

Royds abounded in diatoms, rotifers, water bears and infusoria. Numbers of rotifers which were examined microscopically had been frozen into the ice at temperatures below zero for three years; yet after a few minutes' thawing out they suddenly revived and began eagerly devouring the fungus which abounds in these lakes. In some cases only the body, not the head, of the rotifer appeared to come to life. Several rotifers were similar to those already described by Murray as having been found at Spitzbergen and Franz Josef Land. The water bears came to life in the same manner.

On the black lava rocks of Mount Erebus which had absorbed the sun's heat the snow melted at temperatures below zero and at a height of 9,000 feet. This explains how lichens and similar plant life are enabled to flourish in the Antarctic regions.

The marine fauna near Cape Royds bears a resemblance to the types of animal life of the coal measure series found in Australia and Tasmania. Specimens will be examined by scientific specialists in New Zealand and Australia.

The northern expedition found masses of marine muds 40 feet above the sea level. These contained vast numbers of foraminiferal shells. The biloculina type, which form the biloculina ooze of the Arctic Circle, are specially abundant.

The geological discoveries disprove the Antarctic archipelago theory. The continental plateau extends from the newly discovered mountains 45 miles west of Cape Royds and the magnetic pole to beyond the south pole itself, probably over 1,800 miles. By far the most interesting geological discovery is that of coal measures in latitude 85°; these measures 1,500 feet thick, contain seams of coal 1 foot to 7 feet thick. The microscopic examination of the mineral charcoal which has been secured may indicate its geological age. Rounded quartz pebbles and the great thickness of the sandstone formation imply the action of running water prolonged through many ages. The limestone discovery at the farthest south, interstratified with a remarkable rock of pinkish gray, branded with dark green, un-

like any that Professor David has ever seen, may prove important under microscopic examination. The ancient rocks examined apparently contain monazite.

Near Mount Larsen an interesting deep green mineral was found, which is almost certainly a compound of vanadium. Mount Erebus, like Stromboli, proved a good barometer, the steam column ascending and eruptions occurring with a low barometer. At periods the active crater contained molten lava. The old crater was filled almost to the brim with layers of snow. There are millions of felspar crystals 3 inches to 4 inches long, and pumice lava is of a rare kenite type. Fossil radiolaria were found in erratic of banded chert near Cape Royds. Lieutenant Shackleton is sending specimens of all these rocks to the British Museum. The exact location of the magnetic pole was fixed by elaborate triangulation by Mr. Mawson, extending over 200 miles from Mount Erebus to Mount Melbourne. It proved that the magnetic pole is no longer moving eastward as in Ross's time, but is now traveling northwestward in much the same direction as the north magnetic pole.

The summit crater of Mount Erebus was very active as regards steam and sulphur gases. No molten lava was seen, but during a big eruption in June and until September the steam column was glowing like a huge beacon fire, indicating that there was molten lava in the crater. Recently ejected "bombs" were found lying on the new snow, large quantities of sulphur being formed in the crater.

The coal measures discovered far south are probably older than the Tertiary Period; indeed, judging from the induration of the rock, they apparently date back to paleozoic times. No fossils to settle the point have been found, but a microscopic examination of the specimens may solve the problem.

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#### THE RESIGNATION OF PRESIDENT ANGELL

The regents of the University of Michigan have passed the following resolution:

This board has received with regret the assurance of our beloved president, Dr. James Burrill

Angell, that the time has come when, in his judgment, he should be permitted to retire from the active direction of the affairs of this university.

We desire to record here and now some measure of our appreciation of his services to this institution, of which he so long has been the head.

It is now nearly thirty-eight years since he assumed the presidency of this university. Under his leadership it has grown in student attendance from about 1,200 to more than 5,000, with a corresponding increase in faculty membership. Its advance in effectiveness of educational work and in all that goes to make a university great has been no less prominently marked. The proud position which this university has attained is due, more than to all other elements combined, to the fact that for more than one half its entire life it has been blessed with his learning, his culture, his wisdom, his tact, and, above all, with the example and inspiration of his high-minded Christian character.

It is impossible to calculate the impress for good given to the world by the 40,000 men and women who have carried with them from this institution into their work and in their lives the commanding influence of his rich character and personality.

Proud as he may justly be of the homage which the world justly yields him as educator, diplomat and publicist, he has even greater cause for pride in the grateful affection of the people of this state, whom he has served so long and so abundantly, and in the love of the army of students, whose lives he has directly enriched and to whom he will always stand for all that is highest and best in scholarly attainments, in private character and in public and private citizenship.

The women of the University of Michigan, at their annual banquet, held at Barbour Gymnasium on April 2, passed resolutions, the first part of which read:

This occasion on which you, in your official capacity, address for the last time the body of women of the University of Michigan marks an era in the higher education of women, not alone in this commonwealth, but in America. Your assumption of Michigan's responsibilities was contemporary with our entrance into its opportunities. We were a hazardous experiment given into your hands in the face of a skeptical world. There are no adequate words to express our gratitude for your unswerving loyalty to that trust. We give you increasing homage and reverence for the gifts of genius with which you have wrought

in our behalf. Yours has been, for two score years, the most potent influence in the land for the unrestricted privilege of higher education for women; yours the simplicity before which self-consciousness vanished; yours the fine courage that has helped many a sinking purpose to effective conclusion; yours the felicitous word that has parried the criticism of an over-expectant world, and has signally won where more militant methods would have lost.

#### SCIENTIFIC NOTES AND NEWS

THE spring meeting of the council of the American Association for the Advancement of Science will be held in the Assembly Hall of the Cosmos Club, Washington, D. C., on the afternoon of Wednesday, April 21, 1909, at 4.30 o'clock.

THE annual session of the National Academy of Sciences will be held in Washington, D. C., beginning Tuesday, April 20, 1909, at 11 A.M. The place of meeting will be the Smithsonian Institution. The public sessions for the presentation of scientific papers will be held in the large hall of the National Museum on Tuesday and Wednesday afternoons, April 20 and 21.

THE American Philosophical Society, Philadelphia, will hold a general meeting on April 22, 23 and 24. The opening session will be held on Thursday afternoon, at 2 o'clock in the hall of the society in Independence Square. A Darwin commemoration will be held on Friday evening at 8 o'clock in the Hall of the Historical Society of Pennsylvania followed by a reception. The afternoon session on Saturday will be devoted to a symposium on earthquakes. The annual dinner of the society will be held at the Bellevue-Stratford, on Saturday evening.

PROFESSOR T. G. BONNEY, F.R.S., will succeed Professor J. J. Thomson, F.R.S., as president of the British Association and will preside over the meeting to be held at Sheffield next year.

THE London Geographical Society has awarded its Victoria Research medal to Mr. Alexander Agassiz. The society has awarded a special medal to Lieutenant Ernest H. Shackleton.