# DIGGING TUNNELS.

## THE PRESSURE MEN BEAR WHILE WORKING UNDER WATER.

## Peculiar Sensations and Sometimes Fatal Results-Tunneling Through a Water Hole Under the Hudson River-Interesting Talk With an Air Lock Worker.

Laboring on the firm earth, with "all out of doors" to breathe, perspiring and mayhap grambling at one's hard luck, a person seldom, if over, stops to think that men work day after day deep down in the water or the mud, with none but artificial light to guide their movements and only the air that is pumped to breathe.

People who work in the open air would have only to work for a short time in a diver's suit, a caisson or an air lock, getting a taste of what it is like and how it feels, to be cured forever of grumbling at their lot and to thank their lucky stars that it has been ordained that they work on top of the The work of a diver, his sensaearth. tions while under water and his experiencos have often been written about, but those of the air lock and caisson worker have not. While he does not face the danger of fouling pipes and lines, as does the diver, he stays down longer, gets warmer, and his great danger lies in the stagnation of blood and paralysis, resulting from the change of atmosphere.

Mr. R. C. Rapier of East Cambridge is an air lock worker and talks most in-terestingly. His work was mainly in the air belis used in building the great Hudson river tunnel. To a reporter he talked of some of the supsations, damgers and experiences. He said that, while a man working on the surface of the earth bears up an atmospheric pressure of 15 ponads to the inch, men in the locks bear a pressure of from 15 to 50 pounds of compressed air, according to the depth. The heaviest pressure over worked under was borne by five diversion the Ewedish coast-65 pounds. Four of these died five minutes after coming out.

While as a general thing the diver stands not nearly that amount of pressure and soldom stays down more than two hours, the men in the Hudson river tunnel stood a pressure of from 45 to 46 le pounds and worked in four hour Somo men staid down 20 hours shiits at a stretch, but did not work all the time, and Superintendent Haskins once staid down 24 hours. The sensations experienced are peculiar. When a man first steps in, there is a tingling in the ears and a pain in the head, and when he talks it is apparently through the nose. This is caused by the pressure, and the remedy is to hold the nose, close the mouth and blow against the ears. This relieves the pain and stops the sensation. When the pressure is all on, the worker f als all right and experiences no discomfort. Then there is a sort of exhilaration, and a man does more work in the lock than he could do outside

Another peculiar thing about the action of the pressure is that a man may have liquor enough aboard when out side to just make him feel jolly, but when he steps into the lock he is as drunk as a loon. The danger lies in coming out of the pressure into the open air. It is then that a man is apt to suffer from stagnation of the blood and paralysis, caused by the change of atmosphere. Besides this a man may be attacked in the head or stomach with severe pains. Three out of five cases where the head and stomach are attacked result fatally.

Another severe malady resulting from the change is what is called the bends. This is the air getting in between the firsh and the bone. It is extremely paind so severe at a quart of whisky administered in half an hour would not intoxicate the patient. The stagnation and paralysis are the worst dangers and do the work quickly. Many men have been keeled over by these causes, and not a few die. Old timers at the business sometimes get caught. Mr. Rapier himself was twice attacked. The remedy for this paralysis is a quick return to the air lock. The effect of the pressure varies on animals, as is shown by the mules used in the Hudson river tunnel. Some of these beasts are kept at work down below for a year, and on being brought up are worth more than when they were taken down. Others that had only been in the works four months had to be killed. The men as a general thing do not remain a great many years at the busi-ness, and a man should never work at it after he is 40 years of age. Cutting a hole and building a tunnel through wa-ter is an extremely difficult thing and many was thought to be impossible. Still it was done in the case of the Hud-son river tunnel, and the method, as told by Mr. Rapier, is very interesting. The work on the tunnel had progressed until a body of water was struck. How to tunnel through this hole of water was a puzzling question. It was done in this way. A so called balloon was constructed by making a notting of wire rope and covering this netting with canvas. The interior of the balloon was then filled with blue clay and salt hay. When filled, the balloon, 30 feet in diameter, weighed 140 tons. The hole of water was then located, and with the aid of a huge steam derrick the balloon was dropped into the hole. Then several scowloads of dirt were dumped down on to the balloon, and the whole thing was left to settle At the end of ten days the work of cutting through the balloon was begun. This was a very difficult job. An idea of what hard cutting it was may be gained from the fact that it took two months to dig through the 30 feet. The plates and brick were going in as the work progressed.-Boston Herald.

## RUSSIA'S ARISTOCRACY.

It Embraces a Million Noblemen and Princesses Who Are Shopgiris. Russia possesses 650,000 nobles with-

out counting 350,000 whose titles are not hereditary. Among the Russian nobility there are many of foreign origin. The Russian social code recognizes four categories or estates (soslovia)-that is to say, nobles, priests, town dwellers and peasants. The character of their employment distinguishes these classes from one another. Each is dependent on the czar for all its privileges, and the emperor has absolute power to change the condition of his subjects from a high to a low estate. None of these classes possesses either a historieal, a political or a social individuality.

Russian aristocracy is deprived of political importance, and it cannot boast of such chivalrous qualities as distinguished the French nobles. For the present it lacks sufficient good sense or education to play any part in public Russian aristocrats all desire to be life considered as direct descendants of the Boyars, merely because it is pleasant to be such, and thus get a position of social superiority. Their ambition goes no The Boyars, like the fendal higher. western landowners, are the descendants of the men who of old compared the Russian prince's army. The members of the Russian aristocracy have in great part retained their places at court, so that there can be encountered most of the old historic names. Children of both sexes inherit the titles of their parents.

The Russian aristocracy is distinguish ed by overweening pride and haughtiness, and at the same time there is of ten united to this, in a bizarre contrast, a certain snobbishness. Access to the circles of high society is very difficult. It is only possible to penetrate into them if well born and well connected. The Russians rarely abandon their titles, being too proud of them to quit them casily. A marriage between a poor gentle man and a rich stranger, or vice versa, is considered in this country as a chame ful mesalliance, and the couple would not be received in the aristocratic salons of the capital. Tolstoi, as well as Prince Maschersky, director of the newspaper Grajdanine, has given in his novel very exact and graphic descriptions of Rus sian high life. But with all their innate pride the Russian great folk have never looked upon work as degrading. Thus, if need be, they will adopt with ease and without manyaise honte any offices, any public charges. There is at St. Petersburg a prince who serves in the cus tom house, and many nobles and titled men become professors, schoolmasters, even actors. In a pastry cook shop at Moscow some princesses of high blood serve behind the counter. Others will become governesses, companions, housekeepers, telegraph clerks-in fact, will adopt any employment that may turn up.-Leisure Hour.

#### Goodhart's Joke.

"Yes, dear," said Mrs. Goodhart as she handed her husband his cup of coffee across the breakfast table, "I realize that we simply must economize, and I'm willing to do my part. I've thought of one way of economizing already.

"How is that?" asked Mr. Goodhart. "Well, I'll tell you. I have a good sewing machine and plenty of time, and if you'll select the cloth I'll cut and make you that new pair of trousers you want my own self and save-why, Henry Goodhart, what is the matter with you? Mercy! The man is going into a fit. Here, Jane, bring some water! Go for the doctor, somebody! Help me to support him and keep him from falling out of his chair. What can the matter be? It looks like apoplexy. There! He breathes easier and has opened his eyes. Now, Henry, dear, what is it?"

"Nothing, my dear, nothing, only a sudden faintness. I'll get over it in a few minutes, and I-I-was just jok-

# HIS NOVEL THEORY OF TIDES.

Uncle Alvah Dunning Thinks the Old World "Stoshes" Around.

Uncle Alvah Dunning, the hermit of the Adiroudacks, maintains that the earth is not round like a ball, but as flat as a pancake, or, at best, that it resembles a milk pan, with enough of an edge to it to keep the water from running away.

A number of guests at Charlie Bennett's "Antlers," on Raquette lake, were discussing the theory with Uncle Alvah one day during the hunting season. One of them undertook the alto gether hopeless task of convincing the old man of the error of his belief. Among other things he called attention to the tides.

"Uncle Alvah," he said, "you've heard of tides, haven't you? How do you account for them if the world isn't round?"

The old man remained silent for awhile and then drawled forth, "Waal,

I hev some idee as to 'em." "What is it, then?" asked the ques-tioner, while all the sportsmen drew near to await the answer. Uncle Alvah was not to be hurried, and after anoth er pause he remarked:

"Did ye ever turn over in bed? I think's more than likely." "Yes, I've turned over in bed."

"Do ye sleep 'tween sheets?"

"Always," replied the questioner laughingly. "What's that got to do with it?"

"It's got all to do with it, in my opinion. opinion. When you went over, didn't the bedelothes kind o' slip round an slosh round an didn't get there same time as you did?" "Yos.

"Wnal, that's my idee of the tides. The old earth sort o' slips round under the water like a man under the bed-clothes, or it tecters a bit, like when you tip a milkpan. The water don't get there quite as fast as the land, an that's what makes the tides."-New York Herald.

## "MY OWN THINGS."

The Present Time Is an Age of Individual Environment.

"Say, mamma, John's got my spoon

Can't I have it? It's mine," "Oh, just look! Susan's playing tea party with my dessort plate. Make her stop. She'll break it." "I wish you'd find my pepper box.

This isn't mine," proclaims the head of the house. "It's mighty queer these servants can't ever remember my things.

In the library Uncle Jim is twisting and turning and looking daggers at the unconscious caller who is sitting in his special chair. One member of the household is on the wrong side of the table, and the right paper knife is on the left magazine. He always sits the other side for reading. From the drawing room the voice of the elder daughter is heard saying: "Oh, no, I couldn't endure those portieres. The colors do not suit my style, you know. I made a fuss, and mamma took them in her room. I feel

color in every nerve." Such is what the fashion for having individual things has brought upon the household. We have the individual furnishings, the schemes of hangings to bring out the individual beauty of my lady's eyes, the tint of her hair or the gleam of her shoulders, and on the other hand-perish the thought!--to sink the individual in the useful. Have we not the special chair and foot rest, candlestick and cushion?

Small wonder, then, that the practical, prosaic housewife exclaims: "I wish we could go back to those early Christian days when they had all things in common. I believe I could bear it even with towels!"-New York Times.

Curing a

## Color and Warmth

The color of one's clothing has considerable to do with one's comfort in summer or winter. When exposed to the sunlight, white, it is said, receives 100 degrees F.; pale straw color, 102; dark yellow, 140; light green, 155; dark green, 168; tarkey red, 165; blue, 198, and black, 208. Assuming that this table is correct, the person who dresses in light colors during the summer has about double the protection from the heat that the man or woman in black has.-Lancaster Homeopathic Envoy.

## Vandyke's Place In Art.

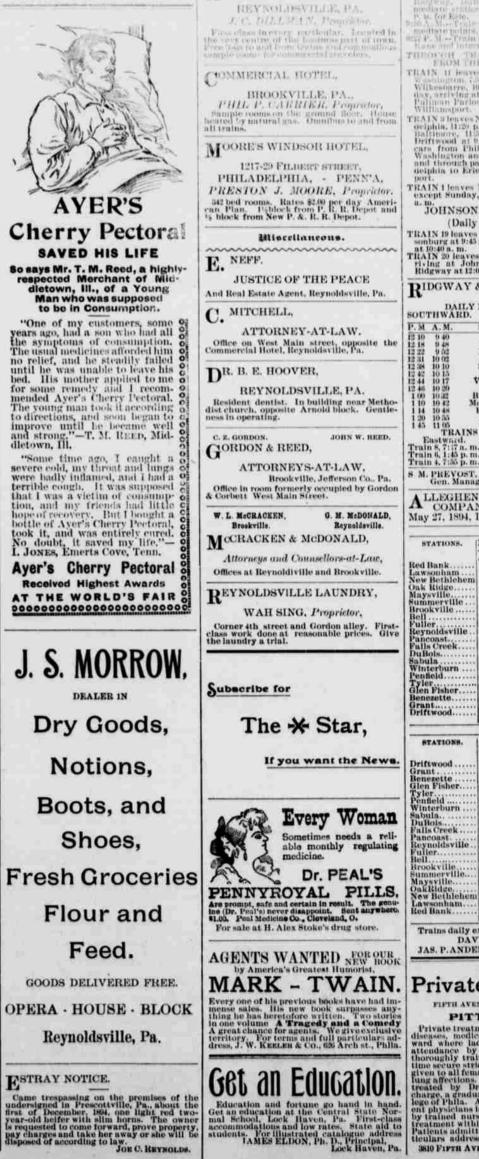
So far as portraiture goes, Vandyke occupies, with Titian and Velasquez, the first place. His works have an air of elegance and distinction and a mundane grace and courtliness naturally befitting his title of "painter to the king." The Italians called him "il pittore cavalieresco." Without the stamina and natural robustness of his great master, Rubous, his portraits are better in point of refinement and grace. But one must know his master to form a just appre ciation of his position .- T. Cole in Century.

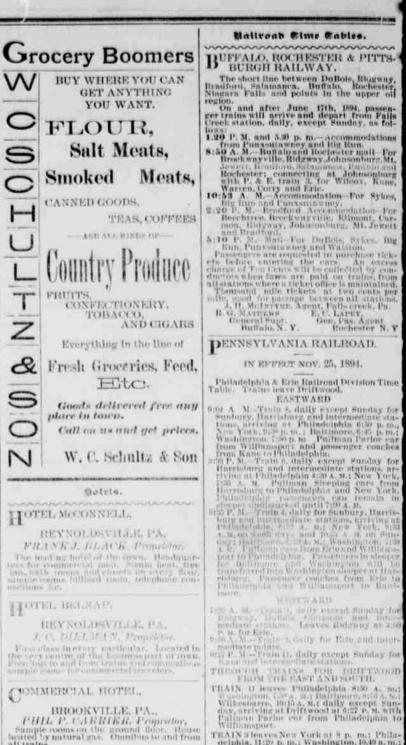
A comparison of the maximum temperature in different parts of the world shows that the great desert of Africa is by far the hottest. This vast plain, which extends 2,000 miles from east to west and 1,000 from north to south, has a temperature of 150 degrees F. in the hottest days of summer.

## A Leaf and Flower Combination

The only known variety, species of genus of plant known to botanical in vestigators in which the flower grows from the leaf has been described in the Paris Journal de Botanique. This queer plant is a native of tropical Africa, and in it the flowers are borne along the midrib on the back of the leaf.-Louis Romblie.

Elizabeth, N. J., was so called after the Lady Elizabeth, wife of Sir George Cartoret.





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## How He Got Bline

Tramp—Please belp the blind. Passerby—How did you become blind? Tramp—Looking for work, sir.— Dallas Times-Herald.

ing when I said that we had to begin economizing somewhere, only joking. my dear."-Detroit Free Press.

#### Boadices's Undiscovered Tomb.

Boadicea's tomb still remains undis-covered. Mr. Read of the British museum has had the trench dug several feet beyond the center of the tumulus on Parliament hill without having found anything to show for whom that particular burying mound was raised. So far the net result of the county council's quest has been a leaden musket ball and some chips of china, but both of these are modern jetsam. There are indica-tions, though, that a portion of the ground was disturbed about a century

For the rest the soil remains as it was in the beginning, heaped up, as there is no doubt was the case, for the purpose of interring some distinguished personage. It is not uncommon, it to draw a blank, for the rain and the slow processes of nature completely de-stroy all vestiges of human remains that may have been buried in them.-London Telegraph.

## A Cold Weather Vell.

A cold weather veil that is a good substitute for the flimsy illusion is one of the finest cobweb crape. This mate-rial comes in various light shades for veiling and is much more becoming than not or tulle. These veils may be washed, if the thrifty wearer desire, in a light suds, made of clear water and a little castile soap. Don't rub the delionte stuff, but squeeze gently and rinse in clear water, to which a drop or two of white mucilage have been added. Dry carefully pinned down on a pillow.

Keeping Pace With the Service.

Patron (angrily)-Bring me some lunch.

Restaurant Waiter-But you've al-ready ordered a breakfast, sir! Patron-Yes, but it was breakfast time then.-Chicago Record.

The battle of the Moat was a conflict before Medina between Mohammed and Abn Sofian. It was so called because most of the fighting was done in the moat that Mohammed had dug to protoot the city from the besiegers.

As is well known, the copperhead is one of the most poisonous snakes, yet J. C. Trout, who was bitten by one three miles from Trimble, Tenn., experienced no serious effects, owing to the remedy he used, which is an uncommon one. He was out hunting, and when a couple of miles from home was bitten on the ankle. He at once started for home, and on the way chewed and swallowed what tobacco he had. When he reached his house, some fresh red popcorn root was procured, and with the milky juice which exudes fom it a stripe was made around his leg just below the knee. The leg swelled up to the mark and no farther, but it finally became so tightly swollen and painful that the juice was washed off and an-other mark made with it around his thigh. The swelling gradually climbed up to the new mark, giving him relief, and he recovered without using any other remedy.-Chicago Tribune

## A Delicious French Candy.

To make French nougat boil a pound of granulated sugar and a teacupful of water over a sharp fire until it begins to turn yellow, writes Nellie Willey in The Ladies' Home Journal. Do not stir while boiling. Have ready one-half pound of almonds blanched and dried. Put them in the oven and leave the door open. When they begin to look yellow, add to the candy as it reaches the turn-ing point described above and quickly pour into a well oiled tin or iron pan about one-half an inch thick. Mark with a sharp knife into bars before it cools. By bending the tins between the hands slightly the candy will come out easily.

## Pussy's Great Catch.

We disapprove of cats catching birds, but where they take such chances as did the Lewiston pussy that leaped from a third story window, snatched an Eng-lish sparrow from a telegraph wire and struck the ground right side up and safely we are almost glad to learn she kept her prey.—Kennebeo Journal.

#### Well Along.

"She is a girl of 17 summers." "Indeed! How old was she when she began to have summers?"—Detroit Tribune.

 
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