posed improvement, and advised the postmaster to go before the Appropriation Committee at Washington with the Supervising Architect and present the need of an appropriation for this purpose.

The improvement is needed, and we hope the new elevators will be such as not to endanger human life. We have had enough of these man-traps.—*The Dry Goods Bulletin.*

[There is certainly ingenuity enough among our inventors to contrive some appliance which will render elevators absolutely safe. Who will do it?—EDS.]

SOUTH AFRICAN ANTELOPES.

The sassaby, or bastard hartebeest, as it is sometimes called, is by no means an uncommon animal, although some few years ago it was only known through the means of a mutilated skin.

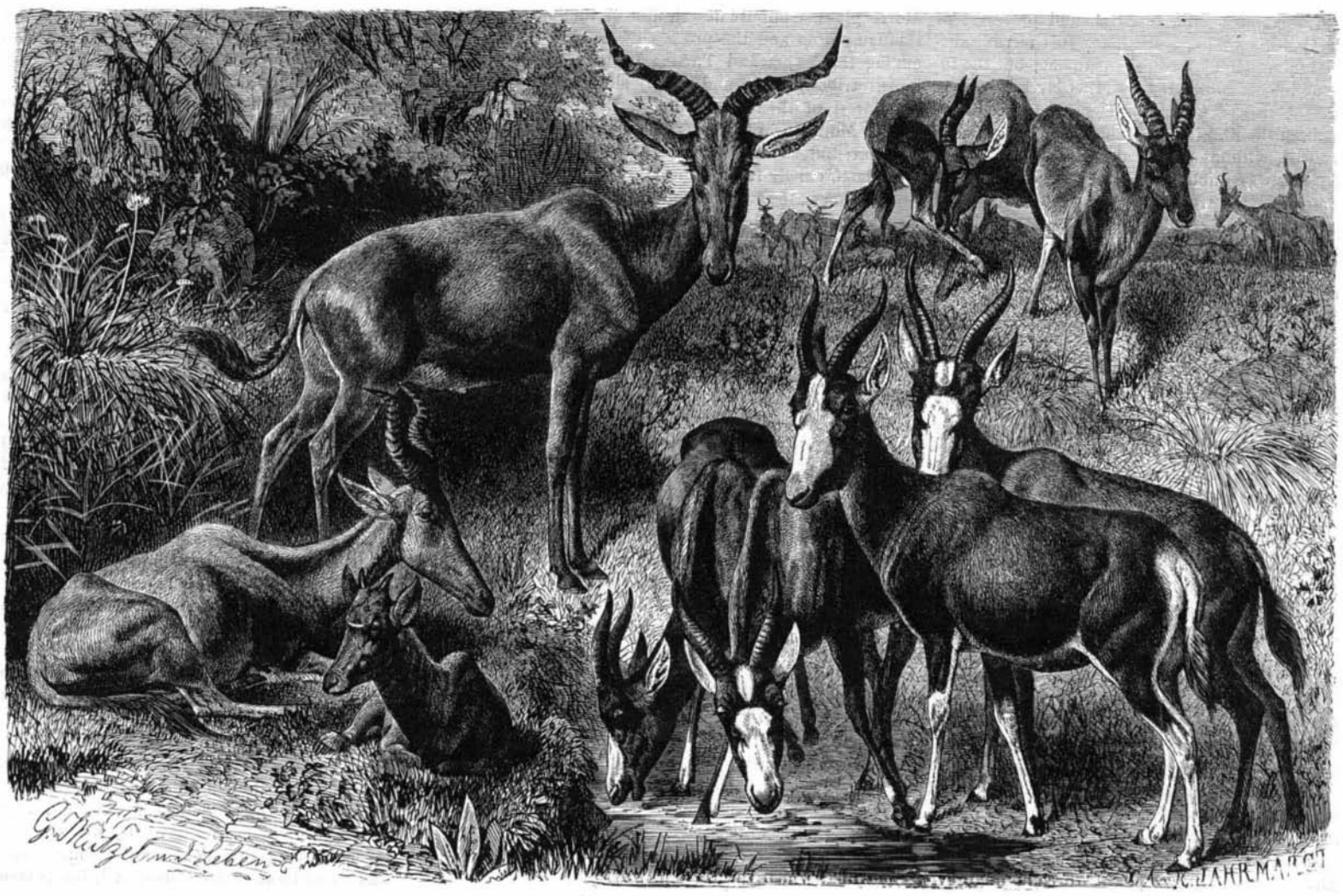
The general color of this animal is reddish-brown, the outer sides of the limbs being dark, and a blackish-brown stripe passing down the middle of the face. Sometimes the body is washed with a bluish-gray. It lives in small herds of six or ten, in the flat districts near the tropic of Capricorn, and is a most welcome sight to the wearied hunter when perishing with thirst. There are many antelopes which are almost independent of water, and can quench their thirst by means of the moist roots and bulbs on which they feed. But the sassaby is a thirsty animal, and needs to drink daily, so that whenever the hunter sees one of these animals he knows that water is at no great distance. It is rather persecuted by the hunters, as its flesh is in great esteem; but as it soon becomes shy and wary, it is not easily to be killed.

Concerning one of these animals, Cumming gives the following curious anecdote: "Having shot a sassaby as I watched the water, he immediately commenced choking from the blood, and his body became swelled in a most extraordinary manner; it continued swelling, with the animal still alive, until it literally resembled a fisherman's float, when the animal died of suffocation. It was not only his body that swelled in that extraordinary manner, but even his head, and legs down to his knees." The poor animal must have been shot through the lungs in such a manner that the air was forced by its efforts at respiration between the skin and flesh, until it assumed that puffy aspect.

The regularly lyrate horns of the bonte-bok, or nunni, serve to distinguish it from its congener the sassaby.

The color of the bonte-bok is a purplish-red, the outside of the limbs deepening into a rich blackish brown, and contrasting strongly with the white hair which appears upon the face, the haunches, and front of the legs. From the vividly contrasting tints of the coat, it has derived the name of pied antelope, or white-faced antelope. The female is not so highly colored as the male, and the throat and under parts of the body are white. This animal is found in the district that borders the colony at the Cape of Good Hope, and lives in little herds of six or eight in number. Herds of much larger dimensions are said to be found in the more northern district. The height of the bonte-bok is nearly four feet at the shoulder, and its length is about six feet, being thus superior to the common stag in size. The horns are black in color, and are furnished with a series of ten or twelve half-rings in their frontal surfaces. Their length is about fourteen or fifteen inches.

The bless-bok (*Damalis albifrons*) has sometimes been confounded with the bonte-bok; there is, however, a marked distinction in the color of the coat. The name, bless-bok, or blaze-buck, is given to this animal on account of the "blaze" of white upon the face, and is equally applicable to the bonte-bok.



Sassaby.—(*Damalis lunatus.*) Bonte-bok.—(*Damalis pygarga.*) Bless-bok.—(*Damalis albifrons.*)

SOUTH AFRICAN ANTELOPES.

The Sponge Fishery of Greece.

The sponge fishery, one of the most profitable occupations, is carried on round the island of Kalimnos by the Hydriots, Speziots, and Kranidiots, who have obtained the highest reputation as divers in this dangerous trade. They go in small boats to the places where the sponges are believed to grow upon the rocks, and then scatter over the sea surface a mixture of oil and fine sand. The sand, of course, sinks, but the oil forms an ever-spreading layer, through which can be seen, as clearly as in a mirror, the places where the sponges lie. The diver carries a large knife in his mouth, and fortified internally by a glass of schnapps, drops over the side, sinking himself by means of a large stone. At the sea bottom he cuts off all the sponges in reach and crams them into a bag, emerging in a short time with his booty. In recent years diving bells have been introduced, consisting of caoutchouc bags connected with the air by means of a pump.

When first obtained the sponges are enveloped in a gelatinous slime. To remove this they are spread on a sandy beach above high water mark, and covered with the sand brought by the tides. This was always the plan in former days. Now sponges are frequently bleached with sulphurous acid or chloride of lime, and sometimes even with potassium manganate and hydrochloric acid.

Thousands of dollars are annually brought to Greece by the sponge fishery.

The Culture of the Rose.

Among other most excellent articles in the June number of *Scribner's Monthly*, is the following on the propagation of roses, which is both timely and instructive:

Every rose will not come from the slip. Of the three great divisions into which the rose family is separated, viz., the damask, the noisette, and the tea, the last two may be propagated with more or less readiness from the slip, or by budding; the first only by dividing the roots, and planting the seed, which latter method is resorted to, however, only when it is desired to obtain new varieties.

The best season for taking rose slips is in June, just after the profuse bloom of early summer is over, although a person who knows exactly how to cut a slip may find good cuttings throughout the warm months. Judgment and discernment are needed for the selection at all seasons I know a generous lady who sent her friends immense armfuls of boughs, with hardly a real cutting upon them.

One should choose from a good vigorous branch of last year's growth a fresh shoot, containing two or three buds, such as will always be found more or less swollen at the base of the leaf stems. It should be cut from the parent branch diagonally, with a smooth, clean cut that will bring off a little of the old bark as well, in order to make the condition as favorable as possible for the formation of roots.

Have ready a box or pot of rich mould. With a round, pointed stick, make a hole several inches deep, and fill it up with clean sand; insert the end of the slip in this sand to the depth of one or two inches; be sure to make it firm in the soil, and the sand acting as a percolator for moisture, you may keep your slip well watered. You can soon see, by the swelling of the buds and the dropping off of the old leaves, whether the slip is indeed taking root, but do not attempt to remove it to the place where you would wish it permanently to remain, until it has put out several sets of new leaves.

An ingenious way to raise a set of slips has been recommended by Mrs. Loudon, which we have tried with unvarying success. It is to take an earthenware flower pot, gallon size, and fill it more than half full of broken potsherds, pebbles, bits of slate, or such things; now set in the middle, on top of these refuse materials, another similar flower pot, half pint size, with the hole at its bottom stopped up tightly with a cork; let its mouth be even with that of the large, outer one; fill up the interstices with silver sand or other pure sand, and set in a row of slips all around, cut according to the directions given above. Keep the inner pot full of water all the time, but do not water the slips directly. In about six weeks your slips will have fine roots, and can be potted. A hand glass always hastens the process of rooting, and enables you to take advantage of the sunshine, but if you are not provided with one, be careful to keep your plants in the shade until they show certain signs of independence of life.

Roses need very rich soil to bring them to perfection, thriving best in a mixture of well-rotted manure, sand, and garden loam, and to stint them of nourishment is indeed poor economy.

A Luminous Sea.

Last February the French ironclad L'Armide passed through a considerable stretch of milky or phosphorescent sea between Point de Galle and Aden. Lieutenant Pornain reports that the nights of February 9, 10, 12, and 13 were characterized by the phenomenon in all its splendor, the ship during this time traversing 660 miles (1,100 kilometers) in a mean latitude of 12° north, between the meridians of 61° and 51° east longitude. There was no thunderstorm, the sky was clear, the moon new, the barometer, thermometer, and hygrometer were regular, and a gentle northeast monsoon was blowing. The temperature of the surface of the water was constant at 25°. The sea was like a snow covered field in a clear night, and all traces of undulations were lost sight of. The milky look was hardly disturbed by the motion of the ship and working of the screw (which shows that the layer had considerable thickness). By day all disappeared; but the hue of the sea was somewhat

altered. Looked at attentively over the ship's side at night the water was seen to contain an enormous number of luminous particles pressed close together, and more brilliant close to the side (where disturbed). Some four hundred of these corpuscles, one to two centimeters long, could be counted in a bucket holding ten liters of the water. Drawn out, these were seen to be of gelatinous substance, which quickly dried and disappeared, leaving a dark globule one millimeter in diameter, which, in the microscope, presented a transparent ovoid animalcule, filled with eggs, and moving its fins and tentacles incessantly. A drop of water added to the dark globule brought back its luminosity; and when the creature was bruised in the hand, it gave a bright mark, which was quickly extinguished, and which had no smell. The milky water, kept till day and looked at in the dark, shows no luminosity, even though agitated; nor does the water procured by day and brought into darkness. It remains to be determined what causes the luminosity of those animalcula, and information is also desirable as to the position of the various milky seas on the globe, the times of their appearance, whether they persist in the same place or not, etc. Several of the officers on board the Armide had witnessed the phenomenon before, but never so brilliant or so continuous. The Armide, in going out, had passed thirty leagues further north in February, 1878, without encountering anything of the kind.

New Treatment for Cancer.

The *Lancet* calls attention to an important series of investigations conducted at the Queen's Hospital, Birmingham, as to a new method in the treatment of cancer, by Mr. John Clay, obstetric surgeon to the hospital, and professor of midwifery at Queen's College. Hitherto this terrible disease has proved incurable by medical treatment; but the inquiries and experiments conducted by Mr. Clay lead to the belief that by the use of Chian (or Cyprus) turpentine—which he has been the first to use—cancer can be not only arrested, but cured, without a surgical operation.

Mr. Clay's paper was published in the *Lancet* of March 27. He recommends his treatment especially in cases of cancer of the female generative organs. He says that he had made extended trial of various remedies, both general and local, but at last concluded that if cancer could be cured it must be by medicine administered internally, and must be of such a nature that it could be taken for a long time without affecting special functions or general nutrition. A study of the pathology of cancer led him to the opinion that a carbo-hydrate of some kind might prove beneficial, and for several reasons he decided that Chian turpentine might prove the most suitable. An opportunity was soon presented. A woman, aged 52, came to the hospital with cirrhous cancer of the cervix and body of the uterus. "Hemorrhage was excessive, pain of the back and abdomen agonizing, and cancerous cachexia well marked. The patient evidently had not a long time to live. In such a case it appeared to be justifiable to attempt to relieve the sufferings of the patient, even if the remedy should produce unfavorable symptoms, or should prove of no avail. I therefore prescribed Chian turpentine, six grains; flowers of sulphur, four grains; to be made into two pills, to be taken every four hours. No opiates were prescribed or lotion used. No change was to be made in her diet or occupation. On the fourth day after taking the medicine the patient reported herself greatly relieved from pain, and was in better spirits, but she complained of a large amount of discharge. It was feared that she referred to a discharge of a sanguineous nature. On examination, however, the vagina was found to be filled with a dirty-white secretion, so tenacious as to be capable of being pulled out rope-like, and this, although she had syringed herself three hours previously." The medicine was continued for twelve weeks with excellent results and every appearance of a cure being probable. At the end of that time she suddenly left the town and left no address.

The second case was a younger woman, aged 31. In this instance the cancer appeared to be melted away by the turpentine in four or five weeks.

Mr. Clay reports several other cases in which remarkable benefit evidently resulted, with every prospect of permanent cure. Some cases have been cancer of the breast, abdomen, etc. In a case where the turpentine could not be digested in pills, it was made into an emulsion by Mr. Whinfield, dispenser to the hospital, as follows: An ethereal solution of Chian turpentine was prepared by dissolving 1 oz. of the turpentine in 2 oz. of pure sulphuric ether (anæsthetic). The ether dissolved the turpentine instantly. Of this solution, ½ oz.; solution of tragacanth, 4 oz.; syrup, 1 oz.; flowers of sulphur, 40 grains; water to 16 oz.: 1 oz. three times daily.

Mr. Clay remarks that "ordinary oil of turpentine, if it produces any effect on cancer, is inadmissible on account of the speedy production of its specific effects, even when administered in small doses. The same remark applies with less force to the Venice and Strassburg turpentines; in my hands they have not produced the same beneficial effects on cancerous growths as the Chian turpentine has done. The maximum dose of the last named drug, which can be safely and continuously given, is twenty-five grains daily It is advisable to discontinue the remedy for a few days after ten or twelve weeks' constant administration, and then to resume it as before. The combination with sulphur was given at first, and has been continued. It is doubtful whether much benefit is derived from the combination, but the effects have been so uniformly good with it, that it was thought advisable to contiuue its use. There is every reason to believe, from the trials made with other substances in combination with the turpentine, such as carbonate of lime, iodide of calcium, ammoniated copper, quinine, bebeerine, hydrastin, etc., that the turpentine is best administered simply, as the most marked and rapid effects have always been manifested when it has been given alone.

"The turpentine appears to act upon the periphery of the growth with great vigor, causing the speedy disappearance of what is usually termed the cancerous infiltration, and thereby arresting the further development of the tumor. It produces equally efficient results on the whole mass, seemingly destroying its vitality, but more slowly. It appears to dissolve all the cancer cells, leaving the vessel to become subsequently atrophied, and the firmer structures to gradually gain a comparatively normal condition.

"It is a most efficient anodyne, causing an entire cessation of pain in a few days, and far more effectually than any sedative that I have ever given. In the cases I have described no sedative was employed in any instance, although in some cases where great pain had existed previously to commencing the treatment, large doses had been given. Whether this arrest of pain arises from the death of the tumor, or, as my son suggests, is due to there being no longer irritation of the sentient nerves (in consequence of tension being withdrawn by the removal of the cells), the fact is the same."

How Ramuau Poison is Made.

In a letter to the *World* from the interior of Peru, Ernest Morris gives a minute description of the ingredients of the ramuau poison and the process of making it, as practiced among the Yajua and Tucuna Indians. These two little-known tribes prepare and supply all the poison used by Indians west of the river Japura in Brazil to the headwaters of the Maranon in Peru. This poison is sometimes called woorara; but the true woorara is prepared by the Indians of Guiana, chiefly from a species of strychnos, while in the preparation of the ramuau poison Mr. Morris is positive no strychnos is used.

During his stay with the Yajuas, Mr. Morris was permitted to accompany the Indians while collecting the plants and roots from which the poison is brewed; but his knowledge of botany is too limited to enable him to describe them scientifically. The following were used, the names being spelled as they are pronounced by the Yajuas.

No. 1. Ramuau.—This is the principal ingredient. It is a sepoy or climbing woody vine, varying from two to four inches in diameter, and is covered with a thin yellowish bark, which is exceedingly bitter to the taste. The leaves are very large, oblong, and deeply veined, and are of a light green color. The fruit and flower both unknown. Is a native of high land. The bark alone is used. No. 2. Wagana.—A large vine from four to six inches in diameter, with very small heart-shaped leaves, a native of low, flooded lands. It is very abundant. The roots alone are used. No. 3. Tuna.—A small tuberous plant with thick, glossy green leaves and beautifully variegated stalk, a native of low lands. The roots alone are used, and emit a very powerful and disagreeable odor, reminding one of asafœtida. No. 4. Rú-úmi.—A small bush with light green foliage, growing to a height of two feet, a native of low land. The bark and roots are both used, and are extremely bitter. No. 5. Cenu.—A very large bush with long, narrow-pointed leaves and very small white flowers, which are borne in clusters of three at the ends of branches. It is a native of high land, and is also bitter to the taste. The bark only is used. No. 6. Ne-wa-tu.—A small tree growing about twelve feet high. The trunk, which varies from two to five inches in diameter, is covered with a thin, light-green bark. The leaves are oblong and of a dark green. It is a native of high land. No. 7. No wu se; No. 8. Pupetu; No. 9. Ramre.—These are all small trees, the bark of which is used. No. 10, Mucutu, and No. 11, Newatu, are small shrubs. No. 12. Ramawe.—A bush attaining the height of three feet, with alternate fleshy, dark green leaves, which, upon being pressed, yield a whitish liquid, which, mixed with No. 9, gives to the poison that intensely bitter taste which it possesses when fresh. No. 13. Yellow peppers.

Many of the ingredients used in preparing this poison could, in Mr. Morris's opinion, be dispensed with. From four to six days are required to make one little pot, or two tablespoonfuls, of the ramuau. After the Indians have obtained a sufficient quantity of the plants and roots—and one would be astonished at the number they collect—they sit down on the floor, and both men and women carefully scrape the bark from the vine ramuau (No. 1), the principal ingredient. The bark is thrown into an earthen vessel, after which it is beaten and then pressed. It yields a whitish liquid, strong smelling and very bitter.

This liquid is put into a small earthen pot, conical in shape, and a great curiosity in itself, and suspended by a cord about eighteen inches above a slow fire. After a few hours Nos. 2 and 4 are added, after they have been treated in the same manner as No. 1. After the second day the mixture becomes almost black, and has the consistency of molasses. All this time it is very carefully watched by the Indians, who now and then taste it. Great attention is paid to the fire beneath the pot, for if the poison becomes the least scorched or burnt it is entirely worthless. After thirty-six hours No. 6 is added. During this time he had repeatedly tried the strength of the poison upon frogs. Grasping the animal by the hind leg he would, with a sharp-pointed stick, insert the fresh poison into the foot, but without any effect. But when tuna (No. 3) was added, the poison became very black, and, upon tasting it, he fouud that even if it was not strong enough to kill the frog, it was strong enough to take all the skin off his tongue.

This was now left to simmer for about ten hours, when the Indians tried its strength upon frogs, which are the hardest animal to kill with this poison. A few moments after being pierced with the poisoned arrow the animal died—too quickly, my interpreter said. So the Indians added one ingredient after another, the last being the small yellow peppers. Again and again they experimented, and when the frogs made one or two hops and then died, the poison was pronounced complete.

The poison made by the Tucuna and Yajua Indians is put in little earthen pots, made expressly for it, and never in gourds. These pots are hidden in the damp woods, where the poison does not become hardened. Often the poison is so strong as to be almost worthless, as birds and game shot with arrows tipped with it prove unfit to eat, and in a few hours putrefy.

ENGINEERING INVENTIONS.

It is well known that the cause of smoke is that the fresh air, entering the incandescent coal from below through the grate, has often all its oxygen consumed before it has passed half way through the layer of coal, so that the upper part of the layer cannot burn, but is simply heated by the underlying incandescent coal, while the products of the combustion of the lower layer of burning coal pass through the upper heated and not-burning layer, and carry with them the combustible gases evolved by the heat, but which cannot take fire for the want of free oxygen. In order to furnish these combustible gases ascending through the upper layer of coal with the necessary oxygen to burn, Mr. Benjamin F. Sherman, of Ballston, Spa, N. Y., has devised a means of introducing air in the furnace with a downward injection upon the fire by a vertically adjustable arrangement of pipes, which may be placed close to the coals or further from them, according to the requirement of the case.

Mr. John U. Sumpter, of Lynchburg, Va., has patented an improvement in the class of axle journal lubricators whose action depends upon capillary attraction, the vehicle for conveying the lubricant to the journals being fibrous material, such as felt, tow, cotton, or fabric of some kind. This invention relates to the means for holding the fibrous material and supporting it in contact with a journal.

An improved railroad gate has been patented by Mr. Samuel L. P. Garrett, of Lewisburg, Tenn. The object of this invention is to provide a railroad gate that an approaching train will open by the pressure of the flanges of the wheels upon a horizontal bar fixed parallel with the rails and rising a little above them.

Theories of Light and Color.

A good deal regarding light was known to the ancients. They knew the law of reflection and something of that of refraction, as shown by the reference of Seneca to the broken appearance of an oar when thrust into the water. Another phenomenon, that of the rainbow standing out in the sky as a sort of challenge to the human eye, could not escape detection. At one particular angle, as shown by Descartes, beams reflected by or emerging from a drop of rain were so welded together as to form a condensed sheath of rays, and it was in this condensed sheath that you saw the colors of the rainbow. Milton, in 1672, proved by the use of the prism, acted on by a beam of light thrown through an aperture in a window shutter into a dark room, that white light is not homogenal, but is composed of various constituents more or less refrangible, of which red is the least and violet the most refrangible. This premised, Professor Tyndall, by a series of beautiful and interesting experiments from apparatus managed by his assistant, threw upon a white screen disks of several colors in order to prove the true effect of intermixture. Thus the ordinarily received theory that combination of yellow and blue produces green was shown to be erroneous, the true effect of the combination of those two colors being, as proved to ocular demonstration, white. By the same means the true complementary colors were displayed. Fixing the eye on a white disk until the lecturer counted twenty and the special illumination of the disk was withdrawn, the spectator saw remaining the filmy semblance of the complementary color, black. Blue left orange, red left green.—*Professor Tyndall at the Royal Institution.*

What We Think with.

Without phosphorus, no thought. So declared a famous German physiological chemist, some years ago. That particular brain substance, which he supposed to be essential to thought, has heretofore been known as protogen with phosphoric acid. Considering this name not sufficiently clear and definite, another German chemist has proposed for it the following precise and significant combination of seventy-two letters: Oxaethyltrimethylammoniumoxydhydrateleylopalmethyloglycerinphosphorsaüre. If mental derangement is in any way due to deficiency in the elements of this highly complicated compound, or to any snarling of its multitudinous constituents, the wonder is that anybody can ever think straight. And what a lot of it that German must have had in his head when he contrived such a name for it!