

**PEAS THREE THOUSAND YEARS OLD.**

In the course of late explorations in the ancient ruins of Egypt, General Anderson, an English traveler, found, inclosed in a sarcophagus beside a mummy, a few dry peas, which he preserved carefully and, on his return to Great Britain, planted in the rich soil of the Island of Guernsey. The seeds germinated, and soon two little plants appeared, from which, at maturity, sufficient peas were gathered to plant quite a large tract of ground in the following season.

Some of the plants thus raised have attained a height of over six feet, and have been loaded with blossoms of exquisite odor, and of a delicate rose tint. The peculiar feature of the growth is the stem, which is small near the root but increases greatly in size as it ascends, requiring a support to sustain it upright. The pods, instead of being distributed around all portions of the stem as in the ordinary plant, are grouped (as shown in our engraving, extracted from the *London Graphic*) about the upper extremity.

The vegetable, it is said, belongs to the ordinary garden variety; but from its presenting the very distinctive differences above noted, it seems worthy of close botanical examination. The peas are of remarkably fine flavor, excelling in delicacy those of the choicest known varieties.

**Discoveries by the Wheeler Exploring Expedition.**

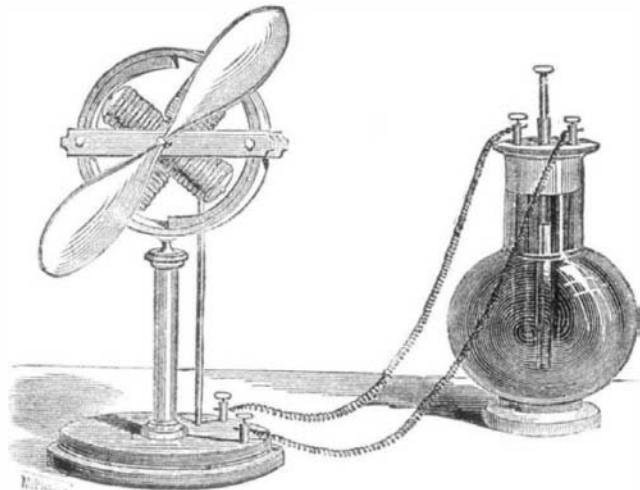
Professor Cope and Dr. Yarrow, of the Wheeler Expedition, have unearthed, in the valleys of the San Juan river, another immense deposit of fossil remains of prehistoric animals. A large number of vertebrates of enormous size, and of genera unknown to Science, have been found, together with others of very rare species, including skeletons of mastodons and mammoths, in a very perfect state of preservation. The fruits of the discovery are not yet classified and arranged, so that a complete list cannot be given; but specimens have been forwarded to Washington, where, we understand, the naturalists have already begun work upon them. The entire collection is said to be a most valuable contribution to palæontology, and will add greatly to our knowledge of that branch of Science. We notice, also, that the investigations as to the living animals of the country explored, are meeting with excellent results. As many as 1,000 birds' skins have been obtained, including several of new varieties of birds. Five new species of fishes, it is said, have also been discovered.

**Waterproofing Compound.**

This compound is prepared by melting paraffin and adding gradually a suitable drying oil, stirring well to insure intimate mixture; it is then poured into molds the shape of bricks or blocks, and allowed to cool. The fabric to be rendered waterproof is rubbed over with a block of the compound, warming the rubbing face gently if the atmosphere is cold, and then ironing the cloth with a warm iron, or passing it between hot rollers. The application of this compound to leather and textile and felted fabrics is said to give excellent results, as, although it renders the cloth thoroughly waterproof, it is not impervious to air.

**THE AERIAL SCREW.**

Under this name, M. De Fonvielle has constructed an apparatus for testing the powers of various electric batteries. Using a winged screw, in the form of a ship's propeller, he is enabled, by counting the rotations, to ascertain accurately



the power of any motor which he may apply to it. Our engraving shows clearly the manner of its use. With a screw of 12 inches diameter and a motor of three magnets weighing about 2 lbs. each, a speed of rotation of 5 turns per second was obtained from a battery equivalent to 6 Grove's elements. The speed can be minutely and precisely adjusted by varying the battery power, and experiments on the size and pitch of the blades of propellers can be readily made. The inventor, in *La Nature*, recommends it to Mr. Bowdler's notice, believing that it would be useful to him in his military balloon experiments, of which we gave an illustrated description on page 67 of our current volume.

**Apparatus for Breathing Rarefied Air.**

M. Bert, whose interesting researches of the effects upon animal life of compressed and of rarefied air we have fully described, suggests a simple device for use by travelers ascending high mountains or by aeronauts. It consists of a Y tube, one arm of which is connected with an oxygen bag made of inelastic material. The other arm is open to the atmosphere; and in a rounded portion inside, near its junction with the balance of the device, is a small balloon of elastic material filled with ordinary air. The mouth is applied to the end of the straight part of the Y. As the eleva-

**PLANT GROWN FROM A MUMMY PEA.**

tion of the person using the apparatus increases, the ball in the tube expands, owing to the decreased air pressure, and hence closes the orifice leading to the surrounding atmosphere. The supply for the lungs is therefore drawn in a greater proportion from the oxygen receiver, enabling the functions of respiration to continue without uneasiness.

**Non-Corrosive Pipes and Plates.**

A recent patent by W. A. Shaw, of New York city, has for its object to protect tubes or metal plates from corrosion by associating with them other metals or alloys, the presence of which renders the entire combination passive. It is known that the presence of platinum protects iron from corrosion, and that zinc will partially protect iron and copper. An instance of the last named fact is the well known application, by Sir Humphrey Davy, in sheathing vessels.

One method of carrying out the present invention is to make a pipe or tube of any one or more of the ductile metals, by drawing, rolling, or by pressing said metals out of a cylinder through a die. At the same time this operation is being performed, a ribbon, band, or wire of a protecting metal or metals is drawn through the die with the tube under treatment, emerging therewith, either wholly or partially inlaid within the inside surface of the tube. One or more such bands may be thus inlaid, and they may be alike, or of different metals. The inlaid bands may be embedded in the shell of the pipe, so as to be flush with the surface thereof, or they may be allowed to project, so as to present a greater amount of protecting surface.

It is alleged by the inventor that, when strips of lead and tin are simultaneously exposed to the action of water, the presence of the tin effectually protects the lead from corrosion, and that there is practically no corrosive action upon these metals when associated in this manner.

**Changes of the Sun's Apparent Diameter.**

The question of whether the sun's apparent diameter is subject to any changes which can be detected by observation is discussed in the *American Journal of Science and Arts* by Professors Newcomb and Holden. The calculations of these astronomers indicate that during some years (1864 and 1870, for instance) there was a tendency to a ten hour vibration of the solar diameter. The conclusion, however, is that this correspondence cannot be attributed to anything but chance.

**New Railway Refrigerating Car.**

Trial was made recently on the Great Western Railway, Eng., of a car, the invention of Captain Acklom, for the transport of meat in a purer and colder air than in the ordinary close cars, so as to preserve the freshness of the carcasses. The car does not differ much in appearance from an ordinary railway wagon, and the patentee claims that it can be built at little more expense, and filled on occasion with any class of merchandise for which an artificially cooled temperature is not required. The body of the car consists of a double paneling of galvanized iron network, with the space between

filled with two couches of inodorous absorbent felt, the outer one four layers thick, and the inner one, an inch apart from it, but a single layer. The mesh of the external panel is much larger than the corresponding mesh inside, in order to permit free ingress to the heat and atmosphere. The inner panel alone forms a ceiling to the chamber, and is covered with the felt, but with an interval of a couple of inches between its surface and the arched outer roof. The object of this arrangement is to admit the passage of a current of air when the car is in motion. Underneath is a tank from which water is driven by a forcing pump to a covered galvanized iron gutter, running round the edge of the roof, between the panels; the outer felt is lipped in this gutter, so that the water is bound to percolate through it to a metal-lined groove below, which returns the drip to the tank. The atmosphere coming in contact with the saturated felt causes evaporation, and lowers the temperature within, while the single inner layer of dry felt preserves the meat from moisture; and it is a curious fact, the warmer the weather is, the quicker the evaporation, and consequently the cooler the interior. The carcasses are strung up on a row of double hooks inside, as in a butcher's stall, and it is stated that one car can carry those of 17½ bullocks, or eight tons of meat. The trial may be pronounced satisfactory, although the car is still susceptible of improvements, the thermometer suspended within it having registered only 62° Fah., while that of the outer atmosphere was ten degrees higher. Captain Acklom undertakes to supply provisions sound and sweet to the salesman, even in the heat of the dog days, and to carry fish and newly killed meat two or three days, if necessary, untainted. Poultry, milk, vegetables, and fruit can also be transported, in all their freshness, in this felt convenience.

**M. DE GROOF'S PARACHUTE.**

On page 99 of our current volume, we mentioned the death of Vincent De Groof, who was thrown, from a flying parachute of his own construction, from a height of 80 feet to the ground and instantly killed. We now publish an engraving of the invention, which was, in general plan, an imitation of a bat's wings, the framework being made of cane, and the intervening membrane of stout waterproof silk. "The wings were altogether 37 feet long, with an average breadth of 4 feet. The tail was 18 feet by 3 feet. These wings were inserted into two hinged frames, attached to a wooden stand, upon which the aeronaut took his place. He had three levers, which he worked by hand, to give his machine propul-



sion or guidance, as might be required. His theory was that, having started from a given height, he could manage his descent so as to reach the earth by a sort of inclined swooping motion, without risk of concussion."—*Illustrated London News*.

The result to the constructor is given above.

THE Metropolitan Railway of Constantinople is nearly completed. The brickwork of the tunnel, from Pera to Galatz, has been finished, and the rails are now being laid.