

Science Notes.

The Berliner Tageblatt estimates the deficit on the exhibition to amount to something like \$1,950,000, and this in spite of the fact that, according to the Lokal Anzeiger, the exhibition, before it closed on Nov. 15, was visited by 3,500,000 paying visitors.

According to the recent communication made to the Royal Society of New South Wales by Prof. Liversidge on the composition of sea water, the professor finds that it contains about 0.5 to 0.8 grain of gold per ton, thus confirming the work of Sonstadt, published some years ago.

German explorers in New Guinea, Dr. Lauterbach, Dr. Keruting, and Herr Tappenbeck, discovered in October, at the foot of the Bismarck Mountain, a navigable stream flowing through a fruitful and thickly populated plain, over which they traveled for two hundred miles. This is the first well populated area that has been discovered in the interior of New Guinea.

Prof. W. J. Waggener finds that with an ordinary printing press and woodcuts or similar relief engravings all kinds of pictures and diagrams may be printed upon sheets of transparent gelatin, in the same way that they are now impressed upon paper. The prints thus made are ready for use as lantern slides without any further preparation, and can be produced for a few cents.

In the polar regions, Mr. Moss found that at a temperature of -35° C. (-31° Fah.) a candle would not burn regularly; for the wax would not melt, being cooled at once by the surrounding air. The flame then burned feebly, and sank down into a kind of tubular hollow; and on boring holes into this the flame sank down so as to leave a tubular shell, which was actually not melted by the flame. The continuous current of very cold air induced by the flame was not heated sufficiently to enable it to melt the wax above the flame.

When a soil that is not irrigated is covered with plants, it evaporates, according to Prof. Wollney, a far greater quantity of moisture than when the surface is bare. In the former case the evaporation cannot exceed the quantity received by the soil from the atmosphere before or during the period of growth. Swampy lands and those that are well irrigated, as also free surfaces of water, can, under circumstances favorable to evaporation, sometimes give to the atmosphere a greater quantity of water than corresponds to the precipitation that occurs during the same time.

An important source of vanadium compounds has lately been discovered in South America, says Nature. In the high plateaus of the Andes, at a height of about 16,000 feet, there exists a mine of anthracite containing vanadium. The coal from this mine, which is easily worked, burns easily, leaving about two per cent of ash. This ash contains one-seventh to one-quarter of its weight of vanadium, besides some silver, with traces of zirconium and platinum. The extraction of the vanadium on the large scale has been accomplished by M. K. Helouis, who has applied it to the preparation of aniline black, to the coloring of porcelain, and in metallurgy. The vanadium used by M. Moissan in the preparation of vanadium carbide came from this source.

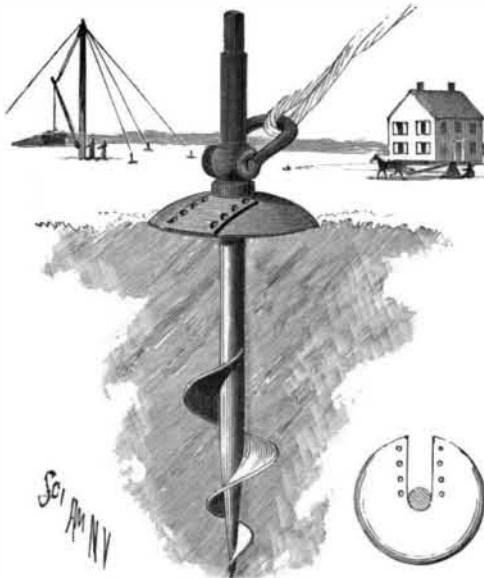
The following table, showing the proportion of light reflected from various substances as compared with that which falls upon their surfaces, is given by Dr. Sumner, and will be found of interest, says Popular Science News:

	Per cent.
White blotting paper.....	82
White cartridge paper.....	80
White tracing cloth.....	35
White tracing paper.....	22
Ordinary foolscap.....	70
Newspapers.....	50 to 70
Yellow wall paper.....	40
Blue paper.....	25
Dark brown paper.....	13
Dark chocolate paper.....	4
Planned deal, clean.....	40 to 50
Planned deal, dirty.....	20
Yellow painted wall, dirty.....	20

By common agreement the wasp is accepted as emblematical of irritability and petty malignity; but even this much abused hymenopterous insect plays a beneficial part in the work of nature, as a note in the Irish Naturalist testifies. A number of wasps were seen by Mr. R. M. Barrington, of Bray, buzzing about his cows. Closer inspection revealed that they were all busy catching flies, and pouncing with the rapidity of hawks after birds on the flies as they tried to settle or rest on some favorite part of the cow. One white cow drew more wasps than any of the others, because the moment a fly alighted it was seen at once against the skin. When a wasp catches a fly it immediately bites off both wings, sometimes a leg or two, and occasionally the head. Mr. Barrington saw some of the wasps when laden with one fly catch another, without letting go the first, and then fly away with both. There was a constant stream of wasps carrying away flies, probably to feed the larvæ in their nests, and returning again to the cows to catch more. In about twenty minutes Mr. Barrington estimated that between 300 and 400 flies were caught on two cows lying close to where he stood. Perhaps this narrative of good deeds accomplished will lead people to think more leniently of the vices of the wasp.

AN EFFICIENT ANCHOR.

For anchoring vessels to the shore of a stream, or for fastening guy lines in raising derricks or in house moving, the simple form of anchor shown in the accompanying illustration has been devised and patented by John J. Ryan, of No. 120 Front Street, Memphis, Tenn. The anchor post has a tapered lower end provided with a screw blade, its upper end receiving a wrench by which the post is turned into the ground, and there being an aperture in the post through which may be passed a bolt to secure a line shackle in position. Movable vertically on the post between the screw blade and a collar just below the shackle is a metal anchor disk, shown also in the small view, the slot in the disk being closed by a riveted plate when the disk has been placed

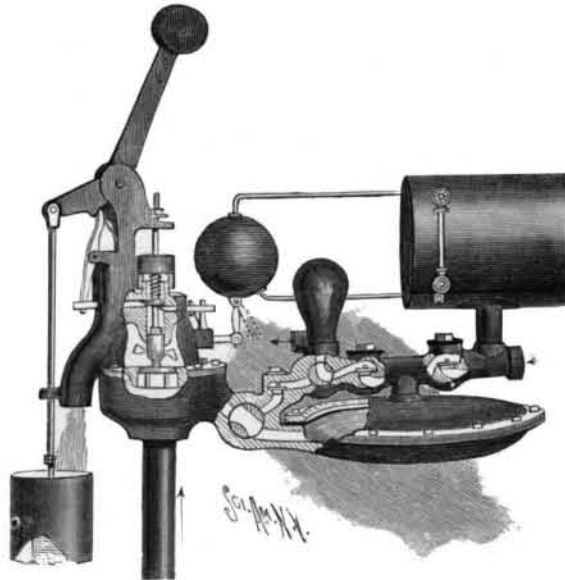


RYAN'S SHORE ANCHOR.

in position on the post. This disk is designed to be especially advantageous in making an anchorage in soft or sandy soils, or in banks over which water is flowing, and also serves as a guide to hold the post straight while screwing it into the ground.

AN IMPROVED HYDRAULIC ENGINE.

The illustration represents an improvement in hydraulic engines whereby the action of a ram or momentum valve is rendered automatic, and the momentum of water is utilized to handle other fluids or gases, as in a pump. The improvement has been patented by Horace D. Payne, of Thompson, Pa. Combined with a ram valve of peculiar construction having a water supply is an incased diaphragm or piston, the space beneath which has connection with the water supply, while the space above is adapted to receive and handle a fluid or gas separate from the water supply. The diaphragm thus has a fluid on each side, or a liquid on one side and a gas on the other side, the pressure being nearly equalized in either case and in-



PAYNE'S HYDRAULIC ENGINE.

surging durability in the diaphragm. The valve is adapted to be seated in the casing by the water pressure, and a bolt movable transversely in the casing is adapted to engage the valve stem to hold the valve open, a pivoted lever connected with an overflow vessel moving the bolt out of engagement with the valve stem, while a water receiver has connection with a bolt adapted to hold the valve in closed position. A weighted lever pivoted to a bracket on the valve casing is adapted to move a pivoted lever connected to a bolt adapted to hold the valve open, and a vessel connected to the weighted lever is adapted to receive water discharged from the valve casing. As shown in the engraving, the device is arranged as a combined boiler feeder and pump for conducting the water from steam coils or radiators of a heating system situated below the water level of the boiler.

Facts About False Hair.

History (writes Mr. Eric Broad, in *Hearth and Home*) records the fact that in 1662, in this country, long flaxen hair was purchased, from the head, at ten shillings an ounce, while other fine hair fetched from five to seven shillings for the same quantity; and within the present century the heads of whole families in Devonshire were let out by the year at so much per poll, "a periwig maker of Exeter going round at certain periods to cut the locks, afterward oiling the skull of each bereft person." That the use of false hair as an aid to feminine beauty was not unknown to the ancients is well proved. The Greeks, Romans, and Egyptians, long before the dawn of the Christian era, resorted to the wearing of tresses obtained from other persons' heads; they even went so far as to paint bald heads so as to represent them as covered with short hair, also marble caps, so painted, were worn. A valuable merchandise in the blond hair of German women is mentioned in ancient Roman history.

A question that has doubtless often presented itself is: Where did all this hair come from? This question I will endeavor to answer. With the coming of spring, in the midlands and west of France, appeared what may fitly be termed a singular class of nomadic individuals, armed with long, iron-tipped staves, and bearing heavy packs of merchandise upon their backs. At first glance one would have taken them to be ordinary hawkers; yet merchandise was but an accessory to their strange industry. They were the coupeurs, the reapers of a hirsute harvest. Armed with long, keen shears, they went their way seeking the tresses of willing victims dwelling in outlying hamlets and villages of peasant France; and a laborious business it was. From "dewy morn" until the shadows of night gathered thickly, they did their ten or fifteen miles a day—often fruitlessly and with empty stomachs, their only bed the wayside. In Auvergne these seekers after hair were known as chimneurs. The Bretons called them margoulins, which terms have no fit English parallels. These curious journeymen exerted every effort to gain their ends—a good head of hair; the former preferring the local fairs as a workroom, the latter choosing to visit the dwellings of their possible clients. In summer the Brittany margoulin was often seen going through the streets, carrying his long staff, from which hung twists of hair, while he cried in doleful tones the well known "Piau! Piau!" at the sound of which the cottagers, with an itching desire to possess some of his gewgaws, attracted the wanderer's attention. He was only too pleased to dazzle their eyes with his many colored wares, and the bargaining was not slow to begin. While the woman fingered his goods, the margoulin weighed her tresses with his hand—a proceeding at which he was adept through long practice. The bargain ended, the woman yielded her abundant locks in return for a few yards of cotton stuff, or a gay petticoat, to which—thanks to the progress of civilization—the coupeur had to add a small sum of money. Sometimes the transaction was not completed without much discussion on both sides. Very often the coupeur had to return to the charge owing to female indecision; and he was more than happy when sure that a tardy remorse would not rob him of half his coveted trophy.

Until the authorities intervened cutting was conducted in public as an amusement for onlookers, it being considered highly entertaining to hear ten or twelve rival coupeurs eulogizing their wares, each protesting his to be far superior to his fellows. The prohibition of this custom drove the hair harvesters to erect tents, rent for the day unoccupied shops, cellars, stables, or any corner they could find wherein to establish themselves. Sticks were then stuck up, from them being suspended petticoats as a lure, as an indication of what could be had in exchange for tresses; to the petticoats were attached twists of hair as trade marks. The ruse succeeded, peasants halted, casting envious glances at the multi-colored garments; they were handled, and even tried on, thus affording an opportunity to the coupeurs to flatter their fair customers—who did not long rest—and victory rewarded the cute buyers. In Auvergne—where the coupeurs were most numerous—the greatest harvest was reaped on St. John's day. The ingathering extended from April to September, during which month the butchers, bakers, locksmiths, etc., forsook their ordinary avocations for that of the coupeur, returning to their legitimate trades with the coming of the dead season. The hair of different countries was distinguished by certain qualities; for instance, that of Auvergne was the coarsest; the finest and the most flaxen came from Belgium; the blackest and longest from Italy; while that procured in Brittany was the most beautiful, though least well cared for.

It is announced that our neighbors, Foster, Paul & Co., 364 Broadway, manufacturers of kid gloves, are to retire from business on January 1. This firm was established some twenty years ago, adopting a patented fastening for gloves, and to this invention is attributed their great success as manufacturers and the fortune the concern has acquired.