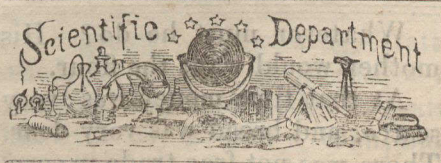

ARSENICAL POISONING.

Prof. S. A. Lattimore, of the University of Rochester, delivered a valuable lecture on "Arsenic in the Arts as a cause of Arsenical Poisoning," before the Medical Association of Central New York at its meeting in Rochester, May 16th. It is full of facts of moment to every household and every person, and deserves the widest circulation that can be given it. We extract from it several statements of the most immediate practical importance to our readers:

"Until recently the chief use of arsenic has been for the manufacture of colors. Combined with sulphur, it yields two sulphides—yellow arsenic or orpiment, and red arsenic or realgar. The splendid emerald green color produced by combining arsenic with copper, or the acetate of copper, on account of its unparalleled brillancy, and its permanency, has won its way to popular favor, despite its poisonous character. The arsenic of copper, or Scheele's green, contains 55 per cent. of white arsenic and the aceto-arsenite, or Schweinfurt green, 58 per cent. The latter color is also known in commerce by a bewildering number of aliases, such as imperial green, emerald green, mineral green, Brunswick green, Vienna green, Vert de Montagne, &c. A painter recently told me that he did not use emerald green because it was poison, but he used in its place Vert de Montagne. He was deceived by a name.

"On account of the insolubility of these arsenical pigments in any fluid which does not decompose them, they cannot be employed as dyes. Their use is therefore limited to cases where they can either be fixed upon the fabric or incorporated into its substance during the process of manufacture. They are also used both as oil and water colors.

"A cake of Windsor and Newton's emerald green water color, which I recently had occasion to analyze, contained nearly 40 per cent. of arsenic—enough to kill ten people.

"In the dress goods known as green tarlatan, the color is emerald green, simply fixed upon the fabric with starch or size. Bright green artificial flowers are colored in the same manner. In decorative and wall papers, and card board, the color is spread on one side of the paper, the surface being left dull or glazed as may be desired.

"In writing paper the color is mixed with the pulp and thus is incorporated into the texture. In such paper the vivid green is usually toned down by some white powder to a pale sea-green.

"The aniline colors are obtained indirectly from coal tar, but directly from 'aniline oil,' by treating it with certain re-agents. The majority of manufacturers prefer arsenic, notwithstanding the danger of poisoning to which the workmen are exposed and the difficulty of disposing of large volumes of poisonous residues. In some manufactories in Europe one hundred tons of arsenic are thus consumed in a single year. The beautiful color fuchsin, when made according to the French mode, is said always to contain arsenic, and since this color is the basis of nearly all other aniline colors, it is readily seen that at least a large number are liable to be poisonous. Yet we wear it in our apparel, we eat it in sweetmeats, we drink it in syrup, we write with it as ink.

"In calico printing, of late, arseniate of alumina has been extensively substituted for albumen, and arsenic acid for the more costly tartaric acid. A crude arsenical ore, or 'black arsenic,' is often sold as 'fly powder,' or even 'cobalt,' and used in the household for destroying flies. Lead shot contains arsenic, which is added to improve the spherical shape. In pyrotechny red arsenic is used in Indian fire or Bengal white fire. The transparency of glass is improved by adding a little arsenic. An arsenical soap is used by taxidermists to preserve the skins of stuffed animals. Hence you often leave a museum with a headache—slightly poisoned. A mixture of lime and yellow arsenic is used in dressing skins to remove the hair or wool. Shepherds use an arsenical mixture sometimes for 'dipping' sheep. Yellow arsenic is used in India in preparing shellac for the market. Both the yellow and green pigments are used—less commonly than formerly—in coloring children's toys and candies. In solutions for bronzing, workmen often employ arsenic, from which they suffer greatly. Candles are often colored green or yellow by arsenical pigments, and sometimes the wicks are saturated with arsenic to improve the brilliancy of the light.

"In the late war with insect invaders, farmers have sought in a variety of poisons a means of protection. White arsenic has been used to a limited extent, but a wholesome fear of its deadly character has checked its popularity. The most successful competitor for popular favor has been Paris green, which is only another *alias* for the aceto-arsenite of copper, or the emerald green of the painter. If pure, Paris green should contain 58 per cent. of its weight of white arsenic, but it is usually liberally diluted with sulphate of baryta. The samples which I have had occasion to analyze have contained from 11 to 27 per cent. of this heavy, harmless make-weight. The quantity of this poisonous powder used in the Western States is enormous. More than a ton has been sold in a single small village in a year. Numerous instances of more or less serious poisoning by Paris green, from inhalation of the dust and from cutaneous absorption, especially where there has been abrasion of the skin, have been reported.

"The compounds of this element are marked by two singular characteristics. Most arsenical compounds, excepting those of the alkalies, are insoluble, and yet they react at once, and powerfully, whenever applied to the mucous membranes or introduced into the blood. They rapidly pervade the system, soon appearing in the liver, in the renal excretions, and pervading the nervous matter and even the brain. In other cases, long after the tissues have suffered decomposition, the bones have yielded up their testimony, under the inquisition of chemistry, in the shape of absorbed arsenic."—*Methodist.*

BEWARE.

Some good mothers fly to the camphor or peppermint bottle on the slightest provocation. Camphor is the more dangerous drug, but both are capable of destroying life. As generally used in the form of an alcoholic tincture, their potency is in no wise diminished, but rather increased, by the addition of another poison.

Peppermint oil, from which the essence is made, is a powerful stimulant, and its capacity for harm is by no means inconsiderable. Ulceration of the stomach has been induced by it, and many diseases have followed its habitual use.

Camphor is a poisonous gum-resin, capable of readily inducing great nervous irritation. When taken in small doses it has much the effect of alcohol or opium. In large doses it occasions spasms and death. In any appreciable amount it irritates the mucous membrane of the stomach, and leads to constipation and ulceration. Even a few doses of this drug may lead to incurable dyspepsia. Yet thousands of families fly to the camphor bottle for relief from every variety of pain.

It were a thousand times better that every camphor bottle in the land should be broken rather than that its contents should be indiscriminately employed. The potent drug ought never to be administered internally except by a competent person, familiar with its power.

It would be a good thing if mothers could learn to depend upon water,—cold, tepid or hot,—to relieve a very large percentage of all bodily pain. There is nothing so innocent; nothing so effectual. Cold water is the most powerful local anæsthetic known. The pain of a sprained limb is quickly relieved by ice-cold water.

Arsenic Hangings.—Prof. Lattimore said recently, in an address before a medical association in Western New York: "The, slight manner in which the arsenical color is laid on wall-paper, shows how easily it may be detached and go its way to mingle with the general dust of the room. Indeed, the arsenic has actually been detected by chemical means, in the dust from the furniture of rooms hung with such paper. The possibilites of small quantities of arsenic entering the system accidentally must be apparent, when we observe the extended use made of the arsenical colors. The green paper meets us everywhere, on the walls, on paper-boxes, labels, cards, tickets, stationery, paper lamp-shades, from which the arsenic is often volatilized by the heat of the lamp. I have perceived the character stic odor of volatilized arsenic in lighting the gas with a wisp of arsenical letter paper. Such articles are constantly in the reach of children, and of adults, ignorant as children of the dangerous character of the articles they are handling. Who, knowing that a cake of emerald green—the favorite among all the colors—contains more than one-third of its weight of pure arsenic, would allow his children to use it unwarned? The use of green tarlatan in protecting chandeliers, picture-frames, and mirror-frames, brings a dangerous article in the house. Not long since I saw, in a summer hotel, the dinner table protected, in the interval between meals, by a voluminous net of green tarlatan, from which the arsenical powder was sifting upon the cloth and into the dishes at every touch. Has the time not come when this broadcast sowing of a dangerous and often unknown poison should be in some manner arested."—*Methodist.*

The Cruise of the "Challenger."—After a voyage of three years and a half around the world, the *Challenger* returned to England, May 24. Our readers have been informed, from time to time, of the interesting deep-sea discoveries made by the party under Professor Wyville Thompson. The expedition has been thoroughly successful, the only drawback being the untimely death of Dr. Willemöes-Suhm. The *Challenger* traversed a track of 69,000 miles, and established 362 observing stations, at all of which the depth has been ascertained with the greatest possible accuracy, and at nearly all the bottom temperature has been taken, a sample of the bottom water has been brought up for physical examination and chemical analysis, a sufficient specimen of the bottom has been procured, and the trawl or dredge has been lowered to ascertain the nature of the fauna. At most of these stations, serial soundings have been taken with specially devised instruments to ascertain, by the determinations of intermediate temperatures and by the analysis and physical examination of samples of water from intermediate depths, the directions and rate of movement of deep-sea currents. Explorations of Juan Fernandez, a week's visit at Montevideo, were made before the vessel sailed for home by way of the Cape Verd Islands. *A Narrative of the Cruise of the Challenger*, by Professor Thompson, in two volumes, is announced by *Nature* as in an advanced stage of preparation.—*Editor's Scientific Record, in Harper's Magazine for September.*

Electric Light for Illumination at Sea.—The steamship *Amèrique*, of the General Transatlantic Steam-ship Company, has been provided with a new electric light for the purpose of illumination at sea. The apparatus used is one of M. Gramme's electro-magnetic machines designed for illuminating purposes. The propelling power is a small but powerful engine. The lamp consists of two pointed coke pencils, four or five inches in length and one-half inch square, kept at the proper distance from each other by a clock-work arrangement, and which will last some four hours. The light, it is affirmed, is visible at sea at a distance of fifteen miles, and lights the ship so perfectly that all the details of her equipment and rigging can be plainly seen at a distance of over a mile. The especial design of the lamp is to afford light for working the ship. The *Amèrique* is the first vessel that has been equipped with the light, and the system is said to work with the greatest satisfaction.—*Editor's Scientific Record, in Harper's Magazine for September.*

Let the Water have Air.—We are now beginning to learn that, up to a certain point, the value of water for non-lung breathing aquatic animals does not so much depend on the amount as upon its distribution in such a manner that it shall absorb the greatest quantity of atmospheric air, or rather of the oxygen which enters into the composition of that air, leaving much of the nitrogen unabsorbed. The earliest observer known to me of this fact was the late Dr. R. Ball, who in Bell's *British Crustaeea*, records how much better he kept a crayfish (Astacus) in a shallow vessel than in a deep one. In all my aquarium work I keep this law in view, and I regulate the amount of surface of water exposed to air, as well as the actual quantity of water, according to the known requirements of the animals to be kept; and the result is very surprising both as to the health of the creatures, and in the saving of the money cost of constructing and maintaining an aquarium.

The Most Useful Drugs.—According to the *London Medical Times and Gazette*, a party of ten medical men were dining together not long since, and one of them started this question, that, supposing all present were limited in their practice to a selection of six pharmaceutical remedies, which would be chosen as being the most useful compound drugs to be excepted. Each of the party wrote the names of the six drugs he should select, and handed to the doctor who started the enquiry. On examining the lists it was found a majority of votes were given in favor of opium, quinine, and iron; between mercury and iodide of potassium the votes were equally divided, as they were also between ammonia and chloroform.—*Journal of Chemistry.*

How to See Sound.—A curious little instrument has lately been invented called the opeidoscope, which may be said to write down witn a pencil of light, any sound produced within it. It is composed of a two-inch tube, on one end of which a piece of thin rubber, or tissue-paper, is pasted. In the centre of the rubber, or tissue-paper, is fastened a small piece of looking-glass—it should be about an eighth of an inch square. When the opeidoscope is made, hold the end with the mirror in the sunlight, and the other in the mouth, so as to sing or speak in it. The ray of light reflected from the mirror falling on a white surface, will describe curves and patterns differing for every pitch and intensity. The same tones will give always the same results.

How not to Overwork.—A health journal says: The best recipe for overworked men is for them to drill themselves to work slowly, and let them begin by learning to eat slowly. When they come to the table let them throw aside care and trouble, greet their friends with pleasant words and smiles, and make the hour one of true delight. Having once learned to eat slowly, let them, as will now be easy, do other things with deliberation, calmness, moderation. It will soon become a habit, and when once well established, it will make life more sweet, and lengthen it to nearer what Nature intended.

Physical Development.—There is nothing of such transcendant importance to a race or nation as *physical stamina*—strong, vigorous, healthy constitutions. How did the Germans, in the late war, gain such signal victories over the French? Why do that people now stand at the head of all the European nations in power and statesmanship? Why do the Germans take the lead at the present time in the cultivation of the sciences, and in almost every department of literature? Is it not owing to their grand *physique* more than to anything else?—*Dr. Allen's Address.*

—The custom of sending telegrams, or rather written copies of them through pneumatic tubes, is making progress in actual use, its most extensive application, however, being made in Paris. The telegram after been written by the sender is sent through a tube to whatever part of the city is designated, there being quite a number of these tubes laid down. French ingenuity, about as soon as the pneumatic system was devised, invented a scheme for taking advantage of it. Twenty words make up the shortest message, and the senders write sixty or seventy words on the blank and then cross out enough to bring the number below twenty. The crossing out is done so lightly that the erased words are perfectly legible, and thus the ingenious Frenchman is able to send a message of much greater size as a "twenty word message." The receiver getting the original paper can read the whole message, as he understands the trick.

—As hoop skirts have suddenly gone out of fashion, manufacturers have on hand immense quantities of crinoline steel which they do not know what to do with. Berthold, of Dresden, Germany, has found that brushes made from this material preserve their sharpness longer than wire brushes, or even coarse files, and are the very best tool to remove slag and iron oxide from iron castings, which are often incrusted when removed from the mold. The usual way of removing them was with a file, but the crinoline steel has proved superior, and its use is now being introduced all over Germany.

—Water which has been kept for some time in the state of ebullition does not make so good an infusion of tea, as water "just upon the boil." A reason for this is suggested by a writer in the *Chemical News*, who says that the escape of dissolved gases might possibly account for the inferiority of tea-infusion made with long-boiled water. To test this, he passed for ten minutes through boiling water a stream of carbonic-acid gas, and then made an infusion of tea with it. The result was decidedly better than when water was employed that had boiled for the same length of time without the addition of the CO.

DOMESTIC.

—A farmer in the Eastern part of the State of New York buried four or five jars of butter last summer as an experiment. He removed one jar the other day and found the butter as nice and sweet as the day it was buried. His plan was to get a good sound jar, fill it with butter, tie a cloth over the top, put in a layer of salt about an inch thick, and tie a strong cloth over the mouth of the jar and bury it four feet under ground, mouth down.

—In order to preserve tomatoes through the year, it is not necessary to resort to the expense of canning them. If stewed in the ordinary manner, but without butter or crackers, only a little salt and sugar, they can be put into jugs, two-quart or gallon, according to the size of the family, and if corked up tightly they will keep for a year. To make assurance doubly sure, some melted wax may also be poured around the corks. Tomatoes may also be dried easily. Skinned and prepared with a little sugar they make a substitute for figs, and are sold under the name of tomato figs.

Fried Cucumbers.—A breakfast dish can be made of this vegetable, by paring and cutting them lengthways into pieces as thick as a dollar. Then dry them in a cloth. Season them with pepper and salt, sprinkling them thick with flour. Melt butter in a pan, and when it is at boiling point, put in the cucumber slices, and fry light brown. Send to table hot.

Baked Tomatoes.—Tomatoes are very nice baked in the oven. To prepare them, pour boiling water over the fruit to loosen the skin, which remove, and cut them in small pieces; season with salt and pepper, and a very little mustard if desired; then put them into a pan with crumbs of bread and butter; cover the pan with a plate and bake three-quarters of an hour. When done, mash all together and put them into another dish.