means of the accompanying diagram (Fig. 3). The period of time covered is the century beginning in 1820, and while the years are displayed down the centre of the diagram, the size (in inches) of the object glasses and mirrors are shown respectively on the left- and right-hand sides against the years of their erection. Many other large instruments of interest, apart from those that were records in size in their time, have been inserted.

No less interesting and important is the study of the geographical distribution of large telescopes. For this purpose the positions of the great telescopes have been indicated on a chart of the world (Fig. 4). On this diagram refractors from 30 to 40 inches aperture are represented by large black spots, and those between 20 and 29 inches by small black dots. On the other hand, reflectors from 60 to 100 inches in diameter are indicated by large circles, and those from 30 to 59 inches by small circles. It will be seen that the very large telescopes predominate in two main regions, namely Europe and the United States of America with Canada. Only one telescope of the very large type is situated in the southern hemisphere, and that is the five-foot reflector for the Argentine National Observatory at Cordoba. This instrument, although completed, has not yet been erected.

South Africa and Australia are both blank in this respect, except that a 26-inch refractor is nearing completion for the former, but it is hoped that in the near future both these countries will be better represented.

The limit of size of a telescope, whether it be refractor or reflector, for the accomplishment of useful work has by no means yet been reached, providing the instrument be placed in a specially selected locality high up on some extensive plateau, where the "seeing" is of a high-class nature during the greater part of the year.

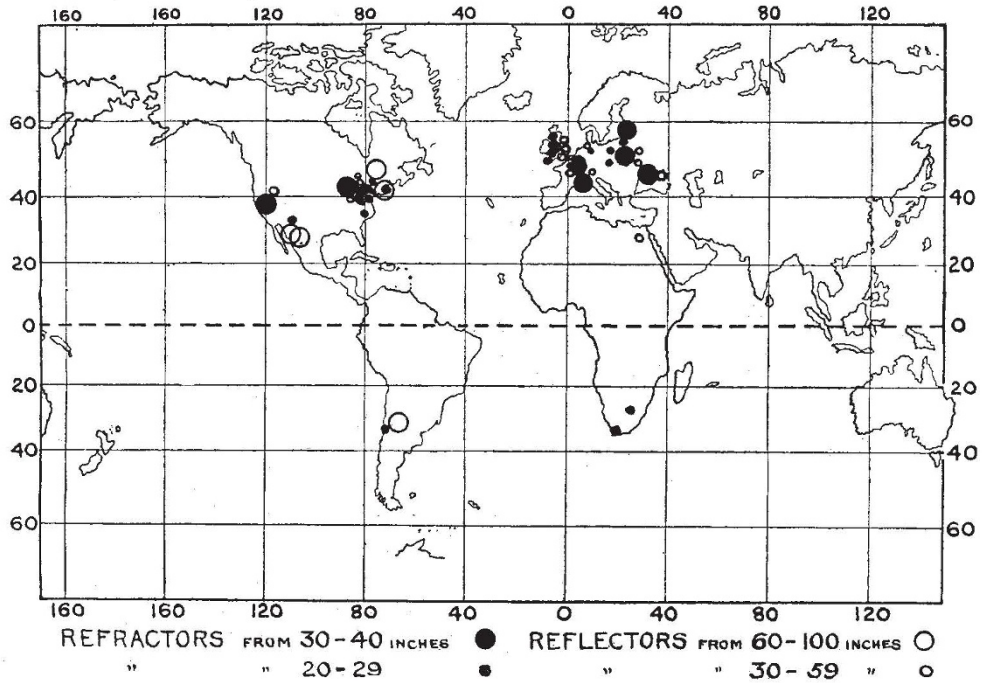

FIG. 4.—Geographical distribution of large telescopes.

This limit is at present only temporarily restricted by the maximum limit that can be reached by those whose work it is to cast the necessary glass blocks. The mounting of even the largest telescope is now only a mild engineering problem.

It must not be forgotten, however, that large telescopes are very expensive not only to construct but also to house; yet experience has shown, at any rate in the United States of America, that when occasion arises an enthusiastic private donor generally appears.

Obituary.

THE death is announced of Dr. Hermann Biggs, Commissioner of Health, New York State, at the age of sixty-three. After graduating at Bellevue Medical College, Dr. Biggs studied in Berlin and Greifswald, and returning to the United States in 1895, directed the production of the first diphtheria antitoxin in that country. In 1900 he became general medical officer of the New York City health department, and there established the first municipal bacteriological laboratory. This post he held until 1914, when he was appointed Commissioner of Health to New York State. Under his administration the health of New York City and State changed markedly for the better. He organised a campaign against tuberculosis, and was responsible for a body of wise health legislation. He was a scientific director of the Rockefeller Institute, and, for a short time, medical director of the League of Red Cross Societies. He gave to his country and to the world distinguished services, and preventive medicine loses by his death an ardent disciple. R. T. H.