know nothing about (as their maps prove), and where the natives say no Portuguese has ever travelled. We claim the country too under the Queen's charter, and we mean to have it, and as an Englishman travelling in an unexplored country, I think I have the right to call any conspicuous mountain by the name of a distinguished Englishman. Such names on the map, at any rate, will show that Englishmen have been there.

As to my altitudes, I suppose they are not worth much. I had my aneroid set in Cape Town at the Observatory. At Tete, which, in the Portuguese official report is said to be 148 metres, or about 530 feet above sea-level, I found that my aneroid, when the weather was fair, stood at about 550 feet early every morning, going up to over 700 feet in the heat of the day, and when rainy weather came on going down to about 300 feet. Thus all my altitudes are taken by the lowest reading in the twenty-four hours. We left Rusambo's on September 1st, and the aneroid then marked 2900 feet. Returning on September 10th it marked exactly the same three days running early in the morning. After this the weather got much hotter, and upon returning to Rusambo's from the Mashona country in October the aneroid read 300 feet higher. I have therefore deducted 300 feet from all my readings west of Rusambo's. Altogether you will think my aneroid readings are not worth much. Perhaps not, but I think it will ultimately be discovered that much of the Mashona plateau is nearly, if not quite, 5000 feet above sea-level.*

A Journey through the country lying between the Shire and Loangwa Rivers.

By Alfred Sharpe.†

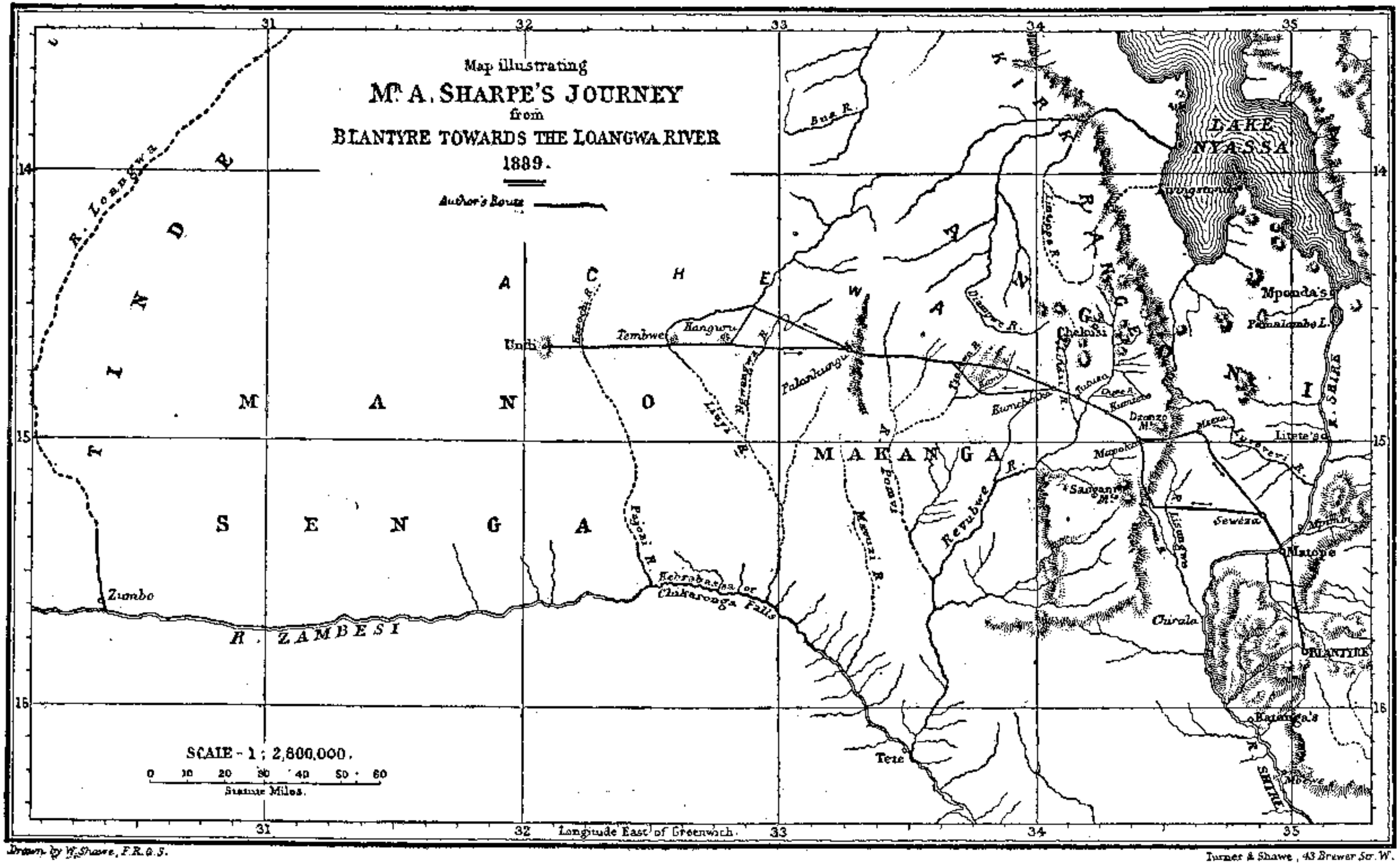
I left Blantyre in the Shire Highlands, on August 22nd, 1889, with a caravan of seventy-four men, intending to travel through the country lying between the Shire and Loangwa rivers (the latter running into the Zambezi at Zumbo.

Crossing the Shire at Matope, a short march of eight miles brought us to the village of Seweza, where we bought a food supply to last us five or six days. Travelling due west from Seweza, we crossed the Lisungwe river, a fine little stream rising in the Kirk Mountains, and flowing into the Shire at Chirala, and commenced the steep ascent from the Shire valley, reaching the watershed between the Shire and Revubwe rivers on the 28th August.

The Kirk Mountains are not a range as they appear to be when

* Mr. Turner has adopted the position of Tete given by Dr. Livingstone and Messrs. Capello and Ivens, and for Mount Hampden he takes that given by Mr. Selous in the map of his journey of 1883 ('Proceedings R.G.S.,' May 1888), correcting the intermediate positions by the compass bearings supplied by him.—[Ed.]

† Communicated by Ottley Perry, Esq., F.R.G.S.



Map illustrating

Mr. A. SHARPE'S JOURNEY

from

BLANTYRE TOWARDS THE LOANGWA RIVER

1889.

Drawn by W. Shawe, F.R.G.S.

Turner & Shawe, 43 Brewer Str. W.

looked at from the east, but merely the abrupt descent to the Shire valley from the highlands lying west. They are a continuation of the wall which, starting in the Konde country at the north end of Lake Nyassa, runs down the whole of its shores, and forms the western edge of the trough in which the lake lies. Following the watershed for a day, and then travelling north-west, I crossed the track of Mr. Montagu Kerr at the village of Deuka in the Angoni country.

The ascent to the watershed is through very pleasant country, well wooded, and with plenty of water; but when the top is reached trees disappear, and the gentle slopes on the western side are bare grass. While in the woodlands I saw elephants, and after entering the bare moor-like country, was seldom out of sight of game.

The inhabitants of this southern portion of Angoni-land, though calling themselves Angoni, are in reality Achewa who have given in their submission to the Angoni and are allowed to live in peace. All the larger villages have headmen from Chikuse's living in them. Chikuse is the king of the Angoni living south of the lower end of Lake Nyassa. His own kraal is situated two days' journey south of the south-west corner of the lake.

On August 31st, during the night, I was deserted by thirty-seven of my carriers, which compelled me to leave half of my loads in an Angoni village, and to take the chance of my recovering them on my return.

The Revubwe (or Revugwe as in Perthes' map) was crossed on September 2nd, a little below where the Chère joins it. It is a stream of considerable size, having occasional deep, rocky pools, which afford a home to a few hippopotami. It takes its rise in the mountains lying north of Chikuse's kraal, and flows into the Zambezi near Tete. Even in the driest season it always has a good volume of water, and in the rains must even here—far up its course—be a large stream. Its bed is full of rocks, worn in many places with deep holes or "pots." The width where I crossed was about 20 yards.

Seventeen miles north-west from where I left the Revubwe another stream was crossed, of about the same size and character, the Lifidzi. The sources of the latter are among the mountains west of Chikuse's, which on the northern side of their watershed supply the head waters of the Lintippe river (flowing to Lake Nyassa).

The Diampwe river, marked in the map accompanying Livingstone's last journals, cannot rise so far south-east as there shown.

After crossing the Lifidzi, a few more so-called Angoni villages were passed, and then commenced the uninhabited belt which invariably surrounds Angoni country. Wherever these people have settled they have driven back the original inhabitants. They have a regular war season, commencing about August (when the crops have all been collected, and the burning of the grass throughout the country has rendered travelling easy), and ending in November, when their gardens have to be hoed and planted. During this period of three to four months they travel in bands throughout the surrounding countries, harrying the weaker tribes and *collecting slaves.* Owing to this, there is always found an uninhabited stretch of two or three days' journey on leaving any part of Angoni land. They always live in the high-lying country, and are rich in cattle, while tribes living near the Angoni never possess any.

My route after leaving Kumchenka, the last Angoni village, five miles west of the Lifidzi river, was nearly due west.

For four days we travelled through pleasantly wooded and well watered country, having an undulating "ground floor," out of which rise large granite peaks and domes in every direction. All this country drains south-west to the Pomvi river which runs south and south-east throughout the Makanga country, and joins the Revubwe river.

I find in Perthes' maps a river called the Aroangwa Posse, the authority for which is, I think, Portuguese. The Pomvi river where I crossed it occupies a position near where the Posse is laid down, and I therefore conclude that it is the same river. It is, however, shown (in Perthes' maps) as flowing to the Liuyi river, which is incorrect. I made careful inquiries and ascertained beyond doubt that the Pomvi flows through the Makanga country to the Revubwe river.

I crossed the Pomvi on September 8th, a good sized stream frequented by hippopotamus. From here the country gently rises, with only occasional peaks, for ten miles to the west, where the "ground level" abruptly falls some 400 or 500 feet, and the character of the country entirely changes.

Here are first met the independent Achewa tribes, who at this their eastern limit are under a chief named Palankungu. Their houses are built high up in almost inaccessible places on the rocky peaks wherever water is within reach. They only descend to the valleys for the cultivation of their gardens, and live in constant dread of the Angoni warriors. They also plant a grain called *mapira* on the mountain sides whereever crevices in the rocks afford a holding to a few handfuls of earth. When they descend to their gardens it is only in large parties; some of the men keep watch, while the others and the women do the work.

After leaving Palankungu we met with great scarcity of water. The country is broken and covered with small fragments of quartz and stones; the heat great, and not a green leaf to be seen.

On leaving Palankungu, I had great difficulty in retaining the remnant of my carriers. They were all Nyassa and Shire men, who are unaccustomed to making journeys of any length, and are quite useless after a few days' travel away from their homes. For three nights I had to watch all night to prevent desertion, and even during the day I had to keep a sharp look out; for though they fear the thought of running home through country inhabited by other tribes, yet their fear of the amount of work to come if they stop is far greater.

On September 12th I crossed the Ngwangwa river flowing south, and crossed it again twice on the 13th, as it takes a bend to the north and back again to the south-west. It was here a rocky stream with plenty of excellent clear water, having a bed about 15 yards wide. Like other rivers throughout this country it is evidently subject, during the rains, to heavy floods. Its general course, I was told, is nearly south until it joins the Liuyi river some 40 miles south.

From here each day brought us into hotter and drier country. The only green things were on the banks of the few streams met with. There was a famine throughout the country, and after leaving Palankungu we were unable to buy any food whatever. Fortunately, game of all kinds abounds on the banks of the Ngwangwa, and of the rivers we passed further on; and I was able to keep all supplied with meat.

On September 14th we reached the Liuyi river which was here running only a little south of west. It is the Leuia crossed by Livingstone. At the point where we reached it, we were, as nearly as I could judge, some 25 miles, as the crow flies, south-west from where Livingstone reached it. It is here (on the upper part of its course) a rocky stream rather larger than the Pomvi or Ngwangwa, and has occasional deep pools frequented by hippopotamus. (I subsequently crossed it much lower on its course, where its character was changed to a wide sandy river flowing through plains.)

At this point I found it impossible to get my men any further, and decided to leave most of them and nearly all my remaining loads at the town of a chief named Kanguru, a day south-west; and then to push on with a few men lightly loaded. I shot a hippopotamus in the Liuyi river, which gave all a good supply of meat for some days to come.

From the point where I first struck the river I went, without crossing it, 15 miles south-west to Kanguru's. He lives, like all the Achewa, high up on a rocky mountain, and is one of their biggest chiefs.

I left here most of my men and loads, and, starting again on September 18th, with a small party, travelled due west 14 miles to Tembwe, without reaching the Liuyi river again. Tembwe is a small chief who has his village on the extreme summit of a mountain some 1200 feet above the level of the surrounding country. I did not climb up to his village but camped on the side of the mountain near the rocky hole from which the people obtain their water. From here I overlooked, to the west, a great stretch of apparently dead level country, with only one or two hills rising out of it at considerable distances from one another. The Liuyi river was visible as a thin green line coming from the north-east, making a great bend round to the south, and disappearing to the south-east. I had from time to time enquired as to the whereabout of Mano which is marked in Perthes' maps, as a town on the Liuyi; but I here found that Mano is the name of the whole of the country lying west of the Liuyi river, and reaching, according to information given me, almost to the Loangwa river to the west.

The Mano country, I was told, was bounded on the south by the Senga country; on the west, by the country of Tinde, a chief on the Loangwa river; and on the east by the Liuyi river.

The Liuyi, where I again struck it on September 19th, is from 25 to 30 miles west of the dotted lines given, in Perthes' maps, as its supposed course. It is here a large stream; but, at this time of the year, has only a narrow line of water trickling down its sandy bed. The actual sand-bed of the river is from 25 to 40 yards wide, between low banks; beyond these, the high banks (forming in flood time the limits of the water) are in some places 80 to 100 yards apart.

Leaving the Liuyi river before daylight on September 20th, we had a terrible march west, some 40 miles to a river called the Kapochi. It is very difficult to get any information as to the country even one day away, and I was not aware how far we had to go before reaching water again. I reached the Kapochi myself at sunset, having been the whole day without water. My men dropped in, some during the night, and some not until noon the next day, much exhausted by thirst and the great heat. I have experienced no heat so great in Africa as in this Mano country. There is no dew.

The Kapochi river which is not marked in any maps, so far as I am aware, is about the same size as the Liuyi, but has no running water in it at this season. Water is, however, easily got by digging down a foot into the sand. Stopping a day on the river, and travelling a few miles down its course, I found large deep pools, with many crocodiles and hippopotami, and plenty of fish.

Another waterless stretch of ten miles brought us to a high rocky mountain, inhabited by Achewa, the retreat of a chief named Undi. He claims Kanguru and Palankungu to the east as subject to him, and says his country extends to the west almost to the banks of the Loangwa river.

Water collects in one or two places among the rocks high up in the mountain, and affords a supply throughout the dry season.

Endeavouring to get on west from Undi's, I learnt that at this time of year there was no water for three long days' journey ahead, and I could get no men as guides. The famine was even worse here than in the country we had left behind. Near Undi's we passed several skeletons, and were told that many had died from hunger. I offered gifts of guns and powder to any who would accompany us to the west for three days, and this, I knew, would tempt them if it were possible, but I could get no one. I had therefore to give up for this year (1889) my journey further west.

Undi is constantly visited by Arab caravans from Nyassa, as he collects considerable quantities of ivory. He formerly lived in the country to the north-east of his present abode, but finding himself too near the Angoni, moved back a few years ago.

Leaving Undi's on September 24th, I started on my return journey, and reached the Shire Highlands again in 26 days. On returning, I shortened the journey somewhat * by cutting off two corners on my old route. Along the banks of the Liuyi, Ngwangwa, and Kapochi rivers there are immense quantities of game. My men lived entirely on meat for three weeks, as we were unable to buy any food. Rhinoceros are very plentiful west of the Liuyi river, and on all three rivers I shot elephants.

I was unable to ascertain accurately whether the Kapochi runs to the Liuyi, or straight south to the Zambezi. Of those I asked some said one thing, some the other. I am inclined to think, however, that it runs to the Zambezi and is identical with the Pajosi, marked as entering that river some 30 to 40 miles above where the Liuyi enters it.

Livingstone, in the "Last Journals," mentions several places described to him as lying south-west of his route from Nyassa to the upper Loangwa, e. g. Zomba's, Zalanyama mountains, Isamangombe mountains, Chindunda mountains,† &c. I passed through the positions given to some of these, but could not hear of them. Names change quickly in Africa, places being, as a rule, called after the reigning chief. When he dies there is a new name, and the old one is quickly forgotten.

Livingstone also speaks of gold. Of this I could hear nothing. It may have been found formerly, but at the present time nothing is known of it by the natives, nor did I find any traces, though I made a careful search.

Undi is doubtless the chief spoken of to Livingstone as Undi M'senga (Undi in Senga), living to the south-west of his route. His (Undi's) name is known afar; I heard of him before leaving the Revubwe valley. The Achewa must formerly been a very large tribe. They are the original inhabitants of nearly the whole of the country contained (roughly) between the Kirk Mountains on the east, the Loangwa on the west, and the Zambezi on the south; their northern limit being about 13° or 12° 30′ S. lat.

Since the advent of the Zulu tribes from the south (called the "Angoni," "Maviti," or "Mazitu"), the Achewa have been driven out of all the best country back into the hills, where they lead a miserable existence, harried constantly by the Angoni, and suffering almost every year from famine. In one spot only have the Achewa been able to hold their own—at Kasungu, some four days west of Lake Nyassa. This place, when visited by Livingstone, was a large and thriving collection of towns under a powerful chief named Muasi. I was there in 1888, and found the country round Kasungu thickly populated by Achewa under

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* The journey west occupied from August 22nd to September 22nd.

† Chindondo is a word meaning "a large wilderness," or "uninhabited country."

a chief also called Muasi, but not the one who was there at the time of Livingstone's visit. He had died.

The Achewa language is almost identical with that spoken by the Maganja. The Achewa, Atonga, Atimboka, and Wahenga tribes are all closely allied, and evidently come from the same stock.

A Visit to the newly emerged Falcon Island, Tonga Group, South Pacific.

By J. J. Lister, M.A., H.M.S. *Egeria.*

On Wednesday, October 2nd, 1889, H.M.S. *Egeria* left Nukualofa (Tonga) to visit Falcon Island. It lies in the south-west part of the Tongan group, nearly in a line between the high volcanic islands of Tofooa, and Kao to the north, and Hongatonga and Hongahapai to the south. Tofooa is some 35 miles away and is seen in clear weather with the high conical top of Kao, 3030 feet high according to the chart, looking over the middle of it, as though it was part of the same island. Hongatonga and Hongahapai, two remnants of an old crater, are nearly always visible, pale purple or grey with distance, 15 miles to the south.

At the present time (October 1889) the island consists of two distinct parts. 1st. The remains of a very wide-based conical hill, the side of which slopes gently up, at an angle of about 6° to the highest part and then ends abruptly in a cliff whose base is washed by the sea at high water. Captain Oldham informs me that the present height of the island is 153½ feet. In a bird's-eye view the outline of this part of the island is a nearly symmetrical oval—the cliff presenting a convexity to the sea, and the base of the slope of the hill, where it joins the level, a convexity in the opposite direction.

2nd. A flat, extending away from the base of the hill in a northerly direction. This is about 10 to 12 feet above high tide level and is traversed by tide ridges, which run in a general way parallel with the shore of the flat and present a steep side towards it, and a more gradual slope in the other direction.

Except for some few seedling plants half-a-dozen of which were found during our visit, the island is entirely destitute of any vegetation. It is just a bare brown heap of ashes, round which the great rollers break and sweep up the black shores in sheets of foam.

The structure of the hill is seen in the cliff section. It is composed of fine-grained, dark greenish-grey material, arranged in strata. The strata are marked partly by slight differences in colour but chiefly by the salts, some white, some yellow, which have crystallised at the surface, more abundantly from some layers than others, and form pale bands. The strata are thickest in the highest part of the hill and thin out as it