SCIENTIFIC SCRAPS.

The polar regions of Mars, like those of the earth, appear to be covered with ice or snow.

Looking through yellow glass in a fog is said to render objects more distinctly visible.

By the new mode of tanning mineral salts take the place of tannic acid in preserving hides

The weight of the cranium varies, in a general way, with the weight of the skeleton, but not proportionately, like the weight of the brain.

Various kinds of foul water, which are sure to kill when injected under the skins of rabbits, become harmless as soon as th ey are shaken up with common sand.

The moon is gradually increasing the length of our day, by enlarging its own orbit, so that we may reasonably look forward to a day of 1,400 hours, instead of twenty-four.

The two coldest spots on the earth are not its poles. One of them is in Northeastern Siberia, the other in the archipelago north of the North American coast line, northwest of the Parry islands.

It is generally supposed that a thick covering of snow affords the best protection from the severe frosts of winter to the soil beneath. Experiments by Deherain and Kayser prove that grass turf is much more effectual.

The fact that color is nothing but a function of the eye has been distinctly shown only within a few decades, although Schopenhauer announced it on theoretical grounds. This discovery must exert a marked influence on art theories.

Professor Padicirio, of Montpelier, thinks he has discovered a direct method of destroying the phylloxera. He uses prussic acid. The destruction of valuable vineyards in Europe by this insect within ten years is estimated at three thousand million francs.

CLIPPINGS FOR THE CURIOUS.

The word alderman is derived from the Saxon "ealdorman."

Butter was used by the early Romans as medicine, never as food.

About thirty-four millions in silver dollars are now in circulation.

The cachalot, or sperm whale, has an enormous head and no sense of smell.

After man the whale's worst enemy is the grampus, which attacks it savagely.

Crows have been known to go to roost with the barnyard fowls during a cold storm.

Twelve million five hundred thousand acres are devoted to cotton in the Southern States.

A narrow-gauge road of three feet costs in construction about five-eights as much as a broad gauge.

It is said that watermelons may be preserved for an indefinite time by giving them three or four coats of varnish.

In the late sale of the library of Mr. George Brinley, a copy of the first book printed in New York brought $1,600.

The Ojibways pulled down the house in which any one had died, and chose another place to live in as far off as possible.

In Great Britain there are three sheep on every four acres of cultivated land ; in the United States there is but one sheep on thirty-four acres.

Military Terms Explained.

Fatigue duty means details made from companies for duty, work of all kinds, such as loading and unloading quartermaster and commissary wagons, repairing roads, ditches, etc. Police duty is the keeping of the camp in order, sweeping, etc., and is generally performed by the old guard, though sometimes a special detail is made for the purpose. A field work is a work of dirt thrown up for the purpose of giving protection from the enemy's fire. The best order for firing with the breechloading rifles is in open order or as skirmishers. If a call sounds to fire, a soldier fires only when he sees something to shoot at. File closers are non-commissioned officers or men marching in rear of company and their duties are to check all disorders, keep the ranks well closed up, and to caution men who are firing too high. File-closers never take part in firing unless the command is hard pressed, at close quarters and when every available musket is needed. Tactics is the art of moving troops in the presence of an enemy. Strategy is the science of conducting the operations of war ought of sight of the enemy. An aligment is the line upon which droops are formed or dressed. A point of appui is the point of rest or toward which companies are dressed. A pivot is the fixed or movable point upon which a change of direction is made. A deployment is the forming of a column of twos or fours into line a ployment is the forming from line into column.

Burial Customs in Europe.

In France, as most people are aware, no one meeting a funeral on the streets omits to raise the hat or cap in token of respect; but in Spain the usage does not exist. When the "Viatique" is carried through the streets, every one is bareheaded and kneeling, but a funeral passing along receives no mark of respect as in France. Moreover, while in the latter country a deceased person is followed to the cemetery by all his relatives, friends, acquaintances, and even by many who are only acquaintances of his acquaintances; in Spain it is the habit for persons to abstain from accompanying the coffin to the grave. If the defunct belongs to the better classes, his friends send their carriages to follow, but they themselves remain at home. The Spanish cemeteries differ also materially from those in France. "They are," said M. Emile Maison, who has resided many years at Madrid, "but walls provided with drawers, only a few monuments being seen in the inclosure, erected to the memory of the wealthy or distinguished."

To leave Spain and its customs and halt on Italy's classic soil, there are one or two things worth mentioning in reference to the burial of the dead, which is performed with a different ceremonial in different parts of the country. One remark which applies to the whole of Italy may be made, however, namely, that the hearse is entirely unknown. Apropos of the hearse, its introduction into France only dates from Louis XIV.'s time; and when it was first used to carry the dead to the cemetery the innovation was loudly condemned by the public. At Turin the interment of the higher classes takes place generally at dusk; the followers are numerous, but are mostly composed of valets or servants of the friends or relatives of the deceased, clad in rich liveries for the occasion.

At Naples funeral ceremonies are conducted with a certain parade and pomp. The dead man, woman or child is exhibited, richly dressed, on the bed; sometimes, indeed, the body is thus exposed to view under the porch of the house, surrounded with lighted tapers and flowers. When the moment arrives for placing it on the bier the duty is discharged by a religious community, excepting in the case of the poor, whose remains, as in France, are consigned to the "fosse commune," which is, in fact, nothing but a deep well. In the magnificent Neapolitan cemetery, which forms an amphitheater, there are 365 of these wells, one for every day in the year. Every day one of them is opened to receive the dead, a quantity of quicklime is emptied into it, a few pails of water are poured on, and the stone is replaced, to be removed again only at the expiration of a twelvemonth. This is how the remains of the poorer classes are disposed of. With regard to the wealthier portion of the community, they are interred in a monument resembling a chapel. The coffin is not lowered into a vault, for the reason that there are none, but is placed in the chapel itself, and covered with a slight layer of prepared earth, which has the property of reducing the body to a skeleton within a year from the date of interment. The family of the deceased person then proceed with another funeral ceremony. The bones are collected, put into a fresh coffin of peculiar shape, and walled up, the name and quality of the defunct being inscribed on the stone which shuts in the coffin.

At Palermo the dead are placed in a bier richly covered with red gilt-embroidered velvet, or in a kind of sedan chair equally red, and conveyed to the convent. On its arrival the body, after the funeral service has been performed, is lowered into a large "souterrain," which extends under the convent gardens. Here the unconfined remains are placed in a vault, the ground of which is formed of extremely fine sand. Each receptacle is made to hold six or eight corpses. It is called the "Scolatojo," and when filled is walled up for a year.—*Churchman's Shilling Magazine.*

Moles.

Who is there among dwellers in the country who has not seen dead moles hanging on sticks in the fields or has not heard of farmers paying money for their capture? A correspondent, however, suggests that farmers may have been making a serious and cruel mistake. "I have had," he says, "a field of wheat full of moles all the year without doing it the least possible injury; but, on the contrary, I verily believe that up to harvest they did my crop good. Again, it is said moles eat seed corn, but this is a great mistake, for I have examined the stomachs of scores, but never found a single grain of corn in one of them. I believe 60,000 bushels of seed corn are annually destroyed by wireworms." The mole, of course, is a great enemy to this subterranean pest.—*London Graphic.*

There is every indication of an enormous travel to Europe next summer, and nearly all the steamship lines are increasing their fleets.

Ostrich Feathers.

During the war ostrich feathers went up to an enormous price in this country. When we had to pay as high as 260 for gold to pay not only for the crude feathers, but for the work of preparing them for the market and the heavy duties exacted upon them in their finished form, they became almost unattainable. At that time the arts of bleaching and dyeing feathers were hardly known in this country. A German, Isidor Cohnfeldt, was the first to establish the new industry here, and already New York has the largest establishment for feather manufacture in the world, and is enabled to maintain a lively competition in this line of products with the principal European cities. This principal establishment employs in its busiest season—the spring and summer months—525 girls and thirty-six men, and all the year round finds work for from 435 to 460 persons; turning out $1,250,000 worth of goods per annum. Few people have any idea of the amount of rough treatment an ostrich feather will stand and has to go through to make it the beautiful thing which eventually adorns some lady's Gainsborough hat or a Knight Templar's chapeau.

As it comes from Africa in its crude state, it is plain, rough, discolored and dirty. In that condition it may be worth anywhere from $5 to $250 per pound, according to its length, fineness, absence of color and thickness. First, after being counted and tied together by their quills, with long strings, the feathers are vigorously brushed, one by one, to free them from dirt. The workman trys them on one brush and works them with the other, touzling, hackling and mussing them in such a way that their destruction seems inevitable. They are then soused in great tubs of soapsuds, rubbed with brown soap, and washed more vigorously than laundresses wash clothes. After that they are bleached by a process which turns even black feathers to snowy white. From the bleaching tubs they go to the dye vats. We now excel in this country the European feather dyers in the delicacy and durability of all our colors, except the coral tint, in which the old world is still ahead. However, that tint has not yet been much in demand by fashion. "When it is," our dyers say, "we shall of course beat them in that too." When thoroughly dried, beaten, redried, combed and sorted the feathers pass into the hands of girls. The thick, unsightly stem of each feather is pared down thin on the under side, and in place of its stiff and ugly quill a tapering substitute of wire, covered with cotton and paper, is firmly fastened on. By careful sorting, clipping, selecting out and matching pieces from different feathers, a composite second feather is made, to underlie the long and perfect one which constitutes the top of each completed plume, and these various pieces are securely sewed together, so that it requires a sharp eye to detect that the fine construction, of double thickness, is not a single feather. In exceptionally valuable plumes, the lower as well as the upper feather is whole and not made up of pieces, but in all cases the completed plume is double. If the stem of the upper feather is discolored it is carefully scraped.

After steaming, to soften the feathers, they are next curled and "laid." In the first process a girl, by passing the fibers between her thumb and a dull knifeblade, gives them a regular curl all along both sides of the feather, and the second consists in giving them a series of dexterous little twists which throw the curled ends upon the upper side of the plume. All this work adds an average of ten per cent. to the value of the feathers. A pound of fine ones, suitable for plumes, will contain about 150 feathers, sufficient for seventy-five plumes, and costs, say, $250. The finished plumes command from $4 to $15 each, according to length and quality, but the general average is lowered by the small comparative value of the lower grades.—*New York Sun.*

One Wrong Brick.

Some workmen were lately building a large brick tower, which was to be carried up very high. In laying a corner, one brick, either by accident or carelessness, was set a very little out of line. The work went on without its being noticed, but as each course of bricks was kept in line with those already laid, the tower was not put up exactly straight, and the higher they built the more insecure it became. One day, when the tower had been carried up about fifty feet, there was a tremendous crash. The building had fallen, burying the men in the ruins. All the previous work was lost, the materials wasted, and, worse still, valuable lives were sacrificed—and all from one brick laid wrong at the start. The workman at fault in this matter little thought how much mischief he was making for the future. Do we ever think what may come of one bad habit, one brick laid wrong? Young people are now building a character for life. How important to see that all is kept straight.—*Observer.*

MORAL AND RELIGIOUS.

The Three Hardest Words.

A very learned man once said, "The three hardest words in the English language are, 'I was mistaken.'"

Frederick the Great once wrote to the senate: "I have lost a great battle and it was entirely my own fault."

Goldsmith says, "This confession displayed more greatness than all his victories."

Do not be afraid to acknowledge your mistakes, else you will never correct them; and you are really showing how much wiser you are than when you went astray.

Religious News and Notes.

Kansas has 299 Presbyterian churches with 12,044 members.

Leipsic, in Germany, has only seven churches, all poorly attended, and no such thing as a Sabbath-school. The people are indifferent to religion, and look upon a religious person with curiosity.

The revival movement which originated in St. Paul's Methodist Episcopal church, Cincinnati, under the ministrations of Mr. Harrison, has extended to nearly all the churches in that city and its suburbs.

The Bishop of Honolulu has gone to England for the purpose of soliciting aid for building the Episcopal cathedral in the capital of the Hawaiian kingdom. The church will be 125 feet long, and cost $50,000.

The Centennial Methodist mission at Lucknow, India, is reported to be in a prosperous condition. The present number of pupils is 115, comprising fifty-eight Christians, forty-four Hindoos and fourteen Mohammedans.

The Rev. George C. Miln has decided, after all, not to give up the pulpit of the Unity church, Chicago (Unitarian) for the bar, his congregation having voted him perfect liberty to say in his sermons whatever he wishes.

New Hampshire has eighty-one Baptist churches, with a total membership of 8,915. The total amount contributed in all the churches for the support of the gospel and for benevolent and miscellaneous objects the past year was $78,105.48.

Archdeacon Macdonald, of the Canada Protestant Episcopal church, has a field of work on the confines of the Arctic circle, and extending over about twenty degrees of longitude. About 1,500 natives have been baptized and more than 100 are communicants.

There are 874 Baptist churches in New York, with a total membership of 114,431; and 802 Sunday-schools, with 11,993 officers and teachers and 101,272 scholars. The total valuation of the church property is $8,447,251; the total indebtedness $441,372 and the total expenses of the past year, for maintenance of public worship, $798,516, and for charity, $313,206.

Precious Opal.

Since the time Pliny accurately described his opalus to the present day this handsome mineral has been esteemed a gem, though not always assigned the same rank; for fashion, in its capricious vagaries, displaces and reinstates it in favor at irregular intervals. Its innate beauty so happily characterized in the lines,

> "Milky opals that gleam and shine
> Like sullen fires through a pallid mist,"

coupled with the fact that it is perhaps the only stone really defying imitation, has enabled it to eventually hold its own. The high rank awarded it in ancient times was undoubtedly largely due to the comparative ease with which it could be worked, and also to the fact that unlike all other precious stones much of its beauty was revealed and available without any labor. The strange popular belief of modern days that opal is an unlucky stone to the wearer, appears to be directly traceable to Sir Walter Scott's romance of "Anne of Geierstein." In its usual occurrence in seams or veins in porphyry and igneous rocks, it is plainly an infiltration of gelatinous silica (silica in the colloid state), often mixed with considerable cyrstalloid silica, and retaining more or less of the original combined water. Indeed, precious opal proper seems, as a rule, to contain more water than the other varieties. Until within the past few years the greater part of the material for commerce has been of Hungarian and Mexican origin, but a new source of supply has been discovered in Queensland. In the variety from this locality, which may in some respects be considered unique, the usual fiery reflections are displaced partly or even entirely by the most splendent metallic hues—greens and blues of every conceivable shade—the individual colors in some instances being arranged in more or less distinctly defined bands or zones, or again imperceptibly melting into each other and vying with the plumage of humming birds in magnificence. Clearly the old descriptions will need enlarging to cover this latest addition to the numerous forms of silica.—*F. W. Stoebner.*

GUITEAU'S PRESENTS.

The Various Articles Received by the Condemned Assassin—A Change of Spirits.

The popular reprobation of the assassin's crime is still manifested in different ways. The common mode of expressing the feeling against the assassin, says a correspondent, is to send a rope suggestively noosed. These ropes began to come by express and mail before the trial, and are still coming in. They have been sent to the district attorney, to Mr. Scoville, to the warden of the jail and to the assassin himself. A little room at the jail is strewn with ropes received from various parts of the country. Some of them are ropes such as are generally used in executions, with the conventional hangman's noose skillfully made. Many other little reminders of the fate that awaits him come in the mail to the assassin, but the warden, as a rule, keeps them from his eyes.

Cheap comic pictures representing the gallows with a dangling victim are also sent to the assassin. In every nook in the district attorney's office can be found some testimonial of popular feeling respecting the assassin. Many of the things received have been destroyed. In one corner of Mr. Corkhill's private office is a little heap of ropes. A bundle of switches was sent to the scoundrel from Florida. A citizen of Osceola, Iowa, in order to testify to his feelings in a unique way, invested $6.50 in a pair of white kids and a fine white satin tie, the tips of which he dyed blood red. He sent these with a request that they be worn by the culprit on the scaffold, the red marks to testify the innocent blood of his victim. They now form a part of the district attorney's museum.

From Ohio came a little wooden box, opened on one side. It contained a miniature scaffold, on which a paper image of a man was hanging, while a score of paper women were hauling on the rope. These were, according to the inscription on the box, "The women of Ohio."

Among other curiosities saved by the district attorney is a miniature scaffold and coffin, very neatly constructed, and a gallows-tree, with an effigy six or seven inches long suspended upon it. There is also a little coffin, the open lid of which exposes a death's head. The coffin is inscribed "Strangulatus pro diabolo, 1882."

All sorts of pictures, cartoons and letters have been received and destroyed. During the early part of the trial a great many gags of various patterns, the common form being a corncob with strings tied at each end, were received, with a request that they be applied to the prisoner. Some of these have been preserved. In the same connection may be mentioned various pots of glue and mucilage, sent with the suggestion that the villain's mouth be glued up. Many patent medicine firms, doubtless with an eye to an advertisement, sent the district attorney samples of their wares, proposing that he dose himself with the mixtures so that his health should not fail him until he had convicted the prisoner.

The district attorney has also received a large amount of Confederate money to be turned over to the prisoner. One imposing testimonial letter, signed "Citizens," contained one copper penny to be given to Mr. Scoville to aid in the defense. A letter received from New Waterford, Conn., from a rope-maker, proposed to make for the assassin a red, white and blue rope out of silk or any other material the district attorney might select. One of the most ghastly curiosities in the museum is a black cap sent by an unknown friend of justice.

A letter that came from Chicago suggested as the proper mode of execution that the assassin be fastened to a rope 300 feet long, the other end being attached to a balloon, which would give him a veritable "flight to glory."

The demon, according to Warden Crocker, has become as docile as a lamb; doesn't insist upon having his own way as he did during the trial, and does what he is ordered to do without a murmur. He has lost much of his accustomed bravado, and does not become so excited when in conversation. General Crocker states that he does not believe any man under sentence of death ever more fully appreciated the awful situation than the condemned. He has become very much depressed in spirits and shows it. He behaves with perfect decorum, and there is not a sign of insanity in his conversation or actions. He is denied the privilege of seeing visitors now altogether, and this seems to worry him.

Jacob Wilson, the town crier of Birmingham, England, who has held the office fifty-two years, is the sixth Jacob Wilson who has held the place during the last 300 years, each being the youngest son of his parents, and succeeding without question to a place that had come to be recognized as hereditary. This Jacob Wilson, however, ends the line, as the office has been abolished.

The output of bullion from the Utah mines for 1881 was $10,000,000.

In the Clutches of an Octopus.

A Fulton market (New York) fish-dealer gave a reporter some interesting information about that uncouth marine monster, the octopus, or devil-fish. He said: "I'd rather meet half a dozen sharks than one octopus. In almost any market in San Francisco you will find them from ten to twelve feet long. They are sold by the pound to the Chinese and sometimes to Frenchmen and Italians. I kept a stall there once, and I have sold hundreds of them. The Chinese call them Chang Kwei Yu, and they are very fond of them. Italians and Frenchmen always wanted them cleaned, but Chinamen wouldn't buy them unless they were whole. I didn't understand this until one day when I sold about fifty of them to an old Chinaman, who was so particular about their having bills and suckers on that I sent a boy to follow him. He traced him to a Chinese doctor, who paid the old chap more for the suckers and bills than he had paid me for the entire lot. It seems that these parts were very valuable to them as medicine; so after that I made just double on my sales. They taste something like frogs, but are too soft and jelly-like to suit me. Angel Island is a great place for them, and any pleasant day you can see Chinamen hunting among the rocks at low tide or hauling long nets for them.

"The largest one I ever saw alive had a spread of about twenty-two feet. It was a good many years ago. I was knocking about 'Frisco, where I met a friend who had got together a party to go up the coast somewhere near Vancouver's Island, and hunt for rich wreck, and I shipped. We discovered the old hulk in about four fathoms. In the crew were two halfbreeds from Mexico, who could stay under water, it seemed to me, about ten minutes. They were pearl divers from the Panama coast, and when they went down they carried a heavy stone to sink them and a rope to make fast to anything they could find. When the oldest diver slipped over we could follow him on the bottom by the air bubbles. His mate held a small life line that he signaled by. In about four minutes the signal came, and we hauled away. He came aboard with a jump and said that he had hooked on to a cask or a box, and that as soon as he moved it a cloud of mud or sand rose, as if some big fish had moved, and thinking of sharks, he had come up for his knife, which he generally took down at first. He seemed somewhat winded, and the other man said he would go. Taking a sharp knife in his mouth, he was lowered down, and was soon out of sight. After he had been down about five minutes there came a pull on the life line that nearly jerked the skipper overboard. We pulled and pulled, until it was evident something was wrong and we all gave way hard, and by the way it came we thought the whole wreck was afoul. In half a minute we had Pedro's head out of water, but the sight of it almost made us drop the line. The poor fellow seemed almost covered with a mass of snakes, that were twisted all over him. The arms and legs of the animal writhed about, some around his neck, others around his arms and body, while fastened to his breast was a big bag-like body with a pair of eyes like a cat's, with the same green light you see in them in the dark. The skipper and the other diver knew what it was, and sung out for knives. We couldn't get it on deck, because three or four of its arms were slung around the bow cable. The diver lowered himself, and putting his knife in under the animal, he slit it in two. The skipper in the meantime was at work in the fore chains, and he cut off the arms. Then with a jerk we had the man on deck. He was half dead, and we had to cut the octopus from him piece by piece, and even after it was cut up the two jaws clung to his chest and had to be cut out. It took us half an hour to clear him, as each sucker—and there were hundreds of them—brought blood when it was torn off. We filled two barrels with the pieces that we took from him, and the whole animal must have weighed 250 pounds, and probably more. We put it together afterward on the deck, and it measured from the tip of one arm to the tip of the opposite one twenty-two feet.

"It seems that the first man down started the thing, and when the next one reached the bottom he was tied up in a knot. For a minute he couldn't use his knife, and when he did make a cut at the animal it let go its hold on the bottom and sprang at him, and in that way we hauled him up."

Clerks in the French government offices are not so well paid as to make the struggle for places so great in France as in some other lands. On an average the salary is only 2,500 francs, or about $500 a year, and the most of them marry on this and have children. Rent costs them at least $100 a year, clothing and linen another $100, if not $120, and general expenses about $100, thus leaving them $180 for food, drink, and the dowry of the daughter.