

Taking the Challenger researches in conjunction with those of Sir James Ross's Antarctic Expedition and other observations, it seems to be indicated that a great zone of Diatom Ooze of varying width surrounds the South Polar regions, as represented on the accompanying chart. This zone lies for the most part between the Antarctic Circle and the latitude of  $40^{\circ}$  S., and may be estimated to cover about 10,880,000 square miles of the sea bottom in these regions. There is a small patch of Diatom Ooze in the North Pacific, which may be estimated at about 40,000 square miles.

### GLOBIGERINA OOZE.

This name was in the first instance applied to the mud collected when sounding out the greater depths of the Atlantic Ocean in connection with telegraph cables, because a large percentage of this mud or ooze was made up of the small Foraminiferous shell named *Globigerina bulloides*. The term Globigerina Ooze, which has become quite familiar and well established, is at once appropriate and distinctive, and is now adopted for all those deposits which are chiefly made up of the Foraminiferous shells belonging to the family Globigerinidæ. The first specimens of the ooze were probably procured by Lieutenant Berryman of the United States Navy in the North Atlantic, and were described in some detail by Ehrenberg and Bailey in 1853. Many subsequent writers have described specimens that were afterwards procured from other regions of the ocean. Were all the deposits which contain 10 or 15 per cent. of these Foraminiferous shells classed as Globigerina Ooze, then this deposit would be by far the most extensive of the deep-sea deposits, for some species of these shells are present in greater or less abundance in all the types of marine formations from Equator to Poles. Near land, however, their presence is sometimes wholly masked by the abundance of land debris or exuvie of shallow-water organisms, and in the greatest depths of the ocean these shells are absent, or at least do not accumulate on the bottom so as to form a calcareous deposit. In this Report, as a general rule, a deposit has not been classed as a Globigerina Ooze unless it contains over 30 per cent. of carbonate of lime, principally made up of the dead shells of these Foraminifera. There was at one time much discussion as to whether those Foraminifera, which are in this Report called pelagic, lived at the surface of the sea or on the bottom of the ocean; this question has been, we believe, definitely settled in favour of the former view, as will be pointed out in detail later on. The following is a list of the pelagic Foraminifera that were taken in the surface nets during the cruise of the Challenger, and it is the dead shells of these species which, having fallen to the bottom of the sea, make up the principal part of the carbonate of lime present in the great majority of pelagic deposits, and especially in all those denominated Globigerina and Pteropod Oozes:—