### SCIENTIFIC AND USEFUL.

Frw realise the power stored in coal for man's use. It is stated as a scientific fact that in a boiler of fair construction a pound of coal will convert 9 lbs. of water into steam. Each pound of steam will represent an amount of energy or capacity for performing work equivalent to 746,600 foot lbs., or, for the whole 9 lbs., 6,720,000 foot lbs. In other work, 1 lb. of coal has done as much work in evaporating 9 lbs. of water into 9 lbs. of steam as would lift 2232 tons 10 feet high.

2232 tons 10 feet high.

INDIA-RUBBER.—One criterion for good rubber has been that it would float on water, its specific gravity being 0.585. The addition of any mineral adulteration, of course, renders it heavier than water, and it sinks; but recently cork has been introduced as an adulteration; and as it injures quality without increasing its weight, specific gravity becomes an insufficient test of quality. In some specimens examined at a chemical works in Stolberg, forty to fifty per cent of mineral constituents were found, and to these are attributed the fact that India-rubber finds less use in the arts than might be expected.

EIMILABITY OF GUM ANL BLOOD.—From ex-

SIMILARITY OF GUM ANL BLOOD.—From experiments made with pyrogalic acid, Struvé concludes that gums perform a function in plants analogous to that of the blood in animals. Pyrogalic acid in contact with alkalice oxidizes rapidly, becoming of a dark brown color. With other substances, such as gum arabic and blood, the oxidation is slow, a yellow color is produced, and long, needle-like crystals form which are insoluble in water. The least trace of this yellow substance produces an intense blue with ammonis or the other caustic alkalies. The exact composition of this curious substance has not yet been ascertained.

Voice of Fishes,—At a recent meeting of the

Voice of Fishes.—At a recent meeting of the Academie des Sciences, M. Charles Robin read a report on the investigations of M. Dufossé relatreport on the investigations of M. Dufossé relating to the production of voice in certain fishes.
The swimming-bladder appears to be the principal agent in producing voice—at least in those
fishes in which that organ has a valve opening
into the corphagus; and even in those in which
it is a xhut sac, it sets as a sounding-board in
augmenting the sound produced by other parts,
That it is not exclusively the cause of vocal
sounds is shown by the circumstance that some
fish are destitute of a swimming-bladder, and
are yet capable of producing distinct musical
sounds.

THE proprietor of a manufactory of Schweinfurt green—arsenite of copper—in France, was recently sued for negligence to apply proper sanitary protective measures on his premises, such lack of precaution having resulted in the death of two workmen. Judgment having been rendered against him, he applied to the council of health for instructions as to what regulations he ought to impose in his works. At their suggestion, the laborers are now prohibited from bringing their food to the manufactory, or taking their meals there. They are required to wash their hands in acidulated water before each meal; to keep a special suit of clothes for working wear, and to use stout shoos impermeable to arsanical powder; and to leave work instantly on the slightest attack of illness.

Colors of Marine Waters,—Many local THE proprietor of a manufactory of Schwein-

on the slightest attack of illness.

Colors of Marine Waters, — Many local causes influence the colors of marine waters, and give them certain decided and constant shades. A bottom of white sand will communicate a graylsh or apple-green color to the water, if not very deep; when the sand is yellow, the green appears more sombre; the presence of rocks is often announced by the deep color which the sea takes in their vicinity. In the Bay of Loango the waters appear of a deep red, because the bottom is there naturally red. The sea appears white in the Gulf of Guines, yellow on the coast of Japan, green to the west of the Canaries, and black round the Maldive group of islands. The Mediterranean, towards the Greetan Archipelago, sometimes becomes more or less red. The White sometimes becomes more or less red. The White and Black Scan appear to be named after the ice of the one and the tempests to which the other is subjected.

# FAMILY MATTERS.

HOME-MADE CHLORIDE OF LIME.—Directive a bushel of sait in a barrel of water, and with the sait water stack a barrel of lime, which should be made wet enough to form a kind of paste. For the purpose of a disinfector this is nearly as good as that purchased at the shops and drug stores at more than troble the expense.

WASHING MADE EASY.—Go to a druggist and buy one pound of soda ash and one half pound of lime; put it in two gallons of soft water, bring it to a boil, then strain. Put in a stone jar and set away for use. For a medium-sissed washing use one pint to two or three pails of water, belling the clothes one hour before rubbing. Be particular in rinsing.

How to Ripen Tonators.—Pick them from the vines as soon as they have their growth, and put them in an upper room before a sunny south window. A painted floor is best to spread them ever, as it will draw the heat much better than an uppainted one. Tomatoes do not ripen that if left on the vines after the weather gets chilly. Vines that have been kept from the frost can be pulled and hung up by the roots in the cellar. It is said the tomatoes will continue to grow said ripen for weeks.

KID GLOVER (TO CLEAN).—Piece a fine towal

KID GLOVES (TO ULKAN.)—Place a fine towel folded on the table, on which lay your glove,

take a piece of finned, and with the foreinger dip it lightly into milk, then rub it about twice dip it lightly into milk, then rub it about twice on a place of common brown scap; proceed to rub the glove, commencing with the thumb, and as the finunel ingertly becomes dirty, change it till no dirt comes off the glove. After cleaning the front and back of the finger, open the finger and again lay it down flat, this time to clean the sides, otherwise you would find a streak of dirt when the glove is dry. After the fingers clean the palm and back, taking care no particle escapes, otherwise a streak will appear. When the glove is dry pull it out, and a white clean glove will be the result. Too much scap stiffens the glove; too much milk is equally objectionable. icciionable.

Joctionable.

PINE APPLE PRESERVE.—To every pound of fruit, weighed after being pared, allow lib. of loaf sugar and a quarter of a pint of water. The pines should be perfectly sound, but ripe. Cut them into rather thick slices, as the fruit shrinks very much in beiling; pare off the rind carefully, that none of the pine be wasted, and in doing so notch it in and out, as the edge cannot be smoothly out without great waste. Dissolve a portion of the sugar in a preserving pan, with a quarter of a pint of water: when this is melted, gradually add the remainder of the sugar, and boil until it forms a clear syrup, skimming well. As soon as this is done, put in the pieces of pine, and boil well for at least half an hour, or until it looks nearly transparent. Put it into pots, cover down when cold, and store away in a dry place.

## GOLDEN GRAINS.

In communicating ideas to other minds be simple, natural, concise, and earnest.

By Love's delightful influence the attack of ill-humor is resisted, the violence of our passions abated, the bitter cup of affliction sweetened, all the injuries of the world alleviated, and the sweetest flowers plontifully strewn along the most thorny paths of life.

Love does not go by words, and there are times when conventionality is impossible. There are people who understand one another at once. When one soul meets another, it is not by password, nor by halling sign. nor by mysterious grip, that they recognize. The subtlest freemasonry in this world is this freemasonry of the spirit.

sonry of the spirit.

HAD I children, my utmost endeavors should be to make them musicians. Considering I have no car, nor even thought of music, the preference seems odd, and yet it is embraced on frequent recollection. In short, as my aim would be to make them happy, I think it the most probable method. It is a resource which will last them their lives.

LIVE LIKE LOVERS.—Some people—men and women both—when they have got married, think they may do just as they please, and it will make no difference. They make a great mistake. It will cause all the difference in the world. They should be more devoted after marriage, if they have the slightest idea of being happy. It is losing sight of this fundamental truth which leads to hundreds of divorces.

vorces.

YOUR INEAL LADY.—When a young man is able to support a wife and a household, he should marry. But a few cantions may be suggested. He ought to consider what he has to give, as well as what he expects to receive. If he expects all the graces and virtues to reside in a woman—personal beauty, agreeable manners, intelligence, efficiency, prudence, good management, devoutness, affection—by what right does he lay claim to the heart of such as one? What rare creature are you, that such a paragon should be yours? Is it modestor manly to suppose that you have only to ask to receive? There is a wiser method of solecting a wife. Let one find in his own class and on his own level one who is fairly his equal. Let the own level one who is fairly his equal. Let the partnership be equal. Do not ask her to bring everything, and you nothing. To marry your ideal woman may all be very well; but you will have to live with a real one.

# HUMOROUS SCRAPS.

THE creditors of an absconding Yankee banker found, on opening his safe, that the only thing he had laid up for a rainy day was an um-

A Worderstein lady was prevented from attending the funeral of her aunt by being unable to prepare a mourning bustle in time. Had it been her mother-in-law's funeral she would have gone any way.

ried, was he?" exclaimed the coroner. "That will do. We have got at the bottom of this will do. We have got at the bottom of this business."

business."

WHEN Handel once undertook, in a crowded church, to play the dismissal on a very fine organ there, the whole congregation became so entranced with delight that not an individual could stir till the usual organist came impapatiently forward and took his seat, saying, in a tone of acknowledged superiority, "You cannot dismiss a congregation. See how soon I can disperse them!" disperse them !

disperse them?"

A REPORTER for a Western paper, speaking of a certain fair creature, remarked that "the profusion and color of her hair would lead one to look upon it as though it was spun by the nimble fingers of the easy hours, as they gilded through the bright June days, whose many sunny rays of light had been caught in the meshes, and were contented to go no further." This is better than saying the girl's hair was red." red."

There was a great delicacy in the manner in which a foreigner, having a friend hung in this country, broke the intelligence to his relations on the other side of the water. He wrote as follows:—"Your brok! it had been addressing a large meeting of citizens, who had manifested the deepest interest in him, when the platform upon which he stood being, as was subsequently according to the stood being, as was subsequently according to the stood with the stood being as was subsequently according to the stood with the stood was a way owhere to the stood was a subsequently according to the stood being a subsequently according to the stood being a subsequently according to the stood being as the subsequently according to the stood being as the subsequently according to the stood being a subsequently according to the stood being a subsequently according to the stood being as the subsequently according to t ascertained, very insecure, gave way, owing to which he fell and broke his neck !"

which he fell and broke his neck!"

FOND OF "LOO."—A mild and affectionate wife in Lancaster overheard an acquaintance romark that her husband was too fond of loo. She waited up for him that night, and when he came home demanded to know it he had been spending his time with "Loo." The unsuspecting husband admitted that he had, when, without giving him time to explain, she went at him with a fire shovel. The busband does not exactly remember how the interview ended, but he could never convince his wife that "loo" was a game at cards, and always plays whist now, and gets home before ten o'clock.

A Washington papers tells of an elegantive

A WASHINGTON papers tells of an elegantly-dressed young lady who went into one of the dry goods stores on Pennsylvania avenue, bought a spool of cotton, and requested the proprietor to have it sout home. Overwhelmed with the important duty so suddenly thrust upon him, he important duty so suddenly thrust upon him, he immediately procured an express wagon and detailed a clerk, who, lifting the spool into the wagon, drove with it to the residence of the young lady, and, dismounting, rang the bell, and, when the door was opened, placed the spool upon his shoulder and carried it into the hall, and gently placed it on end, as if it had been a barrel of flour, and then retired. The consternation of the family can be imagined. The head of the house has been dedging in and out of the dry goods stores during the past week trying to find that elerk.

The following dialogue occurred in the Fau-

The following dialogue occurred in the Pau-bourg St. Honore, Paris, between a patriarchal gentleman and his granddaughter.

The following dialogue occurred in the Faubourg St. Honorc, Paris, between a patriarchal gentleman and his granddaughter.

"What makes your hair so white, grandpapa?" inquires the maiden.

"I'm very old, my dear; I was in the ark," says grandpapa, humorously, but with a reckless regard for truth, which does not prepossess us in the old man's favor.

"Oh," says the child regarding her:

with a fresh interest, "are you Noah."

"No, I am not Noah."

"No, I am not Shem."

"Are you Shem, then?"

"No, I am not Shem."

"Are you Ham?"

"No, I am not oven Ham."

"Then you must be Japhet," says mademoiselie, at the end of her historical tether, and growing rather impatient of the difficulty that surrounded her aged relative's identification.

"No, I am not Japhet."

"Then, grandpapa, you are a beast!"

FAIR SPECIMEN OF ANEHICAN NEWSPAPER REPORTING.—A couple of dogs were having a dispute on the opposite side of a slat fence in High-street, the other morning, when one of them, letting his valor get the better of his discretion, plunged his head through the slats, in hope of nipping his antagonist. That was where he made the mistake; the head went through nicely, but would not pull back. The other pup, seeing his fee was in chancery, leisurely commenced cating up the front part of his head and ears. There was "music in the air" about that time, and the yelping brought the juvenile owner to the rescue. He took in the situation at once, and freezing on to the dog's tail, and bracing against the fence, he pulled his level best. For a moment it was doubtful which would give way first, the tail, the head, or the pecket; but with a final surge, the boy brought away the pup, minus the biggest part of both ears. The first jump that that dog made was something over 20 feet, and with a continuous wail of grief he disappeared around the corner.

A PROMINENT manufacturer of Springfield, disappeared around the corner.

Wither a Texas man was trying to anchor his mule to a stake, recently, the callmal managed to get the rope around the man's neck, and then ran away at the top of his speed. The widow wants to sell the mule.

In one of Lord Brougham's last speeches his false upper teeth fell out, and there was an embarrassing silence until they were restored, when he remarked that his teeth had given him a good deal of trouble ever since he had out them.

A young drug clerk committed suicide a few days ago. At the inquest the coroner asked a follow clerk of the deceased if he knew of any cause for the suicide. "No," was the reply; "the was getting along nicely, and was going to be married next month," "Going to be mar-

nose's safety by standing on his hind legs. Then while his master laughed hysterically and clap-ped both bloody hands fo his shirt bosom, as the snake leaned up against the fonce, and seemed to be trying to set a dog on the unhappy ally, as he trotted away.

### OUR PUZZLER.

#### 99. DOUBLE ACROSTIC.

Two gallant steeds both famed in story, Two galants seeds both failed in story,

Each bore a here on to glory.

The conqueror of a world my first bestrode,
As through the foeman's ranks he furious rode.

My second carried Albion's pride

That day when Gailla's star was pale,

And took its famous name

From a city all in flame,

As the roar of British guns swelled the gale.

- Cold is the breeze of the northern sea, But the ice breaks up, and the ship sails free.
- A grim revenge and horrid feast, His teeth in the skull of the traitor priest.
- The white tents shine in the morning light, And the warriors arm for the coming light.
- i. Last, softly beautiful as music's close. Angelio woman into being rose
- A mightier arm than sword and shield. Yet asks no strength its force to wield
- Botter to seek in breezy fields for me, Than to the doctor for me pay your fee.
- The Church had launched its dreaded and But not a soul seemed much the worse
- How speeds the good ship through the form The fire burns brightly in many a hom
- A gentle spirit of the stream, Not free from human wee I ween.
- 10. Reformer of a nation's code Which ere he came was writ in blood.

### 100. DOUBLE ACROSTIC.

A novelist in Britain born, Whose writings literature adorn, Initials name. A work of merit by him penu'd, Drawn with deep pathos to the end, Finals proclaim.

- 1. An instrument much played of old.
- An instrument much played of old.
   A metal this, resembling gold.
   Circle or orb, 'twill surely prove.
   A bird—symbol of peace and love.
   Old Priam's son, by serpents shile.
   An English county, 'tis quite plain.
   Here British valour won the day.
   Name this wild animal, I pray.
   Part of a theatre, in truth.
   An Indian protects (Greech).

- 10. An Indian potentate, forsooth.

T. I.,

# 101. SQUARE WORDS.

- 1. A knot; to accustom; the name of an English Queen; to urge; drove.
- 2. A place of restraint; inactive; worth; to deceive; an amphibious quadruped.

  C. Marsh.

# 102. CHARADES.

Dreaming one fine summer day,
As close to the little brook sitting; On a moss-covered bank by the way. watched the fleet swallows at ois As over the stream they were flitting.

My first in the distance I heard As my second so slowly went round;
So still was the sir, not a single leaf stirred,
And hum of the bre, or sweet song of the bini,
Mingled soft with my whole's pleasant sound.

My second she was at our home,
We both lost our first when out walking;
She was so determined to roam, he was so determined to roam, So my whole it was no use talking. B. A. I.

## Answers

- 87. CHARADES,—1. Star-ling, 2. Part-ridge, 3. Part-rot. 4. Cuw-lips, 5. Page-ant. 6. Chin-a, 7. Brido-groom, 8. Chaff-inch.
- 88. ANAGRAMS.—I. Charles Kingsley, 2. John Stuart Mill. 3. Robert Browning. 4. Thomas Carlyle, 8. Henry, Lord Brougham, 6. Honglas Jerrold.

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