ments of the surface current hourly for twelve hours (thus covering an entire tide, ebb and flood), and a few bottom current readings. The calm weather of that and the two preceding days gave an ideal opportunity for this work; hence the strong dominant set to the southwest which our instruments revealed is probably of considerable importance as an index of the long-shore flow of St. Lawrence water. From this point we ran a section across the coastal shelf, via Roseway Bank and the deep but circumscribed basin between it and La Have Bank, to the continental shelf, where we towed and took oceanographic observations to 500 meters.

Our program now called for a section crossing the shelf obliquely, to Halifax, and the first half of this line was successful. But an easterly storm drove us off our course, to shelter in La Have River, where we were held prisoners, first by northeast winds, then by fog, and finally by a violent southwest gale for four days. On reaching Halifax, August 2, we learned of the European war; and shortly received orders to return to United States waters.

On August 6 we sailed from Halifax, planning to make first a section across the Continental shelf normal to the coast as far as Emerald Bank; and then to run to the Gulf of Maine, making stations en route. The section was successful, and we were lucky enough to vary the monotony of the plankton hauls by the capture of a large swordfish, and of a sunfish (*Mola mola* Linn.). But thick fog set in on August 8 and drove us once more to Shelburne for shelter. Until the eleventh we lay at anchor, waiting for a change of weather; then lost patience and put to sea again. Our next field was the Gulf of Maine, where we located our stations at the same positions as those of 1912 and 1913, first in the northeast corner, then off Mt. Desert rock, and along shore to Gloucester, where we arrived on August 15. A week was spent in port; and on the 22d the *Grampus* sailed again, running east to the center of the gulf, and then to Cape Cod. Passing through Vineyard Sound we took our departure from No-Mans-Land on August 25 for a section across the Continental shelf, with stations at the 20-, 35- and 80-fathom contours, and one over the 1,000-fathom curve. We had supplied ourselves in Gloucester with bait and a long-trawl, and made two sets for tile fish (*Lopholotilus chamæleonticeps*) on the twenty-sixth. In 80 fathoms we caught only two; but in 105 fathoms an hour's set yielded 19, the aggregate weight being about 350 pounds. We occupied three stations during the run back to Gloucester, where we arrived August 28.

During the cruise complete oceanographic data were taken at 52 stations, ranging in depth from 15 to 250 fathoms; 126 tows were made with the horizontal nets: the quantitative net was used at 26 stations. The distance sailed was about 2,000 miles.

Statements as to the scientific results must await the completion of titrations of the water samples and the general examination of the plankton samples: the general report on the cruise, like that on the cruises of 1912[2] and of 1913 will be prepared in the Museum of Comparative Zoology.

HENRY B. BIGELOW

INTERNATIONAL OCEANOGRAPHIC EXPEDITION

AT the present time arrangements are being completed to despatch the International Oceanographic Expedition under the command of J. Foster Stackhouse, F.R.G.S., for a seven years' voyage to chart the seas, and to determine as far as possible the exact position of the large number of rocks and reefs which have been reported during the last century.

Not since the days of the *Challenger* has so great an enterprise been undertaken, and it is highly desirable that no time be lost in making the fullest inquiries into these hidden dangers to navigation.

Over 3,500 dangers have been reported in the Pacific Ocean alone, and some of these no doubt account for the fact that during the last

[2] *Loc. cit.*

three years, the great insurance corporation of Lloyds has reported that over 134,000 tons of shipping in which they were interested, had mysteriously disappeared, involving a loss of over $13,000,000.

Whilst the first duty of the expedition will be to accurately chart the seas, the vessel will carry a staff of twelve scientific men, who will make a thorough investigation of all places visited, and in little known regions, parties will be left for short periods to carry on work in many branches of science. The expedition has been fortunate in enlisting the practical support of many governments, and after consultation with hydrographers in many parts of the world, the following itinerary has been agreed upon.

Leaving London in June, surveying work will be carried on in the North Atlantic, particularly in the vicinity of the sinking of the *Titanic*—where on three occasions a rock has been reported—thence down the Atlantic, after calling at several ports in this country, to the Panama Canal.

For the next four years investigations will be made in the Pacific Ocean, calling at most of the little known islands, and extending in its operations from the Sea of Ohkotsk to King Edward VII. Land.

On leaving the Pacific, the expedition will continue its work amongst the islands of the East Indies thence to Zanzibar by way of Columbo, Seychelles and Mombasa. Later considerable time will be spent in the unknown waters south of Madagascar. After calling at Natal, the vessel will once more sail for Antarctic waters, and endeavor to find the coast line between Queen Mary Land and the Weddell Sea. On leaving these latitudes a thorough investigation will be made of the Sandwich Islands, which are at present unsurveyed. Continuing westward oceanographic work will be carried on around South Georgia and the Falkland Islands. From Port Stanley a line of soundings will be made to Montevideo, examining several shallow patches in the South Atlantic, and thence by way of Trinidad, Martin Vaz and Cape Verde Islands to London.

A FOSSIL BOTANICAL GARDEN

The New York State Museum has received from Willard Lester, Esq., a deed of gift of about three acres of land in the town of Greenfield, two miles west of Saratoga Springs, which include the widely known "Cryptozoon Ledge," and this little property is set apart as a public geological park to be preserved and protected by the state because of its scientific interest.

The acquisition of this natural monument by free gift from a distinguished citizen of the state is not only the expression of a fine sentiment, but it brings under authoritative care a noteworthy natural phenomenon. The Cryptozoon is a marine calcareous alga which grew in great spherical bodies and in the Cambrian seas which deposited the limestones of this park, they were so abundant as to form extensive reefs. The Hoyt (Cambrian) limestone here forms a ledge which has been planed off by the ice sheet so that the Cryptozoa are smoothed down to a level surface and their interior structure beautifully displayed over an area of about a half acre. The gift, however, includes the extension of this ledge into other natural rock faces and abandoned workings of the old Hoyt quarry from which the geological formation takes its name.

The little property which is to be known as the "Lester Park" is of great natural beauty, both in itself and in its approaches, but not the least interesting thing about it is the fact that it is given to the state because of its geological and educational worth.

John M. Clarke

RECENT CHANGES IN THE ACTIVITIES OF THE BOSTON NATURAL HISTORY SOCIETY

On Wednesday evening, November 18, Professors H. L. Clark and Alexander McAdie addressed the first of the general meetings of the society which are being resumed this season. Dr. Clark spoke on New Australasian Echinoderms collected by S. S. *Endeavor* and Dr. McAdie spoke upon Exploring the Air. The interest shown by the large number of members present and the number of informal