OCEANOGRAPHIC MUSEUM OF MONACO.

The museum occupies the eastern extremity of the gardens of St. Martin, on the rocky plateau of Monaco, covering the site which was formerly occupied by the powder factory and a small museum. It is established upon a steep declivity of the rock by means of solid foundations which descend as far as the sea, and covers ground which could not be used hitherto. In this way the Prince of Monaco succeeded in keeping the museum from infringing too much upon the magnificent gardens which surround it. The present building, erected on the plans of the architect Delefortrie, is entirely of stone taken from the Turbie, this being a secondary limestone which is very resistant and whose grain comes very near that of lithographic stone. A few pieces only, such as the monolith columns of the façade, have been brought from Brescia, but this stone is of the same kind. The museum is a long building, running about northeast-southwest. It measures 325 feet in length. The central part, measuring 65 feet long and 65 feet wide, is continued on each side by a wing 130 feet long by 50 feet wide. The arrangement and dimensions are the same for the whole of the building, except that the width is different for the basements. On the Avenue St. Martin is the entrance, and it gives access to a vestibule which is situated in the front portion, the latter being a projecting part in front of the middle portion of the museum. It contains the staircases which lead up to the upper or second story. From the vestibule, into which opens the entrance to the museum, we pass into the large central hall of the ground floor, which forms the reception hall. At each side of the latter is a hall for the exhibition of collections. The ground floor, which lies at 172 feet above the water level, is 23 feet in height. The second story, which is 37 feet high, carries an intermediate gallery between the ceiling and floor, and runs around the different rooms, which are laid out on the same plan as on the lower floor. These two stories are designed to be used to show the collections and instruments. On each floor the three rooms can be opened into a single large hall by means of sliding doors, thus making a hall of some 320 feet length which can be used for congress meetings or like purposes.

The lower two or basement stories face directly upon the sea, and therefore are well lighted. In Fig. 2 is shown the eastern end of the museum, and we observe the four stories of the building and also the arrangement of the roof, which is in the form of a vast terrace some 1,800 square yards in area, overlooking the sea. In Fig. 4 will be seen the interior of the lower basement floor, which is 11 feet high and is designed to be used for some of the rougher work, especially for the mounting of the large specimens, such as the large fish, cetaceæ, seals, etc. The same view shows in the foreground a series of vertebræ of a species of whale found in the Mediterranean, and farther back skeletons of fish about 20 feet long, which were captured by the Prince in the neighborhood of Monaco. The laboratory is equipped with a gas engine which drives the different machine tools used in mounting the pieces. Below is situated a well-aired annex room which contains the macerating basins, and these are large enough to receive the skeleton of an entire whale.

The other wing of the lower basement forms a large hall which is used to receive the aquariums. The latter are of different sizes, and we have first a range of nine basins measuring from 3 to 16 feet long and 3 feet high. Fig. 1 shows the contents of these aquariums, consisting of congers, lampreys, eels, and similar specimens, and the view was taken by magnesium light. At the end of this range of basins we find a large tank some 20 feet long which is to contain the fish of great size. Beside it is another large tank in which are to be seen two sea tortoises (*Thalassochelys caretta*). These specimens were brought from the Azores in 1896 by the Prince of Monaco, and since that

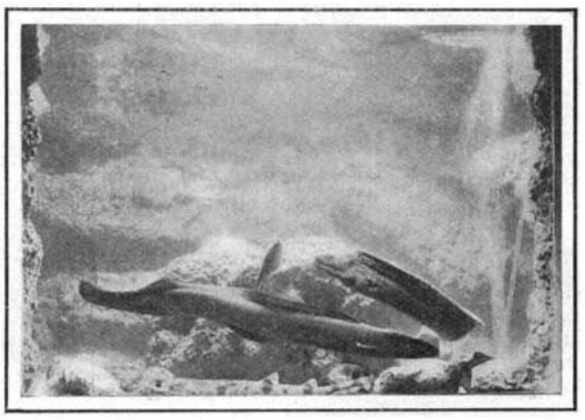

Fig. 1.—Congers in One of the Aquariums.

time one of them has grown from 7 to 88 pounds weight. A large table built in armed cement supported on an iron frame and measuring 70 feet long by 3 feet wide, runs parallel to the first range of aquariums. It forms a shallow trough which is designed to carry a number of movable aquariums, and the overflow from these can run out directly upon the table. These aquariums will be used for research and will be well lighted, as they lie next the windows. Many physiological and biological researches will be carried out here. Near by is a series of tanks in armed cement 6 by 3 by 2 feet. The sea-water is brought to a height of 110 feet by two pumps placed in a special chamber underneath, operated by electric motors from the tramway circuit, and is received in a tank reservoir. Thence the water passes to the aquariums with a fall of ten feet or more, which allows automatic aeration of the basins by an injecting atomizer system.

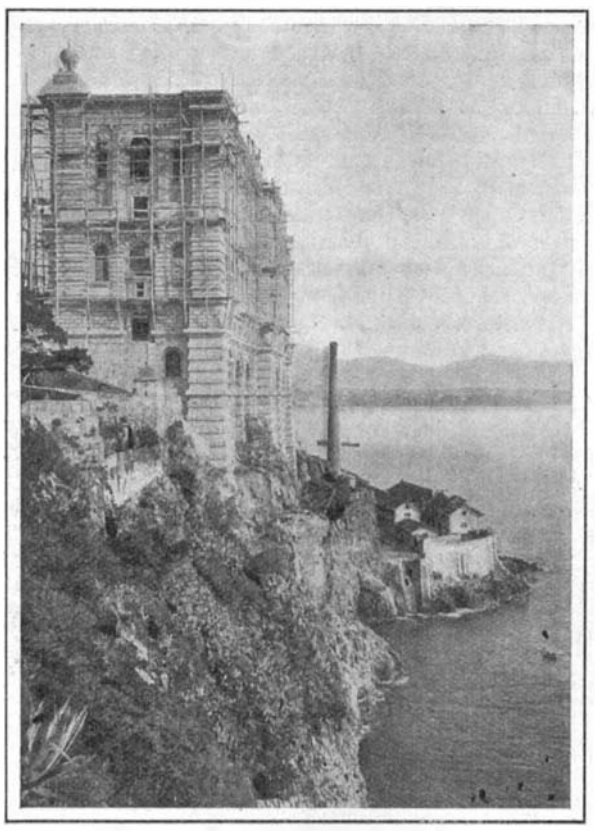

Fig. 2.—Eastern End of the Museum.

At present the aquariums contain a great number of specimens resulting from the captures at sea during the different expeditions. Above this floor is the upper basement story, which is 12 feet high and like the former is some 320 feet in length. It contains the rooms used for the preparation of the specimens and for their storage, also different laboratories among which is to be noted the chemical laboratory shown in Fig. 3. Several private work rooms are set apart for the use of persons who come to consult the collections or who wish to make oceanographic researches. A special library occupies the central hall of the floor, and near by is a large photographic laboratory. The basement floors are now entirely installed, but the two upper floors which are designed for public use will not be fitted out before the building is quite finished. In this portion will be exposed the objects relating to oceanographic work, including the apparatus, the results of researches, etc. Under this head we find different types of floats and apparatus used for studying surface or deep-sea currents, sea-sounding apparatus of many kinds, and sounds which contain specimens brought up from the bottom, such as mud, sand, gravel, and even pieces of pipe inhabited by sea animals; also water flasks designed to take samples of water at a given depth at the same time as their temperature, besides thermometers, densimeters, etc., affording the observation of densities and chemical composition of different layers of water, also instruments for studying the penetration of light into deep water, etc. We also find apparatus which are designed for use in capturing living specimens, several of which have been designed or modified by the Prince or his aids. Among these are ordinary sea nets, Hensen nets, vertical nets with large opening, surface nets, and finer ones for collecting the plankton during the movement of the vessel, and many like apparatus. These will be shown either in actual or reduced size.

But the largest part of the exhibits will comprise the zoological collections taken from the sea-bottom, from the surface or from mid-water during the scientific campaigns of the Prince, especially the deep-sea specimens, for the latter have now been taken at depths of several thousand feet. Besides, the museum will not only contain the specimens collected since 1885 by the exploring vessels "Hirondelle" and "Princess Alice," but a large number of others which have been obtained by exchange or otherwise and come from all points of the globe. A large collection of maps, graphic plans, photographs, etc., will complete the series of oceanographic documents, besides a series of water-color views made from the living animals.

Referring to the general view of the building, under the main cornice of the roof will be inscribed the names of famous oceanographic exploring vessels, among others the American vessel "Albatross," celebrated in oceanographic work, besides others from different nations, such as the "Talisman," "Challenger," "Valdivia," etc. On the façade will figure the "Hirondelle" and the "Princess Alice," above each of the allegorical groups executed by the sculptor Dussart. These groups, which are 26 feet in height, represent Truth unveiling the world's forces to Science, and Progress coming to the aid of Humanity. From its bold construction and its purpose, the Oceanographic Museum of Monaco constitutes a monument, for whose erection Prince Albert I. deserves praise.—Translated for the SCIENTIFIC AMERICAN from La Nature.

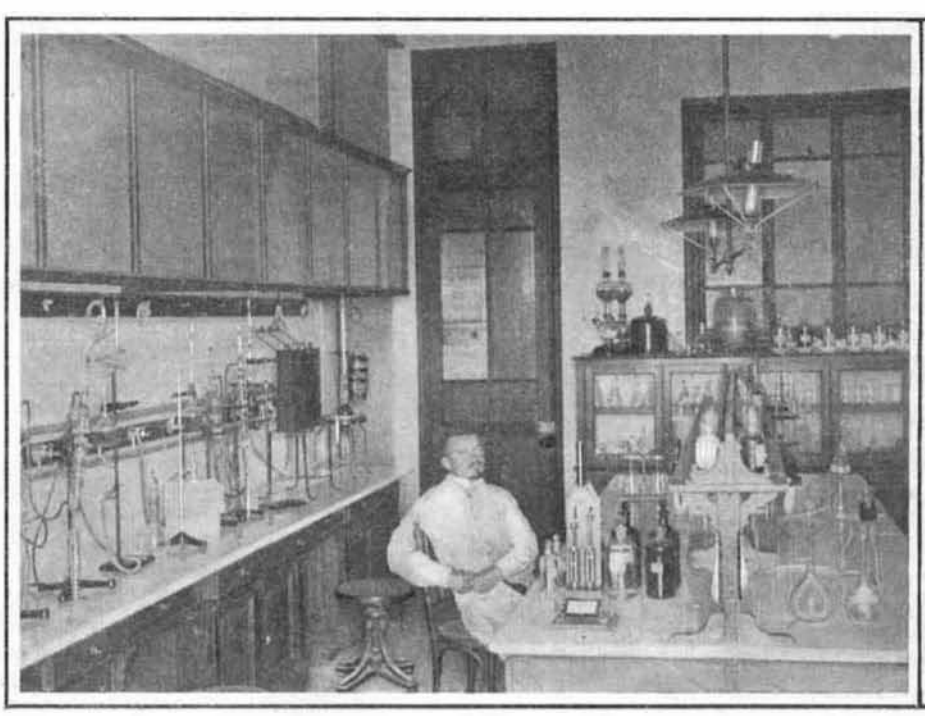

Fig. 3.—Chemical Laboratory of the Museum.

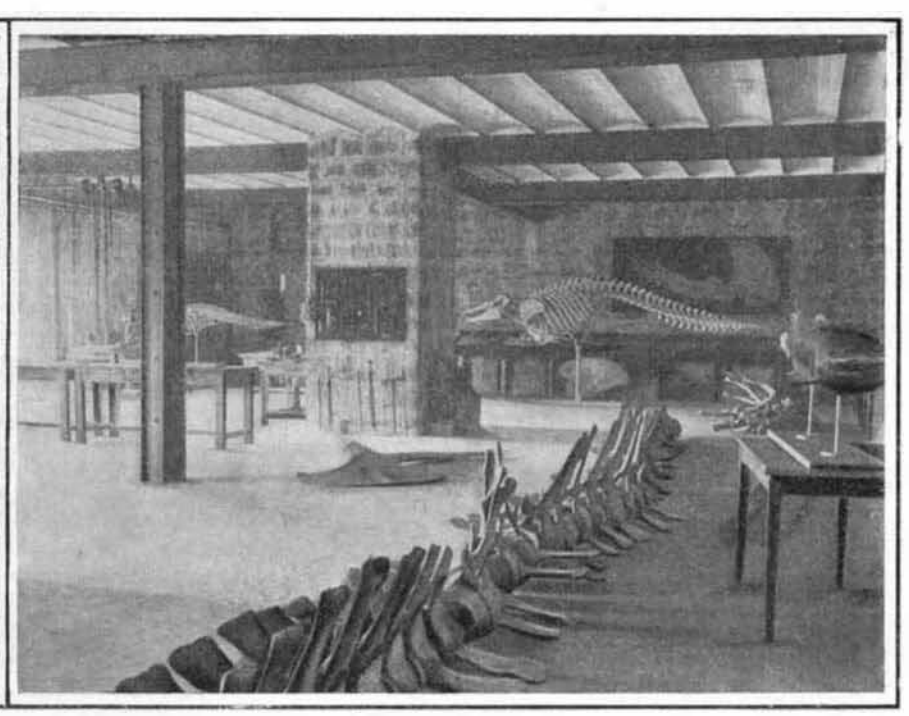

Fig. 4.—Department of Preparation.

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