has ever been done. Estimating the surface of the globe at *two hundred millions* of square miles, and that the sea covers *three-fourths* of it, or a hundred and fifty millions of miles, if we suppose the average depth *two miles*, the whole quantity of water will amount to *three hundred millions* of cubical miles. La Place observes, that if the ocean were increased by one-fourth, the world be submerged, and were it diminished in the same proportion, there would be a deficiency of moisture—the largest rivers would dwindle into brooks, vegetation would languish and decay, and the earth, instead of being a scene of fertility and beauty, would become a bare and barren wilderness. Ample as are the boundaries of the ocean, its extent seems nicely adapted to the economy of nature, and the same hand that gems the tiny flower with the sparkling pearl of the morning, wields the heaving bosom of the waters, and confines them within their capacious channel.

It is a property of every fluid body, whatever be its extent, that since its particles press equally in directions; its surface, when not operated on by external causes, becomes a uniform level. From this it might be inferred, that the sea, exclusive of fluctuations of the tides, would have an entirely level surface. Such, however, is not the case, owing to local peculiarities. The difference of the level is chefly observable in gulfs and inland seas, especially in those whose openings are towards the east. In consequence of the earth's rotation, the waters have an *apparent* general motion from east to west, and being thereby forced into these inlets, their level becomes higher than that of the general body. The French engineers, when in Egypt, observed that the waters of the Red Sea, towards the east of the Isthmus of Suez, were 32½ feet higher than those of the Mediterranean on the opposite side of the isthmus. Humboldt concludes from observations made by him on the Isthmus of Panama, that the waters of the Gulf of Mexico were from 20 to 23 feet higher than those of the Pacific on the other side. The water which rises from the Mediterranean by evaporation is said to be three times more than all that runs into it from rivers; and hence its surface is always lower than that of the Atlantic, from which a current constantly flows into it at Gibraltar. There are from three to six feet between the level of it and that of the Atlantic on the opposite sides of France. The Baltic and Black Sea, which are almost lakes, rise in spring, in consequence of the greater abundance of water brought into them at that season by the rivers. The difference between the level of the Baltic and of the North Sea, on the opposite sides of Jutland, is about a foot.

The saltness of the sea is one of its most obvious peculiarities, and has in all ages attracted considerable attention. Its water has been annalysed with chemical accuracy, and is found to contain several extraneous substances, the principal of which are muriate of soda or common salt, muriate of magnesia, and sulphate of lime. It may be considered certain, from the nicety of the investigations and the closeness of the results, that the proportion of saline matter in the waters of the sea is the same in all parts, and that the slight differences which have been discovered, are attributable to local causes easily accounted for. The quantity of saline matter in the waters which have been examined, varies from *one twenty-fourth to one thirtieth* of their *weight*. The saltness appears to be somewhat less towards the poles than within the tropics; but this may be accounted for from the circumstance, that in the tropical regions there is a great and constant evaporation, and as the fresh waters of the rivers evaporate more readily than those of the sea, they here possess less influence in diminishing the saltnesss than in the high polar regions is supposed to have some effect in producing the difference which has been observed. The coasts and inland seas are generally not so salt as the ocean, owing to the fresh water which flows into them from rivers. The Baltic is never so salt as the North Sea, and sometimes when the wind is so strong as almost to keep out the sea, the water is nearly fit for ordinary use. In the Firth of Forth, the saltness is only *one-thirtieth*, but perhaps at a distance from the coast, the proportion is nowhere so small. Various theories have been formed, with the view of discovering, on scientific principles, the cause of the saltness of the sea. Since these have all proved unsatisfactory, most people are now content to believe, that, as in many of the works of nature, it is easier to perceive its advantages than to find out a satisfactory cause The saltness seems an essential quality of the water, which it, in all probability, received at the creation, and which has continued ever since without increase or diminution. We can no more assign an adequate nautural cause for it, than we can tell why grass is green, or why fire burns. As it would be of vast consequence far those on long voyages to be able to deprive sea-water of its saltness, and render it fit for ordinary use, frequent attempts have been made to discover some means for the accomplishment of this important end. No plan, however, has yet entirely succeeded; the water cannot be rendered fresh by mere filtration, as the saltness, being a chemical quality cannot be removed by mechanical agency. The saline property may be necessary for the prevention of putrescence; certainly it is of advantage in increasing the specific gravity of the sea, and thus, as it were, imparting a greater buoyancy to those bodies which float on its surface. The specific gravity of the purest spring water is 1.001; of sea-water, 1.028; and hence a ship is said to draw less water, or to float more easily, by *one thirty-fifth* in the sea than in fresh water. In consequence of this peculiarity, sea-water does not freeze till the thermometer descends to 28 degrees Fohrenheit, while common water freezes at 32.

The temperature of the sea, like that of air, is liable to be affected by seasons, but less so than the air, as water is a worse conductor of heat. In five observations made by different individuals on the waters of the Atlantic, within the tropics, in different years, at periods varying from February to November, the temperature ranged from 80.78 to 82.40 deg. averaging 85.57 deg., while the mean temperature of the air, in the basin of the sea, was found by Cook to be 80.6 deg. From five observations made between 25 and 28 deg. N. lat., the average of the sea was 73.4 deg., of the air 69.8 deg. From these it appears that the temperature of the sea, in these regions, is a little higher than that of the superincumbent air. As the solar rays do not penetrate beyond 300 feet, water being a bad conductor of heat, and as the water on the surface, when colder than that below, descends, and the warmer ascends, the temperature decreases with the depth. In the Carribbean Sea, the temperature was found to fall 36 deg. at a great depth. In the friged zones, however, the water has been found to be warmer below than at the surface. In the Greenland seas, Scoresby found it six or seven degrees warmer at the depth of 200 fathoms than at the surface. Within the tropics there is no difference between the temperature in the northern and southern hemispheres, there is scarcly any for 80 degrees, but beyond that it decreases more rapidly towards the south, owing to the greater extent of ice in the neighbourhood of the south pole. There is much more land towards the north than the south pole, and the ice is found to extend five or six degrees farther in the Antarctic than in the Arctic regions. The temperature of the sea, in particular places, is greatly affected by currents, which mingle the waters of different regions and depths. Humboldt found the waters in the Gulf Stream 72½ deg. Fah.; when out of the current, the water did not exceed 63½ deg. On the contrary, the current on the coast of Chili is colder than the surrounding waters. Those only who have felt the enervating influence of the tropical climes can properly appreciate the refreshing and bracing effect of the grateful sea-breeze.

When a small quantity of the water of the sea is examined, it possesses no colour, but the sea itself is, in general, a bluish-green colour. The colour of bodies is found to depend on their respective capacities of absorbing or reflecting light. Those bodies are black which absorb all the light that falls upon them, and those are white which reflect it all unchanged. The intermediate hues and tints are produced by the various proportions in which the different calorific rays are absorbed or reflected. It appears that masses of transparent fluids—as the sea and the air—reflect chiefly the blue rays, and hence their colour is a deep azure. Though this is the general colour of the sea, yet in many particular places it is much altered by local causes. The extraneous matter brought down by rivers, the nature of the soil in the bed of the sea and especially living vegetables and animals, greatly effect the colour, and produce considerable variety. The particular colour of the Yellow Sea is ascertained to arise from the immense quantity of yellow-coloured mud which is brought down and deposited in its basin by the Hoang-ho. The Red Sea and several other parts of the ocean, sometimes present the appearance of a blood-red, which is caused by the presence of marine vegetables. The sea is said to be white in the Gulf of Guinea, and black around the Maldine Islands. The phosphorescence of the sea long a subject of inquiry and speculation, is now ascertained to be occasioned by the presence of luminous animalculæ. Voyagers describe the scene as truly magnificent. The sea appears one unbroken sheet of flame, and the ship seems to plough her course through waters sparkling with living fire.

From Hogg's Instructor.

ON THE IMPORTANCE OF CULTIVATING HABITS OF OBSERVATION AND ATTENTION.

Mrs Barbauld, in her 'Evenings at Home,' has a story entitled 'Eyes and No Eyes,' which very happily illustrates the difference existing among mankind in regard to the cultivation of these habits. Two boys take the same walk; the one returns having seen nothing either to interest or amuse; while the other comes back quite delighted, and gives a minute account of the many objects which the other had passed by, unnoticed or unimproved.

In passing through life few intellectual habits are more valuable than these. True it is, that memory and judgment are very important, but then, unless these powers have been cultivated, memory has nothing to exercise itself upon, and without them judgment can form its conclusions from no other data than those furnished upon the authority of others. They are the basis upon which the reflecting power must raise the superstructure; and while we would deprecate such a disposition of mind as would lead those possessing it to give their attention to the scenes, circumstances, and objects passing around, without obtaining from them any useful or practical lesson to apply to the formation of their own habits or conduct we would equally avoid those mental habits in which the mind, without any regard to the external world, draws all its materials from its own meditations or the opinions of others, than which nothing can be more calculated to bring the mind into a state of dreamy enthusiasm. In the survey of a plant, what is it that constitutes the difference between a botanist and a common spectator, but that while the one has long been in the habit of using his powers of observation in the vegetable world, the other has never turned his attention to the subject; and, consequently, how many uses to which the plant may be applied, and beauties by which it is distinguished, strike the mind of the former, which totally escape the notice of the latter.

The cultivation of these powers is, in a great measure, the foundation of excellence in every department of science. They impart to their possessor that invaluable quality familiarly denominated presence of mind. In every emergency those of an observant turn of mind are ready; they have, in all likelihood, in the course of their experience seen the same, or at all events, similar circumstances before, and are prepared promptly to take the necessary measures in the case before them.

It follows, then, if these observations are correct, that all should endeavour to take an active interest in what is going on around them, and use those powers with which God has endowed them, in a careful observation of the operations of his hand, whether as seen in the works of creation or providence.

From Hogg's Instructor.

WE ARE HASTENING ON.

Away, away, through the wild'ring maze.
Of life we are hastening on;
Like th' meteors that brighten the sky with their blaze—
Just seen, than for evermore gone.

Like the stately ships that dance o'er the wave,
Wafted on to a distant clime,
We onwards speed from the womb to the grave,
Through the billowy flood of time.

The beauty of youth is bright in our cheek
And the warm blood bounds high in our veins,
And we utter the language that young lips speak,
In free and affectionate strains.

We joy in our love with the hearts that rejoice,
And share in the mourners dole,
For the cold chills of selfishness stay not our voice,
Nor freeze up the fonts of our soul.

We are hastening on, and our youthful bloom
Gives place to a sickly pale;
Remorseless decay goeth on to consume,
And strength is beginning to fail.

The garlands of glory, the laurels of war,
Have faded forever away;
The glittering tiara that shone from afar,
Has vanish'd for ever and aye.

The trials and toils which fill up life's page,
Are carved upon our brow,
And the hoary hairs of feeble age
Are sprinkled o'er us now.

From Hogg's Instuctor.

DEFENCE OF OLD MAIDS.

Some people write defences of the church, and some defences of the state, some defences of one thing and some of another, but, so far as I can recollect, nobody has ever written a defence of old maids; so that it behoves me to enter the lists as their champion. But before commencing their defence, I must give an explanation of the two monosyllables, old maid. Maid is a word used in opposition to matron, that is, an unmarried person; old maid simply an old unmarried person, and it generally implies not only that the person is old and unmarried, but also that she has not much prospect of ever being married. Having thus explained the meaning of the term, I proceed to the justification of the parties.

The vulgar opinion of old maids seems to be that they never had it in their power to be otherwise than old maids, and that this of itself is a crime. Now, allowing for argument's sake that this were a crime, which, however, I am very far from supposing, according to the law of England, every man (and I suppose the privilege is extended to woman also) should be thought innocent of any crime until he is proved to be guilty, so that no old maids should be suspected of this crime until it is proved against them; and that, I think, will not often be the case, for the reason that they are not very likely to tell themselves, and that no other person is likely to know. But I said that I did not think the fact of their being old maids was any crime; and indeed I think it is no proof of their being inferior to others, but rather superior, and on that account worse to please in the choice of a husband, so that old maids retiring to garrets, with cats and parrots. Now, to say the least, I certainly think that taking care of cats and parrots are in existence, they must be in existence, they must be maintained in some way, and as well in that as as any other. However, I can by no means justify the practice of some old maids, of coddling them up, expending that care and affection on them which might be so much better bestowed on their fellow-creatures. But I think, to judge by my own observation, old maids are generally much more desirous to promote the cleanliness and order of their departments than to make them liable to being dirtied and disarranged by pet animals. And how many old maids there are who employ their time far better than they get credit for! Their nephews and nieces generally have a large share of their attention and care, besides what they devote to the world at large. In short, do we need nobility of birth to recommend old maidenism to us? Queen Elizabeth was an old maid. Or sterling worth of character? Hannah More was an old maid. But perhaps some say, the lamentable curiosity of old maids admits of no excuse; and I really think that it does not admit of much. However, we must recollect that when people have not affairs of their own to attend to, they naturally get interested in those of others, even to a ridiculous extent.

JESTING WITH SCRIPTURE.

There is a practice which is fearfully common, even among professors of religion, and from which, alas! ministers of the Gospel are not always free, which cannot be to severely condemned, as offensive to God, and injurious to the best interests of man. We allude to the practice of connecting ludicrous anecdotes with passages of Scripture. We know by sad experience, and we appeal to the experience of others for the confirmation of this remark, that so lively is the impression produced on the mind by the association of something grotesque with certain texts of the Bible, such passages can hardly be read in the most serious moments, without bringing up to their mind some idea which it requires a strong effort to prevent using a smile. This is one abuse of sacred things not less displeasing to God, than the Old Testament it would have been to desecrate from a holy to a common use the sacred implements of the temple, the holy anointing oil, or the hallowed fire of the altar. If to put new wine into old bottles, or to sew a new patch on an old garment be unwise and uncongruous, how much more so to prostitute the sacred words of inspiration to point a jest for the amusement of a social circle! To do so, in the presence of the young, is peculiarly injudicious. Here the maxim of a Roman satirist is especially applicable: *Maxima debetur puero reverentia.*

Jeremy Taylor forcibly remarks on this subject: 'Some men used to read Scriptures on their knees, and many with their heads uncovered, and all good men with fear and trembling, with reverence and grave attention. For all Scripture is given by inspiration of God, and is fit for instruction, for reproof, for exhortation, for doctrine, not for jesting; but he that makes use of it, had better part with his eyes in jest, and give his heart to make a tennis ball and that I may speak the worst thing in the world of it, it is as like the material part of the sin of the Holy Ghost, as jeering of a man is to abusing him; and no man can use it, but he that wants wit and manners as much as he wants religion.'—*Presbyterian.*

A COMMON FOLLY.

Do thy passions begin to rise in arms? Do they grow disordered and unruly? Let thy reason come out to them, and ask, whether they know their master; and let thy soul blush, with infinite scorn, that ever these base slaves should usurp the throne of their rightful lord, and unman thee, by deposing reason, which is all thou has to show that thou art not a beast! What an extreme silly thing is a man in passion! Nothing can be more ridiculous and contemptible. Out of love and pity to thyself, Oh man, do not affront and disgrace thine immortal soul any more, by suffering any malapert and saucy passion to outrage and assassinate thy reason. That was a generous rule of Pythagoras: 'Let a man use great reverence and manners to himself.' Be ashamed friend, to do any vile or dishonest action before thyself.—*Gibbon.*

A NEWSPAPER

The newspaper is the chronicle of civillisation—the common reservoir into which every stream pours its iving waters, and at which every man may come to drink. It is the newspaper that gives to liberty its practical life its constant observation, its perpetual vigilance, its unrelaxing activity. The newspaper informs legislation of public opinion, and it informs the people of the acts of legislation. And this is not all. The newspaper teems with the most practical morality; in its reports of crime and punishment you find a daily warning against temptation; not a case in a police court, not a single trial of a wretched outcast, or a trembling felon, that does not preach to us the awful lesson, how imprudence leads to to error, how error conducts to guilt, how guilt reaps its bitter fruit of anguish and degredation. The newspaper is the familiar bond that binds together man and man—no matter what may be the distance of climace or the difference of race. There it is that we have learned how to sympathise with the slave, how to battle for his rights, how to wrest the scourge from his taskmaster. Over land and sea the voice of outraged humanity has reached the great heart of England, and raised up a host of freemen as the liberators of the enslaved and tortured negro! The newspaper is a law book for the indolent, a sermon for the thoughtless, a library for the poor. It may stimulate the most indifferent, it may instruct the most profound.—*Sir E. L. Bulwer.*