Earth and Ocean Temperatures.

As we descend into the interior of the earth the temperature gradually increases. In mines, and during the sinking of artesian wells, it has been constantly observed that, at a certain distance from the surface, a point is attained at which the heat of summer and the cold of winter produce no effect upon the temperature; and beyond this point the heat augments in a regular ratio of 1° Fah. for every 55½ feet of descent. It is true that this increase of heat is not uniform in every part of the earth, as it differs in different strata at the same depth from the surface, but this variation is so small as not to affect the general rule. Reasoning from this data, geologists naturally conclude that at the depth of say 200,000 feet, the temperature must be 3,600°—a heat which must keep all the materials in the center of the earth in a state of fusion. It is, therefore, taught by many, that the center of the earth is a fiery mass, and that the globe's solid crust does not amount to more than a fiftieth part of its diameter. But if this is a law or rule regarding the solid parts of the earth, the contrary seems to be the case with the fluid portions of it. Lieut. Berryman, U. S. N., in his deep sea soundings, seems to have eliminated a totally opposite law reigning in the ocean, viz., that the cold increases according to the depth; and in connection with this other remarkable phenomena. He says :—

"Five hundred miles north of Bermuda we found the greatest reliable depth ever obtained, it being over four miles; and accompanying this were thermometrical observations of a singular character, indicating phenomena never before discovered or conceived, and which at this moment are an unsolved problem to the scientific world. In a long series of experiments the temperature was indicated as existing ten, fifteen, and twenty degrees below the freezing point. This may be owing to the defective instruments; but if so, a consistency of error was preserved almost beyond the possibility of chance."

The records of these deep sea soundings go to contradict the well-known and established law that water freezes at 32° Fah.; also that there is one law relating to temperatures for the ocean and another for the dry land. There must have been some defect in the instruments referred to, which indicated an ocean temperature below the freezing-point, or else the stratum of fluid reached at the great depth mentioned was not common salt water, but some other fluid, incapable of freezing, except at a much lower temperature. We do not believe, however, that any such fluid exists where these deep sea soundings were taken.

The Vine Disease.

This disease, which has ruined the crops of the vine-growing countries of Europe, is at last conquered. Mr. Kyle, a Scotch gardener, has discovered that the application of sulphur to the plant is an effectual preventive and remedy. Of such importance had this disease become to France, that the Society for the Encouragement of Agriculture offered a prize of $2,000 for a cure, and many smaller ones for researches on the subject. This first prize has been divided between Messrs. Kyle (who was also awarded the $100 gold medal of the Society), Duchartre, Gouties, and Maris. M. Barral, in his report to the Council, makes the following remark :—"It was England who inoculated the vine disease into Europe, but it is remarkable that it was in that country that it was most perfectly studied by Mr. Berkeley, and again in the same country that a cure was discovered by Mr. Kyle."

In this country, and especially those parts of it where the vine is cultivated, it ought to be recollected that it should be studied as well as nurtured, and that, like every other plant, the more care and attention that is paid to its growth, the more abundant and luscious will be its fruits. It is not enough that our soil is so rich that it will grow luxuriantly without much care. We yet ought to pay attention to it to produce still more luxuriance.

Lieut. Maury in the Navy.

"Lieut. Maury, who has been physically incapacitated for naval service by a broken leg, having been restored to rank by the Naval Courts, other officers now demand that he either be sent to sea, or got out of the way of their promotion by resignation."

We copy the above paragraph from an exchange, and we hope, for the honor of the country, that the last statement is not true. Lieut. Maury is an ornament to his country, and we rejoice that he has been restored to rank by the Naval Courts, and that he will neither resign nor get out of the way, to make room, perchance, for some lazy, worthless fellow, who might disgrace the American navy. Lieut. Maury has done more to promote nautical science than any man now living, and hence we urge that he should be retained just so long as he lives. If he is incapacitated to do physical service because of a lame leg, his head is not broken, and by the aid of its workings he can do quite as much as can those who would supplant him, by the combined power of their legs and all their other qualifications. Nelson, when he achieved his greatest victory, was blind of an eye, and had only one arm.

The Stubborn "Leviathan."

The talk and the writing about the launching of this vessel have now become leviathan-like in dimensions. We wait with patience for the period when we can say, "like leviathan afloat, lay her bulwarks on the brine." By the latest news from Europe, five attempts at launching had already been made and failed, and further operations are suspended for a long time to come, on account of the breakage of chains and hydraulic pumps employed to move her. No less than three hydraulic rams, one powerful windlass, and the double chains which drag the vessel towards the river have all been burst or broken. She still sticks on her ways, at two-thirds the distance from where she was built. The London *Times* states it will cost $500,000 to launch her; the London *Engineer* says it has cost $350,000 already, and as it has to be moved twice the distance it has already traversed, it may cost more than $1,000,000. Just think of one million of dollars being expended upon launching this monster! What in the name of common sense possessed its builders to construct her at such a distance from the water?

Circle of the Scientific Press.

France, with her accustomed energy in the cause of science, has made another great step forward, by the forming of a new society under the above title, and which is to consist of members of her scientific press, who, at their meetings, will discuss the inventions and discoveries of the past month, in every branch of science and art, and lay before the world the results of their discoveries. At their first meeting in Paris, on the 16th of November last, they were presented with a full account of the submarine tunnel to connect England and France, by the designer, M. Thomé de Gamond, and after an animated discussion it obtained their approval. Many inventions were then exhibited, such as a watch which will give the correct hour at any meridian, a way-measurer for vehicles, and many articles of *vertu* and interest. We look with great hope to the future of this society, comprising, as it does, among its members, the chiefs and subordinates of a scientific literature which is the most *purely* scientific, although not perhaps, the most practical, existing in any country in the world.

The Black Hills.

There are some sections of our extensive country almost as little known as the interior of Africa. The St. Louis (Mo.) *Republican* states that a party has just recently returned to that city from an exploring expedition in a wild region known by the above appellation. It is a vast country of movable sands, sterile, bleak and inhospitable. There are small streams at remote distances in it, upon which there is spare vegetation; sufficient, however, for the subsistence of the Indians' horses and some buffalo. It must ever be the home of nomadic tribes, who wander about like those of the wild wastes of Asia in search of the small patches of pasturage which are fructified by the irrigation of distant rivulets. This country has been supposed to be fertile from its geographical position and its appearance upon the map, but it proves to be wholly otherwise. The party consisted of sixty men, and the Sioux, who are numerous there, forbid the return of any more white men. They said that this party might pass, because it was the first, but no others must come, as they scared away their game, and would discover their strongholds and hiding-places.

Quack Names for Burning Fluids.

A correspondent writing to us from Fall River, Conn., states that a burning fluid called "Helion Oil," has recently come into extensive use in that city, and he asks if it is one of those fluids liable to explosions, which we described lately in an article in our columns. We have had other inquiries of a similar character relating to a fluid called "Excelsior Oil." Not having seen the oils which have received such names, we cannot tell what they are, but we suppose they are coal oils with flashy names to astonish the marines. All such fluids should receive their true name in connection with that of the manufacturers, such as "Breckenridge Coal Oil," "Newark (Ohio) Coal Oil," &c. Thequality of the oil will thus become an advertisement to the manufacturers, and incite them to make improvements, in order to excel one another in producing the best and cheapest article.

Vocal Machinery of Birds.

It is difficult to account for so small a creature as a bird making a tone as loud as some animal a thousand times its size; but a recent discovery has shown that, in birds, the lungs have several openings communicating with corresponding air bags or cells, which fill the whole cavity of the body from the neck downward, and into which the air passes and re-passes in the progress of breathing. This is not all. The very bones are hollow, from which air pipes are conveyed to the most solid parts of the body, even into the quills and feathers. The air being rarified by the heat of their body, adds to their levity. By forcing the air out of the body, they can dart down from the greatest hights with astonishing velocity. No doubt the same machinery forms the basis of their vocal powers, and at once resolves the mystery into a natural ordering of parts.—*Gardner's Music of Nature.*

Preserving Railroad Timbers.

Messrs. Editors—I would suggest a cheap plan for increasing the durability of railroad ties and other timbers in exposed situations. Make a cheap long tank, with a furnace under it, and place it on a railroad car. Fill it with coal tar, (which can be obtained at any of the gas works for $1 50 a barrel,) and bring it to a boiling heat. Now introduce a set of ties or timbers, and boil them for a short period, raising them up and down, by some simple contrivance, four or five times, when undergoing the operation; then take them out, and allow them to dry for a few days. It will require but a short time to prepare timbers in this manner, and the cost is not worth naming, in comparison with the durability imparted to them over those laid down in their natural condition. One set of tar-prepared ties will last three times longer than an unprepared set. Fence-posts should also have their ends which enter the ground treated in this manner. J. Scotton.

Newark, Ohio, January, 1858.

[Our correspondent is perfectly right in his conclusions respecting the advantages to be derived from this mode of treating railroad timbers. The only objection to the process is the handling of dirty sticky timbers; but that is of no consequence while plenty of persons can be found ready to do the work.—Eds.

Preparing Liquid Glue.

Messrs. Editors—The following is a method by which I have prepared liquid glue, and have found it very convenient :—

Take the glue in any quantity desired, and dissolve it in as small a portion of boiling water as possible; it will then be found too thick for use. While it is still hot, take the glue-pot from the fire, and reduce or thin the glue to the proper consistency with alcohol; then put it in a bottle, the mouth of which must be covered with india rubber or other material impervious to the air.

Liquid glue made in this manner, and placed in bottles, may be kept ready for use for a number of years. I have some glue which I now use that was thus prepared six years ago, and is as good as when newly made. It only requires to be slightly warmed for application during cold weather.

Merchant Kelly.

Bentonville, Ind., Dec., 1857.

[This is a very good method of making glue for use where only a little is required, and that but at considerable intervals of time. Liquid glue is very liable to rapid putrefaction in warm weather, and it freezes in cold weather. Alcohol preserves it from both of these influences. A bottle of liquid glue is very convenient for use in families to mend broken chairs and other pieces of furniture.

Cure for Chapped Hands.

Messrs. Editors—I have seen in a late number of the Scientific American directions for curing chapped hands. I have used the following for many years, and have recommended it to a number of friends, and wherever it has been used, the result has been all that could be desired :—

Take two ounces of glycerine, and one ounce of rosewater, mix, and rub your hands well with it before retiring to rest. It is pleasant, agreeable, and cleanly, and its effects are truly wonderful; indeed, whatever business a party may be engaged in, it will not fail to effect a cure. The glycerine alone is equally as good, but the rosewater is more pleasant to use. William Nash.

Branford, Conn., January, 1858.

Destruction of Models.

Periodically—at the end of every six months or so—it becomes imperatively necessary that we should destroy or otherwise dispose of such models as have been sent to our office for examination, have been declared by us to be not patentable, have then remained uncalled for by their inventors, and have consequently accumulated in our possession. As the commencement of a new year is a period of general cleaning-out and brushing-up in every well-ordered establishment, and constitutes one of the above-mentioned epochs of destruction in our own, we hereby notify all inventors wishing to preserve those of their models which have now lain long in our hands, that they must order them away immediately.

The best of the models of unpatentable devices are retained by us, discretionarily, even if they have been in our possession as long as six months; but we do not keep such as have been so poorly constructed as to be not worth the expense of carriage homeward to their owners, and we do not hold ourselves accountable for any model which has been stored in our office longer than six months.

The above remarks equally apply to all models which have been sent to us for the purpose of having engravings prepared from them.

Of course, it is almost unnecessary to add that we most carefully preserve all such models as we have received with positive instructions to make applications for patents thereon, and that such are forwarded to the Patent Office at Washington at the earliest opportunity.

Finally, we again admonish all who wish to save models which have been long lying in our office, that they must quickly order them to be boxed up and shipped to their respective owners; or otherwise, by and by, the latter will wish to have their models when restitution will be an impossibility.