

or die at sea, their soft parts, and even their bony structures, might be entirely removed in solution, while the stones and pebbles contained in their stomachs would remain as a part of the deposit.

It has been pointed out that minute fragments of rocks, especially particles of quartz and other continental minerals, have been found in some of the deep-sea deposits at great distances from the coasts of Africa and Australia. This abnormal distribution is to be accounted for by the great distance to which winds may carry dust from desert regions on the continental surfaces, as, for instance, the Sahara and the interior of Australia.

It will thus be seen that the area to which continental debris may be transported over the floor of the ocean varies greatly in different localities. It is least along high and bold coasts in tropical and subtropical regions; it is more extensive off the mouths of great rivers, off the coasts of desert regions, and in enclosed seas, but is most extensive towards the polar regions, where blocks of all sizes and kinds are widely distributed by icebergs and other kinds of floating ice.

*Minerals derived from the Disintegration of Continental Rocks.*—An examination of terrigenous deposits shows that the prevailing minerals around continental shores are those that might be derived from the disintegration of emerged lands. The size of these minerals, as well as their abundance, is in direct relation with their greater or less distance from the coasts, except in iceberg regions. They have frequently a rolled aspect, their angles being softened, and they recall by all their peculiarities the same mineral species which constitute most of the geological layers making up the continental masses. Quartz plays the principal role. The normal position of these minerals is coincident with the distribution of terrigenous deposits, and if exceptionally they are found in pelagic deposits, they have been in these cases transported by icebergs, by atmospheric currents, or other agencies to which we have just referred in speaking of the distribution of continental rocks.

In some cases there are special characters which may serve as a guide in attempting to establish the terrigenous origin of these particles, but it must not be denied that this subject is surrounded with many difficulties. It is often difficult to determine the age of certain rocks by a study of their lithological composition; in a much higher degree, therefore, is the determination of the isolated minerals which constitute these rocks a matter of great uncertainty. In all these cases the most certain guide is the mineralogical association with the rock fragments in the deposits. There are some minerals which have not been recognised in recent eruptive rocks, or at least are extremely rare in these masses, while on the contrary they are extremely abundant in the rocks of the ancient eruptive series; tourmaline and muscovite are examples. If minerals, about which there is uncertainty as to their age and origin, be associated with fragmentary masses of crystalline and sedimentary rocks of the ancient series, we may conclude with very great