Artificial Cold.

Since the days of that dissipated heathen, who in order to cool the air during an oppressive summer, caused mountains of snow to be piled up, and suffered them to melt away, down to the present era, in which there prevails a rage for the thing, mankind has been incessantly in quest of refrigeratives. In those regions where ice and snow are found during winter, it became an easy expedient to store up such treasures of cold for use in warmer seasons; but where, if formed at all, they could be only of a momentary existence, it is manifest that some other means must be employed to supply the luxury of coldness to the noble and wealthy; and thus the art of artificial refrigeration—an art which has to boast of the elaborate researches of the ingenious Robert Boyle, and has occupied much of the consideration of other philosophers before and since—took its origin. We have already taken notice of the now prevalent use and means of procuring beautiful ice for the table, we shall here present a brief sketch of the history, and a short notice of the methods of producing cold artificially.

Cold, as a luxury was far from being unknown to the ancients. The winter's snow or ice was rudely gathered up in heaps, or buried in pits and covered with straw or chaff. But this was a wasteful, and grew to be an expensive method; and it became desirable to have ready means at every season, and independantly of the accidents of the skies, for obtaining the same end. The simplest of these proceeded on the principle of loss of temperature, as a result of rapid evaporation. The Egyptians were accustomed to cool their water by placing it in earthen pitchers, the exteriors of which were kept constantly wet by being sprinkled with water by slaves. It was the habit of one of their luxurious monarchs to have several servants for this office alone, whose duties were to expose the water to cool on the summit of the palace, and constantly supply the royal table with the beverage. Cooling pits were also dug in the earth, into which the water-vessels were placed during the day time, the exterior being well soaked with water, and then surrounded with the fresh leaves of a vine or other plant, evaporation rapidly went on, and the liquid became most agreeably cool. Another method is said to be mentioned by Plutarch, which was by casting into the water a number of small stones, the agitation and consequent evaporation produced by which would probably exercise a slightly frigorific power over the water. It was probably an accidental observation of what could not have failed to have been an every day occurrence, that led to the next improvement in this mode of refrigeration. Many of the earthen vessels of the Egyptians are made of unglazed ware; water placed in one of these was found to be cooler than when kept in other vessels, and the more open and porous the material, the more rapid the transudation of the water, and its evaporation from the surface of the jars, the greater the degree of cold obtained. Water-vases were then formed for that purpose solely; and the invention, unaltered in principle, has come down to the present time with increasing usefulness. Illustrious of the second great chemical law—that liquefaction produces cold—next followed. For ages in India, it had been the practice to cool beverage in that burning climate by dissolving saltpetre in water. From India, the practice made its way into Europe; and Beckmann states that a Spanish physician, Blarious Villa Franca, practising at Rome, first introduced this method of producing cold in Italy about the middle of the sixteenth century. It is related that wine, placed in this mixture, was cooled to a degree making it almost intolerable to the teeth; and this was a considerable step in the history of artificial cold. Other saline substances came into use, and pits were formed, into which, on the large scale, the water to be cooled was put in vessels, surrounded by the cooling mixture. Finally came the important discovery, that an intensely freezing mixture was capable of being formed by mixing snow or ice and salt together. A celebrated physician electrified a large audience by exhibiting its effects upon a bottle of wine, which he actually froze into ice: and this "new method of freezing water" is also mentioned by Lord Bacon. Such are the conditions under which this subject has been handed down to existing posterity.

(*To be continued.*)

Garden Automaton.

At Euston, in Oxfordshire, England, there is a garden with many curious ingenuities, which are very amusing. On approaching a certain spot a hermit rises from the ground, and entertaining one with a "neat and appropriate speech," sinks down like a Jack in a box. There is a small rocky island in the midst of a lake, which is full of watery tricks. The visiter is politely requested to walk up and view this spot, and after satisfying his curiosity, and proceeding to walk down again, the fountaineer bobs down, turns a cock, and sends *jets d'eau* flying on all sides of the victim, one stream having for its object his legs, and another his head. After this reception, he is conducted to look at a spaniel hunting a duck, by the force of water—the automatons diving and pursuing each other by turns. Beyond is a grotto; a hedge of sparkling jets of water rises from the ground to guard it; mimic cascades foam down in tiny cataracts, and countless streams shoot up, and appear to lose themselves by being caught in their return, and not suffered to fall down again. Here, too, a nightingale discourses liquid music, and arched jets of water with one another, and now and then delightful showers tell the visiter that it sometimes rains when the sun shines.

Musical Fishes.

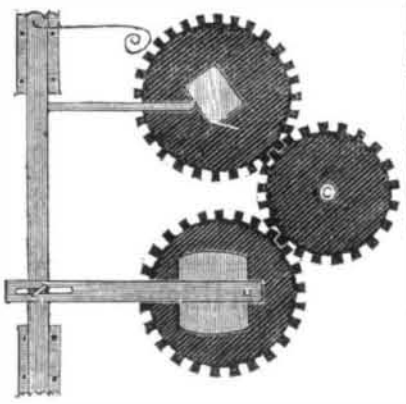
Aquatic animals are generally supposed destitute of the means of making themselves heard; and if they communicate with each other, it is usually supposed that it must be otherwise than by sound. The seal, has, it is believed, a peculiar and distinct cry; and the grampus snorts as it attains the surface. Frogs and other amphibious animals croak loud and long enough; but in all these cases the sounds are emitted, not under, but above the water, and by creatures rarely more than half aquatic. The cetaceous races have warm blood, and suckle their young: and fishes, properly so called, are considered, as we shall presently show, erroneously, a silent race. The long-eared Baalamite is justly reckoned the strangest ass mentioned in history, and a scaly creature emitting sounds may truly be reckoned a very odd fish indeed. A party lately crossing from the promontory in Salsette, called the Neat's Tongue, to near Sewree, were about sunset, struck by hearing long distinct sounds like the protracted booming of a distant bell, the dying cadence of an Eolian harp, the note of a pitchpipe or pitchfork, or any other long drawn-out musical note. It was at first supposed to be music from Parell floating at intervals upon the breeze; then it was perceived to come from all directions almost in equal strength, and to arise from the surface of the water all around the vessel. The boatmen at once intimated that the sounds were produced by fish abounding in the muddy creeks and shoals around Bombay and Salsette; they were perfectly well-known, and very often heard. Accordingly, on inclining the ear towards the surface of the water, or better still by placing it close to the planks of the vessel, the notes appeared long and distinct, and followed each other in constant succession This fish is about the size of a perch.

To Make Superior Potato Bread.

Take eight or ten large potatoes, peel and boil them; when done, make them fine and mix with half a pint of good yeast in the centre of a bowl of flour, say six quarts; set it in a warm place to rise. When quite light, mix it up stiff with warm water, and let it rise a second time; make it into loaves, let them rise, then bake slowly.

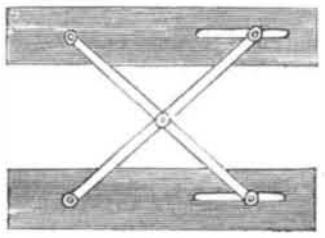
MECHANICAL MOVEMENTS.

Curve Delineator.



This cut exhibits a combination by which a series of concentric curve lines may be described on the square surface attached to the lower wheel by means of a point proceeding from the upright part to the right, which is traversed by the upper wheel at the same time that the square surface is revolved by the lower.

Another Parallel Ruler.



This is another modification of the Parallel Rule. It has no advantage over the one we presented before, only that it has two instead of three rules, and for the closing and opening there is a slot in each rule for the sliding bars to move in, so that the rules may be parallel to one another.

Pruning Peach Trees.

Pruning the peach is very little practiced, simply because its great advantages are generally unknown. Most cultivators however, must have noticed the great difference in the size of the peaches, and still more in their quality, grown in one case upon young and thrifty trees, and in the other on old and stunted ones. Old trees might be rendered thrifty and productive of large delicious fruit if a regular system of pruning were kept up. The tendency in the growth of this tree, when neglected, is to form long and bare branches, with leaves and fruit only at the extremities, shutting out the light from the rest of the tree, attended with slow and diminutive growth. Judicious pruning, by shortening in, commenced while the tree is young, and continued yearly, will preserve a round handsome head to the tree, and young and thrifty shoots will start from all parts of the branches, even down to their very commencement at the upper extremity of the trunk. Old trees have, in some instances, been much benefitted, by the rough and unskilful trimming by winds, and new and healthy branches have sprung up and borne finely on old and stunted trees which had thus been accidentally relieved of a part of their useless limbs A. J. Downing says; "We have seen two trees of the same age side by side, one unpruned, and the other regularly shortened in, and both bearing about four bushels. The fruit of the latter was, however, of double the size, and incomparably finer." A similar experiment, made the past season by the writer was attended with quite as great success.

Strength of Rope.

The following is a rule for finding the weight a rope will bear, with safety:—Multiply the square of the circumference in inches by 200 and it gives the number of pounds the rope will sustain with safety. Example: Required the number of pounds which a rope 2½ inches diameter sustain. The square of 2½ is 6 1-4, which multiplied by 200 gives the desired answer, 1250 lbs.

Ropes made of wire are about three times stronger than the best hemp, the sizes being equal. The strength of Manilla is about one half that of hemp.

Reading and Speaking.

Always when you read or speak, learn to preserve an erect attitude. When you blow through a flexible tube, the air is expelled with more quickness and facility when the tube is straight than when crooked. From the same principle the windpipe, which conveys the breath from the mouth and nostrils to the lungs, and from thence again outwardly, should always be retained in an even and open position. When you read in your chamber never decline your head or body towards the table, but sit upright, and hold the book or paper on a level with your breast. When you speak in public let the whole weight of your body rest upon your legs alone. Keep your throat and nostrils always clear and open. These are the passages through which the breath and voice are expelled, and the smallest obstrustion in them produces an effect similar to what we find in an instrument from the same cause. Those who are not accustomed to expel their breath with the same freedom through the nostrils as through the mouth, pronounce the three nasals—*m*, *n*, and *ng*, very imperfectly, which produce that dull, disagreeable sound which we call snivelling, or speaking through the nose. The latter term is entirely wrong, because it is the defect of *not* speaking through the nose which occasions that impropriety in articulation.—Sometimes this habit arises from an excess in taking snuff, which ought always to be avoided by a public speaker or singer.

Cement.

Ashes 2 parts, clay 3 do, sand 1 do, mixed with oil, will resist the weather equal to marble.

Brown Mortar—One third Thomaston lime, two thirds sand, and a small quantity of hair.

Lime and sand, and cement and sand, lessen about one third in bulk when made into mortar.

Digging.

23 cubic feet of sand, or 18 cubic feet of earth, or 17 cubic feet of clay, make a ton.

18 cubic feet of gravel or earth before digging, make 27 cubic feet when dug

To Exterminate Bugs.

Saturate the parts infested thoroughly with camphene and flour sulphur, and you will not be further annoyed with those troublesome insects. Try it.