The *sixth* order, or smallest size of harbour, is 11¾ inches diameter; lens light costs out £70, or complete £216. *

In the early days of the lens lights we were entirely dependent on the French for eir construction. The superior character of the St. Gobain and Premontrè glass, d the appliances of MM. Soleil, François, Letourneau, Sautter, &c., kept them in session of nearly all the construction of lenses in use. The exceptions, in our untry, were those made by Messrs. Cookson, of Newcastle-on-Tyne, who, about 36, made some apparatus, as that of Hartlepool, &c. Later, however, the Messrs. ance, of Birmingham, have largely entered on this important branch of manufac- re, and many beautiful examples are the result of their enterprize.

M. Degrand, of the French Lighthouse Commission, has introduced another pro- ss for making the lenses, by forming them of thin sheets of moulded or *cast* glass. his is in use in the Beacon light of Walde Point, near Calais.

CHAPTER IV.

GENERAL REMARKS.

It is very important that the distinctive character of different Lighthouses, and d especially of those near to each other, should be plainly marked, and easily re- gnized. It might be supposed that this was readily and well done, by the alterna- on of fixed and revolving, at different periods, flashing or double, and even treble hts; but very numerous accidents demonstrate that mistakes frequently occur. uring fine and clear weather there is not any difficulty, with ordinary caution. It the thick haze, snow and storms, driving scud, and all other embarrassments, which, hile they tend to throw doubt on the ship's reckoning, also make it difficult to ap- oach an unknown Lighthouse without running into danger. Therefore any dis- action, by which one light can be instantaneously distinguished from another, is ost useful. The difference in the aspect between the reflector and lens light is one these, at the sailor's command.

At long distances (say above 10 miles) the flash from the revolving light from the flector has a sensible disc, and will last a considerable time, 12 or 14 seconds if the volution is 1 minute; that from the lens light will be whiter, more star-like, and ill not last more than 7 or 8 seconds. Another distinction of the latter is, that the ght is not totally extinguished between the flashes,—the upper and lower zones eeping constantly illuminated. This secondary light, at favourable times, is visible far as the horizon of the place, and from 8 to 12 miles, according to the size of the paratus, in ordinary weather. This is a marked distinction between the two stems, as the eclipse is total from the reflectors, even at short distances. But it ust be remembered that the new holophotal system has also nearly total eclipses.

The distinction between the fixed lights, on either system, is not so well marked. he lens equally distributes the light, which is equally bright in all directions: on e other hand, the reflector light is brightest when immediately in front of the flector, so that a vessel sailing past, when very distant, will find that the light at nes gets fainter, till a short distance further brings her into the force of the next flector.

Very much has been written upon the comparative merits and economy of the two stems. Perhaps the difference at times has been over-rated. At all events, it is

* These prices, which are common to nearly all manufacturers, are taken from the Tariff Messrs. Chance, Brothers and Co., Birmingham (1860).