

THE GATHERER.

The Luxury of Cold Water.

The plague of winter is cold, and the plague of summer is heat, but we may do much to lessen the miseries of both seasons. Now that we are approaching the dog-days, it may be well to point out that by means of a liberal use of water one may pass through the summer furnace without suffering any serious discomfort. Water is good for other things besides the allaying of thirst. It has a permanent determination to evaporate, and as it cannot evaporate without heat, it consequently diminishes in the process the heat of our rooms. Pans of water, the cooler the better, stationed about a bed-room will positively reduce not only the sensation of heat, but the heat itself. Should any one doubt this, let him have his tub, with its shallow depth and wide surface, filled with spring-water, or water with a good block of ice in it, and placed in his bed-room, and mark in half an hour how many degrees the thermometer has fallen. It ought to be six degrees at least, and will be eight if he is not stingy with his ice, and this improvement in the temperature will last for hours. If the heat still remains too great, throw up the bed-room windows, fasten an old blanket or travelling-rug across the space, and drench that well with water; in five minutes the air in the room will be reduced to that water's temperature. Never mind the breeze.

Ozone in the Breeze.

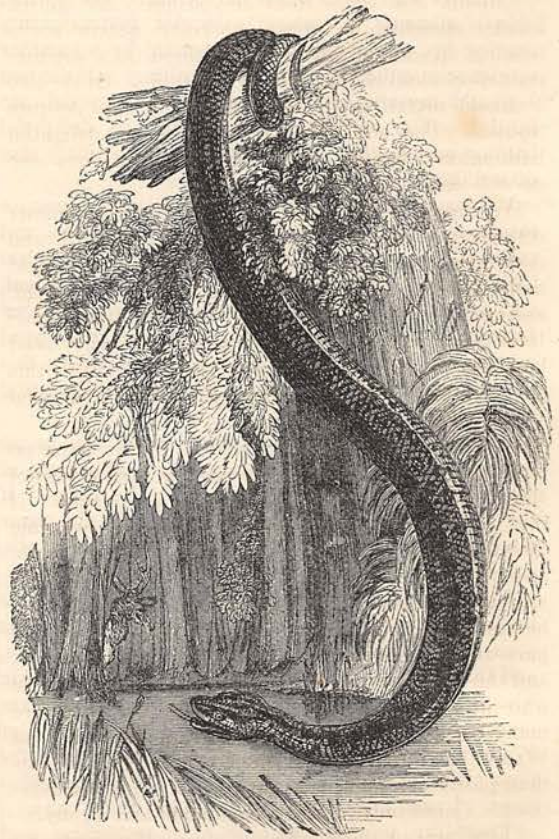
In ozone we have, doubtless, the great natural agent which removes many deleterious gases and vapours, and destroys infectious matter floating about in the air. But what is ozone? According to Professor Andrews, it is "oxygen in an altered or allotropic condition." It is rarely found in the air of large towns, unless in a suburb where wind is blowing from the country. It is seldom absent in fine weather from country air, and is more abundant in the atmosphere of the mountain than of the plain. Its permanent absence from any locality may be taken as a sure proof that the inhabitants are breathing adulterated air. The absence of ozone in towns, and in large rooms even in the country, is, probably, the chief cause of the difference which every one feels when he breathes the air of a town, or of an apartment, however spacious, and afterwards inhales the fresh or ozone-charged atmosphere of the open country.

The mechanical action of pure air over vegetation is productive of ozone, but it is still more manifestly produced by the dashing of waves and spray against the air. These lashings of air and sea together evoke ozone, which, being inhaled, gives a stimulus to the constitution. From this arises the benefit to health resulting from a sea-voyage, or from residence at some pleasant seaside resort. It has been pointed out that, as water in motion is thus productive of

ozone, the quality of the atmosphere in large cities might be improved with ease and without much expense. In all available places public fountains might be erected, and if these were kept constantly playing, the air would be sensibly ozonised. Thus, not only would health be secured, but there would be a decided gain in cheerfulness, for life in cities would then be like a continual fête-day.

An Immense Snake.

An illustrious stranger has come to take up his permanent abode amongst us, in the shape of one of the largest of the *Boaide* family known to our generation. He arrived lately in Liverpool, in a large box, and is now safely housed in the snake-house of the



Zoological Gardens. This snake is an anaconda, whose name may be given in English as "the good-swimming moose or deer eater." It is difficult to give his exact length. "He is not," says Mr. Frank Buckland, "to be measured with as much facility as a fathom of rope." We may set it down, however, as between eighteen and twenty feet. Round the body he measures over two feet, so he is a tremendous

fellow. He lies in his present quarters in a bath of warm water, from which he emerges only at rare intervals. Feeding him has hitherto proved a simple process. His bath is covered over at night, and a duck is put into it in company with the snake. The duck is nowhere to be seen in the morning, and Mr. Anaconda looks fatter. He is decidedly nocturnal and aquatic in his habits. Like our own British snake, the anaconda is found in marshy, damp places; he feeds on animals which come down to drink at night. In his way, he is a peaceable character, never interfering with men unless attacked, when, of course, he makes a rule of taking his own part. His teeth are not poisonous, but they have very great and dangerous powers of crushing.

Conversing by Telegraph.

To hold converse with those we love is one of the chief delights of our existence; and when, through force of circumstances, we separate from our friends, we feel the loss most keenly. Science, however, has lately stepped in to our aid. A scientific apparatus with this intention is likely, in years to come, to be offered to the world. Telegraphy, for transmitting signs of various lengths to represent letters and words, was and is considered one of the most wonderful inventions ever known; but now we hear that the study of this same principle which governs telegraphy is being developed for conveying vocal sounds from one given point to another. The Telephone, as the apparatus is called, has been tried in America with undenied success. There are two forms of the same instrument, one by Mr. Bell, the Boston professor of vocal physiology, and the other has been the joint work of several scientific men. The former has never been publicly described, but the latter instrument, which has attracted the most attention, and which transmits and receives ordinary sound-vibrations of the voice by means of electricity, is of comparatively simple construction. A membrane is stretched over a box, and at the side is a short tube of large diameter. To this tube the operator talks, and the sound, being strengthened by the box, finally affects the membrane, and causes it to vibrate. A thin disc of copper rests on the membrane, and this disc is fixed to a wire attached to the electric battery. A metallic point hangs above it, which forms the end of the wire, and points in the direction to which the sound is to be conveyed. With every vibration the membrane rises and touches the point, when a current is established and a communication effected. At the receiving end the instrument consists of a piece of iron the size of a large needle, which is wound about with insulated copper wire, and supported on a wooden box with thin sides. With every passage of the current the needle vibrates, and the vibrations are made audible to the human ear by the sound which is increased by the wooden box. Vocal sounds, by means of this instrument, have been sent 143 miles; and although the invention is by no means perfected, great results are expected from it in course of time.

The First Book Printed in England.

During June of this year will be celebrated the four-hundredth anniversary of the introduction of printing into England by William Caxton. This is an age of anniversaries—perhaps we have too many of them—but this one asserts quite peculiar claims to recognition. The birth of printing has certainly been a more momentous event to the human race than the birth of even the most famous of famous men. No country owes more to the art than our own. This being the case, it is somewhat strange that the precise date when the first book was printed in England has not been ascertained. Much labour and research have been expended on the subject, but to little purpose. The first book produced in the English language was "The Recuyell of the Historyes of Troy," which was translated by Caxton in 1471: it was printed at Bruges probably in 1474. This was followed by "The Game and Playe of the Chesse," the translation of which was completed in 1474. It also was printed at Bruges. Three years after the date last mentioned, we come to the first book printed with a date in England. This, the forerunner of such a host, was the "Dictes and Sayinges of the Philosophers, enprynted by me, William Caxton, at Westmestre, the yere of our Lord m.cccc.lxxvij." This is the first indisputable date we have to stand on. Taking it, therefore, as the date of the introduction of printing into England, it has been determined to hold a celebration this year in commemoration of the event. The leading feature of the celebration will be an exhibition of antiquities and curiosities connected with the art of printing. We are glad to know that this exhibition promises to be a great success. Certainly, as is remarked in the prospectus issued by Mr. J. S. Hodson, of the Printers' Pension Corporation, seeing that the printer's art provides the means of education, renders available the results of scientific discovery and research, and is the most effectual instrument in emancipating mankind from the thralldom of ignorance and superstition, the celebration ought to be as popular with the general public as with those more or less connected with the printer's craft.

Fresh Water under the Sea.

Things are often met with in very unlikely places. Who, for example, would think of looking for springs of fresh water underneath the salt sea? Yet such springs undoubtedly exist in many places, and Sindbad the Sailor was hardly at all drawing on his fertile imagination when, in one of his voyages, he described meeting with a river of fresh water that ran out of the ocean into a dark cave. A proposal has recently been made to utilise these springs. M. Toselli, the author of this proposal, points out that their water, brought to the surface through flexible tubes affixed to buoys, would furnish ships with those supplies of water they are often so much in need of. M. Toselli appears to have studied the question carefully, and provided for the preservation of his apparatus in the face of storms.

Answer to Double Acrostic on page 383.

P uc K
 E urek A*
 TournamenT
 R aleig H
 U n A
 C otte R†
 H arri-kar I
 I nkerma N
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An Invasion of Rats.

The solitary spot in the Pacific Ocean known as Pitcairn's Island—long famous as the home of the surviving mutineers of the *Bounty*—has, it is reported, recently suffered from an invasion of a remarkable

Ships Built of Steel.

A revolution has taken place in the art of naval construction, the importance of which it is difficult to exaggerate. This is the substitution of steel for iron as a material for ships of war. By substituting steel for iron a more sparing use of metal would be possible, with the corresponding result of insuring a reduction of weight and increase of speed, and a possible reduction of cost. Steel, too, has greater ductility or elasticity than iron, while in tensile strength or toughness it possesses in its ordinary form a power 50 per cent. greater than its rival. But the fatal defect of steel was its fragility. It had a tendency to crack, and this there seemed no means of overcoming. In merchant ships, it is true, steel came to be pretty extensively used, but the requirements of the mer-



A SCENE IN PITCAIRN'S ISLAND.

character. It seems that an army of rats, landed from some wreck or other, have behaved very much as Mr. Browning's rats did in Hamalin Town, swarmed over everything, eaten up everything, consumed all the flour, and devoured the entire grain-crop of a season. The length of the island is but two and a half miles; from end to end the rats marched in a compact army, some of them as large as rabbits—an assertion which might seem exaggerated, did we not remember that the French naturalist, M. Gentil, declares he saw in the sewers of Paris specimens of these vermin "as large as full-grown tom-cats"—creatures, indeed, that full-grown tom-cats refused to fight. As the Pitcairn's Island rats made a clean sweep of the islanders' harvests and stores, it is not surprising that the humanity of a Pacific trader should have been appealed to for a supply of flour. It would be well, perhaps, if the islanders could be looked in upon more frequently, and better still if this recital of their woes would attract to their domain a few professional rat-catchers.

* "I have found it!"—the exclamation of Archimedes.

† Burns' "Cotter's Saturday Night."

chant service are by no means so exacting as those of the navy.

After long and patient investigation, the hope that a satisfactory method would be found of manufacturing steel fit for the construction of men-of-war grew into a certainty. At the London Works, by a process adopted by Dr. Siemens, steel was produced that answered the required conditions, and Government has now not only commenced two corvettes at Pembroke, but ordered six smaller vessels, all of which are to be built of steel. This steel possesses a toughness which is unapproached by any other kind of metal, and before it breaks yields even to 50 per cent. Its strength is much greater than that of iron, its ductility equals that of iron, and the surface of the plates being much smoother, the friction and consequent loss of speed in vessels built of it must be less than in the case of iron ships.

Thus Dr. Siemens has overcome a difficulty which has for years baffled invention and experiment, and a path for naval construction has been opened up which will, in all probability, lead to the most important consequences.