east side of the island, a distance of 1,250 feet. The first work was done in October, 1870.

The main breakwater reaches at its northern extremity a depth of 18 feet, and contains about 65,000 tons of rip-rap. A detached pier, about 200 feet from the principal structure, is 300 feet in length, and contains about 28,000 tons of rip-rap. On the main breakwater there is a light-house near the 60 feet entrance to the basin. A mammoth basin has also been constructed, in which vessels drawing not more than seven feet of water may ride safely at anchor. There are contained in this structure 320,000 feet of timber (board measure) and 6,000 tons of stone. The total cost of the entire work was $285,000.

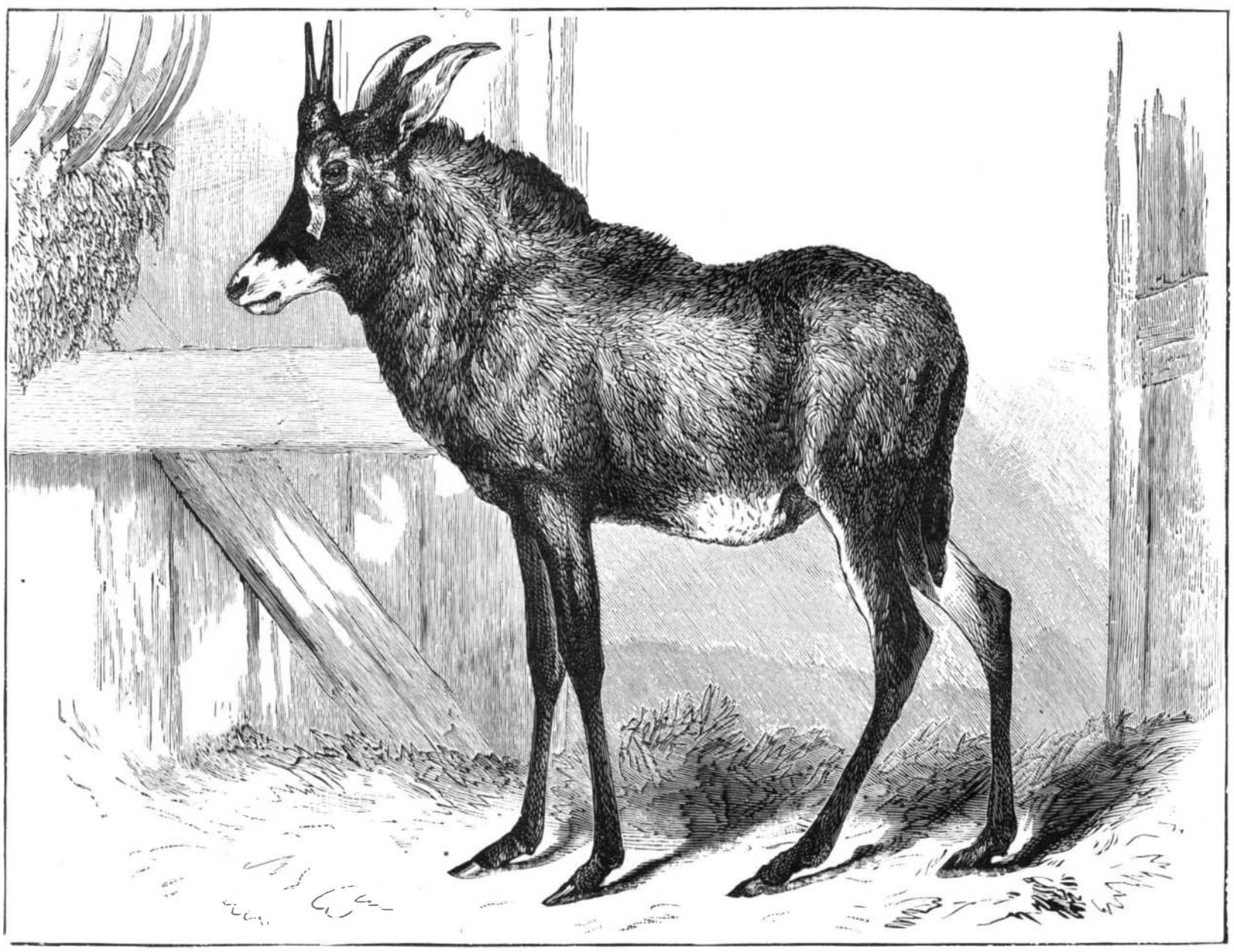
Block Island is an isolated island in the Atlantic ocean, about midway between Montauk Point, at the Eastern extremity of Long Island, and Point Judith, R. I. It is eight miles long and from two to five miles wide.

THE EQUINE ANTELOPE.

A young animal of this species, from Nubia, has lately been added to the collection of the Zoological Society, at the gardens in Regent's Park. There was a specimen brought to London some time ago, which unfortunately died within two or three days of its arrival, from disease contracted before. This one seems to be doing well, like most of the other antelopes in the collection, of which they form an important and interesting feature. The antelope genus of ruminating mammals, distinguished from the ox, the deer, the goat, and the sheep, includes nearly a hundred diverse species, the majority of which are natives of Africa; a few belong to Asia and Europe, while America has scarcely any true antelopes. Among the more conspicuous and familiar instances are the Persian or Arabian gazelle, the Indian nylghau, the ibex and chamois of the Alps, the eland, the gnu, the springbok and blessbok, and others, in South Africa.

The equine antelope grows to as large a size as the eland, sometimes measuring as much as 7½ feet in length and 4 feet in height at the shoulder, or the ordinary stature of a horse. Its color is a reddish-gray, with brown head and a white spot over each eye; the horns are large and heavy, round in shape, and marked with a series of rings, except toward the points, which are very sharp; and the entire horn curves backward when fully grown. This species is also found in South Africa, inhabiting the plains of the Transvaal and other elevated parts of the country.

We present an illustration of the individual specimen of the Nubian race which has taken up its abode in London.



THE EQUINE ANTELOPE.

A Telephone Concert.

One of the most successful, and, in some of its features, peculiar, telephone concerts ever held, lately took place at the Wesley Chapel, Columbus, Ohio. Mr. Sidney Short delivered, at the church, his lecture on the "telephone." The lecture was illustrated by charts and apparatus. During the lecture demonstration of the practical operation of the telephone was given, which greatly surprised, interested, and gratified the audience. The arrangements of the apparatus were as follows:

Four Edison transmitters were placed in the Western Union main office, and two Phelps crown receivers at the church, a quarter of a mile distant. The lecture was delivered in the Sunday-school room, which is 50 feet square. The crown receivers were placed at one end of the room, and were provided with paper cones 4 feet long and 10 inches in diameter at the large end. With the apparatus thus arranged, a solo sung in the Western Union office was distinctly heard by the audience. After this, Mr. George Makepeace, of the State University, gave a cornet solo. Every note was distinct, yet as sweet and low as though heard from a distance, and coming over still waters on a quiet summer eve. When "Great Deliverer, Come," by the Wesley Chapel quartette, came through the instrument, not only were the tones of different parts distinct, but even the words could be understood in every part of the room. As an encore, "We're Going Home To-morrow," was given. This, also, was clear and sweet. A cornet duet by Messrs. Makepeace and Hyatt, and, in response to an encore, "Old Virginia" was given with equal success. The musical programme was closed by the Doxology. After a short conversation with Mr. Ross, at the Western Union office, Mr. Short, in a glowing tribute to America's work on this, the invention of the age, brought his remarks to a close. Every word spoken or sung at the office was not only distinctly heard by the entire audience, but the voices of the speakers and singers were recognized, and could have been distinctly heard in a hall capable of seating a thousand persons.—*Journal of the Telegraph.*

Academy Notes.

The *Public Ledger* report of the recent meeting of the Philadelphia Academy of Natural Sciences, contains the following interesting items:

Professor Edward D. Cope stated that he had in his collection a large number of specimens illustrating the natural history of the extinct rhinoceros from the Loom Fork horizon and elsewhere in the West, where these remains form more than one-half of all the fossils found. Four distinct genera, anchisodon, hyrachodon, aceratherium, and aphelops, were described, and the species characterized. A beautiful specimen of an extinct skate, embedded in shale from Bear river, was exhibited and described. It belonged to a new genus of the family of trygons. The distinguishing characters are found in the teeth, which are like those of the genus raia, and in the spines of the tail, which are three in number, compressed and with one serrated edge. The name Ziphotrygon acutidens was proposed for the genus and species.

Professor Cope stated in this connection that, contrary to the assertion of Mr. Clarence King, no species of fossil fish was found common to the shales east and west of the Wasatch Range. The name Amyzon beds was given to the deposits west of the range, which were also found in the South Park.

Mr. John A. Ryder described a beautiful little crustacean found for the first time on this continent in the vicinity of Woodbury, N. J., by Mr. Seal, an indefatigable collector of the minute life of his neighborhood. The head is provided with robust claspers and two long, fleshy proboscis-like organs, which are coiled up between the claspers when at rest. The little creatures, which are about half an inch in length, are provided with eleven exquisitely delicate branchiæ on each side, by means of which they float gracefully on their backs in the water. The specimen was named Chirocephalus Holmanii, in honor of Mr. D. S. Holman, the Actuary of the Franklin Institute, from whom the specimen was obtained, in recognition of the services he has rendered in devising methods for studying living objects, both large and small, under the microscope.

Dr. Chapman exhibited and described the placenta of a species of monkey (Macacus cynomolgus) which was remarkable in being single, and thus differing from the placenta of the other Old World monkeys, except the chimpanzee.

Dr. C. N. Pierce called attention to a skeleton of a maori, dug out of the sand on the beach of Chatham Island, South Pacific Ocean, and presented to the Academy by Mr. Wm. H. Rau. He pointed out the fact that in the lower jaw the third molar was the largest instead of the smallest, as in civilized man, thus approaching the condition in the lower animals. Other peculiarities of dentition were noticed.

American Coal at the Mediterranean.

Since referring in our last issue to the fact that anthracite coal was advertised for sale in Geneva, Switzerland, we find the following item in the New York *Tribune:* The rumor that an Italian firm was negotiating in the United States for an immediate supply of 100,000 tons of coal, in place of obtaining it from England as heretofore, has caused uneasiness in London. A cargo of American coal reached

the Mediterranean sixteen months ago, and met with a ready sale, and more than twenty cargoes have been sent over since that time. The *Globe* apprehends that before long the coal industry of Great Britain will have to encounter determined rivalry on the part of the United States. American coal will not be landed in England, but will be shipped to ports on the Continent which are now dependent upon supplies from the coal fields of the United Kingdom.

Astronomical Notes.

OBSERVATORY OF VASSAR COLLEGE.

The computations in the following notes are by students of Vassar College. Although only approximate, they will enable the ordinary observer to find the planets.

M. M

POSITION OF PLANETS FOR JUNE, 1879.

Mercury.

On June 1 Mercury rises at 3h. 41m. A.M., and sets at 5h. 43m. P.M. On June 30 Mercury rises at 5h. 31m. A.M., and sets at 8h. 34m. P.M.

Mercury should be looked for during the last week in June, nearly in the parallel of the point of sunset; it will be in conjunction with the new moon on the 19th.

Venus.

On June 1 Venus rises at 7h. 22m. A.M., and sets at 10h 29m. P.M. On June 30 Venus rises at 8h. 15m. A.M., and sets at 10h. 6m. P.M.

Venus passes 4° south of Pollux on June 2, and 2½° north of Regulus on June 30.

Venus will be near the crescent moon on the evening of June 23.

Saturn.

On June 1 Saturn rises at 2h. 2m. A.M., and sets at 2h. 25m. P.M.

On June 13, according to the Nautical Almanac, Saturn will be in conjunction with the moon at 5h. 31m. Washington time. The planet will therefore rise on the morning of that day, following the crescent moon.

On June 30 Mars and Saturn will rise very nearly together, at 0h. 13m., and will keep nearly the same path until they set.

Uranus.

On June 1 Uranus rises at 10h. 47m. A.M., and sets at 15m. after midnight. On June 30 Uranus rises at 8h. 58m. A.M., and sets at 10h. 23m. P.M.

Sun Spots.

The sun has been examined daily, since the first of the year, with a glass of 3 inches aperture. As late as May 8 no spot had been found. On May 9 a small spot was seen, which had developed within the previous twenty-four hours. It could not be found with the same glass on the 12th, but the large telescope showed that it had broken up into several minute sections, and was rapidly diminishing.

Mars.

On June 1 Mars rises at 1h. 20m. A.M., and sets at 51m. after noon. On June 30 Mars rises at 0h. 13m. A.M., and sets at 39m. after noon.

Mars will be near the waning moon on June 12. According to the Nautical Almanac Mars will be in conjunction with Saturn at 2 P.M. on the 30th. The two planets will therefore be seen to rise nearly together.

Jupiter.

The planets Jupiter, Saturn, and Mars are all best seen in the morning.

On June 1 Jupiter rises at 44m. after midnight.

Mars rises north of Jupiter at 1h. 20m. A.M., and Saturn rises north of Mars at 2h. 2m. A.M.

On June 30 Jupiter rises at 10h. 50m. P.M., nearly as Venus sets.

Jupiter is very brilliant. We are coming nearer to it, and its moon can be seen with very little optical aid.

The Coney Island Pier.

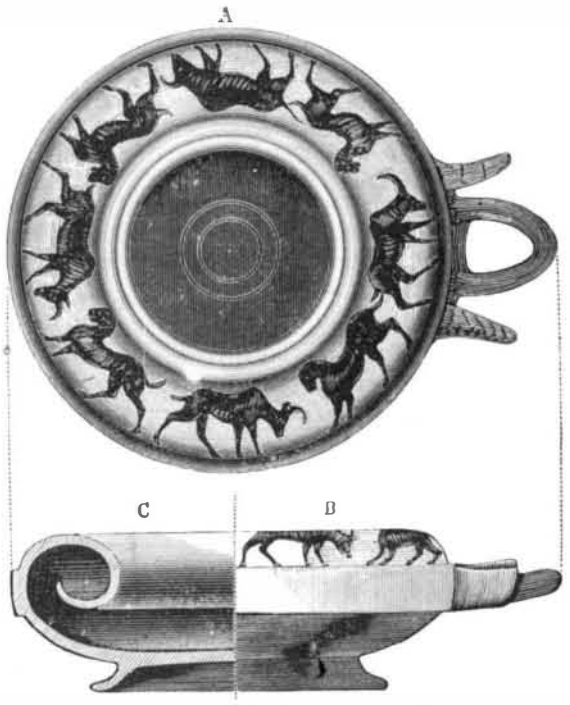
The Ocean Navigation and Pier Company, of which Mr. Jacob Lorillard is president, are erecting off West Brighton, Coney Island, an immense iron pier. The contractors are the Delaware Bridge Company, and the construction is under the supervision of Messrs. Maclay & Davies, civil engineers. The pier, when completed, is to be 1,000 feet in length, extending outward from high-water mark. Its width is to be 50 feet, with enlargements of 100 feet in width at the shore end, the center and the pier head. It is to be double-decked, with iron substructure, the whole supported by wrought-iron tubular piles 9 inches in diameter, made of one-half inch metal. These piles are arranged in rows, at distances of 20 feet longitudinally and 16 feet 8 inches laterally. Each pile has at its base a circular cast-iron disk 2½ feet in diameter, which, when sunk into the sand, acts as a supporting base, and at the depth of 15 or 20 feet insures a perfect foundation. The piles are driven by the "jet water" system.

Iron capitals are bolted to the tops of the piles, and they support 15-inch wrought-iron beams, bolted together, upon which the superstructure will rest. The entire structure is to be made more secure by being braced throughout with diagonal rods an inch and a half in diameter, and heavy horizontal struts bolted to the beams transversely. When completed, the entire structure will be supported by 260 iron pillars. The flooring of the lower deck will be well finished and inclosed in a handsome iron railing. The landing stage will be at the lower deck of the pierhead, and will be guarded by massive oak fender pieces.

More than 100 workmen are engaged in pushing forward the work. At night two electric lights, one on shore and the other on the movable derrick, are used. The first pile was driven on the 22d of April. All the material for construction is on the ground, and it is intended to have the last pile in place by the 1st of June. On the upper deck of the pier are to be spacious pavilions and saloons. The whole structure will cost more than $150,000.—*Iron Age.*

GREEK DRINKING CUP.

The engraving represents the upper face and a diametrical section of an ancient Greek drinking cup which was used

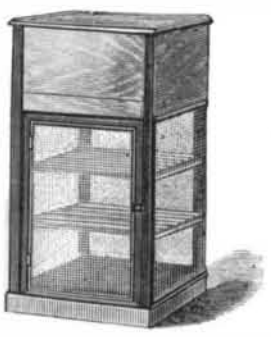


ANCIENT GREEK DRINKING CUP.

by the soldiers for dipping up the muddy water met with in their marches. The inwardly turned rim prevented the mud from following the water as it was poured from the vessel. This vase or cup is preserved in the Pourtalis collection.

NEW PROVISION SAFE.

The accompanying engraving represents a very useful household article recently patented by Mr. Samuel Inman, of 929 South Asland Ave., Chicago, Ill. It is designed for keeping bread, pastry, meats, milk, and other articles of food which require protection from insects or other vermin. The safe is made in two parts, the upper part being made air-tight, or nearly so, for containing bread and pastry, and protecting them from the influence of the atmosphere and from insects. The lower portion consists of a light frame having a door in one side, the whole being covered with wire gauze, which permits of a free circulation of air, while it prevents the entrance of rats, mice, or insects. The shelves are formed of slats of wood, secured to end cleats. This part of the safe is intended for receiving meats, butter, milk, and other articles which require a free circulation of air around them. The safe may be set upon the cellar floor or hung up by wires, as may be most convenient.



Inman's Provision Safe.

Painting Walls—Seasonable Hints.

Of course, says the *American Builder*, everybody knows, or ought to know, that walls and ceilings are finished with plaster. But everybody may not be aware that plaster has the property of absorbing moisture. This, perhaps, will not take place in rooms where a fire is kept steadily; but in rooms left, as is often the case, for weeks without a fire, the walls will take up a considerable quantity of damp. The effect will be injurious to the health of the inmates. There are few persons who have not suffered from a mysterious cold, caught they know not how, though, perhaps, damp in the plaster had something to do with it.

The extent to which damp is absorbed in a plastered wall may be discovered by noticing what so often takes place in rooms where the walls are painted and have become chilled by a season of cold weather. As soon as the temperature becomes warmer the atmosphere is condensed on the walls, and at times in such quantities as to run off in streams. Now, had it not been for the paint, the greater portion of this moisture would have been absorbed by the plastered walls. And as a consequence the quality of the plaster would have been impaired and the room made unwholesome. In view of this defect in plastered walls, it becomes a question well worth considering, whether, in finishing a house, the walls should be papered or painted. If paint is decided on, it is highly necessary that the painting be properly done and good materials employed. White lead, which is the chief ingredient of all paint used, is of late years heavily adulterated—a reason why some painters can do work so much cheaper than others. There are also dishonest painters who will lay on nothing but "whiting" and size for the first coat, and finish off with one coat of oil paint. It is not easy to detect the fraud at the time, but as such paint soon wears off the wall, and attaches itself to the garments of those who rub against it, the customer speedily finds out that he has been cheated. It takes three or four coats of good oil paint honestly laid on to make good work of painting plastered walls.

In painting walls there is ample scope for taste, and such colors may be chosen as are most suitable for each apartment, and in harmony with the furniture. Apartments lighted from the south and west, particularly in a summer residence, should be cool in their coloring; but the apartments of a town house ought all to approach toward a warm tone. In a drawing room the coloring should be characterized by vivacity, gayety, and light cheerfulness; by light tints of brilliant colors with a considerable degree of contrast and gilding—the walls being kept in due subordination to the furniture, though partaking of the general liveliness. The characteristic coloring of dining rooms should be warm, rich, and substantial, without vivid contrasts, and gilding should be avoided, unless in small quantities for the sake of relief. Parlors ought to be in a medium style, between that of a drawing room and dining room. Libraries should be solemn, grave, and quiet in color and finish, while bedchambers should be light, cleanly, and exceedingly cheerful. A greater degree of contrast between the room and its furniture may be admitted in the chamber than in any other apartment. Stairways, halls, and vestibules should be of a cool tone and simple in their style of coloring, being in that what they are in utility—a link between the exterior simplicity of a house and its interior richness and comfort.

Mr. Gary has the Last Word.

To the Editor of the Scientific American:

As your correspondent "E.," in your issue for May 17, page 304, has made some misstatements, will you allow me to correct him? In referring to a letter written by me and published by you, April 5, he says, "Mr. Gary's knowledge of history is as defective as his knowledge of magnetism and electricity," and he advises me, before I write any more history of science, to be at the pains of studying it a little more carefully.

Allow me to say that all the history I attempted in the letter referred to was the following sentence: "The law of gravitation was not discovered in a laboratory, nor was the power of steam nor electricity." This is all the history that I attempted, and the SCIENTIFIC AMERICAN, which your correspondent will acknowledge is good authority, remarked in regard to this, in the same number in which it appeared, that "everybody will agree with what our correspondent says about laboratory discoveries, Newton and the apple, Franklin and the kite string."

Your correspondent E. also holds up before your readers a list of honored and respected names as martyrs to "conceited ignorance, and mutilated and outraged history," and tries to vindicate history and himself by making other misstatements. He says: "Mr. Gary brags that he is ignorant of what others have done." I humbly acknowledge that I do not know it all, but I never brag about it. As to his assertion that Professor Henry advised me to buy $50 worth of books and study up on magnetism before wasting more time, I have to say that Professor Henry never said anything of the kind. Another eminent scientist made a similar remark before he saw my discovery, but after seeing it, he advised me to go ahead.

Let us hope your correspondent's knowledge of history and science is more accurate than his assertions in regard to current events. It is to be feared that "much learning hath made him mad."

W. W. GARY.

Boston, Mass.

Malleable Nickel and Cobalt.

Fleitmann has succeeded, by a very simple device, in obtaining cast nickel in a malleable and ductile form, even when cold, while cobalt prepared in the same manner possessed such hardness when cold that he expects it can be used for cutting instruments, while hot it is both malleable and ductile. His process consists in adding to the fused metal, through a hole in the lid of the crucibles, ⅛ per cent of metallic magnesium, which possesses a remarkable power of destroying carbonic oxide. The author is of the opinion that the porous and crystalline character of cast nickel is due to its absorption of carbonic oxide gas while in a molten state. It is not impossible, however, that owing to the great affinity of magnesium for nitrogen, its action may be due to the destruction of cyanogen in the metal.

Cobalt prepared in this manner possessed none of the reddish color attributed to it in the text-books, but actually excelled nickel in whiteness and brilliancy.

He also welded these metals on to iron and steel at a white heat, and strips thus welded were rolled out to the finest number without separating from each other.—*Berichte d. d. ch. Ges.*

SOOT FOR ROSES.—Collect some soot from a chimney or stove where wood is used for fuel, put into an old pitcher, and pour hot water upon it. When cool, use it to water your plants every few days. The effect upon plants is wonderful in producing a rapid growth of thrifty sheets, with large thick leaves and a great number of richly-tinted roses.