

ses, and a girl committed to memory between 300 and 400 verses in one week.

"From the observations I am enabled to make, I feel persuaded, that the great Head of the Church continues to own the labours of his Missionary servants in this country; and I have much pleasure in saying, that I think our work, generally, is attaining such a ground, and assuming such an attitude, that if we do not accomplish all we wish, we shall, at least, look our difficulties in the face in a way which has not been done before since I have had a residence in Ireland."

Long has Ireland suffered under the oppressive influence of ignorance and superstition, detaining the noble race of her sons in captivity the most galling; but it is hoped that the "time to favour her, even the set time is come." Various circumstances encourage this expectation, amongst which we may enumerate the just sense entertained of the causes of her depression by many of her most pious and zealous clergy and nobility. An Irish nobleman, whose active and unwearied exertions in promoting her best interests, justly entitle him to grateful recollection, thus expresses his views, in a letter addressed to one of the General Secretaries:—

"Thousands, nay millions here [in Ireland] are dying for lack of knowledge; and I would appeal to the humanity of those who love their neighbour as themselves, and beseech them, at this moment, to redouble their charitable exertions in favour of Ireland. Satan, like a roaring lion, is seeking whom he may devour; and he is only to be overcome by the soldiers of Christ, armed with the sword of the Spirit. May sympathy work in the hearts of our brethren; may England rightly comprehend the true cause of this country's degradation; may she every day become more interested in the spiritual welfare of the people, and persevere in turning the hearts of the disobedient to the wisdom of the just."

#### LITERATURE.

##### OF THE SEA.

The sea is a vast collection of waters in the deep and unfathomable valleys of the earth. This great abyss occupies nearly three quarters of the whole surface of our globe; which has been thought by some too great a proportion; but it is probable no more than sufficient to fertilize the land.

The saltness of the sea is a property in that element, which appears to have excited the curiosity of naturalists in all ages. This property is very rationally judged to arise from great multitudes both of mines and mountains of salt, dispersed here and there in the depth of the sea; the salt being continually diluted and dissolved by the waters, the sea becomes impregnated with its particles throughout; and, for this reason, the saltness of the sea can never be diminished.

The saltness of the sea preserves its waters pure and sweet, which otherwise would corrupt and stink like a stinky lake, and consequently none of the myriads of creatures which now live therein, could then have being; from hence, also, the sea water becomes much heavier; and, therefore, ships of greater size and quantity may be used thereon. Salt water also doth not freeze as soon as fresh water, whence the seas are more free for navigation.

The most remarkable thing in the sea, is that motion of the water called tides. It is a rising and falling of the water of the sea. The cause of this is the attraction of the moon, whereby the part of the water in the great ocean, which is nearest the moon, being most strongly attracted, is raised higher than the rest; and the part opposite to it, on the contrary side, being least attracted, is also higher than the rest. And these two opposite rises of the surface of the water in the great ocean, following the motion of the moon from east to west, and striking against the large coasts of the continents that lie in its way, from thence rebounds back again, and so makes floods and ebbs in narrow seas, and rivers remote from the great ocean.

As the earth, by its daily rotation round its axis, goes from the moon to the moon again, (or the moon appears to move round the earth from a given meridian to the same again) in about 24 hours, hence in that period there are two tides of flood, and two of ebb, and this alternate ebbing and flowing con-

tinues without intermission. For instance, if the tide be now high water-mark, in any port, or harbour, which lies open to the ocean, it will presently subside, and flow regularly back, for about six hours, when it will be found at low water-mark. After this, it will again gradually advance for six hours, and then return back, in the same time, to its former situation; rising and falling alternately, twice a-day, or in the space of about twenty-four hours.

The interval between its flux and reflux is, however, not precisely six hours, but eleven minutes more; so that the time of high water does not always happen at the same hour, but is about three quarters of an hour later every day, for thirty days; when it again recurs as before. For example, if it be high water at any place to-day at noon, it will be low water at eleven minutes after six in the evening; and, consequently, after two changes more, the time of high water the next day will be about three quarters of an hour after noon; the day following it will be at about half an hour after one; the day after that at a quarter past two; and so on for thirty days; when it will again be found to be high water at noon, the same as on the day the observation was first made. And this exactly answers to the motion of the moon; she rises every day about three quarters of an hour later than upon the preceding one; and, by moving in this manner round the earth, completes her revolution in about thirty days, and then begins to rise again at the same time as before.

To make the matter still plainer; suppose, at a certain place, it is high water at about three o'clock in the afternoon upon the day of the new moon; the following day it will be high water at about three quarters of an hour after three; the day after that at about half an hour past four, and so on, till the next new moon when it will again be high water about three o'clock, the same as before. And by observing the tides continually at the same place, they will always be found to follow the same rule; the time of high water, upon the day of every new moon, being nearly at the same hour; and three quarters of an hour later every succeeding day.

The attraction of the sun also produces a similar rising and falling of the water of the ocean, but on account of its distance, not near so considerable as that which is produced by the moon. It will be readily understood, that according to the different situations of the sun and the moon, the tides which are raised by their respective attraction, will either conspire with or counteract each other in a greater or lesser degree. When they conspire together the tides rise higher, and their mutual action produces what are called *spring tides*. On the contrary, when they counteract each other, they produce *neap tides*.

From a slight consideration of what has been said, we might be led to imagine, that the time of high water at any place, would be when the moon is over the meridian of that place. But this is by no means the case; it being usually about three hours afterwards; the reason of which may be shown as follows: The moon, when she is on the meridian, or nearest to the zenith of any place, tends to raise the waters at that place; but this force most evidently be exerted for a considerable time, before the greatest elevation will take place; for if the moon's attraction were to cease altogether, when she has passed the meridian, yet the motion already communicated to the waters would make them continue to ascend for some time afterwards; and, therefore, they must be much more disposed to ascend when the attractive force is only in a small measure diminished.

The waves of the sea, which continue after a storm has ceased, and almost every other motion of a fluid, will illustrate this idea: all such effects being easily explained, from the consideration that a small impulse given to a body in motion, will make it move farther than it would otherwise have done. It is also, upon the same principle, that the heat is not the greatest upon the longest day, but some time afterwards; and that it is not so hot at twelve o'clock as at two or three in the afternoon; because there is a farther increase made to the heat already imparted. Instead of its being higher then, when the moon is upon the meridian of any place, it will always be found to happen, as far as circumstances will allow, about three hours afterwards; and the intervals between the flux and reflux, must be

reckoned from that time in the same manner as before.

The sun being nearer the earth in winter than in summer, is nearer to it in February and October than in March and September; and therefore the greatest tides happen not till some time after the autumnal equinox, and return a little before the vernal.

The tide propagated by the moon in the German ocean, when she is three hours past the meridian, takes twelve hours to come from thence to London bridge; where it arrives by the time that a new tide is raised in the ocean.

These are the principal phenomena of the tides; and where no local circumstances interfere, the theory and facts will be found to agree. But it must be observed, that what has been here said, relates only to such places as lie open to large oceans. In seas and channels, which are more confined, a number of causes occur, which occasion considerable deviations from the general rule. Thus, it is high water at Plymouth about the sixth hour; at the Isle of Wight about the ninth hour; and at London bridge about the fifteenth hour, after the moon has passed the meridian. And at Batsha, in the kingdom of Tonquin, the sea ebbs and flows but once a day; the time of high water being at the setting of the moon, and the time of low water at her rising. There are, also, great variations in the height of tides, according to the situation of coasts, or the nature of the straits which they have to pass through.—Thus, the Mediterranean and Baltic seas have very small elevations; while, at the port of Bristol, the height is sometimes near thirty feet; and at St. Malo's it is said to be still greater.

WEBSTER'S DICTIONARY.—At a meeting of teachers and other literary gentlemen on the eighteenth of May last, a committee was appointed to examine Webster's American Dictionary, and report their opinions on the merit of the work. At a subsequent meeting their report was read and accepted. In this report the committee say, that the Prefatory and Introductory remarks of the author command the most unqualified approbation—and that the etymological character of this work gives it a claim of preference, as in this particular all former lexicographers are very defective, and a knowledge of radical language is essential to a thorough acquaintance with the derivative words—that the accuracy of the definitions in this work also gives it a superiority over others, as we here find not only the original meaning of words, but the group of ideas which cluster around it, and are delighted in tracing the affinities and likenesses between the parent and the offspring—that a knowledge of etymology is essential to the correct orthography of a derivative language, and that for want of this knowledge, the orthography of words is sometimes mistaken, and the words are made to express ideas different from the true ones, and in some cases is absurd or ridiculous. That in accentuation the author has followed the general principle euphony, and for the discrepancies from Walker, reasons are assigned which in general are satisfactory to the committee—that to reduce this fugitive attribute of our language to uniformity is a very difficult task, but that a general rule of classification, laid down by Dr. Webster, as far as the information of the committee extends, is judicious and analogous.

The committee consider the excellence and value of this work to be much enhanced by the addition of more than twelve thousand words to the largest list in any other work of the kind, and among these are the technical terms of modern science.

The committee remark that the difficulties of which foreigners complain, in acquiring a knowledge of the English language, arising from the varied sound of the vowels and some of the consonants, call loudly for a remedy; and they think one is found in the use of the points introduced by Dr. Webster, which are easily introduced and applied, and that if, by those means, all, or even a part, of these difficulties shall be removed, incalculable benefits will be the result. Providence has permitted us to live in a most eventful period of the world. They observe that the moral and religious enterprise of the present day—the improvements in arts and sciences—the discovery of new modes of applying moral and physical force, present an aspect of no common interest, and appear to designate the present as the most suitable time for the adoption of such work as