

portion of this area will be explored and a month's stay made, at the point of greatest concentration of seaweed, by means of a large buoy anchored in about two miles of water.

The depths beneath this zone will be searched by all modern methods of dredge, trawl, nets, traps and hooks. In this way a more thorough knowledge will be gained of a single limited area in mid-ocean than has heretofore been achieved. The daily and weekly changes in temperatures, salinity and density of the water, and in animal life will be studied and recorded. In effect the ship will function as an island.

The *Arcturus* will have a movable bow-sprit or railed platform which can be lowered to within a few feet of the water, and from which any fish or other creatures floating in the path of the vessel can be harpooned or netted. There will be a runway with a hand-rail around the outside of the hull, which will give access to any part of the length of the ship's side. Large searchlights, crow's nests near the top of the masts and marine glasses will be in constant use to discover any interesting creatures within vision. There will be diving apparatus for work and study at shallow depths on submerged platforms in mid-ocean; numerous aquariums, tanks and wells for live fish; a dark room is to be built for the study of luminescence in deep-sea fishes, and complete equipment will be brought into play to capture forms of deep sea life of which comparatively little is known.

Most of the luminous fishes live at great depths; some of these creatures, however, that do not inhabit the actual abysses are known to rise nearer the surface at night, so nocturnal activities aboard the *Arcturus* will probably be almost equal to those of daylight hours. Dredging, trawling and the use of baited traps after dark may be the means of securing hitherto unknown forms of life.

One of the objects of particular interest will be the attempt to secure specimens of the giant squid, which so far is only known through the remains found in the stomachs of cetaceans.

A powerful wireless set will be installed on the ship and weekly reports, describing the progress of the expedition, will be sent out. Complete records will be kept by means of motion pictures, paintings and photographs, as well as by written descriptions and accounts. Casts and models of the more delicate and perishable animals will be made, and every effort is to be directed toward obtaining information as to the habits of various fishes.

The extent of the Sargasso Sea varies in accordance with wind and current, so that some cruising about will be necessary in order to determine the most favorable spot for locating the floating island. Between the extremes of giant cetaceans and microscopic plankton,

there will be enough material for study to occupy every moment of the six months which it is proposed to spend on this deep-sea expedition.

### PLANS OF THE ENGINEERING FOUNDATION

THE Engineering Foundation, New York, has appointed 190 leading engineers, representing industry, education and public service in twenty-seven cities throughout the country, to act as local representatives. These engineers will work with the Foundation Board in carrying out a nation-wide plan "for the furtherance of research in science and engineering or for the advancement in any other manner of the profession of engineering and the good of mankind."

The foundation's work will be carried on with \$500,000 provided by Ambrose Swasey, of Cleveland, augmented by a recent gift of \$50,000 from the estate of Henry R. Towne. The immediate direction of the foundation's affairs will be in the hands of a group of engineers in New York and other cities.

At present the foundation is cooperating with the National Research Council and the Research Committees of the various engineering societies in investigations of engineering problems.

With research committees of the founder societies of civil, mining and metallurgical, mechanical and electrical engineers, the foundation is cooperating in investigations of concrete and reinforced concrete arches, steel columns for buildings and bridges, mining methods, rock drill steels, properties of steam-bearing metals, lubrication and strength of gears.

Besides the foundation's appropriations to aid research, totaling \$15,000, contributions from industries and other sources aggregate more than \$100,000. Personnel research in industry, education and government will be furthered in 1925 through the personnel research federation.

Representatives announced are affiliated with numerous national organizations in addition to engineering societies, the list including the American Chemical Society, the American Association for the Advancement of Science, the Iron and Steel Institute, Society for Promotion of Engineering Education, American Society for Steel Testing and the American Meteorological Society.

### PUBLIC LECTURES AT THE UNIVERSITY OF MINNESOTA

THE zoological museum of the University of Minnesota has announced the program for its fifth annual course of Sunday afternoon lectures. These lectures are being given at 3:30 P. M. in the animal biology building as follows:

January 4. *The winter bird life of Minnesota*: THOS. S. ROBERTS, director of the zoological museum, University