

THE OCEAN, ITS GRANDEUR AND SUBLIMITY.

BY REV. WALTER COLTON.

The most fearful and impressive exhibitions of power known to our globe, belong to the Ocean. The volcano, with its ascending flame and falling torrents of fire, and the earthquake, whose footstep is on the ruin of cities, are circumscribed in the desolating range of their visitations. But the Ocean, when it once rouses itself in its chainless strength, shakes a thousand shores with its storm and thunder. Navies of oak and iron are tossed in mockery from its crest, and armaments, manned by the strength and courage of millions, perish among its bubbles.

The avalanche, shaken from its glittering steep, if it rolls to the bosom of the earth melts away, and is lost in vapor; but if it plunge into the embrace of the ocean, this mountain mass of ice and hail is borne about for ages in tumult and terror; it is the drifting monument of the ocean's dead.

The tempest on land is impeded by forests, and broken by mountains, but on the plain of the deep it rushes unresisted; and when its strength is at last spent, ten thousand giant waves, which have called it up, still roll its terrors onward.

The mountain lake and the meadow stream are inhabited only by the timid prey of the angler; but the ocean is the home of the leviathan; his ways are in the mighty deep. The glittering pebble, and the rainbow-hued shell, which the returning tide has left on the shore as scarcely worthy of its care, and the watery gem, which the pearl-diver reaches at the peril of his life, are all that man can fish from the treasures of the sea. The groves of coral which wave over its pavements, and the halls of amber which glow in its depths, are beyond his approaches, save when he goes down there to seek amid their silent magnificence his burial monument.

The island, the continent, the shores of civilized and savage realms, the capitals of kings, are worn by time, washed away by the wave, consumed by the flame, or sunk by the earthquake; but the ocean still remains, and still rolls on in the greatness of its unabated strength.

Over the majesty of its form and the marbel of its might, time and disaster have no power. Such as creation's dawn beheld, it rolleth now. The vast clouds of vapor which roll up from its bosom float away to encircle the globe; on distant mountains and deserts they pour out their watery treasures, which gather themselves again in streams and torrents, to return, with exulting bound, to their parent ocean. These are the messengers which proclaim in every land the exhaustless resources of the sea; but it is reserved for those who go down in ships, and who do business on the great waters, to see the works of the Lord, and his wonders in the deep.

Let one go upon deck in the middle watch of a still night, with naught above him but the silent and solemn skies, and naught around and beneath him but an interminable waste of waters, and with the conviction that there is but a plank between him and eternity, a feeling of loneliness, solitude and desolation, mingled with a sentiment of reverence for the vast, mysterious, and unknown, will come upon him with a power, all unknown before, and he might stand for hours entranced in reverence and tears.

Man also has made the ocean the theatre of his power. The ship in which he rides that element is one of the highest triumphs of his skill. At first this floating fabric was only a frail bark, slowly urged by the laboring oar. The sail at length arose and spread its wings to the wind. Still he had no power to direct his course when the lofty promontory sank from sight, or the orbs above him were lost in clouds. But the secret of the magnet is at length revealed to him, and his needle now settles with a fixedness, which love has stolen as the symbol of its constancy, to the polar star.

Now, however, he can dispense even with sail, and wind, and flowing wave. He constructs and propels his vast engine of flame and vapor, and through the solitude of the sea, as over the solid earth, goes thundering on his track. On the ocean, too, thrones have been lost and won. On the fate of Actium was suspended the empire of the world.

In the Gulf of Salamis the pride of Persia found a grave; and the crescent set for ever in the waters of Navarino; while at Trafalgar and the Nile, nations held their breath.

As each gun
From its adamant lips
Spread a death shade round the ships,
Like the hurricane's eclipse
Of the sun.

But of all the wonders appertaining to the ocean, the greatest, perhaps, is its transforming power on man. It unravels and weaves anew the web of his moral and social being. It invests him with feelings, associations, and habits, to which he has been an entire stranger. It breaks up the scaled fountains of his nature, and lifts his soul into features prominent as the cliffs which beetle over its surge.

Once the adopted child of the ocean, he can never bring back his entire sympathies to the land. He will still move in his dreams over that waste of waters, still bound in exultation and triumph through its foaming billows. All the other realities of life will be comparatively tame, and he will sigh for his tossing element, as the caged eagle for the roar and arrowy sight of his mountain cataracts.

Scientific.

The Air Rendered Visible.

The Paris correspondent of the Washington Republic says: "At the last sitting of the Academy of Sciences, a very remarkable paper was read. It was presented by a well-known engineer, M. Andraud, who has made many public experiments on compressed air as a substitute for steam on railways. I give you a resume of the contents of this paper. It is entitled *Aéroscope*, or the Visibility of the Molecules of the air. Some of the deductions made, in a medical point of view, are in the highest degree curious. M. Andraud proves, that, by a very simple contrivance, the air is rendered visible. By taking a piece of card, colored black, and piercing it with a fine needle, this interesting fact is established. If we look through this hole at the sky, on a fine day, or at a strong lamp, having a ground glass, we see a multitude of little transparent globes moving in the midst of confused nebulosities. These little globes, some of which are more transparent than others, are molecules of air. Some of them are surrounded with a kind of halo. These, after, says M. Andraud, are the elements of oxygen, whilst others are elements of azote. After continuing the observation for some time, we shall see small points detach themselves and disappear in falling; these, says M. Andraud, are atoms of carbon. This phenomenon of vision, it is essential to remark, passes within the eye itself; the molecules of air which are observed, are those which float in the liquid, which occupies the anterior part of that organ. According to the author of this paper, the discovery is not interesting merely as a phenomenon, but may be applied to important purposes in medicine. He says: 'The physician will one day make use of the *aéroscope* as an important means of diagnosis. Vertigo, giddiness, which are the forerunners of apoplexy, will be announced by perturbation in the molecules. Fever always exists when the molecules under the action of a magnetic current circulate on a vertical ground—sometimes in one sense, and sometimes in another; and when this movement of gyration becomes more precipitate, the patient experiences the singular sensation of turning, as it were, upon a wheel of ixion.'

Amorphous Phosphorus.

It is well known that phosphorus is one of the most useful articles, as employed, in friction matches, which are now so indispensable to our comfort. Hitherto, to labour with this substance involved fearful diseases to those who, from necessity or interest, devoted themselves to work with it. It was also very difficult to transport, and its storage was a serious consideration, as it ignited at a summer temperature. All these difficulties respecting phosphorus are now removed by the splendid discovery of rendering it amorphous, which strips it of all its dangerous qualities, but deprives it of none of its useful properties. The effect is produced by a simple change in the arrangement of its atoms, and is a phenomena equally new and important to chemical science. Some friction matches made with amorphous phosphorus were exhibited in the Great Exhibition. The discoverer is Professor Schrotter, of Vienna, and he is not without strong hopes of revolving some of the other elementary crystallized substances into a similar state. Liebig, in the last edition of his letters, ventures to suggest, upon the strength of this discovery, that many of the minerals

composing the crust of this earth, may be but crystallizations of one and the same body.—*Scientific American*.

Causes of Insanity.

The more ordinary causes of insanity, such as pecuniary difficulties, disappointment in love, religious excitement, grief, intemperance, and excessive joy, are generally well understood. But in a report of the Bethlehem Hospital, England, we find some causes assigned which, to say the least are curious and almost incredible. Thus two men became mad from fear of the cholera; two women from living with insane persons; one from attending a singing class; one from terror at the Parisian revolution of 1848, and one from the excitement of travelling, for the first time, in a railroad-car. In several cases insanity resulted from bodily sickness. Three men became crazed from exposure to a hot sun. One poor fellow went mad from excessive sea sickness. Generally, women are more liable to hereditary insanity than males; and it is known that their sedentary occupation, render them more subject to it, from most causes, than the other sex. In the Bethlehem Hospital, during one year, twelve females were admitted who had gone mad from love; but not one male. In conclusion it is said that half the causes, whether as regards men or women, are moral ones, a fact which should inculcate forcibly on parents, teachers, and guardians, the necessity of disciplining the moral sentiments, as well as cultivating the intellect.

POWER OF KITES.—The power of a kite twelve feet high, with a wind blowing at the rate of twenty miles an hour, is as much as a man of average strength can stand against. With a stronger gale, such a kite has been known to break a line capable of sustaining 200 lbs. The surface spread by this sail is forty-nine square feet, and it should be noticed that these serve as standing ratios, from which, by the rule of proportion, the power of larger kites can be calculated. We must not, however, suppose that a kite of thirty-six feet in length has only three times the power of a kite twelve feet in length; for, in fact, it has three times the power in length, and three times the power in breadth, which will make the multiple nine; so that it would lift or draw nine times as much as a kite of twelve feet. Two kites, one fifteen feet in length, the other twelve, have power sufficient to draw a carriage with four or five persons when the wind is brisk.

If the following, from the London Times, be true, our geological correctors of Moses' cosmogony will have need to correct some of their dates, to say the least: "Professor Gorini, who is professor of natural history in the University of Lodi, made recently, before a circle of private friends, a remarkable experiment, illustrative of his theory as to the formation of mountains. He melts some substances, known only to himself, in a vessel, and allows the liquid to cool. At first it presents an even surface; but a portion continues to ooze up from beneath, and gradually elevations are formed, until at length ranges and chains of hills are formed, exactly corresponding in shape with those which are found on the earth. Even to the stratification, the resemblance is complete, and M. Gorini can produce on a small scale the phenomena of volcanoes and earthquakes. He contends, therefore, that the inequalities on the face of the globe are the result of certain materials, first reduced by the application of heat to a liquid state, and then allowed gradually to consolidate."

PICKLING MEAT.—Professor Reinesque denounces the use of saltpetre in brine intended for the preservation of flesh to be kept for food. That part of the saltpetre which is absorbed in meat, is nitric acid, or aqua fortis—a deadly poison. Animal flesh, previous to the addition of pickle, consists of gelatinous and fibrous substances, the former only possessing a nutritious virtue: this gelatine is destroyed by the chemical action of salt and saltpetre, and, as the Professor remarks, the meat becomes as different a substance from what it should be, as leather is from the raw hide before it is subjected to the process of tanning. He ascribes to the pernicious effects of the chemical change all the diseases which are common to mariners and others who subsist principally upon salted meat, as scurvy, sore gums, decayed teeth, ulcers, &c., and advises a total abandonment of the use of saltpetre in the making of pickle for beef, pork, &c., the best substi-

tute for which is, he says, sugar, a small quantity rendering the meat sweeter, more wholesome, and equally as durable.

IRON.—It is estimated that the quantity of iron manufactured in 1849, throughout the world, reached four millions of tons, and that this was an increase of sixty per cent. over the quantity manufactured in 1839. The same increase for the ten years following, would make the quantity six millions four hundred thousand tons in 1859. We see no reason why such an increase should not be realized. The world is but beginning to understand the innumerable uses to which this metal may be applied.

The Farm.

Destruction of Lice on Cattle and Ticks on Sheep.

During the winter season, cattle and sheep are oftentimes infested with vermin, such as lice and ticks, &c. This trouble generally happens to those lean in flesh, and the vermin prevent their thriving, and sometimes have been known to cause the death of the animal itself by the irritation and prostration of strength which they occasion. We have tried all the different washes and lotions and ointments that have been recommended for destroying these pests. Many of them are effectual, but it is a trouble to apply them in cold weather. It is no small job to wash or oil a calf or a cow all over, thoroughly, in mid-winter, and if it be not done thoroughly the job will have to be done again. The easiest and most effectual mode of destroying these vermin is to suffocate them to death by tobacco smoke. By having a large tube or box, with a tube at both ends, into which tobacco may be put and set on fire, one end of the tube may be fitted on to the nose of a bellows, and the other applied among the hair of the calf or wool of the sheep, and the smoke blown in by the bellows. The destruction of the vermin is sure. A blanket may be thrown over the creature, which will tend to keep the smoke in contact with the skin, and thus render the effect more speedy in its operation. By having a suitable instrument made, a large stock or cattle of flock of sheep may be gone over in a short time. Hens and other fowls that are infested with lice may be freed from them in the same way.

We have recently seen a small machine advertised by Hovey & Co., No 7 Merchants' Row, Boston, and by other dealers in agricultural implements, called Brow's Fumigator. It is designed for the purpose of throwing tobacco or other smoke over shrubs, flowers, &c., that are infested with lice, &c.; also fumigating green-houses, dwellings, ships, closets, wardrobes, &c., &c., and filling them in a short time with the smoke of the substance used. We have thought this instrument might also be used for the purpose of the smoke pipe we have mentioned, and probably be a vastly better one for that purpose, as it appears better calculated for burning the substance used and for throwing the smoke in larger volumes where directed. We have never known it used for that purpose, and recommend a trial of it. If it be found to work well, the fact will be an additional recommendation to the invention in question.—*Maine Farmer*.

WATER CISTERNS.—Cisterns are now constructed on scientific principles, and are found eminently to subserve the purposes for which they are applied. There is no heavy outlay required for brick, limestone or plank, and the exquisite manner in which all the details of the work are consummated, ensures the owner against the periodical recurrence of those heavy pecuniary expenses which were necessary formerly for repairs. By excavating a hole in the soil, in convenient places—say in your shed or barn yard, of the desired capacity, and coating the bare sides with cement, you will secure a cistern that will be permanent, and which will cost you but a mere trifle. One man will excavate it in a day or so, and a barrel of cement, costing one dollar and thirty cents, or thereabouts, will be sufficient to coat it. The shape of the cistern, for greater strength and convenience, should be that of an egg, with the large end down. The covering may be either of wood or split granite, and should have a hole for the insertion of the pump, and another, provided with a wooden funnel, rising six feet above the surface, for ventilation. By filtering the water from your out-buildings, and keeping the funnel constantly open, you will secure a regular and constant supply of excellent water, both for your stock and for domestic use.—*Germanian Tel.*