known country again at Burao. The Tug Der has a regular and broad channel all the way from the Golis range through Ogo, and for several miles below Ber, and a belt of fine park-like country borders both sides of the river. Through Ogo we found a rise of 300 feet in 20 miles as we journeyed northwards, which is an average of 15 feet per mile. Each day's march brings larger bushes and a fresher morning, but it is not until Dubbur is reached that the rugged edge of the rift appears, and

the everlasting plains are left behind. It was here, on January 15, that I registered the lowest morning temperature, namely, 47° Fahr. at 6 a.m. The air was excessively clear, and fifteen minutes after the sun had risen I was able to light my pipe with a lens only $1\frac{1}{4}$ inch diameter. Later in the day Dunbar shot a fine kudu; the horns measured $53\frac{1}{2}$ inches along the curve; the head was broad and symmetrical. An examination of this part of the Golis range showed the geological structure to be identical with the Miriya pass and Bur Dab. We enjoyed the march down the Sheikh pass tremendously; the scenery much resembled that of the Apennines when crossed from Chiavari

ON THE TUG DER.

on the Genoa side into the plains of Lombardy. Our time being expired, we made a rapid march across the Guban to Berbera, meeting Mr. Lort Phillips and party at Bihendula, who were on their way to the interior by the Sheikh pass.

Let us glance briefly at the tract of country we have passed through. All that part east and south-east of the Habrje peak is inhabited by the Mahmoud Gerad, a tribe of the Dolbahanta. Possessing many ponies, they are inclined to be rather independent and lawless, the more so as they do not wholly depend on Berbera for their supplies of cloth, rice, and dates, but go to the east coast, and also to Mait, 150 miles east of Berbera, in the Gulf of Aden. They have improved much of late years, and the increased value of ponies since the Italo-Abyssinian war is a great inducement for them to keep a check on their raiding instincts, and come in to trade at Berbera.

The Allegheri, who live to the south of the Bur Dab around Bohotle, are already entering into treaty with the British Government, and the Resident at Berbera had gone down to them a week before our visit. The same may be said of the Arasama, who until lately were the terror of all caravans; they are sandwiched, as it were, between the Mahmoud Gerad and the Allegheri. The Bur Dab range, owing to its large extent, rocky gorges, permanent water, and innumerable caves, will long remain the resort of robbers, unless the wells could be closed when the legitimate inhabitants move their flocks to other pastures. It is upon the protection of the pastoral interests that the prosperity of this part of Somaliland depends; it is within easy

ON THE TUG DER.

reach of Berbera, where there is always a good market. The quality of the mutton is excellent, and the ponies are useful little beasts, capable of enduring long marches under a blazing sun. The camels also are of a small but hardy breed, well adapted for the transport of merchandise. The resources of the country stand thus: sheep and cattle, camels and ponies, and next in importance hides, gum, "hig" fibre, and a few ostrich feathers.

The wants of the people are confined to cloth, rice, and dates, together with salt, brown blankets, and a few beads. They are capable of smelting iron themselves, but foreign metal is coming much into favour among the smiths, as it saves them the heavy labour of reducing the ore, and can be obtained very cheaply in a convenient form, to make

their spears, axes, and smaller articles, such as bits and stirrups. A very small quantity of iron suffices for the Somali, as he requires neither agricultural implements nor vehicles. As matters stand at present, the country not only pays for its government, but there is always a small surplus, and although great commercial developments are hardly to be expected, yet it ought to be jealously guarded by us, as it is one of the few remaining places where, in a healthy and bracing climate, our young men may learn to face their lion and obtain that coolness of judgment only to be acquired in the chase of big game, and which will be of the greatest value to them in many spheres of life.

The preservation of the game by the proper regulation of the hunting-parties who go into the country should form one of the leading objects of the government, so that the stock may be kept up indefinitely, and all may find something worthy of their steel.

With regard to the map, the principal positions were found by observations of stars for latitude and azimuth, and the detail by traversing with prismatic compass. These methods are particularly adapted to the kind of country surveyed, which consists of large stretches of plain with bold peaks and ridges that form unmistakable referring-marks.

The only place I am not quite sure of is Daba Kallareri, there being two positions pointed out to me by our men as having that name, one at the north end of the Kerimo range, and the other some miles to the south-west. I have therefore marked them A and B.

The heights were calculated from observations of an aneroid and thermometer by Stanley, both of which instruments have been examined at Kew.

The following is a list of the principal positions :—

POSITIONS FOUND BY ASTRONOMICAL OBSERVATIONS.

	Lat. N.			Long. E.		
	°	'	"	°	'	"
Arregir	9	10	16	46	10	35
Shimber Berris	9	12	21	46	4	5
Gallol Dobleh	9	42	20	46	0	33
Habrje camp	9	50	13	46	11	20
Station on Habrje	9	50	10	46	12	35
Bohotle	8	15	45	46	27	55
Himiri	9	11	34	45	45	20
Gorra Abn	8	49	0	46	26	40
Dongorreh	9	47	50	45	54	10
Bah Lardis pass	9	6	40	46	20	15
Eil Dab	8	56	40	46	29	40
Lascal well	9	54	0	45	51	10

POSITIONS FOUND BY TRIANGULATION WITH THEODOLITE, AND TRAVERSING
WITH PRISMATIC COMPASS.

	Latitude.			Longitude.		
	°	'	"	°	'	"
Habrje peak	9	50	50	46	12	50
Ardi peak	9	58	20	46	3	30
Habrje well	9	56	50	46	14	10
Hill near Habrje well... ..	9	56	5	46	14	0
Daba Kallareri (A)	9	40	0	46	24	20
Daba Kallareri (B)	9	39	15	46	17	50
Artalla	9	43	5	46	8	0
Chan Der	9	36	0	46	6	0
Orhor	9	31	35	46	5	25
Cordohn Medu	9	25	10	46	4	30
Arri Bob	8	43	30	46	24	25
Ber Ras	8	36	5	46	25	10
God la Yareh	8	29	20	46	26	10
Shololah	8	22	20	46	25	15
Dohn	8	26	0	46	23	30
Mererdleh	8	28	30	46	20	25
Elemo	8	20	30	46	20	20
Do Gobleh	8	24	30	46	15	40
Yeh Bacht	8	31	45	46	13	15
Serman Ghadu	8	37	0	46	11	30
Adaleh	8	44	50	46	10	50
Gorroreh	8	52	45	46	9	50
Gol Addeh	9	1	55	46	4	15
Idoweino well	9	9	0	45	52	20

POSITIONS TAKEN FROM SWAYNE'S RECONNAISSANCE OF 1891.

	Latitude.			Longitude.		
	°	'	"	°	'	"
Yirrowa	9	24	44	45	43	5
Shellele	9	2	52	46	0	25
Kirrit	8	58	33	46	9	28
Kabr Ogaden	8	56	24	46	28	4
Arreged	9	8	26	46	12	20
Lascal (top of mountain)	9	52	39	45	51	46

II. By G. PERCY V. AYLMEER.

STARTING from England for Aden by the P. and O. *India*, towards the end of 1896, we quickly exchanged the dreary skies and sullen winter weather for warmer and brighter latitudes. The "we" consisted of Mrs. E. Lort-Phillips and Miss Gillett, Messrs. E. Lort-Phillips, Bland, Fremantle, Gillett, and myself, all bound for Somaliland. Although so large a party, most of us had previous experience of the country, and each a special object in revisiting it. Mrs. Lort-Phillips and Miss Gillett, to add to the valuable collection, botanical, entomological, and

geological, obtained in 1895 by the former and Miss E. Cole; Lort-Phillips to complete, if possible, his unique collection of birds, the result of many toilsome expeditions already; Fremantle and Bland on shooting bent. These comprised the main camp, whilst Gillett and myself formed a detached party for lion-hunting, in which I may mention at once we were singularly unsuccessful; and I also wished to fill in some blanks in a previous map, take a series of altitudes and observations, and visit certain parts of the Haud which were unknown to either of us, and consequently attractive. Aden, with its troublesome preliminaries, relieved by kind hospitalities, left behind us, and the miserable passage across to Berbera consigned to oblivion, we spent a busy week getting

DOBAR, FROM BERBERA.

(From a photograph by F. Gillett, Esq.)

together men, camels, ponies, and the thousand other requisites, and, having moved out to the Dobar mountains, camped near the stream which, issuing from its interior, provides Berbera with its water-supply. The Dobar mountains form one of several isolated limestone hills which shut in the maritime plain from the Hinterland. Although the ascent from the coast is to the eye almost imperceptible, yet its base springs from an elevation of 360 feet, whilst its summit, which Lort-Phillips, Fremantle, and I reached after a pretty rough scramble, is 1534 feet above sea-level. Here, perched upon a precipitous pinnacle of rock, we found a native praying-place, indicated by the circular arrangement of stones and boulders, probably of considerable antiquity, and seldom, if ever, visited, except by the troops of cynocephalous apes, which scream and swear at being disturbed. A glorious view rewards the climb. Across the glaring plain to the north the white mosques and buildings of Berbera show up against the deep blue background of sea, fringed

with a golden eyelid of sand. East and west lies the maritime plain, with its rugged mountain sentinels, whilst to the south, the distant Goolis range, in tender blues and darker purples, half veiled by the crimson haze of the westering sun, stands cool and inviting above the fierce heat of the lowlands. From Dobar, the main route to the Sheikh pass in the Golis crosses another narrow plain, a few miles in width, and plunges into a rocky and precipitous defile, winding through the Kaffir hills. These are a broken and rugged line of limestone hills running east and west, about 6 to 7 miles in width. Singularly desolate in appearance, barren, and almost devoid of animal life, they are riven and weathered in every direction by the intense heat. About midway through this one comes upon the hard and imperishable Plutonic rock, here exposed by the cutting of the stream, which in this pass is almost always running above ground, in pleasant contrast to the usual dry and sandy tugs (or river-beds) along which one has so frequently to travel. The end of a long day's march from Dobar brings us to the pleasant camping-ground of Bihendula, and here, many hands making light labour, our querulous camels are relieved of their loads, which, skilfully superintended, spring up as a canvas village clustered around the grateful shade of a wide-spreading fig-tree. From Bihen extends another gradually ascending plateau, dotted like the lower maritime plain with solitary hills, here composed of Archæan rocks, and generally steep and difficult cones. The most imposing of these, Daimoli, I had long wished to ascend, so early one morning in 1895 I rode out from this same camp of Bihen, with two or three natives, a supply of water, and a good length of sound camel-rope. Seven or eight miles, gradually ascending all the way, over rough and stony ground of broken limestone, cherts, and granite (amongst the former of which are many ammonites, belemnites, and other fossil shells), brought me within easy reach of the north slope of the hill, which from this point certainly appears anything but tempting; in the form of a double cone, the higher is scarped all round its summit with a rather formidable-looking perpendicular cliff. Below this to the south and to the west its sides are impregnable; to the east, from this point of view, it looks perhaps practicable for a goat; whilst towards me its northern face sloped steeply down from its summit scarp for 600 or 700 feet in a bare face of smooth-worn stone. The base of this terminates in a tangle of stunted trees and huge boulders, and looked easily attainable, so leaving pony and camel, and taking with me a couple of natives, water, rope, and instruments, we laboriously worked our way up to the end of this fringe and to the base of the granite slope. This proved by no means so bad as it looked from the distance, so taking off boots and sandals, and using the rope in the bad places, we carefully crept up. As we ascended, however, the angle grew ever steeper and the stone smoother, until at last we arrived at a spot where progress seemed completely barred. My Somalis, although

thoroughly plucky, had neither of them good heads for heights, and certainly clinging to the smooth rock face, which immediately below our feet sloped sharply away into apparent nothingness, was rather dizzy work. The plan so far had been, in the more difficult places, to advance with the rope until I found secure foothold, leaving the men standing firm below, to stop me if I should slide down, and then to lower the rope, by aid of which we all safely gained the same vantage. Here, however, the footing was so insecure, and the angle so steep, that evidently if I once began to slide (as was almost inevitable), I should carry the whole party ingloriously and disastrously down. To return as we had come was not desirable, even if practicable, and to go up here was clearly impossible, so was any movement to the east, but to the west it looked just possible to move sideways across the face. Anyway, it was clear we must move somehow, if we were not to stay up there for ever, and as the longer we looked at it the less I liked it, I made the move. Slowly and carefully, with boots and sandals dangling round our necks, we progressed crab-fashion across the slope to the westward, until at last, after an anxious passage, we arrived at a spot on the granite which I had previously noted, above which the angle seemed less steep, from which we were again able to resume our ascent. From this point all real difficulty ended; even the steep cliff at the extreme summit let us off easily, and we eventually found ourselves, hot and breathless, upon the hitherto untrodden top. A rough climb, but well worth the trouble. The summit, formed of huge weathered masses of bare gneiss, curiously studded with small protruding points of dark hæmatite, is split into fissures 10 or 12 feet deep, in which grasses, stunted shrubs, and flowering plants find a scanty soil. Of these I made a hasty collection for the benefit of our botanists in camp, and was richly rewarded by one of them subsequently proving to be new.*

After a welcome rest, utilized for taking bearings, boiling thermometer, etc., a close inspection from the top showed that a route down the eastern side to the col between the two cones was quite practicable, and proved to be perfectly easy; by it accordingly we descended, and by it this year (1897) Gillett and I went up without the slightest difficulty, and were again fortunate enough to secure two new botanical specimens. Bihen, from a geological point, is full of interest. From the specimens brought back in '95, Dr. Gregory (to whose notes on the subject † I am indebted for much information) decides that the limestone there is lower Oolitic and Bathonian, and a large and valuable collection of its fossils has been made by Mrs. Lort-Phillips. From Bihen, two short marches bring one to the foot of the Sheikh pass. Although this

* *Kew Bulletin*, No. 105, September, 1895, pp. 211-230.

† 'Notes on the Geology of Somaliland,' by Dr. Gregory, F.G.S., F.R.G.S., etc.

is now an excellent road, our camels being heavily loaded, it occupied nearly the whole day to get them up. As, however, in 1884 it took us three days' hard preparatory work at the pass before we were able to even attempt the ascent, one may well be content with the present. At the summit of the pass is one of the comparatively few permanent villages in the country. These are solely occupied by the Widadin (priests), and correspond to a certain extent with our universities as seats of learning. They are also regarded as centres of godliness, which may, perhaps, rather destroy the parallel. Their sheikh succeeds to his position by virtue of age and holiness; cleanliness is evidently not taken as a connection of the latter, as I have seldom seen any apparently dirtier old man than the present holder of the title. Here, also, overshadowed by huge hassadans (euphorbias), lie the crumbling remnants of one of the old Galla villages, sole visible proofs of the occupation of a vanished race. That their inhabitants were in no way inferior in civilization to their successors, seems evident from even the scanty traces they have left behind them. Solidly made stone houses point to permanent occupation, and few years of disuse would naturally obliterate any trace that might be expected of regular cultivation. Well built of rough blocks of the country rock, laid in fairly regular courses, mud mortar alone was apparently used, as I could discover no sign of lime, and this and time probably account for their present ruinous condition. Rectangular in form, generally they are of narrower frontage than depth, and usually face north and south. The interiors in most cases consisted of a single room; several holes sunk in the sandy soil and *débris* within the walls brought us down to a hard limestone surface, which presumably did duty as flooring. No trace of woodwork in any form was left, anything of this nature having probably long since been used up for firewood; nor could I form any opinion as to the construction of the roof, unless the negative evidence of absence of remains in the interior points to thatch. In all probability, the method employed was that in use by their descendants in the Galla countries at the present day. That the entire population occupied permanent settlements seems, from the scarcity of these ruins, impossible; where they do exist, the sites are well chosen, but not even at Eyk, which is the most considerable of any of these ruined towns I have visited, do the number of houses appear sufficient to account for more than a few hundreds of inhabitants.

From this place our respective routes for a time diverged. Our main camp moved leisurely along the eastern extension of the ledge as far as the priests' village of Sok Soddah, within reach of the lofty mountain of Waggar, busily occupied with the acquisition of every object, animate and inanimate, that seemed worthy of a niche in the ever-growing collection; whilst I, with ten or a dozen Somalis, made a rapid march down to the neighbourhood of Bur Dap, in the south-east, from which direction reports of lions had been brought in. News, however, in

Somaliland, though it flies fast and far, generally grows in importance in inverse ratio to its accuracy, and, this case proving no exception, I rejoined the main camp at Sok Soddah a fortnight later, after a fruitless march of over 200 miles of roasting desert, having come upon only one old lion track during the journey, men, horses, and camels rather played out. The mountain of Bur Dap enjoys an evil reputation : situated on the boundary of the Habi Toljarlla and Dolbahanta tribes, and also within easy reach of the Habr Yunis, its position makes it extremely convenient for anybody who may be "wanted," no extradition

CAMP ON THE MIRSA.

(From a photograph by F. Gillett, Esq.)

treaties being there in force. The first meaning of its name signifies Fire mountain. As there is nothing volcanic in its composition, perhaps signal fires may be alluded to; on the other hand, I have heard the name explained by the assertion that Dap is the native equivalent for the rock of which it is composed.

I was glad, on this march, to renew my acquaintance with Burao (the point from which, in 1884, with the late F. L. James's expedition, we commenced a march to the Webbi by fourteen days over almost entirely waterless desert, across the Haud to Gerloguby, during which

our camels never drank), and with one Mattar, then a boy, now sultan of this district, and the second in descent from that Awad who then held the reins. Awad was slain in one of their constant raids, and Mattar exhibited with much pride a sword we had presented to his ancestors, and gratified me by the intelligence that our Namoos, or good name, had acquired a permanent fragrance with his people, to preserve which I made him a small present, and prescribed three Cockle's pills for one of his wives, who suffered from a disorganized liver. Though I believe Somaliland to be in the main most healthy, and the hill country for Europeans particularly so, even more than usual care is needed at these elevations to guard against the great variation in temperature between the midday heats and the rapid fall in the thermometer which occurs immediately after sunset; whilst to the Somali, who has usually managed to pick up fever in some of his many wanderings to the Webbi or elsewhere, this cold mist and wet almost inevitably recalls his enemy. For these expeditions we always lay in a good stock of rough warm blankets to serve out to the men on guard at night or invalids, and they have really proved worth their weight in gold; but even with their aid the fever fiend cannot be entirely exorcised.

Shortly after returning to Sok Soddah, the weather improving and marching becoming again practicable, we moved the camp to the actual slopes of Waggar, where, at an elevation of about 180 feet above the Sok Soddah plateau, we found a much improved climate. The mists and rain seemed to blow over the shoulder of the mountain, and collect and hang upon the plateau, leaving the higher ground wind-swept and free, though even here reminiscences of just a soft day in the Scottish highlands were unpleasantly frequent. Excepting for this one drawback, Waggar seems to be a paradise for the 'ologist. Day by day saw large and increasing numbers of every species, known and unknown, creeping, crawling, flying, harmless, and (to give piquancy to their pursuit) deadly poisonous, added to the cases and bottles of our insatiable collectors. Gillett and I were on the eve of starting on a hard and long march into the Haud, for which we should require to take away about sixteen strong camels, and although we had left Berbera with close on to seventy, yet a certain number of these were always on the road keeping up communications with that place, and a certain number were weak or ailing, so that even Lort-Phillips himself, most ardent of collectors, who was meditating another move for the main camp still higher into the mountain fastnesses, groaned when he thought of the cruel track before him, at the rate at which the loads were increasing. However, as it turned out, our own camels bred on the plains proved quite unfit for the chamois track up which the main camp subsequently went, and hardy Eesa Moosa camels had to be hired for the purpose. For many years I had cherished the hope of paying a visit to a reputed

Galla city in the centre of the Haud named Eyk. Rumour had it that here the ruins were of vast extent, that every kind of antiquarian treasure was to be had for the picking up, and even as far back as 1884 whispers of heavy discs of gold finding their way mysteriously down to the coast had reached my ears, added to which that rather fraudulent monarch of the forest, the lion, was reported to be there in inexterminable numbers. Therefore, as time waits for no man, and summer must see us back in England, it was clear we must break up our pleasant, cheery party, and, leaving the cedars, running streams, ferns, and orchids of this land of comparative milk and honey, set our faces steadily to the south, and march into the heat and glare of the waterless Haud. So on February 18 we broke camp and started south. Four long days' marching through the monotonous stretches of the

WHITE-ANT HILLS.

(From a photograph by F. Gillett, Esq.)

desert, a constant reiteration of parched sandy plains, bare save for the endless succession of the giant white-ant hills, which give such a melancholy, churchyard-monumental look to the land there. Then long miles of the khansa (wait-a-bit thorn) jungle, through which the track, where there is one, winds a devious course, making each mile into two, and the task of working the prismatic compass almost hopeless. Then again through pleasanter stretches of large trees and patches of the tall and graceful durr grass, where oryx, debbertag, gerenouk, and owal relieve the march and help the larder; and by midday of the fifth day, emerging from one of the thick belts, Abdulla, our taciturn Midgan guide and tracker, points across a long dull-red depression, evidently in better times of rain a water-pan, to a distant cluster of brown irregular mounds dotting a wide open plain, on which a yellow sea of

grass is waving, and laconically says, "Eyk." Pleased as we were to have attained it, depression fell upon us at its apparent insignificance, and, riding forward, we halted the caravan and pitched the camp amongst its broken walls. These a closer view showed to be of greater extent than at first appeared, and presently all hands, spurred on by prizes offered for the best finds, were hard at work hunting for relics. Of these we soon had a large store. Broken glass of a variety of sizes and patterns; broken bracelets very similar in pattern to those in use at the present day; pottery and china of several kinds, including Oriental china and Celadon; some few pieces of worked iron, silver, and bronze rings; a crucible for melting down silver coin to work up into ornaments, just as they use now; and also some interesting fragments of a grinding-stone composed of a hard black species of stone, which I believe was

RUINS OF EYK.

(From a photograph by F. Gillett, Esq.)

much sought after for this particular purpose in many parts of the world. These all formed a rather imposing array, but still were perhaps disappointing—nothing was whole, everything broken; and where were those golden discs under whose fancied weight our camels had groaned? Two days were spent in a close examination, which disclosed little further of interest. The houses, although in some cases larger than those at Sheikh, were built in the same manner and position, although of different stone, the material being a kind of conglomerate of limestone rubble naturally cemented together, brought from some slightly elevated ground at a few miles distant. Vast middens, overgrown with grass and thorns, pointed to a prolonged occupation, and yielded our principal finds. We came across several pits 15 to 20 feet deep, either wells dried and filled up with washed-in silt, or more probably, perhaps, simple catchment basins by original design, as they now are in effect, the surrounding mounds of thrown-out soil having been cut through on the southern and higher sides to allow the surface rain-water to drain in.

The Somalis have a legend that somewhere near there is concealed a deep and never-failing well, but so artfully hidden by the last departing of its original owners as never afterwards to have been discovered. Certainly there is abundance of water here in the rains, and by a little engineering applied to the depression to the north enough might be stored to last for a considerable period; but the Somali is content to drive away his herds and camels when the hard times come, and seek fresh pastures. The position of Eyk I found to be within a few miles of that assigned to it in 1884 by Mr. W. D. James and myself from native reports. This evening four camel-loads of water arrived, somewhat to our relief, as the precious fluid was running low. The want of water is the greatest possible hindrance to shooting in this region, where the lion-tracks may lead one to, no man can forecast, and, being almost always several days' journey from the nearest wells, it is anxious work making arrangements to meet camels with fresh supplies at some unknown point in the desert, whilst any hitch might cause a serious disaster. Providence was especially kind to us in this respect on several occasions. For long we drew our supplies from Berato, where an enterprising Somali has dug some wells; unpleasant and unwholesome, its only merit was the fact of its being liquid. At Berato there is a priests' village, permanent stockaded huts and jowari cultivation; whilst about 9 miles west is the large and important town of Hahi, the position of which I wished to fix, but was unfortunately prevented from visiting. At Berbera, however, I met Captain Swayne (brother of the author of a well-known book of Somaliland); he had just returned from this town, and gave me its position, but, having unfortunately mislaid the notes on this point, I have been compelled in this map to leave it in its present position, which is, however, approximately correct. The men with these water-camels reported that our road into Eyk had been crossed by a party of four lions, so we broke up the camp, and next morning at daybreak picked up their tracks. These we followed in an easterly direction towards Bur Dap, gaining little upon them, the tracking being slow, and towards evening of the second day, losing them entirely, and water running short, were compelled to leave them. The anthills in this particular district are certainly the largest that I have ever seen. Built up around a tree, which is rapidly absorbed within a tomb of red mould, very roughly following its outline, they assume most fantastic shapes, growing perhaps along some leaning fork until the centre of gravity falls so nearly outside the base that they are easily blown over by one of the frequent tornadoes of wind-blown sand, which the Arabs so aptly name spirits of the desert. They are built with great rapidity, according to the Somalis, attaining ten or a dozen feet of height in the course of a single year. On this day I picked up a good *Amadorcas Clarkii* freshly killed by a leopard, skin and scalp almost perfect. For weeks after this our journey was an unbroken record of constant marching and counter-marching

across the Haud, at rare intervals finding lion-tracks, following them, never reaching them. Almost always their tracks showed them to be in large mobs, and always travelling. Our luck was out, and in spite of incessant hard labour we were never able to strike them. Pressing necessity at last for communication with the others, mails, and provisions drove us as far north as Dawelli, near the Djerato pass, which may almost be considered the western extension of the Mirsa ledge, as, although its continuity is broken between Bun Yero and Gan Libah, yet west of the latter the altitude and general geological features are again almost identical with those at Sheikh.

These objects achieved, we again started south for a rapid march to the Toyo plain for haartebeest, with the intention of returning from

TRACKING THROUGH ANTHILL COUNTRY.

(From a photograph by F. Gillett, Esq.)

there *via* Hahi to Sheikh; but a dangerous case of fever in camp made it necessary to give up the long march, and we accordingly returned to Sheikh by easy marches along the southern crest of the Golis, at an elevation of nearly 5000 feet, daily marching through dense fogs and rain. At Sheikh, Gillett, with his usual energy, started off on a flying march to endeavour to intercept the main camp—rumours of its being unexpectedly seen in Berbera having reached us—whilst I turned west again along the Mirsa, and ascended a steep pass impracticable to camels, in order to revisit the interesting cave of Shonach. Situated on the lofty neck which joins the bluff of Foadwein with Foadiare, the mouth of this curious place is near the eastern extremity of a rocky gorge, on entering which one suddenly passes from the bright daylight into Cimerian gloom. Overgrown with heavy-leaved figs,

hassadans, and junipers, a narrow path leads into this eerie place, until one's steps are arrested by the unusual sound of running water, which issues from a dark and creeper-hidden orifice. Needless to say, the place is haunted. Have not sheep and goats been seen to enter and never to return? and does not, from far down in the bowels of the earth, a deep booming sound come echoing along the narrow passage? Clearly a malevolent and carnivorous Afreet. Is not also the water itself, gushing from the dry rocks at the top of the hill, decidedly uncanny? Certainly the place does look interestingly mysterious, but also carried an unpleasant suggestion of snakes with it, which was not dispelled by the answer to my question on this head—"Allah yaaraf, labat" ("God knows, maybe"). Knowing the supply of air to be limited, I left my men behind and entered. For a short distance the height is sufficient to stand upright, and the breadth to walk dryshod on each side of the stream; but very soon height and width contract, and one has to take to crawling along the bed of the stream. Lighting a lantern, I became presently aware of the voice of the spirit: from far up the narrow tunnel came a deep booming, rushing sound, now advancing, now dying away. On advancing, the walls still contracted, until, being reduced to dragging myself along prostrate, a refreshing stream of water entered my collar and pleasantly trickled along into my boots. Again the mysterious noise approached, and the lantern, pushed in advance—which was just tall enough to keep the flame from the water—was, with my face and shoulders, violently assailed by a swarm of hundreds of bats, which came sweeping down the passage. Finding it completely blocked by the unexpected obstacle, they turned, and with them the noise again died away into the distance, until, their passage in that direction also presumably being arrested, the performance began again *da capo*. Twice I came to places where the roof was higher, and was able to relieve the strain of the awkward position, but the atmosphere grew more and more oppressive. Close above my face two huge and abominably repulsive greenish-coloured spiders kept pace. The light burned lower and lower, and finally went out. With some trouble I extracted from a dragging pocket a matchbox (fortunately water-tight) and relighted. Again and again it declined to burn, and finally, recognizing that the board-school allowance of air must be in dangerous deficiency, I commenced a feet-forward retreat until able to turn round and meet the welcome daylight. Before leaving I captured a couple of bats to add to the collection, but have not yet heard whether they belong to any new species. Sheep or goats, finding their way in, must perish miserably, as, following the water up, they must soon find themselves unable to turn, and would lack the sense to retreat backwards. The water on its exit from the cave falls almost immediately into a circular basin, from which it drains away by a subterranean outlet, and no doubt forms the headwaters of the Alla Ulli tug. I had attacked this cave

in 1895 with no better success, and this year had conceived the idea of diverting the water from the basin and allowing it to form a surface-running stream down the valley, to the great advantage of those who frequented it. Now, however, the volume of water running had diminished by half, and as this would be almost immediately sucked out of sight in the thirsty soil, that scheme had to be abandoned. Where the source of this water may be, I am quite at a loss to know. That it could be an artesian supply, under pressure from the Abyssinian highlands to the west, forcing its way here to the surface through some natural shaft, seems difficult to believe, as it would have had to make its passage upwards through the subjacent granites as well as the limestone formation above. That water has in the past found its way into this gorge through similar channels seems evident, as I found several other smaller caves giving into it, apparently formed by water; but if considered as surface water, it is an equal puzzle how sufficient storage to maintain a constantly running stream can be found so near the summit. Moreover, this year much heavier rains had fallen in the immediate vicinity than on my previous visit, yet the stream had shrunk to half its volume.

The question also of what becomes of the rainfall over a great part of the Haud seems rather obscure. A considerable number of boiling-point altitudes show that the general trend of the country slopes to the south-east. The heavy rainfall from the crests of the Golis, and, with few exceptions, from the level of the Mirsa also, flows south and south-east, until, merging into the Tug Der ("Long tug"), it finds its way down the Wady Nogal and into the Indian ocean. This river, however, does not appear to drain any of the country south of about $9^{\circ} 30'$ N. lat., whilst the actual surface of the Haud below this, although of course in the main undulating, is, taken in detail, so remarkably flat that it is almost devoid of watercourses, and in the rare cases where any water-cuttings are met with, they extend no distance, but spread out on to the level surface like the fingers of a hand. This occurs even at Beràto, where one branch of the considerable tug which takes its rise under Dodoaba, loses itself in the plain after furnishing the wells at Oadwein with their water. I gather from native reports that the other branch in the rainy season carries water to Hahi, which in the dry season has to use the Oadwein wells. In some of the shallow pans which exist in limited numbers, the water remains for several months, and in a few throughout the year. In the former, even when dry on the surface, a species of mud that is just liquid to drink can sometimes be obtained by digging a few feet down, but care must be taken not to break through the thin stratum of clay which holds it from the sand below. The depth of this desert sand must be considerable, 70 or 80 feet of it being sunk through to reach the water at Burao on the northern side, and apparently diminishing to the southwards until the rock at Gerloguby

on the southern edge is reached. As the Tug Der is ascended from Burao and the Golis approached, the water is found nearer the surface; but instead of finding, as might be expected, the converse to obtain in descending the river, we find the water at Ber, 10 miles below Burao, at only about 15 feet. Here the river-banks have almost disappeared, the flood water finding its way through several shallow channels, which converge again lower down. No doubt evaporation carries off a great deal of the rainfall, but does not seem sufficient to account for all. Natives of the desert certainly possess a kind of inherited instinct for the likely places in which to look for water, but it would be interesting to ascertain whether it might not also be found, to the great advantage of the country, in many places where it has not been sought for, but where to all appearance the indications seem equally favourable. Sun wedded to water in this soil and climate would grow anything and everything, and could the supply of the latter be made permanent, this arid desert would quickly blossom into a garden of Eden.

The benefits of an English occupation of the Somali coast are obvious to the Somalis. Natives near the coast are now met, more often than not, carrying no more formidable weapon than a stick. In 1884 this would have been with justice considered as merely foolhardy. Might was right, and though arbitration was frequently called upon to decide disputes, more often than not the question would end by being put to the crucial test of steel. Now when robbery and bloodshed occur, the disputants bring their case to the court at Berbera, where they are settled with justice and despatch before the Assistant Resident. Should one side consider that an appearance in person might involve danger to his life or liberty on account of the weakness of his case, pressure can be generally brought to bear upon the representatives at Berbera of his tribe, which will either ensure his eventual appearance, or necessitate his leaving his tribe for some such happy hunting-ground as Bur Dap, where he is, however, in the uncomfortable position of an exile and an outlaw. Trade with the interior existed under the old *régime*, but restricted almost to vanishing-point by the oppressive tolls levied upon the caravans, both on their journey and at Berbera. Fifty per cent. of their profits were commonly allowed to go in this manner. Now it is true we levy export duties, but these in no way compare with the former exactions of the Berbera brokers, whose profits, although not extinguished, are kept in reasonable check by legislation. Armed escorts are furnished to caravans passing through disturbed regions, to protect them from blackmail on the journey, whilst the mountain passes have been made passable, and life and property within our sphere are reasonably secure. These are but a few of the happy contrasts existing between now and then. Alas that in another respect *laudator temporis acti* should have a stronger case! The big-game

shooting of the country year by year grows less, and I greatly fear that its fate is sealed. This is, however, a question which I have no justification for discussing here.

ROCKALL.

THE Royal Irish Academy has recently published an important series of papers on the remote islet of Rockall,* which summarizes all existing knowledge of that interesting rock. The recent revival of interest in Rockall is largely due to Mr. Miller Christy, who has called attention to the importance of its position as the site of a meteorological station, and endeavoured to induce the owners of sea-going yachts to attempt a landing. As Rockall is a small and steep rock rising on a bank of no great extent from the abysmal waters of the North Atlantic in lat. $57^{\circ} 36'$, long. $13^{\circ} 14' W.$, it is extremely difficult of access. It lies 185 miles from St. Kilda, in the Outer Hebrides, itself only accessible on a few occasions each year, and 260 miles from the north coast of Ireland. Prof. Rupert Jones, F.R.S., contributes a historical notice of previous references to the islet, from which, and from notes in the reports of other contributors, it appears that while frequently sighted and often mistaken for a ship, it has rarely been landed upon, and only a few attempts to land have been recorded. Fishermen from Grimsby and the Færoes frequent the Rockall bank, and they may have landed occasionally without leaving any authentic record. The recorded landings are given as follows:—

July 8, 1810: A party from H.M.S. *Endymion*, under Captain Basil Hall, made a landing with much difficulty, and brought away some fragments of the rock, which are still preserved.

August 15, 1862: A boat from H.M.S. *Porcupine* attempted to land; one man only succeeded in doing so, but at a point from which it was impossible to climb the rock. He broke off specimens with the sounding-lead which was thrown to him, and Captain G. H. Inskip presented fragments of the rock so obtained to several museums.

In or before 1888 the captain of a Grimsby fishing-smack is reported to have landed, and, climbing to the top, estimated its height as 78 feet.

In July, 1887, and in 1888, two fishermen from the Færoes landed and climbed the rock.

These appear to be all the authentic instances of a landing having been made. The rock is only about 70 feet in height, and not more than 100 yards in circumference, with some small submerged rocks lying off it. The extent of the bank, less than 100 fathoms deep, is about 100 miles from north to south, and 50 miles from east to west. The rock

* *Transactions of the Royal Irish Academy*, vol. xxxi. part 3, August, 1897.

SKETCH NORTHERN S

COMPILED FROM

Messrs G. P. V. AYL
and Lieut. BRScale
Natural Scale 1:750,0Mr Aylmer's route,
Mr Parkinson's rou
Lieut. Brander-Dunl
Boundaries .

SKETCH MAP OF NORTHERN SOMALI LAND

COMPILED FROM THE SURVEYS OF
Messrs G. P. V. AYLMEYER, F. B. PARKINSON
and Lieut. BRANDER-DUNBAR

Scale of Miles
10 5 0 10 20 30
Natural Scale 1:750,000 or 1 inch = 11.8 miles

Mr Aylmer's route, 1897 . ————
Mr Parkinson's route . ————
Lieut. Brander-Dunbar's route
Boundaries