

### THE ROUTE FROM SUAKIN TO BERBER.

This route, estimated by General Gordon during his rapid passage over it in 1874 as about 288 miles in length, and found by Major Prout in his careful reconnoissance in 1875 to be about 255 to 260 miles, is one presenting great and peculiar difficulties to the march over it of a large body of troops; especially between the months of March and November, when the heat is excessive, and when those troops may be required to deal, during the march, with hostile forces.

Starting at sea-level at Suakin, it ends at an altitude of about 1,240 feet on the Nile, at Berber, after having attained at one point an altitude of nearly 3,000 feet.

In its entire length it is practically, *for a large force*, a barren, treeless, waterless desert, but quite different for a small detachment of a few hundred men with their necessary animals. For a large force (say, 5,000 to 10,000 men) the water used by men and horses must in some manner be transported with them or in advance of them.

The wells and water-holes on the whole line may be quickly named and described, as follows: at about 2 miles from Suakin are the wells which furnish water to the town; and here a good supply for a large force may be had. The next water is at El Hundouk, about 9 miles out. These wells furnish partly sweet and partly brackish water, sufficient for about 250 men and 500 animals. At about 17 miles out are the wells of O-Taon, with capacity for, say, 250 men and their horses. In the valley of Sinkat, at about 23 miles, 200 men with 500 animals can usually be supplied by shallow water-holes, which are called the wells of Hambouk; and it is probable, that, by using care, this result might be doubled. Sinkat, nearly 1,000 feet above sea-level, was, in former times of peace and good government, used as a summer residence by the richer merchants of Suakin.

At about 40 miles from Suakin, the wells of Kissibil can furnish good water for a small party, say, a general officer with his staff and escort; and thence on, no water is found until Wady Haratree is reached, at about 64 miles out. Here 600 men and as many animals can drink. Eleven miles farther on, an equally good supply is found at the wells of Salalaat.

The next supply worth mentioning is the well of Abd-el-Hab, where perhaps two battalions might be supplied. This excellent well is 97½ miles from Suakin. At El Ariab, about

118 miles from Suakin, there are three large wells, well constructed, and furnishing good water, in quantity large enough for two or three battalions, with a fair proportion of animals, — a strategic point which should be held by a permanent garrison if the road is to be used.

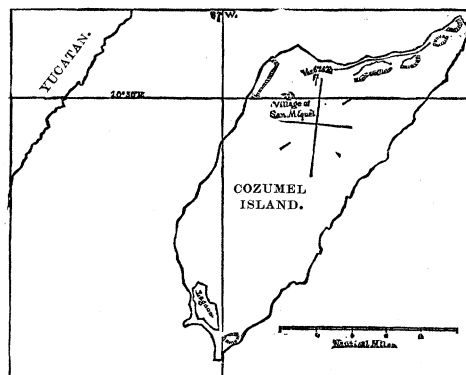
From El Ariab to O-Baek, a distance of nearly 60 miles, no water is found; and even at O-Baek the supply is very disappointing to thirsty marchers, since it is hardly sufficient for a battalion with its animals, and is often brackish. Thence on, the route is in blank desert until within six miles of Berber.

Thus it is seen that on the eastern half of the route there is scant supply of water for the advanced guard of a strong division, while on the western half there is practically no water until within six miles of Berber. Throughout the line, cannon and wagons can be drawn with little difficulty; but the eastern half passes frequently through narrow and tortuous defiles, which an active and intelligent enemy would render extremely dangerous to a marching force.

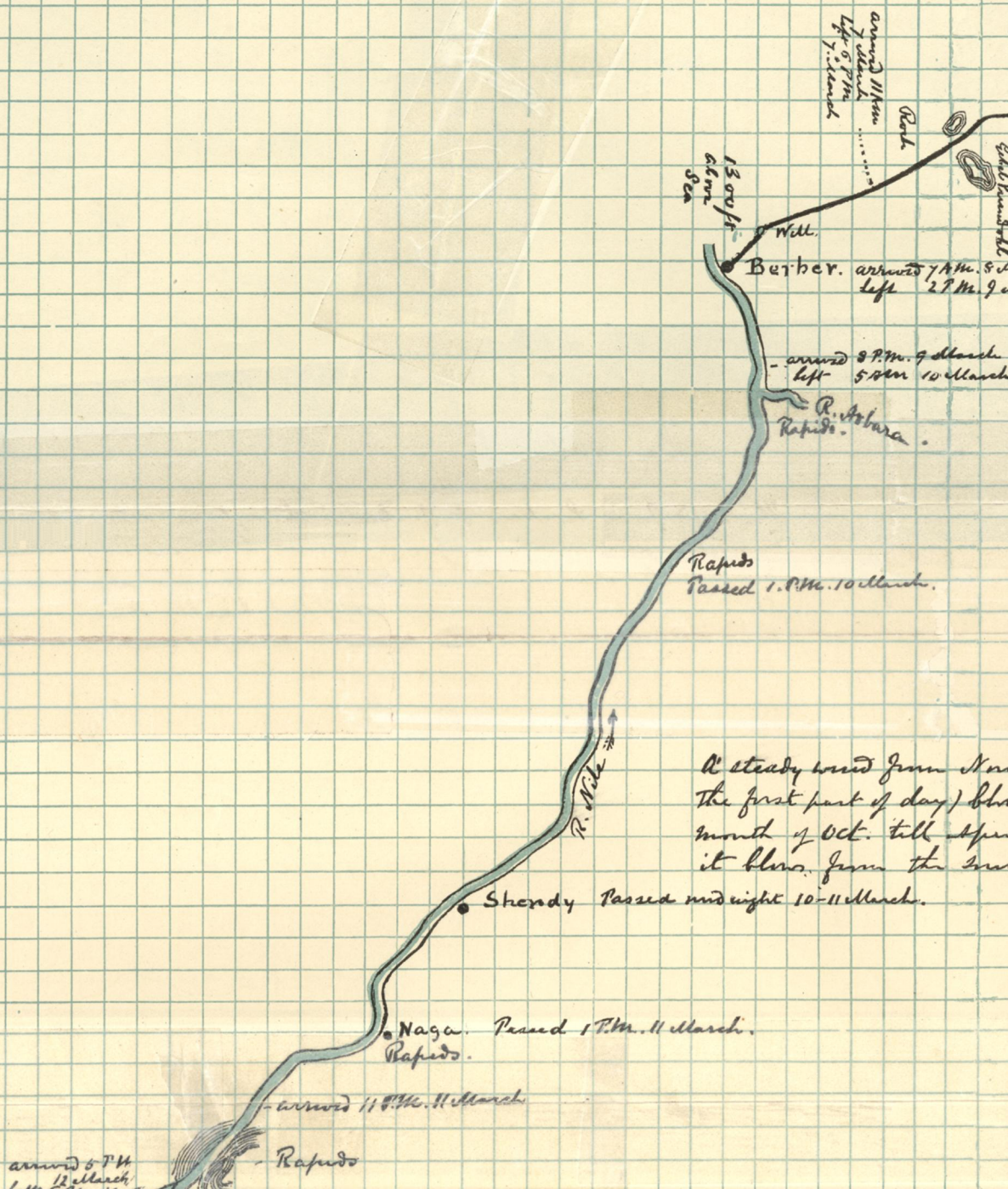
C. P. STONE.

### THE ISLAND OF COZUMEL.

DURING the night of Jan. 22 last, the U.S. fish-commission steamer Albatross was anchored off the northern end of the island of Cozumel, on the east coast of Yucatan, and on the 23d steamed along the western side of the island to an anchorage off the village of



San Miguel, four miles from its north-west end. The naturalists went ashore next day in two divisions, — a shore party and a seining party, the latter aided by men from the ship. Both were remarkably successful, the birds collected

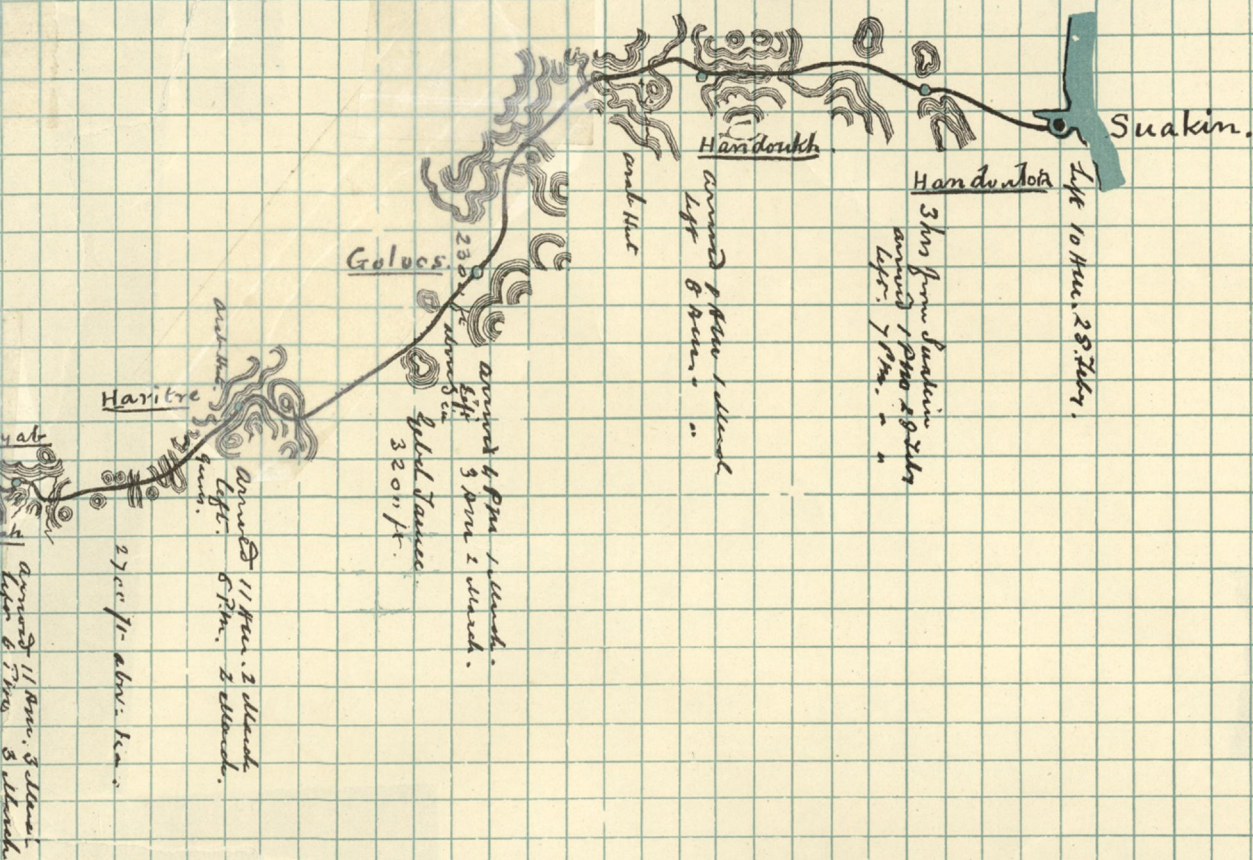


A steady wind from N. (the first part of day) blew from the mouth of Oct. till after it blew from the S. (the second part of day) till 10-11 March.



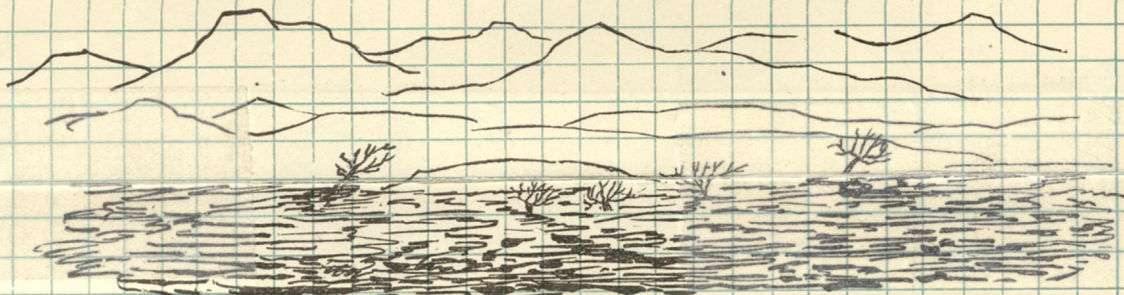






# Route from Suakin to Khartoum 28 July to 13 March Scale $\frac{1}{425000}$

The road from Suakin to Berber is through an arid mountainous country, as far as Arab it is sparsely covered with dwarf trees of stunted growth. The wide plains are partly sand, and partly black basaltic stone. From Sobata to Berber the plain is generally sandy. The walls are more like scratched in the bed of rivers. During storm, heavy showers fall but they are soon washed up. Pair of Camel hire from Suakin to Berber 1 1/2 stops. Hire of Port-Jon Berber to Khartoum. 7 or 8 stops. The whole rapid are dangerous to pass at night. Packages for Camels ought to weigh about 150 or 120 lbs. The climate is very dry, hot during day & cold at night.



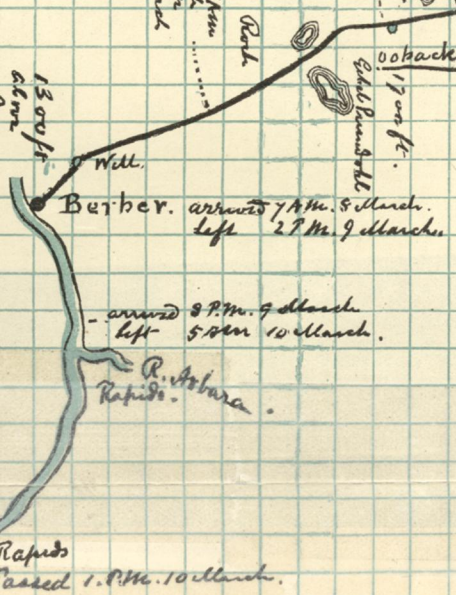




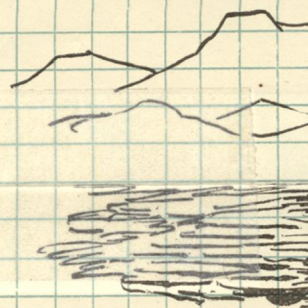
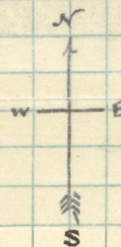
The scale of this map is about 1:1325,000 or 21 miles to an inch.

FACSIMILE OF A MAP DRAWN BY GENERAL





A steady wind from North (stronger in the first part of day) blew from the mouth of Oct. till April after which it blew from the South from May till Sept. and night 10-11 March.



NB. The worst part of the road is the 10-11 March.

We left Cairo 21 Feb. arrived Suak 21 Feb.  
 " Suak 22 Feb. " Suakin 26 Feb.  
 " Suakin 28 Feb. " Berber 8 March  
 " Berber 9 March " Khartoum 13 March  
 The vegetation of Berber at Gazala having been burned out in night & the at Khartoum on 22 March about the 15 April.

The distance by road from Suakin to Berber about 288 by road. There to be brought in the



March 11 Arr. 3 o'clock  
March 6 Dep. 8 o'clock

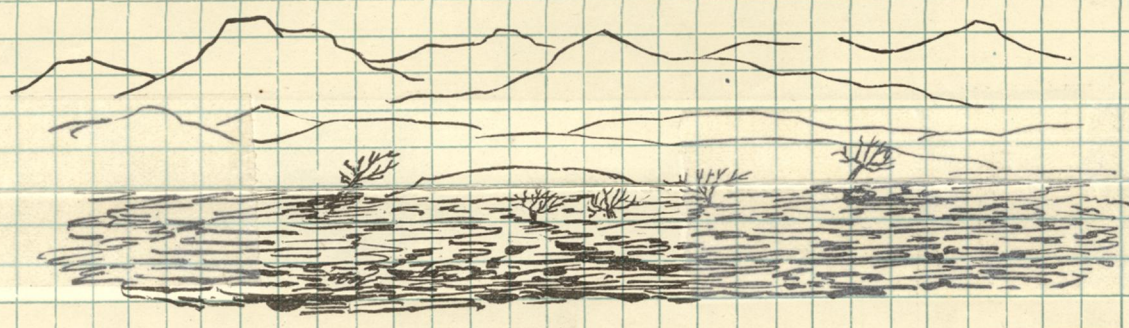
cc 11. Arr. 11.00

11 Arr. 2 o'clock  
6 Dep. 2 o'clock

March.  
March.

# Route from Suakin to Khartoum 28 Feb to 13 March Scale $\frac{1}{625000}$

The road from Suakin to Berber is through an arid mountainous country, as far as Arab it is sparsely covered with dwarf trees of stunted growth. The wide plains are partly sand, and partly black basaltic stone from wadis to Berber the plain is generally sandy. The wells are more holes scattered in the bed of rivers during storm, heavy showers fall but they are soon sucked up. Prices of Camel hire from Suakin to Berber 1 1/2 Staps. Hire of Port from Berber to Khartoum. 7 or 8 Staps. The Nile rapids are dangerous to pass at night. Packages for Camels ought to weigh about 150 or 120 lbs. The climate is very dry. hot during day & cold at night



NB. The worst part of journey between Suakin & Berber is the latter half, the wells being so far apart

The stations are from Suakin

1. Handoukh	3 hrs	Wetook	1	3 hrs
2. Handoukh	10 hrs	"	2	5 hrs
3. Golvoos	10 hrs	"	3	7 hrs
4. Haritree	10 hrs	"	4	7 hrs
5. Hyab	10 hrs	"	5	9 hrs
6. Mattah	13 hrs	"	6	3 hrs
7. Ariab	16 hrs	"	7	9 hrs
8. Ootack	24 hrs	"	8	23 hrs
9. Berber	24 hrs	"	9	32 hrs

The distance by road from Suakin to Berber about 288 miles by road. There can be brought en route.

Ch. H.