



THE TAXANON.—The "cabby" will soon be unable to "put a little on," for an invention has been patented called the taxanon, a little lantern-like apparatus, which, ingeniously placed at the back of a cab, measures the exact distance traversed by it.

GRAPHITE IN NORWAY.—A graphite mine has been discovered at Eker, close to Hongsund, Norway. The quality is apparently good, and hopes are already entertained that this discovery perhaps may give rise to the erection of local lead pencil manufactories.

INSULATING COMPOSITION.—The Telephone Company of Zurich is supplying a new insulating cement for electrical apparatus, for which the following advantages are claimed. Its insulating property is equal to that of porcelain; it is hard as stone, but not brittle, and it is not acted upon by moisture, acids, or heat.—*Electrical Review*

FIRST TUNNEL LIGHTED BY ELECTRICITY.—Washington claims the honour of the first large railway tunnel to be lighted by electricity. This is the Stampede Pass tunnel on the Northern Pacific Railroad, which is 9,540 feet long, and is fitted up with a 600-light Edison municipal plant, using water-power, fed from melting snows from the mountain peak, for driving the dynamo.—*Electrical Review*.

The water-lily is said to be largely used in some parts of India as a foodstuff. The fruit of one species that grows plentifully in the lakes of Cashmere is rich in starch, and has much the flavour of a chestnut. If the nuts are dried they will keep for a long time, and, when ground, may be made into cakes or porridge, or they may be soaked for some hours and then boiled. The seeds of the lotus are also much used in India. When green they are eaten raw; when ripe they are boiled. The root, too, is often boiled and served as a vegetable.

PHOTOGRAPHY IN MEDICINE.—Photography has attained a recognized position in medicine. Facsimile reproductions from photographs form a special feature of the *Illustrated Medical News*; there are amateur photographers on the staff of nearly every hospital, and the extensions now being carried on at the Royal College of Surgeons comprehend a "Photograph Room." The department has already been opened, and was alluded to by Mr. J. Hutchinson, the president, at the annual meeting of the College held last week. Before long, the surgeon will think no more about carrying his camera than he does now of carrying his stethoscope.—*Photographic News*.

THE OLDEST OBSERVATORY.—The observatory at Pekin is the oldest in the world, having been founded in 1279 by Kubla Khan, the first Emperor of the Mongol dynasty. There are still in it three of the first instruments of observation. These were used for the observation of Halley's comet in 1738, and may also be used when, twenty-two years hence, this comet again appears. The oldest observatory in Europe is that founded by King Frederick III. of Denmark, on the island of Hveen, in the Sound, and where famous astronomer Tycho Brahe carried out his celebrated observations—among others, that of the "bright" star in Cassiopeia. The Paris Observatory was established in 1671, and that of Greenwich three years later.—*English Mechanic*.

A CHEMICAL BALLET.—At a banquet which was given at the conclusion of the German Congress of Naturalists and Physicians at Cologne, Dr. Hoffman alluded to the difficulty experienced by students in understanding the constitution of organic compounds, and suggested an original method of fixing these in their minds. The audience was then treated to a ballet in which the dancers were dressed in different colours, to represent the various atoms. At his command these coloured female atoms grouped themselves in various fashions to show the chemical constitution of particular compounds, and their reactions. The composition of benzole, and the formation of aniline and its derivatives, were particularly applauded. The ballet wound up by a representation of the formula for roborite—the new explosive—the finale being a formidable explosion.—*Annals of Hygiene*.

MENTAL CAPACITY DUE TO BRAIN SURFACE.—In an article in the *Popular Science Monthly*, Dr. M. A. Starr says that "there are many interesting facts which make one believe that the greater the extent of brain surface in a man, or, to put it a little differently, the more the folds and deeper the creases between them, the greater are the man's mental powers; and just here it becomes apparent that to judge of the extent of the entire brain surface by the size of the head, or by the extent of the superficial irregular surface which is covered by the skull, without any regard to the number of folds or their depth, is to fall into an absurd error, and here we begin to see how baseless the old phrenology really is. For a little brain with many deep folds may really, when spread out, have a larger surface than a large brain with few shallow folds, and a so-called bump or elevation on the apparent surface of the organ, even if it produces a corresponding elevation on the head, which it frequently fails to do, will indicate nothing regarding the number of folds or the depth of the creases which lie about it, so that it may be stated without hesitation that from the size or shape of the head no conclusion whatever can be made as to the extent of surface of the brain, and consequently no conclusion can be reached regarding the mental capacity."

THE BIRTH OF THE NEW YEAR.

Old Father Time moved restlessly through space, with his eyes intently fixed upon the hour-glass in his hand; closely following came Old Year, casting anxious glances from time to time around, for he knew his stay would be soon over. Already he could faintly see the laughing face of the babe which ere long would take his place.

Suddenly all three fled before the awful presence of one who hovered for a moment over the city far below, and then shot downward. Scarce had this noisome shadow disappeared when there appeared the form of one of brilliant splendour, shedding a lustrous light around which illumined the heavens for a brief moment before he, too, winged his downward way towards the city.

Away in the depths of the kingdom of the Lost Spirits, the ruling one awaited the return of his messenger. Ever in restless motion strode he, while his dark thoughts and fiendish plots found vent in hideous laughter, as though he were well pleased with his diabolic plans. Presently back came the darksome form of the messenger.

"What now; what tidings do you bring?"
"The tidings I bring you, are not the most welcome ones! Oh, master of darkness! There is plenty of work to be done if we would baffle the Spirits of Light, who have already succeeded in finding their way to the hearts of some of our most faithful followers."

"'Tis always so," mutters the other, "I dread the close of the old year more than any time, for in spite of all our efforts, the thoughts of men will turn to their actions of the past, and their conscience touched by the hand of the Spirits of Light, starts from the slumber which we would keep it in, and by its aid wakens the desire for something nobler and better to live for. Marked you well those who seemed inclined to transfer their allegiance from us to the Spirits of Light?"

"Ah, that I did!"
"Then away with your band of helpers, sow the seed of evil thick and fast, strengthen the toils more closely around those who seem to waver. Force your way into the hearts of those whom we have so long been trying to win. Follow the people to the midnight services; keep their thoughts from the dying year. Join the revellers, drown the voice of conscience in the wine cup, let it sparkle and dance with its ruby light till its fire maddens their brains and so make them fit subjects for us to work upon. Hark! What sound is that I hear far off?"

"'Tis nothing but the cries of the lost."
"Nay, it sounded to me rather like a blast from the trumpet of the archangel of light. Haste, or you will be too late."

A golden stream of light shot through the heavens; it was the return of the second messenger who had gone forth to the city. To the Kingdom of Light he speeds, never pausing till he bends with lowly reverence before the Master of Light.

"Ah, my messenger! what tidings bring you?"
"Joyful ones," answered the other, "for though the emissaries of the Spirit of Darkness have been striving for some of our children, yet have they remained firm in their faith and love. Others are engaged in silent meditation on the many loving kindnesses that Thou, oh Master of Light, hast shown them through the past year. Others yet again, are spending the last hour of the old year in prayer for guidance to face the unknown paths of the new."

"It is well," answered the Master of Light, "and now you will return to the earth with your band of helpers. See; here they come! radiant with happiness at the thought of the mission they are going on. Visit the homes of the sorrowful ones, whisper words of comfort and hope, especially to those whose hearts have suffered the anguish of parting with their loved ones. Tell them it is but for a brief season and they must rouse themselves to meet the coming year, having faith in their hearts, with hope to light them on their journey, while charity will teach them the delight of doing whatsoever comes to their hand."

A blast from the archangel's trumpet, and wide

the pearly gates were thrown, as the band of the Spirits of Light passed through and winged their way earthwards.

Wild and stormy had been the day. The wind had rushed and roared in its mighty strength, but now as the church bells summoned forth the watchers of the old year, it seemed as though it had spent its fury, and save for an occasional burst, it had died away in a low moaning sound. Swiftly through the city passed the Spirits of Light and Darkness, each striving to win their way to the souls of men. Dying, dying old year, sighed the wind. Then the joyful ringing of the bells announced the birth of the new year, the sound was caught up and re-echoed above by two Spirits of Light, who bore swiftly through the air the great golden bell whose mighty tones reverberated through the heavens, summoning from far and near the messengers from their different errands.

Passing through the wide open gates, they surrounded the Master of Light; deep silence reigned as He opened the Book of Life and read aloud the deeds of those recorded there for the past year. Then sealing that part of the Book with the Great Seal, He left it open with its fair pages as yet unwritten upon, for the records of the new year. Then the vast assembly of the Spirits of Light broke forth into a joyous strain of melody which welcomed in the new year, as the mighty volume of sound swelled forth in its joyousness it penetrated to the depths of the Kingdom of Darkness, causing the evil spirits therein to cower in a fright.

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"THESE MY BRETHREN."

A mother sat in a bare room where a tiny stove scarcely warmed the atmosphere. She had just put three little ones into their ragged bed—ragged, but not dirty, though soap was hard to get and water scarce except in the form of ice and snow—and as she sat weary and depressed, the tears she had been keeping back all day fell in heavy drops upon the little frock to which she was adding another patch, for it was Christmas Eve, and she was a stranger in a strange land.

The husband and father came in with a slow, dragging step, as one who had spent a heavy day in heavy work. He too was in a depressed mood, but when he saw the furtive brushing away of a tear and the sickly beam of a smile with which his wife tried to welcome him, he too smiled and went forward quickly to kiss her.

"A poor Christmas Eve, wife, to be sure, but never mind, 'better luck next time,' as the saying is. Give me a bit of supper if you have any left after feeding so many hungry mouths."

Pouring out a cup of tea, sugarless and milkless, the wife set it beside her husband and added all her store, a piece of bread and a morsel of dripping saved from a jar that had been given her.

"How much did you earn to-day, George?" asked the wife, dreading the reply lest it should mean nothing left for rent and fuel, after bread for two days had been procured.

"Just fifty cents, wife, and I worked hard too; but the boss said I was a greenhorn and couldn't do much yet. After a while he'll give me a dollar, if the frost keeps off so that work can go on, but it's a poor prospect and I'm almost disheartened."

"Let us pray, George, and then go to bed; it's getting cold, and I want to save enough wood to last over Christmas Day."

"I'm almost ready to say it's no good praying, wife, for we are not far from starving, and I pray all day."

"Never mind, Our Father hears; let us trust Him and do our duty. He is no Baal to fall asleep, but a God that hearkens."

Nevertheless it was scarcely with as much faith in the personal God and Father as she tried to inspire in her husband that the wife joined in the simple petition for help that fell from her husband's lips, and no visions of help and comfort cheered the poor weary eyes that closed themselves over tears as the wretched mother thought of the Christmas that used to be and the Christmas of the morrow, when the poor children would wake to dreariness and cold and blank misery, if not to ab-