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The Winter Expedition of the "Antarctic" to South Georgia

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of the Nuers, it was difficult to collect much information of their customs. Like all tribes at the Sobat, they are stark naked, and owing to their living in their own country, unmolested and out of all possibility of being in touch with civilization, it is only natural that they are sunk in barbarism and retain to the full all the inherited customs of their savage ancestors. Their hair is left to grow to a length of about 10 inches, and stained red with the ammonia contained in the dung and water of their cattle. Their bodies (of the men) are covered with the white ash of burnt cow-dung, like the Dinka tribe. This results from the men always sleeping in separate tukls, the floor of which is several inches deep with this white ash, resulting from the perpetually burning or smouldering fire of cow dung inside the tukl; the men actually make their bed in the ashes. The women do not thus cover themselves, but sleep on mats made of dressed cow-hide, and keep their own skins oiled and clean. The young unmarried girls, like the men, wear no covering, but the married women wear a loin cloth of whatever material is available, a leopard, gazelle, or sheep skin. The arms of the men consist entirely of spears (throwing) and shields, with the universal knob-kerry; bows and arrows are possessed by a very few—rifles they have none. It was reported that one of the big sheikhs possessed himself of a few at one time, but broke them up and made bracelets for his ladies. As I have mentioned above, the main wealth of the Nuers lies in their cattle and flocks of sheep. As the importance or otherwise of a man is gauged entirely by the number of his cattle, it follows that the quickest way to become powerful is for an individual, or a village, to appropriate the cattle of another individual or village, or better still of another tribe, and little raids of this kind are not infrequent.

At Nerol another khor joins Khor Felus, by name Khor Nerol, or Chirol, which is said to connect with the village of Nyandeng, on the Sobat. Owing to lack of water, it was found impracticable to explore any distance up this khor.

THE WINTER EXPEDITION OF THE "ANTARCTIC" TO SOUTH GEORGIA.

By Dr. J. GUNNAR ANDERSSON.

IT is already known that the *Antarctic* returned to Port Stanley on March 26 from its first summer campaign in the Dirk Gerritsz archipelago, where a winter station was erected on Louis Philippe land. The leader of the expedition, Dr. Otto Nordenskjöld, who remained in the winter station, ordered the *Antarctic* in the winter season (April—September) to visit South Georgia, the Falkland islands, and Tierra del Fuego, to investigate the natural history of the regions mentioned. The scientific staff of the *Antarctic* for the work were the

following: Mr. J. G. Andersson, geologist, acting scientific leader of the expedition—joined the *Antarctic* in Port Stanley on March 29; Mr. S. A. Duse, for topographical, meteorological, and oceanographical work; Mr. A. Ohlin and Mr. K. A. Andersson, zoologists; Mr. C. Skottsberg, botanist.

On April 11 the *Antarctic* left the Falkland islands and anchored in Cumberland bay, in South Georgia, on the 22nd of the same month. The route was almost in a straight line, and oceanographical work was carried out to a considerable extent. In this part of the ocean not a single sounding had been taken before, and amongst the six soundings taken here by the *Antarctic*, the following are the most important:—

Lat.	Long.	Depth in fathoms.
52° 7' S.	55° 40' W. 777
52° 47' S.	51° 36' W. 1558
53° 6' S.	48° 71' W. 1985
53° 43' S.	40° 57' W. 1818

The last of these soundings is the most interesting, as showing that there is a deep sea between the Shag rocks and South Georgia, but no submarine ridge connecting them.

During April 27–30 the expedition visited Royal bay in order to inspect the present condition of the German station of 1882–83. The dwelling-house was found to be in good condition, the observatories being partly blown down. Mount Krokisius was climbed by Mr. Skottsberg, in order to look for the thermometers left there by the German scientists; but the thermometers were broken, possibly thrown over by wind. The termination of the Ross glacier descending into Royal bay was examined several times by the German Expedition, and it was stated that in the year August, 1882—August, 1883, the face of the glacier had retreated 2500–3000 feet. Evidently this regression was only of a temporary nature; according to the determination made in April, 1902, by Mr. Duse, the face of the glacier has readvanced beyond the maximum stage observed by the German Expedition.

On May 1 a party, consisting of Mr. J. G. Andersson, Mr. Duse, Mr. Skottsburg, and one of the crew, was put on shore to work on land during two weeks, the *Antarctic* at the mean time visiting the Bay of Isles, Possession bay, and a bay situated south-east from Possession bay, and slightly marked, but not named, in the British Admiralty chart.

On May 12 the *Antarctic* returned to Cumberland bay, and on the following day both parties were reunited. For a month (May 14—June 14) the ship was anchored in a safe harbour in the interior of the southern branch of Cumberland bay, going out occasionally for a day in order to sound and dredge in the bay. During the first part of this time (May 14–26) the weather was splendid, and the ground almost free from snow, the land-survey making good progress. In the last two weeks violent gales were experienced, covering the land with snow to a depth of about 3 feet.

The result of our stay in Cumberland bay is a detailed investigation of that part of South Georgia. The whole bay and its surroundings, an area of 250 to 300 square miles, was mapped on the scale 1 : 100,000, some parts of higher geological interest having been surveyed on the double scale. Of the excellent harbour already mentioned, a survey on the scale 1 : 10,000, with numerous soundings, was made. In the bay forty soundings were taken, indicating that the greatest depths are 137 to 170 fathoms, and that there is in front of the bay a coast-bank with a depth of 97 to 98 fathoms.

The geological survey gives evidence of a distinct plication in this region, the axis of the fold being nearly parallel to the longitudinal axis of South Georgia. In a rock in this folded formation was found a fossil, a *bivalve*, not yet determined.

The glacial phenomena are magnificently developed in Cumberland bay. We found here traces of two glaciations—an older, almost total, and probably filling the whole bay out to the coast-bank; and a second, more recent, of much less extension, but marked by terminal and lateral moraines of gigantic dimensions. (A fuller report on this subject will be published in the next number of *Ymer*, the journal of the Swedish Geographical Society.)

During the voyage to South Georgia twenty-five dredgings were made in depths reaching to 170 fathoms, most of these being taken in Cumberland bay. Here we made rich and varied collections of a fauna luxuriant both in species and individuals. Skins, skeletons, and embryos of sea-leopards and sea-elephants were collected.

The botanical investigations, though carried out in winter-time, have added to the phanerogamic flora two forms new to the island, besides the thirteen species previously known. Moreover, there have been made considerable collections of lower land-plants, and of marine algæ from depths to 55 fathoms.

On June 15 the *Antarctic* left South Georgia, returning in a wide curve to the north up to 48° 27' S., and re-entered Port Stanley, July 4. During the homeward voyage seven soundings were taken, two of them indicating considerable depths in the hitherto unknown area north-west from South Georgia.

Lat.	Long.	Depth in fathoms.
50° 58' S.	38° 54' W.	2572 *
48° 27' S.	42° 36' W.	3279

Deep-sea temperatures and samples have been taken in nine series in all between the Falkland islands and South Georgia, but the material is not yet examined.

The principal interest during the voyage from South Georgia was

* 2572 fathoms being a minimum, as it is doubtful if the bottom was reached by this sounding.

attached to the deep-sea plankton. Hauls with large nets (10·5 and 3 feet diameter), from 1000 to 1500 fathoms depth gave rich collections of bathyplanktonic animals—fishes, medusæ, crustaceans, etc.

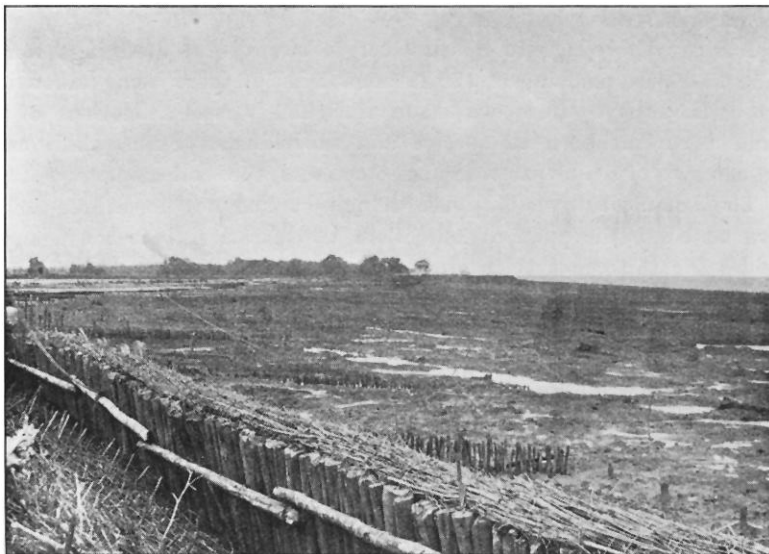
It is remarkable that no antarctic icebergs were seen during the whole expedition to South Georgia.

Port Stanley, on board the *Antarctic*, July, 1902.

THE SHORE OF DEMERARA AND ESSEQUIBO, BRITISH GUIANA.

By FRANK J. GRAY.

THE shore of Demerara and Essequibo consists principally of "sling mud" with small deposits of "caddy" and broken shell above high-water mark. The only exceptions to this are the sandy shores which lie in front of Golden Fleece and other plantations adjoining the mouths of the rivers. The subsoil is the clay of the country. The "sling mud"



SEA DEFENCES AT PLANTATION HOPE, DEMERARA.

is a non-calcareous plastic clay, similar in composition to the subsoil, but containing an excess of sand. It appears to be derived from the subsoil clay by the process of erosion and attrition by the waves, and by the addition of the sand of the "caddy" held in suspension by the sea.

The "caddy" consists of fine sand, mixed with clay and calcareous