THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

The meeting proves to be one of the most interesting yet held, both from the number of eminent scientists present and the variety of the subjects discussed. We notice that Mrs. Elizabeth Thompson, of New York city, has donated to the Association the sum of $1,000 for the purpose of advancing original scientific research. The gift was presented by Dr. Van der Weyde, and its reception suitably acknowledged by the President, after which the thanks of the society were transmitted to the donor.

The Metamorphism of Rocks.

Professor T. Sterry Hunt said that when, early in this century, the crystalline rocks of the Alps were shown to rest upon uncrystalline fossiliferous strata, it was suggested that the overlying crystallines were newer rocks, which had undergone a metamorphism from which those directly beneath had been exempted. This notion spread until the great crystalline center of the Alps was considered to be in part of secondary and even of tertiary age. The speaker questioned this view, and had satisfied himself that the crystalline rocks of the Green Mountains and the White Mountains, and their representatives alike in Quebec, New Brunswick, and in the Blue Ridge were more ancient than the oldest Cambrian or primordial fossiliferous strata. He showed how folding, inversion, and faults had alike, in the Alps and in Scotland, led to the notion that these crystalline rocks were in many cases newer than the adjacent fossiliferous strata. In another paper, on the "Geology of New Brunswick," the same subject was further illustrated.

Professor Pierce, on

The Rotation of the Planets as a Result of the Nebular Theory,

set forth an explanation of the actual rotation of the planets on the supposition of their being formed, according to the nebular hypothesis, from rings thrown off from the rotating main body in the process of condensation. He instanced more particularly the planets Jupiter and Saturn. The inner portions of such a ring having a less velocity than the outer ones, axial rotation in the same direction as that of the primary would be determined in the breaking up and running together of the ring into a planetary body. He showed by a mathematical analysis, of the movements of the particles composing the ring, that the velocity of the resulting rotation must be such as is actually observed in the case of the planets referred to, whose mass represents nine tenths of the whole planetary system.

This theory was applied to the absence of rotation in the case of our satellite. He showed the probability that the original nebular ring from which the planets were formed may have been of twice the size of their present orbits.

In the discussion which followed, he stated that we have never seen anything of Jupiter or Saturn but the clouds which cover them. He thought that those planets were yet at a white heat, and we simply saw the clouds that are raining down upon them.

The Growth of the Brachiopod

was the subject of a paper by Professor E. S. Morse, in which he showed that the brachiopods were the only class of animals of which the developmental history has been hitherto unknown. The reason for the peculiar interest attached by naturalists to this animal is that the very earliest fossiliferous remains—those deposited in the most ancient rocks—are of members of this class. They are moreover found in rocks of all subsequent ages, and are still living in the seas of the present day. Singularly enough, while all other groups of animals have changed in their distiactive features, and many have been extinct, there are brachiopods of the present day that can scarcely be distinguished from their most ancient representatives. The brachiopod is a small animal, enclosed in a bivalve shell and adhering by a posterior appendage to the ocean floor. The possession of this bivalve shell has led all naturalists to include bracbiopods among the mollusks. Three years ago Professor Morse, after a long and patient study of the living forms, startled the world of naturalists by announcing his conviction that the animals were not mollusks, and that they had no relations with shell fish whatever, but were true worms. Professor Morse has succeeded in raising the brachiopod from the egg and has studied its external and internal structure in every stage of growth. Briefly, the embryo commences life as a little worm of four segments; and after enjoying itself in swimming freely in the water for a while, attaches itself to sea bottom by its posterior segment and settles permanently. The middle segment then protrudes on each side of the head segment and gradually incloses it, thus producing the dorsal and ventral shell so characteristic of the entire class.

Mr. Hilgard read a paper on the meridional arcs measured in the progress of the coast survey, in which the length of the quadrant is considered as 2000 meters greater than the 10,000,000 which the base of the metric system was supposed to represent. This corresponds to an error in the theoretic value of the meter of $\frac{1}{200}$ of an inch.

Professor Hough, of the Dudley Observatory, described a new

Automatic Registering and Printing Thermometer,

which consists of a glass tube bent in the form of a siphon, the closed leg of which is filled with alcohol and the open one with mercury. On the surface of the mercury in the open end, there rests an ivory float suspended from a delicate balance, having platinum wire attached to each end of the lever. When the column of mercury in the thermometer tube rises or falls from the effect of temperature, the platinum wires dip in small mercury cups underneath them, thereby causing a current of electricity to pass through one of two electro-magnets operating mechanism for giving motion to a fine micrometer screw. The motion of this screw elevates or lowers the balance, thereby breaking the circuit. Whenever a change of temperature equal to one tenth of a degree Fahrenheit occurs, the magnetic circuit is completed, and the screw is moved a space equivalent to the change in the hight of the mercury in the thermometer. At the same time the clockwork moves the type wheels indicating the temperature, which is printed at the end of each hour on a slip of paper moving in front of them. A pencil held against a revolving drum also records a continuous curve, exhibiting at a glance the hight of the thermometer.

Professor Feuchtwanger referred to the

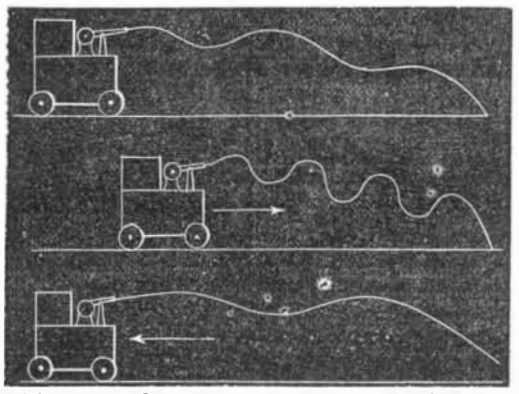
Existence of Live Mammoths,

and stated that the discovery of the mammoths in Siberia, in the deep gorges of the mountains near the Lena Viner, which was lately published as having been made by a scientific Russian convict, who saw five living animals, 12 feet in hight and 18 feet in length, with projecting tusks four feet long, excites some discussion in Europe. It is worthy of inquiry whether the mammoth of the past tertiary period, discovered during this century in Siberia, near the same river, can have any relation to the convict's discovery. Thousands of these animals have been found buried in the ice, with their well preserved skins, and thousands of tusks are brought to England to this day for the use of the turner. These are of nearly the same dimensions of those seen by the Russian. The convict has received an unconditional pardon on the recommendation of scientific men who have investigated his statements and believe them to be true.

Professor E. S. Morse read a paper on the subject of

Variations in Wave Lengths,

in which he first alluded to the discoveries of Proctor, Huggins, and others in accounting for the displacement of lines in the spectrum in observations of celestial objects. It is well known that when a star is approaching the observer the luminiferous waves emitted by it are crowded together, and on the contrary are separated when the star is receding. To illustrate this phenomenon, the speaker exhibited the instrument represented in our engraving. It consists of a tank



filled with water and set on wheels. On top of this is a compartment containing compressed air. From one end of the tank a pipe protrudes, which is moved up and down at a fixed rate by simple clockwork. When the cock is opened, allowing the water to escape from the pipe, the stream assumes a sinuous line, which may be shown, if brilliantly lighted, across a large audience hall. This undulatory stream, when the tank is at rest (Fig. 1), illustrates a luminiferous wave from a stationary source. To exhibit the shortening or lengthening of the waves of light by the approach or recession of the luminiferous body, Mr. Morse simply moves the apparatus rapidly back and forth on the table. As the apparatus moves with the direction of the stream its undulations are crowded together, and the waves are consequently shortened (Fig. 2). On the other hand, when the motion of the apparatus is in an opposite direction (Fig. 3) the waves are proportionably lengthened. The advantage of this illustration is that it exhibits precisely what takes place in the luminiferous waves approaching or receding from the observer of celestial bodies, producing the displacement of spectrum lines.

There was further

Discussion of the Darwinian Theory

between Dr. Dawson and Professor Morse. The former gentleman argued that the making of monkey and of man is explicable quite as readily, to say the least, on the theory of plan as on that of evolution. The egg grows into the animal and that organism produces the egg again. This is revolution, not evolution. The speaker went on to state that, after its appearance in geological history, every species has a plastic tendency to spread to its utmost limits of form. Then ensues a period of decadence until it may become extinct. He believed that a similar process is true of the human race, that the most ancient form of man is beyond the standard of modern humanity, and that, if the man of Cro magno or Mentone had been sent to Harvard, he would have graduated with the full honors of an average American student. Professor Morse, in support of the evolution theory, replied that, if the high development of the ancient skulls found was such as stated by Dr. Dawson, it only carries man further back. Similarly, in the light thrown upon the history of man by the wonderful discoveries in archæology where we meet with traces of an ancient civilization, with complicated language and manners, we can surely believe in savage hordes, pre-existing, from which this ancient civilization has been evolved. The evolution theory, as compared with that of special creation, presented similar features of the undulatory theory of light as compared with the emission theory. Newton's theory required a new modification with every discovery in optics, so that it became a web of hypotheses. The theory of Young explained all that was difficult, and gave physicists the power of prevision. So with evolution: it not only accounts for existing phenomena, from the modification of a flower or the spot on a butterfly's wing to the genesis of the solar system, but it has endowed naturalists with the gift of prophecy, and enabled them to predict the intermediate forms, afterwards discovered in the records of the rocks.

Professor Washburn, of Hobart College, Constantinople, presented a paper on the supposed relics of man found in the miocene of the Dardanelles, in which he concludes that Mr. Calvert and Sir John Lubbock are mistaken, and that the split bones and marks on the fossils are the work of beasts, and no evidence in reference to the antiquity of man.

It is supposed that the resistance of the etherial medium, shown to exist by the undulatory theory of light, will gradually cause the satellites to fall into the planets, planets into suns, and suns into a common center, after which darkness, silence and death will reign. Mr. H. F. Walling, in a paper on the Dissipation of Energy, suggested the maintenance of motion might be from two reasons. First, a series of chemical evolutions or combustion, similar to what are now going on in the sun under its conditions of enormous pressure, etc., by which undecomposable elements are produced, and from which inconceivably enormous quantities of heat are developed; and the other that the infinite magnitude of the universe would prevent a never ending concentration of masses. It was also suggested that the concentration might be so gradual that catastrophic effects might be avoided, either by tidal influences or by final collisions

A New Method of Measuring the Velocity of Ligh

suggested by Professor Dolbear, consists in observing one of the planets, as Venus, both when approaching and receding from the earth, with the spectroscope. Two lines on opposite ends of the spectrum are measured with regard to their displacement, both in approach and recession. If the lines of red and violet rays move with the same velocity, the displacements would be the same. When they move with varying velocities, the difference gives an approximating measure of the velocity of the light.

Coal Mining by Compressed Air.

At the colliery known as Marie, at Seraing, Belgium, the Cockerill Society has an admirable arrangement for working the underground machinery. Standing in the engine house, with the shaft in front, we have the boiler house behind, and to the right of the boilers the forge for repairs, and to the left the air-compressing machine; while in front is the building over the pit mouth enclosing the winding gear, adapted to secure continuous winding day and night and during all weathers. Attached to the engine is a large fly wheel, 5½ yards diameter and weighing 6½ tuns. By means of cranks, this fly wheel shaft moves two pistons, which work each one in a cylinder. Each of these cylinders communicates with upright boxes, placed at each end, having valves attached at the top, opening inwards, and a discharge pipe with valve, opening outwards, which leads to the reservoir of compressed air. The cylinders and boxes are partially filled with water; and when the pistons are moved by the steam engine, the water is first forced into the upright vessel at one end of the cylinder, correspondingly lowering the level of water in the other vessel. A partial vacuum is thus produced, which the outer air rushes through the valve to fill up. On the return stroke, the water is forced back into this vessel, thereby compressing the air and forcing a portion of it through the discharge pipe into the reservoirs. The same action is carried on alternately at the other end of the cylinder, and precisely the same at the cylinder on the opposite side of the machine, with its two upright vessels. The principle is that of the common double action air pump. The disks of the pistons are brass, and the piston rods are coated with that alloy. Each cylinder is 18 inches diameter, and 4 feet 10 inches long. A stopcock or valve is fixed between the compressors and the reservoirs, to cut off communication with the machine during the period of stopping. The air reservoirs are two boilers, each 13 yards long and 5 feet diameter. The air thus propelled into these reservoirs carries with it a portion of water, which settles in the first boiler and is thence, by means of an ⅛ inch pipe, returned to the compressors. Each stroke of piston compresses about 12 gallons of air to a pressure of three atmospheres. The machine at the Marie Colliery is generally worked at a pressure of four atmospheres (60 lbs). From the reservoirs the air is led by iron tubbing of 3 inches diameter and each portion 16 feet in length, is furnished with accurately turned ends. The pipe descends the pit, and runs along the main gate road. From this, branch pipes, 2 inches diameter, lead to the various and numerous works. The joints are fitted with india rubber rings and tightly screwed. The pipes are made from best iron, and admit of being turned in the cold, to suit the various windings of the roads, without fear of fracture. In this pit a total length of nearly a mile of piping is fitted up, and so perfectly that there is not the slightest sensible loss to be observed.

The application of this motive power—or, rather, transmission of power—to the various mining operations, to tunnelling, sinking, driving, coal-hewing, etc. has necessarily induced various forms of apparatus. Some act, as for coal, by means of a revolving cutter working horizontally, others with a percussive action, cutting a groove, in imitation of the ordinary manual operations. Others, again, act solely by percussion to form shot holes. The nature of the material also modifies the form of drill or punch. The form which appears to receive the most favor for hard rocks is of the shape of a

Z. and, in the best arranged apparatus, is made to revolve in such manner that consecutive strokes do not fall in the same place.—*Mining Journal.*

The Largest Engine in the World.

W. L. C. states that, some time since, the New York *Times* mentioned the pumping engine of the Lehigh zinc mines, at Friedensville, as "the largest stationary engine in the world." A writer in a Pittsburgh paper assails the above statement, and endeavors to show that the engine above mentioned has not even an approximate claim to that distinction, and he states that the great Haarlem engine has a 12 feet cylinder with a 10 feet stroke, and he makes its capacity to be 10,000,000,000 gallons raised 1 foot high in 24 hours. "Now, 10,000,000,000 gallons is 83,388,000,000 foot pounds per day, or 57,908,333 foot pounds per minute, equivalent to 1,755 horse power. But the designers themselves only claim 500 horse power for their engine, and must feel flattered by the Pittsburgh estimate. The Lehigh engine was originally designed and rated at 3,000 horse power, and, if called upon, could increase even that figure. Where, then, is the comparison?

The famous engine of Haarlem is nothing but a familiar single acting Cornish engine, having an 84 inch cylinder, with the attachment of Simms' combined cylinder, which is also single acting. Its normal speed is 6 strokes per minute, and who can make more than 500 horse power out of that at any reasonable pressure? But the Lehigh engine is a beam engine with a plain cylinder 110 inches in diameter, 10 feet stroke and double acting. It is now working at 11 strokes per minute, or a piston speed of 220 feet. What is there, then, in the Haarlem engine to entitle it to rank above the engine at the Friedensville mines?

I suspect, however, that my Pittsburgh friend would care little for the reputation of the Haarlem engine, if his own could be shown to be the veritable leviathan. But he describes his engines as having two 64 inch cylinders of 14 feet stroke geared to one shaft and fly wheel, each actuating two pumps, and each capable of working independently. Two 64 inch cylinders give an aggregate piston area of 6,434 square inches, while the piston area of the Lehigh engine is 9,504 square inches, or nearly one half greater. In fact, we have half a dozen blowing engines in the Lehigh valley which show a greater volume of cylinder than that at Pittsburgh. The Lehigh engine was designed by Mr. John West, the company's engineer, to bear a pressure of 60 lbs. with a factor of safety of 8, or a pressure of 80 lbs. with a factor of 6.

Finally, the justice of comparing, at all, the work of the Pittsburgh engines, which are practically two distinct engines, with the single engine of the Lehigh zinc mine is not to me apparent."

Cumberland Gap Cave.

H. B. N., a member of the 42d regiment O. V. I., writes as follows:

In the summer of 1862, while the Federal forces were occupying the Gap, a cave was discovered by our men, while felling timber on the south side of the mountain. Start from the point where all the roads converge to pass the Gap, and follow the Virginia road along the side of the mountain in an easterly direction, until you pass the spring or rather creek which gushes out of the mountain; leave the road at the curve just beyond this spring, and take a diagonal course up the mountain until you reach an altitude of about two hundred feet above, and five hundred feet east of, the spring, and you will find the place.

We were encamped at the foot of the mountain; and although we were not generally much given to ecstacies over holes in the ground, the discovery had sufficient force to rouse a few of us, who soon came to a small depression in the mountain side, as if a large tree had been uprooted, leaving a hollow some six or eight feet in depth. At the bottom of this pit was a small rectangular opening in the rocks, leading in a horizontal direction, and just large enough to admit one person at a time, on all fours. This did not quite meet our expectations, as we thought it not much of "an opening for young men." Lighting my candle, I made a venture, and found, after creeping a few feet, that the passage suddenly widened in all directions. Rising to my feet, and taking a few steps forward, I held the light above my head; but nought could be seen. Beyond the few feet of rocky floor I stood upon, all was impenetrable darkness and profound silence. From the upper ceiling or outer wall not a ray of light returned. A shout brought back a long succession of echoes, and died away in a murmur, bringing evidence that we stood in the entrance of a large cavern with irregular walls. Getting our party together, we followed along one side of the cavern until we came to a kind of rostrum, rising abruptly from the floor to the hight of eight or ten feet. At the front edge, and near one corner, stood an irregular column of alabaster, by which means we were enabled to mount the daïs, which proved to be a horizontal platform extending backward at a slight inclination, and joining the ceiling at a sharp angle some distance back. This grotto was filled with stalactites of dazzling whiteness, so thickly set as to bar our entrance. Instead of the counter parts, the stalagmites, growing up like cypress trees from the ground beneath as usual, the material had been evenly distributed by the inclination of the rock, thus making a floor of glittering crystal, and fringing the front of the rostrum with a pendant veil of silver whiteness and dazzling brilliancy.

Holding our lights above our heads and looking towards the interior of the cavern, we discovered the ceiling, as far as our lights could reach, to be much more brilliant in scenic effect than anything we had yet seen. It seemed as if we were looking up into an immense dome hung with tapestry. So perfect was the imitation of heavy folds of drapery that no repetition of the view could dispel the illusion. The column that had helped us to our position was now seen to be an irregular cluster, some six feet in diameterand extending from the floor to the ceiling.

Among other features of interest was a small stalactite in the form of a quarter circle, with its base attached to the under side of a horizontal rock; it turned on a radius of about five inches, and terminated in a sharp point at right angles to the base line. The drops of water forming this had evidently followed the line of some insect's web.

When we left the chamber, everything was intact, not a stalactite broken or a crystal displaced, save a few specimens we brought away. But when I saw it the next time, "the hand of the spoiler had been there." During the "unpleasantness," I was the witness of much vandalism, but nothing ever seemed less excusable, or furnished a stronger proof of the irredeemable destructiveness of some natures, than the wanton spoliation of these beautiful specimens of the Creator's handiwork. I visited the cave several times before we broke camp, each time finding new chambers; and I left it with a feeling that I had only walked along a corridor, and had not entered the palace proper. If the cave has not been entered since then, these eleven years will afford some evidence as to how fast Nature repairs her desecrated shrines. I write this in the hope that some one may have made or will make further exploration, and report the same."

The Enormous Waste of Fuel in Stoves.

The scientist tells us that fully fifty per cent of our fuel is wasted; that is to say that, as each kind of fuel will, by proper combustion, evolve a given amount of heat to each one pound of such fuel, and as our machines for the conversion of fuel into heat, as now constructed, do not operate without a loss of one half of the heat evolved, the waste is as above stated. Our country has a population of about 50,000,000. It can be put down as a low estimate for each individual, a consumption of fuel, either wood or mineral, equal to at least one tun of coal, with a value of $6 per tun, equaling in the aggregate $300,000,000, one half of which ($150,000,000) is lost. If this be true, this enormous waste should be seriously considered by the inventor, improver, and manufacturer of the stove, in view of its improvement, and a saving of at least a portion of this enormous waste, which, if reduced to twenty or even five per cent, would be of great value to our country.

Science has already done her part of the work, and it remains for the inventor and improver of stoves to do his part. Science tells us the amount of heat each pound of fuel will produce; the conditions required for perfect combustion; the laws governing the operations of heat; the nature of the materials used, and surfaces favorable for operating with heat. Science will go no farther. The practical man must take up the facts science has given, and work on her suggestions to embody, in operating devices, those principles of construction and operation which will result in the effects desired to be secured and attainable.

The usual custom, demanded by the construction of the stove, of adapting its use for service, either for warming in all weathers or in all kinds of cooking, is by the regulation of the draft dampers, by which the combustion of the fuel is increased or diminished; or in other words, the same amount of fuel is used, in the fuel chamber, in a January thaw, or the early spring months when but little heat is required as when the outside temperature is below zero; or when a pan of biscuit or a custard is to be baked, as when a loaf of bread or a custard pie; and to diminish the amount of heat for our use. we check the supply of air to support combustion, and thus prevent perfect combustion, and evolve carbonic oxide, which, by reason of a sluggish current, is more liable to escape into the room to impair the health of our families; while on the other hand we are permitting a good portion of our fuel to escape unconsumed.

What is desired on the part of the people, and is required to effect a saving of fuel, is a stove, for both warming and cooking purposes, which will be capable of dispersing a larger portion of the heat evolved from the fuel in combustion, by all the ways in which heat is made to effect the warming or heating of bodies or substances, which should be made to embrace not only heating by radiation and convection, but also heating by transmission and reflection; and the control of the degree of heat should be obtained by the quantity of fuel in perfect combustion, used or necessary to give the amount of heat required, which quantity of fuel should be so regulated as to adapt its mass to the operations to be performed.

Some may say this is impracticable, and that these operationscannot be secured in stoves. In this we differ; and further, we believe that these operations will eventually be secured in modes both simple and practical. Science has given to us facts and figures, and the inventor and improver of stoves must use these, and adopt the proper means to accomplish the ends desired to be secured; and he who succeeds will do a greater work for the people than has been done by any one man for many years, and will rank with Watt, Fulton, Henry, Morse, as benefactors of our race.—*Stove Trade Gazette.*

A. M. E. states that he once saw, in Boston, the lever of a safety valve fastened down by a ¾ inch iron, driven into a brick wall so that it was impossible to raise it with any amount of steam; and this was directly under a room where some twenty-five men were at work. And still people wonder why some boilers explode!

A GRAND MEDAL FOR CLEVELAND.

THE WILSON SEWING MACHINE TAKES THE GRAND PRIZE AT VIENNA.

THREE separate dispatches from Vienna combine to dispel all doubt as to what sewing machine has won the first honors of the Great Exposition. The first was a special to the New York press on Monday, and was as follows:

VIENNA, August 15, 1873.

The Wilson shuttle sewing machine was awarded the grand prize at the Vienna Exposition for being the best sewing machine.

The second was the regular Asssociated Press report, compiled from a long special to the New York *Herald*, in which the "Wilson Sewing Machine of Cleveland, Ohio," was named as among the exhibitors which received "medals for merit," the highest class of premiums awarded at the Exposition. *All other sewing machines will receive simply an award for progress.*

The third was a private cable telegram received yesterday from Vienna by Mr. Wilson himself, which was as follows:

VIENNA, August 19.

You have received five medals—two for merit and three co-operative.

The meaning of this is that the Wilson machine has received the grand medal *as the best sewing machine*, and a second medal as the machine best manufactured—that is, embodying the best mechanical workmanship. Besides these, Mr. George W. Baker, Assistant Superintendent of the Wilson Sewing Machine Company, receives a special medal for excellence of workmanship on the machine; Mr. Williams of this city receives a medal for best sewing on leather, done by the Wilson; and Miss Brock and Miss De Lussey receive still another medal for best samples of family sewing and embroidery, done on the Wilson machine. This sweeps the entire board. Not only has the Wilson sewing machine been pronounced the most capable and efficient sewing machine in the world, but its work, on both dry goods and leather, is pronounced superior to that of all other machines. This verdict at a World's Fair, where all the leading sewing machines of both continents have competed, before a thoroughly competent committee for more than three months, is the most complete triumph ever won by a sewing machine. We congratulate Mr. Wilson, we congratulate Cleveland on this admirable result. The people of the United States can henceforth be assured that in buying the Wilson machine for $20 less than any other first class sewing machine is offered, they are purchasing the best sewing machine ever offered to the public. It is the people's own machine, made to do the people's work, and offered at a price which every one can afford to pay. It is the people's machine which has won this triumph; the judgment of the Vienna Committee only confirms the verdict that the masses had long ago reached by actual experience.—*Cleveland Daily Leader, August* 20.

The National Lifeboat Service.

Although, in the perfection of its lighthouse system, our country is unsurpassed, there are many improvements in progress in the lifeboat service. The beacon serves to warn vessels from dangerous points, but, as in the case of the ill fated Atlantic, its warning does not always serve to avert the calamity it is designed to prevent. Hence a system of coast guards, comprising staunch lifeboats and thoroughly drilled men, ready to put off to a stranded ship at an instant's warning, has been, for a long time past in England and more lately in the United States, recognized as a necessity. In 1848, an appropriation was made by Congress for the establishment of life-saving stations on the volunteer principle, but experience proved that concerted action and full efficiency were only to be attained by proper training, and therefore the service has been placed under regular naval supervision. Lifeboats have been placed along various points on the Atlantic coast; and we learn from *Inter-Ocean* that two stations are now being established at Evanston and Calumet, on the lakes. The report of the operation of the system during the season of 1871-72 shows that the number of wrecks on our eastern coast was 22. The value of the vessels lost was $227,300, and of their cargoes, $281,800. The amount of property saved aggregated $299,756, and lost, $208,344, 206 persons being also rescued.

The Highest Land East of the Mississippi River.

Professor T. Sterry Hunt, in a paper on the mountains of North Carolina and Virginia, recently communicated to the *Tribune*, says that the region bounded between the Blue Ridge and the branch known as Iron Mountain, Smoky Mountain and the Unaka range, is the most elevated range east of the Mississippi. The summits of the Blue Ridge in North Carolina rise to nearly 6,000 feet above the sea, while the highest points of the Unaka range, in the same State, reach about 6,700, or more than 400 feet higher than Mount Washington, the culminating point of the White Hills of New Hampshire. This region, though abundantly wooded, watered and arable, besides possessing a delightful climate, is in the condition of primeval forest, from the fact that it is cut off, by its position, from the markets, and hence offers little advantage in remuneration of labor to the agriculturist.

The August Meteors.

G. C. T. says: "On the night of August 10, one hour before the moon arose, I kept my eye in the direction of *Perseus*, whence emanated eight meteors, two of which were of unusual brilliancy. The first traveled eastward, parallel with the horizon for 90°, with a uniform trail of 20°. The other ascended to the zenith; it also had a trail of 20°, with brilliant lateral scintillations, increasing in width."