

Acres of Penguins in Antarctica

Geography

Dr. Bowman Tells of Practical Value of Polar Exploration

PENGUINS by the acre are among the profusion of water animals inhabiting the regions adjacent to the desolate lands of Antarctica that help make its exploration of value, Dr. Isaiah Bowman, director of the American Geographical Society, told the American Philosophical Society. Dr. Bowman spoke in the 141-year-old hall of the society, built with money raised by Benjamin Franklin, its founder. A portion of the address was broadcast over a network of radio stations of the National Broadcasting Company, including a short-wave station at Pittsburgh. Through this station three expeditions now in Antarctica—those of Admiral Richard E. Byrd, Sir Hubert Wilkins and Sir Douglas Mawson—heard their labors described.

"Though the land life is poor, the shallow water life about the rim of the Antarctic is amazingly rich," said Dr. Bowman. "Owing to the upwelling of the deeper waters near the shore, as the strong winds brush the surface waters away from the continent, there is brought from below the deeper oceanic waters rich in nitrates. This deeper water also contains an abundance of silica owing to the low temperature and to the large quantity of rock waste swept down by individual glaciers as well as the Antarctic ice cap. There are 0.05 parts per million of nitrogen in Antarctic waters in contrast to the 0.15 parts per million in the North Atlantic and 0.10 in tropical oceanic waters. The result is an ideal home for that immense quantity of diatoms that furnish the base for higher forms of life in succession.

"This is the key to that immense development of seals, penguins, and whales, that excite our curiosity by their appearance in waters adjacent to the coldest, most desolate, and most terribly windswept land mass in the world, the 'home of the blizzard,' as Mawson called it. Mawson saw 16½ acres of penguins in Macquarie Island, half-way between New Zealand and Antarctica, and it is estimated that a million penguins were observed in one rookery in the South Orkneys, in latitude 60 degrees on the northern border of Weddell Sea."

In the studies made by these explorers we are learning more about the actual formation of the earth.



Dr. Isaiah Bowman

said Dr. Bowman, citing the theories of the late Prof. T. C. Chamberlin, of the University of Chicago.

"Reflecting on the great contrast between the north and south polar regions, the one a hollow, the other a hump," he declared, "Chamberlin speculated on the possibility that we have in these and other lineaments of our earth actual 'birthmarks,' as we may call them. He saw in the assembly of materials of which the earth is composed traces of the original bolt of matter shot out from the sun to make the infant earth. The core was built up of heavier material at the end toward the sun and of lighter material at the end away from the sun. The heavier Antarctic end was further shaped into the southern hemisphere while the lighter materials became the ring of land that makes the northern hemisphere. This might be called the 'ring of life' because it made that wide belt of dry land upon which the higher types of life emerged that reached their climax in civilized mankind."

Dr. Bowman praised the work of American newspapers in making the expeditions possible, addressing the three exploring groups.

"This wide interest we owe not only to yourselves but to the newspapers; and the time has come when science as well as the general public

should acknowledge its indebtedness to the press," Dr. Bowman stated. "Without the assistance of the newspapers the well-equipped expeditions of recent years could not have been undertaken. However efficient airplanes may be, they are expensive things. Moreover, we are far more interested in an expedition from which we can have almost daily radio reports than we are in one that vanishes for several years, returns with news that blazes for a week, and then drops into the gulf of forgetfulness."

It is the possibility of more accurate weather forecasts for the southern hemisphere that offer some of the best reasons for the time and money expended on Antarctic exploration, Dr. Bowman believes.

"It would pay handsomely in crops and cattle and security of life if meteorological stations were set up on the borders of the Antarctic and in the island groups that girdle it," said Dr. Bowman. "If we knew the habit of the 'spells' of Antarctic weather there is little doubt that we should be able to find a connection between it and the rainfall and drought periods in the cereal and pastoral lands of Australia, South Africa, and Argentina. It is under the impulse of this idea that Captain Sir Hubert Wilkins has carried on his explorations in the Antarctic Archipelago for two seasons. He is not down there just for fun; he is searching for suitable bases for meteorological stations to be established by international cooperation. With a ring of such stations about the Antarctic, and with daily radio reports as to the weather, it would be possible to draw charts that would trace the effects of cyclones and anticyclones as they move forward from their breeding places out over the southern ocean.

"To forecast seasons of drought would be a practical achievement of the highest order, and no less important would it be to forecast seasons of exceptional rain. . . . It is not putting the case too strongly to say that the practical benefits of meteorological studies in the Antarctic through the medium of a chain of weather stations outweighs all other Antarctic interests put together."

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