

the bottom plate of the burner. When this cord is pulled the sliding tube, A, is raised, and the cap, C, swings over it, instantly extinguishing the flame.

The device is readily removed from the lamp burner for cleaning, and is easily replaced, being complete in itself and not attached to the burner.

For hanging and other lamps placed too high to be easily reached, this invention is valuable, as it only requires a pull of the cord to extinguish the light. Further particulars may be obtained by addressing the inventor, P. O. Box 2326, New York city.

A Marble Boring Sponge.

In 1871, a vessel laden with a cargo of Carrara marble was wrecked off the south coast of Long Island. This year some of the marble having been raised was found to be perfectly honeycombed by some marine boring animal. A fragment of the marble was exhibited at a recent meeting of the New York Academy of Sciences, and the opinion expressed by one of the members that the work of destruction was probably due to a species of *Pholas*. Dr. Newberry, however, was inclined to believe that it was due rather to the ravages of a species of sponge of the genus *Otione*, and this view has been recently indorsed in a note on the subject published by Professor A. E. Verrill, who has had an opportunity of examining some specimens sent to the Peabody Museum of Yale College. Professor Verrill states that the exposed portions of the slabs examined by him are thoroughly penetrated to the depth of one or two inches by the crooked and irregular borings or galleries of the sponge, *Otione sulphurea*, so as to reduce them to a complete honeycomb, readily crumbling in the fingers. The marble is perfectly sound and unaltered beyond the borings. He says that the rapid destruction of the shells of oysters, etc., by the borings of this sponge has long been familiar to him, but he has never before seen examples of its effects on marble or limestone; for calcareous rocks do not occur along those portions of our coast inhabited by the animal. He suggests that its ability to rapidly destroy such rocks might have a practical bearing in case of submarine structures of limestone or other similar materials.

PARIS EXHIBITION.—FACADE OF AUSTRIA AND HUNGARY.

The facade of Austria and Hungary is simple in appearance, but it lacks neither grandeur nor elegance. Its architect had in view not only the Austrian and Hungarian architecture, but also the vestibule of a palace of fine arts. In reality these two pavilions are devoted to art; the one on the south includes the bureau of the Austrian Commission, the one on the north the bureau of the Hungarian Commission. These buildings are of cut stone, and each has above and below three windows. They are very plain on the first and second floors, and appear to have no roofs, but are crowned with a balustrade of stone.

The colonnade that unites the two pavilions forms a portico of nine arches, the abutments of which are each supported by an entablature, supported by two columns of white stone.

The ornamentation of this building consists of festoons and allegorical figures painted in black upon a white ground; the attic that crowns the frieze is equally ornamental.

Above the portico there are statues of art, science, history, etc. At one end of the colonnade floats the flag of Austria; at the opposite extremity the staff bears the flag of Hungary.

Within the Austro-Hungarian vestibule were displayed several statues, among which are Michael Angelo, Beethoven, and Albert Dürer, and beyond there were plans of existing monuments and important buildings in Austria and Hungary.

THE COMMON JACANA.

This bird is a native of Southern America, and there are other species scattered over Africa, Asia, and Australia. Mr. Gould tells us that the Australian species is a good



JACANA.

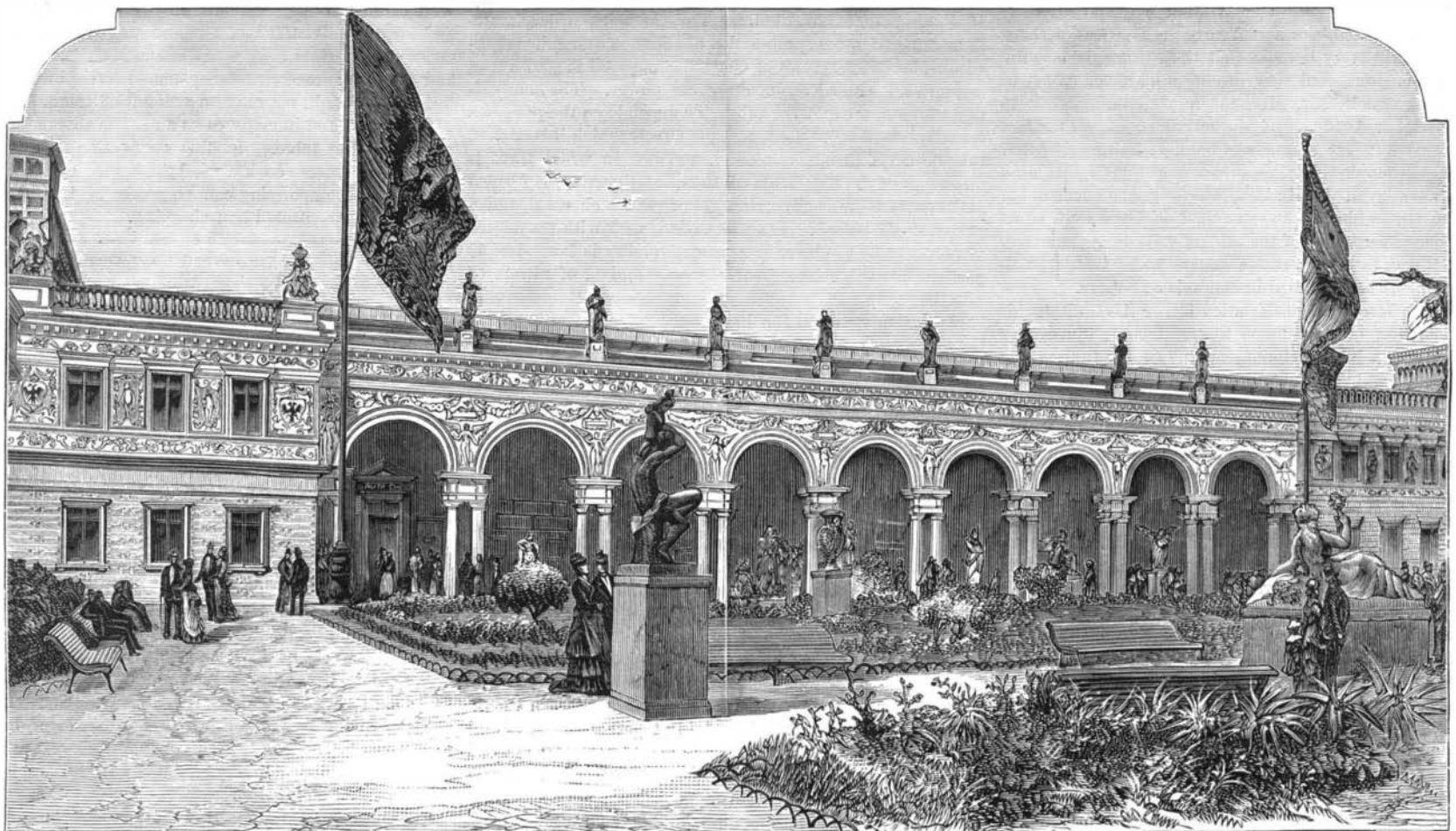
diver, but a bad flier. "Their powers of diving and remaining under water are equal to those of any bird I have ever met with; on the other hand, the powers of flight are very weak. They will, however, mount up fifteen or twenty yards and fly from one end of the lake to the other, a distance of half or three quarters of a mile; but generally they merely rise above the surface of the water and fly off for about a hundred yards. During flight their long legs are thrown out horizontally to their full length. While feeding they utter a slowly repeated 'cluck, cluck.' The stomach is extremely muscular, and the food consists of aquatic insects and some kind of vegetable matter."

The general color of the common jacana is black, with a

slight greenish gloss, taking a rusty red tinting on the back of the wing coverts. The primary quill feathers of the wing are green, and the wings are furnished at the bend with long sharp claws. In the African species these spurs are hardly perceptible. At the base of the beak is a curious leathery appendage, rising upon the forehead above and depending toward the chin below. The claws are all very long, especially that of the hind toe, which is nearly straight and longer than the toe from which it proceeds. We take our engraving from Wood's "Natural History."

Natural History.—The Cope Collection.

When E. D. Cope, the Philadelphia naturalist, bought the Argentine Confederation's collection of fossil bones at the Paris Exhibition, he bore away a prize in the face of a powerful competition. Russia wanted them, or the best part of them; a Vienna scientific institution wanted them; Belgium wanted them, and Paris herself had set her heart on them, intending to place them in the Jardin des Plantes. In the face of all opposition, says the Philadelphia *Times*, a Philadelphian secured the lot, and careful hands have securely packed them in boxes preparatory to sending them to America, where they are expected some time this month. These fossils are peculiarly valuable to this country for the reason that the chief portion of them are not to be found anywhere in the United States, and there are some specimens the like of which no country in Europe can show. They are a sort of connecting link to collections which America already has. The locality from which they come, Patagonia, is regarded as entitled to rank first in the chain or series of specimens which has been dug up in Ecuador, in the valley of Mexico and in the Western and Middle States. In Phoenixville, several years ago, fossil remains were found similar to those discovered in the Western States, Mexico, and South America. These specimens coming from Patagonia, the southern extremity of the western hemisphere, and bearing such a resemblance to those found in North America, have a value which naturalists, knowing and understanding the relations which one collection bears to another, alone can fully appreciate. The collection includes about one hundred different specimens of animals. The perfect state in which some of the remains are preserved gives them an increased value. There are nineteen skeletons, chiefly of large animals, almost completely whole. The species most numerous represented in the collection are the armadillo and sloth. Among the armadillos there are several kinds of skeletons, pronounced by Mr. Cope entirely new to science. One of these is an immense specimen with a curious sort of tail. It increases in size toward the end, at which point it takes an oval shape and is from a foot to 18 inches wide. Unlike that of all other known kinds of armadillo, the tail is without joints—except one at the base, which enabled it to be swung about—and is incased in a hard, shell like box, as hard as the back of a turtle. The tail is supposed to have been, in the lifetime of the animal, its chief weapon of attack or defense. At intervals on the hard, oval surface at the end holes are found, which are supposed to have contained short protuberances, or horns, giving the beast a weapon like a spiked club. Swung with all the strength which an animal as big as the largest elephant of modern times could muster, this armadillo's tail is believed by scientific men to have been more formidable than are now the jaws or claws of a lion or tiger. Another rare



PARIS EXHIBITION.—FACADE OF AUSTRIA AND HUNGARY.

specimen is a saber toothed tiger, of which there is only one other specimen known in the world, and that is in the museum at Buenos Ayres. The size of the skeleton is about that of a large dog. The teeth are long, like the tusks of a walrus, but their edges are like a knife. This animal is believed to have been of a kind that devoured the sloth. No other use can be imagined by naturalists for the possession of such sharp teeth. Reason is found for this theory in the fact that the surface of a sloth's hide is like the shell of a turtle. The skeleton of the sharp toothed animal is almost perfect. There are twelve different kinds of armadillos in the collection and about eight different kinds of sloths. The size of the sloth skeletons varies from that of a small black bear to the largest elephant. There is no known species of sloth living in the present day whose size comes up to that of the small black bear. There is one specimen in the collection of a very large sloth with the head resembling a compromise between a horse and a rhinoceros—very rare. The saber toothed tiger and the club tailed armadillo are supposed to have ruled the forest in their day. In regard to the question of mastery between them, naturalists believe they "gave each other the path." Also in the collection are specimens of many small animals, dogs, deer, and wild boars. There are the skeletons of ostriches and other large birds. It has not yet been determined to what institution of science this collection will be presented. It was reported that the Academy of Natural Sciences of this city would get them, but Mr. Cope expresses himself undecided between it and the Smithsonian Institution at Washington. The collection is conceded by naturalists to have been the most valuable in the Paris Exhibition. It supplies a gap which has long been wanting in affording a chance to students of this country desiring to study certain kinds of fossils to obtain the knowledge they want without going to Europe.

The Torrey Botanical Club.

The Torrey Botanical Club held its regular meeting at the "Herbarium," Columbia College, Tuesday evening, November 12.

As usual, there were exhibited very many interesting plants, both wild and cultivated. Dr. Gross exhibited a full blown rose, from the center of which another perfect flower had grown. One of the members stated that he had frequently seen the common "bachelor's button" (*Centaurea*) of the gardens in the same median prolific condition. Dr. Thurber remarked that it was not an uncommon thing to see, in Mexico, some of the *Cacti* with new plants starting out from the side of their fruit. Mr. W. H. Leggett called attention to the recent rediscovery, in North Carolina, of the long lost plant, *Shortia*, by a son of Mr. M. E. Hyams, remarking that the rediscovery of a plant so rare that heretofore only one known specimen existed—that in Michaux's herbarium at the Jardin des Plantes—was one of the most important botanical events of the age. Mr. Leggett also informed the Club that Mr. Thomas Meehan had recently visited the locality in New Jersey given as a station for *Calluna vulgaris*, and had discovered, without the shadow of a doubt, that the plant had been introduced there from cultivation by an emigrant from England. The president, Dr. Thurber, stated that he had discovered that the roots of *Rhexia Virginica* bear tubers, two or three to each root, and resembling minute tubers of the dahlia, a fact that he could find nowhere stated in our manuals of botany, and that this would seem to show that our authorities do not always tell us in their books everything worth knowing about plants. As having a connection with the latter remark, one of the members stated that the fact was perhaps known to nearly every botanist that the red maple is quite constantly dioecious, and that attention had been called to this not long ago by Mr. Meehan in a communication to the Philadelphia Academy of Natural Sciences, yet the fact is not recorded in our manuals of botany; he stated further that the white maple (*Acer dasycarpum*), although not found wild in the valley of the Hudson, was nevertheless common in cultivation, and in this state he had observed that, when in fruit, one of the wings of the samara was always abortive, and that it was rarely the case a samara had "two large divergent wings," as described in manuals of botany.

Mr. W. R. Gerard called the attention of the Club to his recent detection of a truffle on Staten Island; illustrating his remarks by a large colored drawing of the fungus and its fruit. He stated that truffles had always been regarded as rare in America; but that this was probably owing to the fact that they had not been looked for. Dr. Torrey, in his catalogue of New York city plants, published in 1819, records the edible truffle (*Tuber cibarium*) as found in "Love Lane" (now 21st street). This statement, however, was doubtful, inasmuch as Dr. Torrey, unacquainted with fungi, sent his specimens for naming to Schweinitz, and the latter, in his synopsis of North American fungi, published in 1834, states that he had never met with the plant in this country, but recorded it on hearsay merely. In the Rev. M. J. Berkeley's "Notices of North American Fungi," published two years since in *Grevillea*, he records but a single species—the large-spored truffle (*Tuber macrosporium*)—and that was sent from Pennsylvania by Michener. Mr. Gerard was under the impression, although he was not positive, that he had seen a statement that another species had been detected in California last year. At any rate, the present would seem to be only the third (if, indeed, not the second) authentic account of the discovery of a genuine truffle in this country; and for that reason was a matter of considerable interest. The Staten Island species was found at Huguenot, growing

in loamy soil about the roots of alders (*Alnus serrulata*.) The tubers were about the size of a nutmeg, with a firm, smooth, cream-colored skin. The *asci* were nearly orbicular and contained four large, broadly oval, nearly orbicular, reddish brown sporidia. The surface of the latter was covered with a beautiful network of hexagonal reticulations, from the angles of which arose short linear transparent spines, apparently slightly curved at the apex. The species answered pretty well to the description of Tulasne's *Tuber dryophilum*, the wood truffle, and was perhaps that plant. Mr. A. Brown reported the names of two grasses, as an addition to his former list of adventitious plants of New York city; these were the Bermuda grass (*Cynodon dactylon*) and the Egyptian grass (*Dactyloctenium Aegyptium*). He also reported that the name of the composite plant from Hunter's Point, shown at a previous meeting, had been found to be *Fluorea contrayerva*, a South American dye plant.

Dr. Thurber stated that he had recently received from a gentleman in Connecticut specimens of *Nesaea verticillata*, in which the flowers were all double, and that the doubling of the flowers in a state of nature was a thing of rather unusual occurrence. One of the members remarked that he had met with a double-flowered saxifrage in the spring, and another stated that a few years ago he had found specimens of the Rue-anemone (*Thalictrum anemonoides*), in which all of the stamens were replaced by petals, giving the flowers the appearance of dwarf roses.

After the discussion of a few minor matters relating to the local flora, the Club adjourned.

Cashmere Goats in Nevada.

A correspondent of the Baltimore *Sun* writes as follows touching one of the most promising industries of the Far West:

"Pure Cashmere goats find among the wild sage brush (*Artemisia*) barrens of Nevada an acceptable climate, where their health is excellent and their fleeces unusually fine and silky. A herder near Carson has a flock of 3,000. Eastern farmers (and especially that great multitude who to admiration of rural life do not unite much affection for farm labor) are solicited to give reflection to this intelligence. Here is a whole State, 120,000 square miles, open to superficial pre-emption, its mountains exactly adapted to climbing goats, and its sweet grass sheltered by every bush of *artemisia*. Add to this the miraculous winter pasture, more wondrous than the mythic manna of antiquity. Everywhere the flashing leaved white sage abounds. In the growing time of summer no animal can stomach its bitterness. But the first frost that kills the summer food turns this bitterness to sweetest pasture. It is savory and fattening to all animals that herd. It tenders their meat and gives to their coats a glossy fur that defies the frost and the tempests of winter. There is in contemplation of this most wonderful provision of nature more food for thought and more practical instruction than can be found in all the unverifiable superstitions of the world, however eloquently elaborated. Here is inviting occupation, most remunerating, least laborious, most healthful, least risky, and involving small initial outlay, that ought to tempt your surplus workers to cross the wilderness that lies twixt your machine enslaved land and the life inspiring pursuits of agriculture in this sunny clime—this land of flowers, of perennial verdure, literally overflowing with milk and honey."

Sebastina.

A new explosive material has recently been invented by M. Falmeijer, of Stockholm. The earth or powdery material employed in the composition of common dynamite is substituted here by a species of charcoal, prepared in such a way as to give it considerable absorbing power. The composition of the new explosive substance depends on the purposes for which it is to be used, and the effects which it is desired to obtain. A strong compound, and one in which there is no danger of the separation of the nitro-glycerine, is formed of 78 parts of nitro-glycerine, 14 of wood charcoal, and 8 of nitrate of potash. The proportions vary with the degree of power to be produced. A second quality is formed of 68 parts of nitro-glycerine, 20 of charcoal, and 12 of nitrate of potash.

It is calculated that the increase of effect resulting from the more rapid explosion of this new compound may be estimated at 10 per cent. The proportions of the component parts of the "sebastina" may vary somewhat; but the inventor is of the opinion that these variations should find their limits between 50 and 80 per cent of nitro-glycerine, 15 and 30 per cent of wood charcoal, and 5 and 20 per cent of nitrate of potash.

Vegetable Tallow.

A patent for artificial tallow was issued in October last to Señor Miguel de la Vega, of New York. Some of our daily papers have stated that the chief constituent of this new compound is obtained from a plant that grows wild in all parts of the continent of America, that the article can be produced for 2 cents a pound, and that the yield is about 70 per cent of the prime materials. But the inventor states in his patent, which we have examined, that 100 lbs. of the artificial tallow is produced by mixing together 60 lbs. of castor oil, 10 lbs. of animal tallow, 10 lbs. of vegetable oil, and 20 lbs. of wheat flour. These ingredients are boiled together for about 30 minutes by steam heat. When the mixture cools it hardens, and resembles tallow. Turnip seed oil, cotton seed oil, or any other similar vegetable oil will answer the purpose equally as well as castor oil.

It is claimed that this compound is equal in most respects to common tallow. It is used for lubricating purposes, for the manufacture of soap, candles, etc., but is not intended to be used in articles of food.

The Carpet Beetle.

A correspondent, living at no great distance from a locality where the ravages of the carpet beetle have been suffered, writes to know if the insects in all their metamorphoses cannot be killed by steam. If so, he proposes to prepare a small tea-kettle with a burner under it, and an India-rubber tube running from the nose, and directing the nozzle, when the steam is made, to all the openings under the mop-board, where the insects first make their appearance, and to other crevices wherein they appear. If the steam issuing from the nose should not be strong enough with a long pipe, the apparatus may be put on castors, and rapidly wheeled round the apartment. If such a contrivance is efficient, the whole land might be cleared of this insect at small trouble and expense.

[We have no doubt that, after the removal of the carpet, the direct application of hot steam to the cracks of a floor infested with the carpet beetle in its various stages, would prove effectual, as our correspondent suggests. But, unfortunately, according to Mr. Lintner (*SCIENTIFIC AMERICAN*, October 5, p. 218), the insect does not confine its depredations to carpets, nor its dwelling place to floors; it likewise infests closets, trunks, and other out of the way places where the application of steam would prove decidedly impracticable. The benzine remedy proposed by Mr. Lintner, in the article referred to, would seem on the whole to be the best method that we as yet know of to rid a dwelling of these to be dreaded pests.—Eds.]

Canned Food.

A correspondent of the New York *Daily Bulletin* has been making inquiries with regard to the canned goods business, and finds that roast meats are now canned and sold for use on board ship in place of salt provisions. Lobsters were formerly caught off this shore, but they became scarce here and went to Maine, and since then they have gone to Nova Scotia and still later to Newfoundland. Some of our local dealers have had canning factories in Maine, and have moved them as the fish emigrated, and they are now located in Nova Scotia and Newfoundland. Lobster protective laws have been passed by the legislatures, but they came too late, and are even now but loosely enforced.

Among the novelties now put up are baked beans, fish and clam chowder, and the latest of all are fish balls. Beans were first canned as an experiment about a year and a half ago, and some few have been sold in England. The "fish balls and baked beans" were exhibited at the Paris Exhibition, and a great many orders resulted. There have been rumors among the trade that a large contract was secured at Paris from a foreign government (the French) for the supply of the army, but the company manufacturing deny this. The probability is that a sample order has been given, and that if satisfactory a large order is expected. The product received a gold medal at Paris. The works, which are entirely new, are being run to the fullest capacity, and 500 dozen cans of fish balls and baked beans are being made daily.

Soups of all descriptions are canned, but prices for these are high. In fruits much is being done, and peaches and tomatoes are sent to England. Twenty years ago, oysters were canned at the East, but now Baltimore has the trade and turns its advantage of location to good account. The consumption of canned goods is evidently on the increase, and dealers contend that the system of living in flats is tending to increase it, not only on account of room, but because of the slight (and in many cases an entire absence of) preparation for the table. In this connection should be mentioned the kerosene cooking and the kerosene heating stoves, which are accompanying canned goods in their mission of facile and concentrated housekeeping.

An Improved Shot Gun.

We have been shown recently one of the most complete and strongest guns we have ever seen, and as we are often in receipt of letters asking advice in regard to breech loaders, we think a short description of this gun may interest some of our shooting readers. The piece referred to was made to order for a gentleman of this city by Holland & Holland, of New Bond St., London, a firm whose work ranks with that of Grant, Purdy & Lancaster, but who are but slightly known in this country.

Besides the perfection of the workmanship and beautiful finish, the gun has several novel features that are worthy of notice. The barrel, which is pivoted to the stock, is retained in firing position by three strong fastenings that are operated by a small lever at the top of the stock between the hammers. The cartridge shell ejector, which is of a new form and very substantial, is operated from the barrel joint. Two sets of barrels are fitted to the stock, so that either may be readily removed and replaced by the other. One set of barrels are choke bored for open and long range shooting, while the other is cylinder bored for brush and close work. The gun is inclosed in a chest of English oak, leather covered, and is accompanied with a complete set of loading and cleaning tools.

We are told that notwithstanding the superior quality and finish of Messrs. Holland & Holland's guns, they are furnished at a reasonable price.