

## Scientific.

## Something Warm.

The following extract from a letter to a friend, by the Rev. W. F. Williams, missionary to Syria, will at this season be interesting, by way of contrast, at least:—

"Mosul, opposite Nineveh, Oct. 4, 1851.

"During the hot months—and they are between April and November—the natives all sleep on the roofs, and during the hottest—June, July, and August—live in the cellars. There is no dew in summer, nor rain. I landed May 16, and have seen neither. The air is electrical to a surprising degree. Any horse that is groomed enough so that his tail is not matted together with filth, will show you electrical phenomena by the day—every hair on his tail standing apart, away from his neighbor, then approaching, and again shooting out, as if playing gymnastics.

"For the most part, the scorching air and glaring light shut us into our rooms, which with all our efforts to keep them cool, would reach 100°, and twice, 101°. Day after day, our sitting room was at 98° (blood-heat) from 11 A. M. till 7 or 9 P. M. For 56 days in succession, the thermometer showed 100° or more in the shade; twice it reached 108°. (How high it got in the city, we don't know.) For 33 days it did not but once go below 90° day or night; and the midnight average was 95° and 94°. But we have ceased to suffer for this year. Our sheets have ceased to burn when we got to bed, and a clean shirt is not like that which Hercules put on. We luxuriate in the morning at 64°, and at mid-day only to 94°. But we pay for our comfort with colds. Of a family of nine, seven have or have had terribly severe colds. I escape.

"Oct. 13.—Yesterday was the first day in which I have been able to endure a light pair or worsted pants. Mercury rose only to 89°. First time it has stopped at that. No use for vest yet."

## The Arctic Regions.

Dr. Kane, who accompanied the Grinnell Arctic Squadron, in search of Sir John Franklin, has been delivering some very interesting lectures before the Smithsonian Institute in Washington. The "National Intelligencer" gives an abstract of his lectures.

At one time the vessels were about to enter, in Baffin's Bay, a great field of solid ice, when suddenly this was rent in chasms, which rapidly opened into what were characterized by Dr. Kane as "dark rivers," nearly half as wide as the Potomac. On the 13th of January of last year, these began to close with frightful clamor and disruption. The brig was bodily lifted up seven feet, and an advancing mound of ice threatened to overwhelm her, when by some miraculous agency its course was arrested. The subsequent portions of the lecture were full of novelty; they related to some of the physical phenomena of this wonderful region. The first of these was—

**THE POLAR CIRCLE.**—This, with its gradual and insidious approach, was graphically depicted. At the appalling temperature of 40° and 50° or 70° to 80° below the freezing point, cold became as sensible in its effects as heat; indeed, between the positive effects of the very high and the negative of the very low scale, it was impossible to distinguish by sensation. Upon going out into the open air, the face became encrusted with an icy rind, and the lips were glued together by the cementing aid of the beard and moustache. The trigger of a gun blistered the finger, and a jack-knife in the pantaloons pocket caused you to jump as with a sudden scald. During the long darkness, when they attempted to beguile the winter hours with theatricals, an unfortunate Thespian dropped the pantomimic flat-iron as though receiving a sudden burn. Indeed next day, a row of blisters had given evidence of the truth that, in temperature as in every thing else, extremes meet.

**THE POLAR NIGHT.**—With the cold came darkness. The long night stole gradually upon our voyagers, and at last the clear heavens shone perpetually with unchanging stars. The pole-star was so near overhead as to appear in the absolute zenith, and around it the "great vault of heaven revolved with perpetual twinkle." This portion of the lecture was listened to with breathless attention. At last however, the night passed away, and, almost by an immediate transition, day came upon them. Dr. Kane said that this short period of alternation, giving them as it did the familiar day and night of home, was full of painful associations.

**PROFESSOR KANE**, in a lecture before the Smithsonian Institute, referred to the interesting question of an open sea around the north pole. After citing the theoretical argument in favor of such a body of water, Dr. Kane mentioned that the American expedition under Lieut. De Haven had actually seen from their most northern point, that unmistakable sign, the dark cloud known as the "water-sky;" and Captain Penny, an energetic whaler, for whose views Dr. Kane seemed to have great respect, confirmed this "sky" by sighting the water itself. It is in this region, not far to the north and west of the point which the American expedition reached, that he supposes Sir John Franklin and his companions to be immured; surrounded by seal, and the resources before described, but unable to leave their hunting ground and cross the "frigid Sahara" which intervenes between them and the world from which they are shut out.

## Power of Imagination.

"A few years since, Elijah Barns, of Pennsylvania, killed a rattlesnake in his field without any injury to himself, and immediately after put on his son's waistcoat, both being of one color. He returned to his house, and on attempting to button his waistcoat, he found to his astonishment that it was much too small. His imagination was now wrought to a high pitch, and he instantly conceived the idea that he had been bitten imperceptibly by the snake, and was thus swollen from its poison. He grew suddenly very ill, and took to his bed. The family, in great alarm and confusion, summoned three physicians, and the usual remedies were prescribed and administered. The patient, however, grew worse every minute, until at length his son came home with his father's waistcoat dangling about him. The mystery was soon unfolded, and the patient, being relieved from his imaginary apprehensions, dismissed his physicians and was restored to health."

## Interesting Discovery of Pedunculated Star Fishes.

Our naturalists will be pleased to learn that several individuals belonging to this interesting and extremely rare family of crinoid star fishes have been lately discovered upon the coast of South Carolina, by Professor F. S. Holmes of the Charleston College. Professor Agassiz, to whom they have been submitted for examination, and who has studied the group of animals with his usual skill, believes them to be the first and the only species that has been found upon the Atlantic coast of the United States.

The crinoid star fishes, or as they are popularly called lily stars, or stone-lilies, constituted the most numerous class of the ocean's inhabitants in early geological ages, as is evidenced by the fact that immense tracts of dry land are composed almost wholly of the remains of their skeletons, and in some places we may walk for several miles over one continuous mass of their stony fragments, "fragments which were once built up in animated forms, encased in living flesh, and obeying the will of creatures among the loveliest inhabitants of the ocean."

A few straggling analogues only of these interesting forms now inhabit the seas of our globe, and they have elicited not only the admiration of the common observer, but have also excited much discussion in the scientific world.

A strange feature in the history of one species of this recent star fish is, that the young animal grows upon a stalk like a plant, or lily, the stalk being attached by its base to a rock, or shell, or other substances; but as soon as it attains its full growth or adult state, it disengages itself from the stem of stalk, and swims about in the sea a free and independent star fish. There is another species which is always attached to its peduncle or stalk, and never becomes free. Those discovered upon this coast belong to the first variety.

**EXTRAORDINARY FOSSILS.**—At a meeting of the Geological Society on the 18th Dec., Dr. Mantell exhibited a fossil lizard about six inches long, which had been sent to him to examine and describe, by Mr. Patrick Duff, who discovered it near Elgin. In the same strata Captain Brickender found a track of 20 footsteps of a chelonian or turtle; and in the lower beds of the Devonian, in Lonsdale, fossil eggs of frogs and aquatic salamanders have been discovered, specimens of which were placed before the Society.—The great interest of these discoveries is the fact that

previously no vestiges of any reptiles whatever had been found in the old red formation. Dr. Mantell has named the reptile *Tolerpoton Elginense*, to indicate its remote antiquity and the place where it was obtained.—*Bridgton Gazette*.

**A HINT TO BLACKSMITHS.**—The cutting of bars of iron of pipes with the chisel, is a laborious and tardy process. By the following mode, the same end is attained more speedily, easily, and neatly: Bring the iron to a white heat, and then, fixing it in a vice, apply the common saw, which, without being turned in the edge, or injured in any respect, will divide it as easily as if it were a carrot.

## Cure for Deafness.

A correspondent of the Boston Cultivator gives the following simple cure for deafness:

At about three years of age, a daughter of the Hon. Daniel Baldwin, of Montpelier, became very deaf in both ears. In conversation it was quite difficult to make her hear, and she continued in this wretched state until about eighteen years of age, when an Indian doctor chanced to see her, who told the mother, Mrs. B., that the oil of onion and tobacco would cure her if prepared as follows:—Divide an onion, and from the centre take out a piece the size of a common walnut; fill this cavity with a fresh quid of tobacco, and bind the onion together in its usual shape; roast it, then trim off the outer part until you come to that portion slightly colored or penetrated by the tobacco; mash up the balance of the tobacco; put it into a phial. Three drops of this oil, Mrs. B. informed me she dropped into the ear after her daughter had retired to bed, which immediately gave her considerable pain which lasted for some time. Before morning however, her hearing was so extremely delicate and sensitive, that she suffered by the sound and noise in common conversation! This she soon overcame, and for more than three years past her hearing has been entirely restored, to the great joy of her parents and friends! Having been acquainted with the family for many years, the case is so miraculous and gratifying, that I cannot, in justice to the afflicted, refrain from making this simple and effectual remedy for deafness known.

## The Farm.

## The Law of Manures.

We notice that the question, "Do manures ascend or descend?" has lately been considerably discussed. For our own part, we should no more think of asking or discussing such a question, then we should whether *moisture* ascends or descends. It obviously does both; and so it is with manures, unless the term manures be restricted to mineral substances only.

But though we believe that the valuable parts of manures may be carried into the air and washed into the earth, we do not admit the propriety of some of the positions by which the fact is attempted to be illustrated. For instance, it is said, "the gases of manure ascend, but the salts descend." The fact is here lost sight of that the same substances are capable under different circumstances of assuming both a solid and a gaseous form. Such is the case with carbon, which constitutes the greatest part of ordinary manure, as well as vegetable substances; and also nitrogen, which has formerly been held by chemists, (and is indeed held by many chemists,) as the most valuable and important element in manures.

If a heap of manure is left to ferment on the surface of the earth, or without being covered by some absorbing substance, its bulk and weight are greatly reduced. What has become of the lost portion? It has, of course gone into the air, as it would have done if the manure had been acted on by fire. The manure, or a certain portion of it, has been resolved into its original elements, and the carbon and nitrogen it contained have again become parts of the atmosphere.

The nitrogen in manure is in the form of ammonia, and that it escapes during fermentation, has been proved; it is perceptible by the smell, and has also by means of acids been detected in its ascent. Most people are familiar with ammonia in the form of a salt, and now that in this form it is extremely volatile, and readily passes into an aeriform state. It is also soluble in water, and is therefore readily washed into the earth by rains. Thus the very substance which forms a salt may become a gas and ascend into the air; or it may

become a liquid and descend into the earth. Manure may be combined with substances which will prevent the escape of ammonia; such as charcoal or charcoal dust from coal-pits, peat, muck-soil, and vegetable or carbonaceous substances generally. If the process of fermentation is properly regulated, and the manure is combined with articles which will absorb the gases as they are disengaged, there will be no waste. It may be considered a rule, that whenever smell is emitted by manures some of their valuable properties are being dissipated; hence their odors should not be wasted 'on the desert air,' they should be saved and converted into vegetable substances in which condition they are not only more agreeable to the *olfactories*, but become substantial elements of animal nutrition.

As to the sinking of manures, there is positive evidence of the fact. We have in many instances seen its effects to the depth of several feet. On the farm of Mr. Prentice, near this city, it was noticed lately, in digging a cellar near where a compost heap had been laid, that the earth to the depth of three feet from the surface, though it was of quite a compact and clayey nature, was so impregnated with the qualities of the manure that they were plainly perceptible. And the effects of manure are always traceable to a greater or less depth, in proportion to the porousness of the soil and the quantity of manure applied. It is Liebig's opinion that the soluble parts of manures, 'phosphates and other salts with alkaline bases,' are drawn off, and wasted to a great extent by percolation.

*The depth to which manures should be buried* is another subject, which in connection with the question whether they rise or fall, has been much discussed; and some, who believe that manures *always* ascend, have arrived at the conclusion that they should be placed from "a foot to eighteen inches" under ground.

We do not suppose it practicable to lay down any fixed rule in regard to the covering of manures. Some general principles however may form a guide. It is evident that manures can only afford nutriment to plants when they are in a soluble condition. In their application, therefore, the causes which produce solution and decomposition should be regarded.—These causes are principally heat, air and moisture; though in the elimination and assimilation of food by plants, light and electricity are evidently powerful agents. Most of these principles act with the greatest force near the surface.

In some cases, as in dressing grass lands, we would spread manures on the top of the ground, —but in such cases, we would use as well rotted compost, in which the animal manures had been combined with substances as would absorb the matters that during fermentation might pass off—the reason why we would prefer for such a purpose manure that had passed through the first stages of decomposition in the matter mentioned, is that it would be more readily soluble than in a fresher state, and it would be immediately available to the crop! while at the same time its fertilizing principles would be so far combined and fixed as not to be liable to waste.

But the practice of leaving manures *entirely* on the surface, is not in many cases the most judicious, for the following reasons:

1. If it is applied in an unfermented state, uncombined with absorbent substances, some of its valuable properties might be lost during decomposition.

2. With hoed crops, fresh or fibrous manures on the surface of the ground, would be an obstacle, (more or less according to the quantity,) to cultivation.

3. Manures of any kind, or in any state, when left on the surface, might fail to benefit the crop for which they were intended.

Let it be remembered that they are only available to plants when in a soluble state; and to be made soluble, they must be kept moist. We would therefore cover manures to such a degree as would best secure the advantages and avoid the objections here indicated, and no more.

On tenacious soils, a mechanical effect is sought to be produced by manures; that is, friability of soil. This purpose is best accomplished by plowing in strawy fibrous manures in a fresh or unfermented state. This is obviously, however, quite a different thing from the application of manures to feed a crop.—*Albany Cult.*

Reason, like polished steel, must be kept bright by use, or it will rust.

Ratify promises by performances.