

# Does Polar Exploration Pay?

*Geography*

By EDWIN E. SLOSSON

What practical benefits will the man in the street get from Byrd's flight to the South Pole?

None.

The reason is because the South Pole is of no more importance than any other place on earth and less than most places. The pole is merely the point where all the lines of longitude meet and all the lines of latitude vanish. To reach the point where these imaginary lines meet is an imaginary triumph. It has no more interest from a scientific standpoint than the point where the line of longitude and the line of latitude cross in your home town. Not so interesting in fact, because you are there as well as your fellow townsmen, and "the proper study of mankind is man." Also there are innumerable other living creatures in your vicinity, millions of them, large and small, plants and animals, all of significance to the scientist, not to mention the ground you tread on. A single square mile hereabouts would provide more study material for the botanist, zoologist, mineralogist and all the others that end in *ist* than could be got from ten thousand square miles about the pole. There is nothing but ice and air. The ice is the same as that in your refrigerator only more of it. The air is the same as that at home only colder and blowing harder.

The explorer does not himself know just when he gets to the Pole and afterwards he has a hard time proving to the world that he did get there. Some people still believe that Cook got to the North Pole, some are unconvinced that Peary got there. From a scientific point of view it makes no real difference if either or neither of them got there since "there" is only a mathematical point.

There is nothing at the Pole, not even a pole. I say this because I do not believe it, although I know it is true. The reason I do not believe it is because as a child I learned my geography from a globe, which is lots less misleading than learning it from a flat map, or especially a Mercator map. But my map had really truly poles sticking out at the north and south, the ends of a brass rod, the axis on which the world revolves. Later I was

informed by my teachers that this notion was one of the childish things I must put away but I have never been able to do it. Whenever I think of the Pole I see that brass rod sticking up and must confess that I cannot yet actually understand how the world can rotate on its axis if the axis is an imaginary line.

But the attention of the scientist is turned towards the poles as if he were magnetized like the needle of a compass. He is always attracted by the unknown. Children are afraid of the dark: scientists are drawn to it. It is the fascination of the unknown. A blank space on the map hurts the eyes of the geographer. The Antarctic is the largest blank space remaining on the map and therefore it is the center of intensest interest. It is felt as a disgrace that a continent larger than the United States should remain so far into the twentieth century unexplored.

When the newspaper reader hears that the Byrd expedition to the South Pole is likely to cost a million dollars, he wonders if it will be worth it. Of course it will. A million American people will get more than a dollar's worth of enjoyment in reading about it and thinking about it and talking about it. I have already got more than my dollar's worth out of the expedition before it started, and I have not paid a cent. If each one of us should send to the Byrd Committee in money order or postage stamps the value in his own estimation of what he will get out of it they would not have to bother about raising funds. The motion picture rights that we get out of the three Antarctic expeditions this year will alone be worth more than we shall pay. The antics of the penguins are funnier than any Mack Sennett farce.

Then again polar exploration is worth much to the world as a demonstration of human endurance, enterprise and self-sacrifice. Don't you remember that talk on "Courage" by Sir James Barrie, Chancellor of St. Andrew's University, Scotland. Barrie drew from his pocket and showed the students Scott's last letter, written from the tent where the party made their last stop, stormbound by the blizzard, without

fuel and food, knowing that they had failed to be the first at the South Pole, and that they could not hope to reach home but revealing an unflinching spirit of fortitude.

The text for another commencement address, if the speaker could equal Barrie, may be found in the last act of Amundsen who gave his life for his enemy, when he gallantly went to the rescue of Nobile, shipwrecked somewhere on the Arctic ice sheet.

The scientist is quite justified in saying to the public or his patrons, "Give me money for investigation and the world will be well recompensed," but if he is wise he will not attempt to say when the dividends on the investment will be paid, or in what coin or to whom. On the whole and in the long run scientific research pays, even in the narrowest pecuniary sense of the word "pay", but which particular line of experimentation will prove profitable in any sense of the word, cannot usually be told in advance. If one experiment out of a hundred turns out successfully, the experimenter may think himself lucky. Edison tried out 6,000 kinds of vegetable fibers to find one suitable for the filament of his incandescent lamp and the best he could find, bamboo, was so poor that it was later discarded.

The point to the argument for scientific research is that a "discovery" is a discovery. A man who met a friend starting out into the country with a gun asked him:

"Where are you going?"

"I'm going hunting," answered the man with the gun.

"What are you hunting?"

"How can I tell until I find it?"

So the scientist who is out gunning for a new fact never knows quite what he will find until he finds it, otherwise he would not have to hunt for it. For he would know what he wants to know beforehand.

The primary motive of Arctic exploration was commercial interest. Henry Hudson was in search of a north-west passage to India when he ascended Hudson River and entered, never to leave, Hudson Bay, Later the sport element came to prevail and the race for the pole absorbed the attention of the world. The desire of one particular person to be the first (*Turn to page 179*)

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to reach one particularly inaccessible spot is essentially the same as the desire of the Marathon racer at the Olympic games to be the first at the goal. It attracts the same applause and excites the same personal and national rivalry and jealousy. Incidentally science has gained something by every such expedition, for in the justification of the hazardous enterprise and in the raising of money for it it became increasingly advisable to lay emphasis upon the scientific advantages to be gained. It is impossible, and so fortunately it is unnecessary, to analyze the inner motives of the explorers who have undertaken the conquest of the Poles to determine just what proportion of the instigating impulse was due to the pure scientific spirit of investigation, and how much it was alloyed with the love of glory, fondness for adventure, patriotic emulation and various other influences. Nobody would profess to tell that except a psychoanalyst and he would probably say that men tried to reach the poles because they were too fond of their mothers.

But it is obvious that if the money and effort that had been expended in a dash to the Pole had been used in systematic and unspectacular study of polar regions, the world's knowledge would have been very much greater than it is. Men of science did not protest against the efforts to attain this fictitious goal for the same reason that Mr. Hoover or Mr. Smith does not object when a man votes for him under a mistaken motive. But they openly rejoiced when both Poles were finally reached, not because the attainment had in any way added to the sum of scientific knowledge, but because the removal of this diverting incentive cleared the way for substantial scientific investigation. If polar explorers were not in such a hurry to reach the Pole they could take time to make weather observations and to pick up a few specimens of rock on the way.

We now know that there is nothing at the South Pole except weather and that is bad. A British Consul sent to an interior station in Africa found on the report that he was expected to fill out for the Foreign Office a blank entitled "Manners and Customs" which he filled in "Manners—none; Customs—nasty." Now an anthropologist, out of these mannerless and nasty natives, would have got material for a book weighing five pounds, con-

taining probably a brand new theory of marriage or religion. For not even an Eskimo igloo is to be found in the Antarctic continent although this is larger than Europe or Australia. Accordingly an anthropologist would be useless on the expedition unless he devoted himself to the study of his fellow travellers. The botanist and the zoologist will also have an easy time of it—I mean a hard time of it because they will have difficulty to find anything to work on. Along the edge the botanist can hunt up a few mosses and the zoologist can watch the sea lions and penguins as they climb up from the sea to the edge of the ice, but in the interior there is no life either animal or vegetable.

Still it is from the study of the weather that we may expect the greatest scientific results and perhaps even something of practical value in the sense of pecuniary profit. From observations on ocean and air currents made on the South Orkneys, islands lying above the 60th degree of latitude, it has been found possible to forecast the weather of the Argentine for the coming season. And the crop of Argentine is a large factor in determining the price of wheat in the markets of the world.

In like manner the weather of the Arctic controls the crops of Canada. So it is quite conceivable that a greater knowledge of the climatic conditions of the two Poles would form the basis of a veritable system of long range weather forecasts and so make agriculture less a gamble. In fact I have not seen in the proposals of either of the political parties now contending for the presidency a measure more likely to serve as "farm relief" in the long run than to establish permanent observation stations of the Weather Bureau at the North and South Poles. But no appropriation for my very practical proposal is likely to be passed by Congress because it would be many years before results in the way of weather forecasting could be obtained, and then the benefits would accrue not merely to the American farmer but to all the farmers in the world.

At present weather forecasts are too much restricted in time and space to be of the greatest value. The Weather Bureau dares not prognosticate more than a day or two ahead, and even then the predictions are frequently fallacious. Nothing like the definiteness and ac-

curacy of astronomy, chemistry or physics. The reason for this backwardness of the science of meteorology is because it is long on facts and short on laws. The fault of most sciences at their start has been that speculation ran ahead of the accumulation of data. In meteorology it is the other way around. For scores of years observers have been patiently marking down daily readings of the temperature and pressure of the air and the direction of the wind, but out of this mountain of material very little has emerged in the way of generalized principles applicable to prophecy. This is not due to lack of investigators or to financial support, for all governments do something in the way of weather observation, and there is no branch of research that would bring in more tangible return in the way of financial advantage than this. What little has been accomplished in the way of short term weather forecasts and storm warnings has proved very valuable, but no very general results can be expected until we know more about the movements of the miles of atmosphere above us and particularly the conditions at the Poles, for these regulate the weather of the world.

This point has been put most definitely by the famous Arctic explorer Fridtjof Nansen when he says:

"The circulation of the atmosphere is essentially due to the heating of the air by the solar radiation in the warmer regions of the earth, and to the cooling of the air by the radiation of heat in the colder, especially the polar, regions. To try to find the laws for the atmospheric circulation without knowing the physical conditions of the extensive polar regions, would therefore be somewhat similar to trying to compute the circulation of air in the pipes of a central heating apparatus without knowing the radiators where the heat is given off."

Although the Antarctic continent has for millions of years been destitute of all life, it formerly enjoyed an admirable climate. Fragments of limestone proved to have been built up by the sponges and corals of tropical seas, beds of coal several feet thick, bear evidence of thick forests or swamps. In Jurassic times the south polar continent basked in continual summer like that of Florida or Southern California. Where now it is never summer it was never winter 150,000,000 years ago. At present the great ice-sheet is steadily receding and explorers of later years report less ice and more land on the borders than had been formerly reported.