

New Arctic Expeditions.

THREE expeditions, each aiming to cross by air the unknown regions in the heart of the Arctic Ocean, have been or are at work in the north. Capt. R. Amundsen, profiting from his experience of last year, when he found his range of flight seriously limited by lack of petrol, substituted a semi-rigid Italian airship for an aeroplane. The *Norge*, under the command of its designer, Col. U. Nobile, and piloted by Major G. F. Scott, reached Pulham from Rome on April 11, Oslo on April 14, Leningrad on April 15, and King's Bay, Spitsbergen, early in May. The polar flight took place on May 11-13, the *Norge* passing over the Pole at 2 A.M. on May 12. On her flight from Rome to Pulham the *Norge* covered 1400 miles at an average speed of 47 miles an hour. Only two of the three 250 horse-power engines were used, each being rested in turn. From Spitsbergen to Point Barrow in Alaska via the Pole is 1800 miles, and in favourable weather Capt. Amundsen appears to have crossed in 45 hours.

The *Norge* descended safely at Teller, 650 miles from Point Barrow, having accomplished a total distance of 3393 miles from Spitsbergen in 72 hours. Damage was caused to the balloon fabric by fragments of ice, due to condensing moisture, being thrown violently from the propellers. Capt. Amundsen reports that lack of sleep and freezing of food supplies were the only discomforts on the journey. Thin ice and some open water were seen at the Pole, where the *Norge* descended to within 600 ft. of the sea.

The *Norge's* fuel capacity is seven tons, which, at a speed of 50 miles an hour, gives her a range of 3000 miles, in calm air, or about 60 hours. Her gas capacity of 660,000 cubic feet is about a third that of R. 33. Her length is 348 ft., and her maximum speed is 60 miles per hour. Wireless communication was maintained throughout the flight. The crew numbered 15, including Capt. Amundsen, Col. U. Nobile, and Mr. L. Ellsworth. Lieut. Larsen was the pilot.

An American expedition under Lieut.-Commander R. E. Byrd, U.S. Navy, with Mr. F. Bennett as pilot, is also at King's Bay with a three-engined Fokker monoplane. The original plans included six flights. According to the *Times*, the first was to be one of 400 miles from Spitsbergen to Peary Land, North Greenland, to land oil and provisions. On returning to the base the aeroplane was to make a second journey to Peary Land with more supplies, and then leave on an 850 miles' flight to the Pole and back. On May 9, Lieut.-Comdr. Byrd left on a flight to the north and returned in 15½ hours, announcing that he had reached the Pole. Confirmation is still lacking.

The third flying expedition is the Detroit Arctic expedition under Mr. G. H. Wilkins, who has arrived at Point Barrow with two Fokker aeroplanes. With Mr. C. B. Eielson as pilot, Mr. Wilkins proposes to fly northward over the heart of the unexplored Beaufort Sea. If no land is discovered he hopes to continue across the Pole to Spitsbergen. On the other hand, if land is found, the aeroplane will return to Point Barrow and both machines will go north and attempt to make a base on the new land, whence one aeroplane will continue to Spitsbergen. Mr. Wilkins, who gained his polar experience with Mr. Stefansson,

proposes to adopt his former leader's precept; he will carry as much petrol as possible, and depend on seals for food if he is forced to descend. Near land this may prove possible, but Mr. Stefansson in 1914 crossed areas of the Beaufort Sea in which he saw no seals, and Capt. Amundsen last year reported only one seal at the place of his forced descent.

It is unlikely that any of these expeditions will report new land. Evidence of its existence in the unexplored parts of the Arctic Ocean is lacking, and the results of the recent expedition of the *Maud* supports this point of view. In any event, it is improbable that rapid flights across polar regions can achieve results of great scientific interest.

Less sensational, but more promising in results, are several expeditions to Greenland. Prof. W. H. Hobbs, of Michigan, is leading an expedition to study the glacial anticyclone. He proposes to sail in July for his main base at Holstenberg, a little north of the Arctic Circle on the west coast of Greenland, where the ice-free margin of the land is about 100 miles wide. Here in a sheltered valley the main base, with a hangar for two aeroplanes, will be established. A second station will be near the coast at a height of about 1000 metres, a third at about 2500 metres on the ice cap, and a fourth, well in the interior, in the area of calms and light winds which Prof. Hobbs believes to exist in the heart of the anticyclone. This last station will be visited frequently, but the other three will be inhabited, it is hoped, for fifteen months and will be in charge of Mr. P. Freuchen, the Danish explorer of Greenland. A snow motor and two aeroplanes will be used to establish the stations and main base connexions. There will also be wireless communication with Godthaab and with Dr. L. Koch's expedition on Scoresby Sound. Prof. Hobbs, who will return with many of his staff in October, has received the collaboration of Mr. V. Douglas, Dr. W. Koeltz, and Prof. H. T. Barnes. The expedition has the support of the U.S. Coast and Geodetic Survey and the U.S. Weather Bureau.

An expedition of seven members under Mr. J. M. Wordie is leaving Aberdeen in June for the east coast of Greenland. Mr. Wordie, who was foiled in his attempt to reach the coast in 1924, intends to make for Shannon Island, and, having got through the pack-ice, to make southward to Franz Josef fjord for geological work. The expedition will return at the end of the summer, but is carrying the necessary equipment and stores in case of a forced wintering, which, however, is improbable since in September the coast south of Scoresby Sound is relatively free from ice. Further south, Dr. L. Koch intends to continue his exploration of Greenland from a base on Scoresby Sound, where an Eskimo colony was founded last summer. Other colonies are to be founded in the same district on the site of former Eskimo settlements at Cape Stewart, Cape Hope, and Cape Tobin. The Field Museum of Chicago announces a collecting expedition under Dr. D. B. Macmillan to sail in July to Baffin Land and Ellesmere Land. Several other Arctic expeditions have been prepared for this summer, including a French attempt under Lieut. Sales northward from Spitsbergen in motor sledges, but their start is uncertain. R. N. RUDMOSE BROWN.