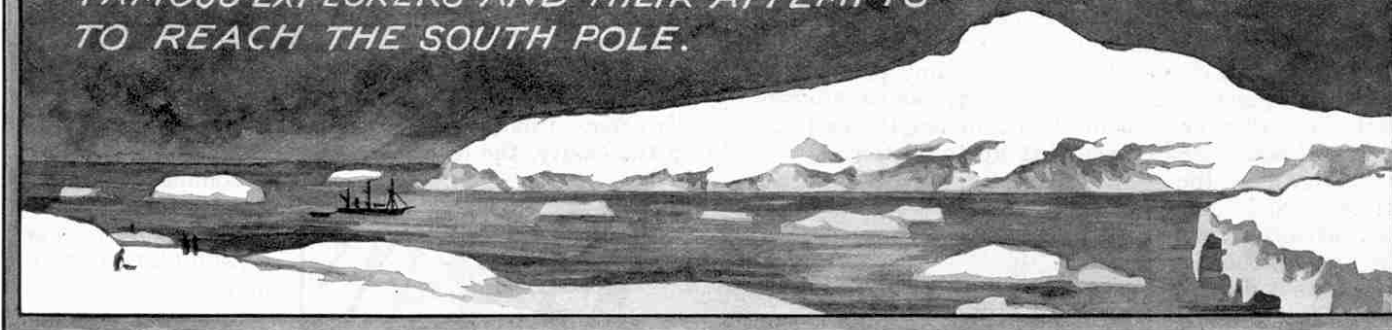


EXPLORING THE ANTARCTIC

FAMOUS EXPLORERS AND THEIR ATTEMPTS
TO REACH THE SOUTH POLE.



II.—THE ANTARCTIC CONTINENT DISCOVERED AT LAST

LAST month the story of the exploration of the Antarctic was brought down to the pioneer efforts of Captain Cook. The great British navigator made a complete circuit of the supposed Antarctic continent, and in this he created a Polar record by reaching a latitude of $70^{\circ} 10'$. He also showed that, if any land existed at all in the far south, it was restricted to a comparatively small area round the Pole and well within the Antarctic Circle.

It is interesting to recall that Captain Cook considered the risks run in the unknown icy seas of the Antarctic to be so great that nobody would ever venture further than he had done. His prediction that the surroundings of the South Pole would never be explored was soon proved to be mistaken, however, when less than 50 years later strenuous efforts to push southward were made by sealers and whalers. Their object was to find seas in which their prey abounded, and in 1823 a small expedition sent out by a whaling company created a Polar record that remained unbeaten for 18 years.

The leader of the expedition was James Weddell, who commanded the "*Jane*," a brig of 160 tons, and the "*Beaufoy*," a cutter of 65 tons. The vessels were provisioned for two years, and their crews numbered 22 and 13 respectively. The first discovery of interest was made early in 1823, when the two vessels reached the South Orkney Islands. The desolate appearance of this ice-bound, mountainous land greatly impressed Weddell, but in obedience to the instructions that had been given him he continued to push southward through seas that were thickly covered with pack ice. He was eager to make further discoveries, and offered a reward of £10 to the seaman who should first see new land. A keen watch was therefore kept by all on board, but there were many disappointments, for in the Antarctic, as in the similar regions in the far North, it is easy to mistake a bank of fog for distant mountains. Icebergs also deceived Weddell's men, for the fragments of rock and soil, brought from the southern Antarctic continent, that remained on them, often suggested the existence of solid land beneath the ice.

On one occasion the cry of "Land!" was very confidently raised, and a dark object was seen at a short distance from the vessel. Soundings were taken, but to the surprise of Weddell and his crew these showed the sea to be very deep. Eventually the mystery was solved, for on closer examination, the "land" was discovered to be nothing but the carcass of a whale!

Moving steadily southward, Weddell eventually reached the high latitude of $74^{\circ} 15'$ south, which was 214 miles nearer the Pole than had been attained by any previous explorer. The season was now growing late, and the nearest inhabited regions were 1,000 miles away. The return route necessarily passed

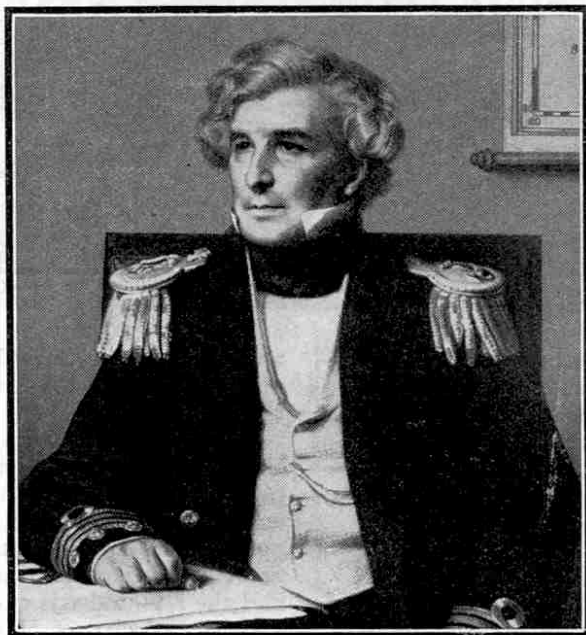
through seas that daily became more thickly strewn with pack ice and with icebergs, and reluctantly Weddell decided that it was time to turn back. A gun was fired and the colours were hoisted, while the name of "King George the Fourth's Sea" was given to the desolate stretch of water over which the two vessels had sailed. This is now known to form an immense bay in the Antarctic continent, and to-day it is called Weddell Sea, in honour of its first explorer.

Since Weddell's return only four vessels have really endeavoured to follow his track. Of these the first two were prevented by the heavy pack from getting as far south as Weddell had done, and they returned without misadventure. In the third ship, Filchner, a German explorer, discovered new land far to the south, but his vessel was firmly gripped in the ice and slowly carried northward, to be set free 200 miles north of the point that Weddell reached. The fourth, Sir Ernest Shackleton's "*Endurance*," was completely overwhelmed and crushed by ice pressure. Possibly the season in which Weddell made his famous voyage was specially favourable, but there is no doubt that his success was due largely to his courage and determination, allied to mastery of the art of navigating Polar seas.

None of the expeditions immediately following that of Weddell penetrated so far south, and it was not until nearly the middle of last century that a new record was established. In 1840 a well-equipped British expedition, under the command of Captain James Clark Ross, sailed into the icy Antarctic waters

south of Australia. Ross had already distinguished himself in three Arctic expeditions, becoming a member of the first when only 19 years of age. Later he took a prominent part in Parry's famous dash for the North Pole in 1827, and thus helped to create a Polar record of $82^{\circ} 45' N$, that remained unsurpassed for nearly 50 years. Four years afterwards he discovered the position of the North Magnetic Pole while serving under his uncle, Sir John Ross.

The Antarctic expedition of 1840 sailed in two vessels, H.M.S. "*Erebus*" and H.M.S. "*Terror*." Ross himself was in the "*Erebus*," and the other vessel was under the immediate command of Captain Crozier, an explorer who later was second-in-command of the ill-fated Franklin expedition that disappeared among the islands in the Polar region north of Canada. One of the chief objects of the expedition was to make a record of magnetic observations in various parts of the Antarctic, and if possible to reach the South Magnetic Pole. After penetrating the Polar pack, therefore, Ross steered directly toward the Pole itself. On 11th January, 1841, a range of lofty mountains was seen at a distance of about 100 miles to the south, and very soon it was realised that new



James Clark Ross, an explorer who was equally distinguished in Arctic and Antarctic expeditions.

land had been discovered. The mountains were from 7,000 ft. to 10,000 ft. in height and were covered with snow; while innumerable glaciers swept down their sides to end at the ice foot. This was the first unmistakable evidence of the existence of an extensive area of land in the Antarctic that had been discovered, and, as if to give complete assurance, rock could be seen protruding above the ice and snow in many places. Although magnificent in appearance, the new land was bleak and inhospitable, and its only inhabitants were penguins, skua gulls, and the seals that emerged from the sea to bask on its shores.

To his discovery Ross gave the name Queen Victoria Land. He reached it near a headland that is now called Cape Adare. There the coast turns southward, and naturally Ross sailed along it in the hope of approaching nearer to the Pole than Weddell had done. He was not disappointed, for on 23rd January, 1841, the vessels reached a latitude of $74^{\circ} 20'$ south, an occasion that was celebrated by general rejoicings.

The voyage was continued southward, and a few days later the striking discovery was made of a volcano, 12,000 ft. in height. Although it was completely smothered in snow and ice, it belched forth clouds of smoke, and its great crater glowed brightly at night. It was named Mt. Erebus, and the name of the second vessel of the expedition was given to an extinct volcano a few miles away. Ross thought that the two volcanoes were on the mainland that he had discovered, but it is now known that they are on an island. To this his own name has been given, and Ross Island has since become famous as the headquarters of the British expeditions led by Scott and Shackleton.

Ross could sail no farther south, and he now directed his course eastward. He then made a second discovery that was almost as striking as that of an active volcano only 700 miles from the South Pole. This was the Great Ice Barrier, a massive cliff of ice that in many places was several hundred feet in height. In great amazement, the explorers passed along these cliffs for a distance of 100 miles without finding any indication that they were nearing the end; and then the approach of winter compelled them to return northward.

Early in the following summer Ross set out to revisit the Barrier, this time approaching it east of his former position in the hope of discovering more new land. On the way southward the progress of the two vessels was greatly hindered by heavy pack, and while they were still struggling with it a tremendous gale sprang up. The sea was lashed by the wind into waves of terrific height, and the ships were in great danger of being smashed to pieces by the violence of the blows from the enormous blocks of ice flung at them by the angry waters. The rudder of the "Erebus" was rendered useless, and that of the "Terror" was completely destroyed. All night the vessels pitched and rolled and seemed to be at the mercy of the elements, but by what seemed a miracle they escaped serious injury. Before the necessary repairs could be effected, however, they drifted many miles northward, and lost so much valuable time that the thorough exploration planned by Ross became practically impossible.

The section of the Great Ice Barrier that Ross now visited was

found to be more broken and indented than that further west. Hopes of finding new land were disappointed, although, as he sailed along the face of the Barrier, Ross noticed in the distance what appeared to be mountains covered with snow. His Arctic experience led him to take the precaution of marking this on the chart as simply "Appearance of Land."

Two summers in the Antarctic were not enough for Ross, and in the following season he again steered southward. He spent the winter at the Falkland Islands, to which he had sailed after his second exploration of the Ice Barrier, and in this third voyage he followed Weddell's track and endeavoured to improve upon his predecessor's record. He was unsuccessful, however, conditions in the Weddell Sea preventing him from reaching a higher latitude than $71^{\circ} 30'$ south, in spite of his resolute attempts to force his way through the barrier of ice that opposed his progress.

Ross finally sailed northward to the Cape of Good Hope, after spending three years in the most extensive and fruitful exploration of South Polar regions that up to that time had

been attempted. He so greatly extended our knowledge of the Antarctic that there was a feeling that little more was to be discovered. Only the fringe of the Antarctic problem had been touched, however, although this was scarcely realised until more than 50 years later.

The first sign of a revival of interest in Antarctic exploration was the visit of the "Belgica," the first vessel to venture upon a stay in the Antarctic throughout the winter. Her commander was

de Gerlache, a Belgian, and with him were scientists who were greatly interested in the many problems presented by the strange and unknown lands in the far south. One interesting member of the staff of this expedition was Roald Amundsen, then an unknown youth, who later became famous as the discoverer of the South Pole, and the hero of the flight of the "Norge" across the North Pole.

The "Belgica" was navigated into the ice-packed waters surrounding Graham Land, on the west of the Weddell Sea, and instead of retreating to warmer quarters when the short Antarctic summer ended, was allowed to be frozen in. Those on board settled down to a routine of scientific observations throughout the winter. In the summer various sledging parties left the ship, and these greatly extended our knowledge of the geography of the region.

Several expeditions to various parts of the Antarctic followed the return of de Gerlache. Of these one of the most interesting was that of Borchgrevink, who visited Victoria Land, and actually spent a winter in a hut that he built at Cape Adare. This was the first occasion on which human beings lived on the Antarctic continent itself throughout the dark, cold months. When summer came round once more Borchgrevink sailed south in the track of Ross, and achieved fame by landing on the Great Ice Barrier, a short march southward enabling him to exceed by a few miles the Polar record set up 58 years previously.

Borchgrevink found that the Great Ice Barrier had changed considerably, and in places its edge was 30 miles nearer the Pole than when Ross had visited it. Soundings showed that the sea was very deep immediately under



A glacier-fringed coast line in polar regions.



Emperor penguins, the most stately inhabitants of the Antarctic. They are nearly four feet in height and some of them weigh as much as 90 lb. Our photograph is reproduced by permission from "The South Polar Trail," by E. M. Joyce (Duckworth & Co.).