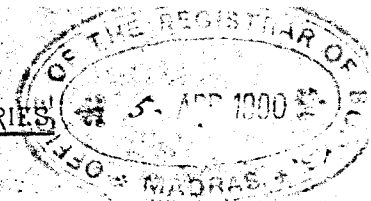


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POCKET SERIES



ODDS AND ENDS

BEING

A Collection of Rare, Valuable, and Interesting
Information on a large variety of subjects:

BY

R. VENKATA SUBBA RAU, B.A., B.L.,

High Court Vakil, Madras :

AUTHOR OF 'GEMS AND JEWELS', 'PLUMS AND PRUNES',

'HINDU LOVE-LETTERS', ETC.

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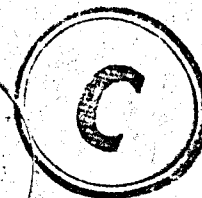
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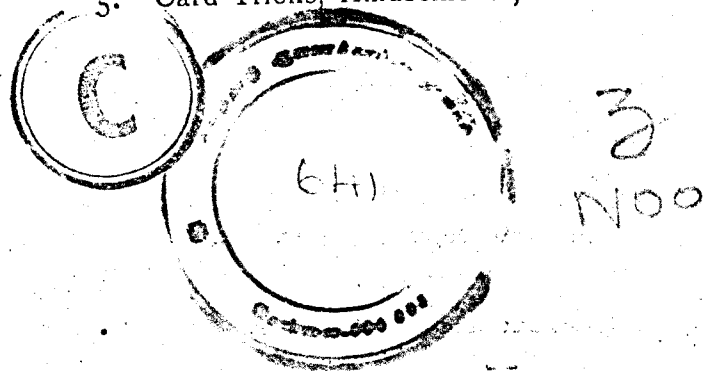


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I.—Culture and Etiquette.

Books and Study.

1. A good book, it has been said, is the best of friends. This is indeed very true. When, from death or other circumstances, we are separated from our nearest and dearest friends, there is no better company than books.

2. Cultivate the love of study. Whatever your business or profession, set apart an hour or two every day for reading what you like best, and never allow your study to fall into arrears. Life is not worth living if your mind is obliged to work, day and night, only for money.

3. Endeavour to form your own library, according to your means. Sydney Smith says that no furniture is so charming as books. Remember that one's library is an index to one's character.

4. Fiction is one of the best forms of relaxation; it is only the narrow-minded who affect to disdain it. The great Cardinal Newman delighted in a good novel, and the names of many great men might be given who also habitually read fiction for relaxation and profit.

5. Do not fail to read the best magazines of the day. Though ephemeral, they represent the passing thought and feeling of intelligent persons and will be found a great assistance in conversation.

6. A few books well-studied are more beneficial than a great many carelessly read. Mere readers are often the most idle of human beings. It is not the reading of many books that is necessary to make a man wise and good, but the well-reading of a few; and, as John Morley has remarked, most books worth reading once are worth reading twice. This is true even in the case of a work of fiction, if it is written by a good author who is an observer of life.

7. Remember that reading furnishes one with but the materials of knowledge. It is thinking, as has been remarked by Locke, which makes what we read ours. Reading without thinking is like eating without digesting. Without thinking, reading may indeed make a rich commonplace, but it will never make a clear head. Thinking is absolutely necessary for the formation of correct judgment. Cultivate the habit of thinking whenever your leisure permits you. If you are a busy man, make it a point to retire occasionally into quiet and solitary surroundings.

The Fine Arts.

8. It is a common failing with most of our big men that their learning is all one-sided. They are good lawyers, judges, mathematicians, or engineers, but absolute non-entities otherwise. Give them a long holiday from their daily work, or force them into retirement; they find their time hanging on their hands, their life becomes dull and unbearable and often comes to a speedy termination. A learned man, who is not delighted with a good picture or never cares to listen to a sweet song, is developed all on one side, and is a kind of monster. Great minds, it is said, are intensely appreciative, and though they excel but in one form of effort, know enough of all others to learn by and benefit from the genius of other men. The tendency to live in one groove of thought is common among mediocre persons simply because it is easy. A really well-educated and cultivated man should exhibit the same comprehensive spirit as the man who is greatly gifted by nature.

9. It is not necessary to have a special taste for art in order to appreciate it. Even a slight knowledge of music and painting will often be the means of giving pleasure to oneself and to others, and is of social value.

10. It is one thing to be "musical," quite another to be able to appreciate and enjoy good music. Music is one of the fine arts in which, not only man, but all other animals, have a common property. There is consequently no exaggeration in the sentiment expressed by Shakespeare—

"The man that hath no music in himself,
Nor is not mov'd with concord of sweet sounds,
Is fit for treasons, stratagems, and spoils."

Music washes away from the soul the dust of every-day life, and no one can be said to live a truly happy life who is a stranger to the pleasures of this divine art.

Conversation.

11. Look at the person you are speaking to, and when you have spoken, give him an opportunity to reply.

12. Don't talk in a loud voice, so that people at a distance can hear you. Whispering in company is bad taste.

13. Don't touch people when you have occasion to address them. Catching people by the arms or the shoulders, or nudging them to attract their attention, is a violation of good breeding.

14. It is a sign of bad breeding to converse in company in any language other than that which all present understand.

15. Don't interrupt a person while he is speaking. Let him have his say and listen politely to him and appear to take interest in his conversation. Don't show repugnance even to a bore. A supreme test of politeness is submission to various social inflictions without a wince.

16. Don't be reading a book or a newspaper to yourself whilst in company. If you are tired of the company, withdraw; if not, honor it with your attention.

17. Be cheerful and gay in company. Do not keep brooding over your troubles, sufferings and mishaps, and do not keep telling others about them. Complaining people are pronounced on all hands great bores. Talk to people about what interests them, not about what interests you.

18. Try to brighten the conversation in company without in any way monopolising it or proving obtrusive. Endeavour to amuse and interest those with whom you are conversing, but never bore or weary them.

19. Conversation may occasionally be enlivened by the relation of stories and anecdotes, but be sure there is no one among the company who has heard you tell the same thing before. It is cruel to expect him to laugh to it again unless you want him to be cruel to you.

20. Never relate a story or an anecdote for its own sake, by dragging it into the conversation anyhow, but only to illustrate a subject that is being talked about. Do not repeat worn-out stories, well-known anecdotes, old jokes, commonplace sayings and stale quotations.

21. Do not affect to shine in conversation, as if that were your peculiar excellence and you were conscious of superior ability. Do not affect a learning you have not got; a few minutes' conversation will discover your true worth.

22. Do not dilate on your own acquirements or achievements. Don't expatiate on what you have done or are going to do, or on your superior talents in anything. Don't make yourself the hero of your own stories. If you are relating a circumstance which has happened to yourself, take care not to embellish it or alter it in any way, so as to make it particularly interesting.

23. Do not refer, directly or indirectly, to your own beauty, cleanliness, or good habits. Don't talk of the superior virtues or excellences of your wife or children.

24. Don't underrate everything that others do. Don't scoff or speak ill of a rival in your profession or trade; rather overstate his merits.

25. Never talk ill of others. There is hardly any one who is altogether free from fault, and it is well for everybody to remember the wholesome advice given to those who live in glass-houses.

26. Avoid personalities in conversation; they are a mark of ill-breeding. Refuse to listen to gossip and scandal, especially about women. Remember there are none so wicked as repressed, and none so good as they should be.

27. Never lose your temper in argument or discussion. However convinced you may be that your own view is right, it is always possible that you may be mistaken, and in social conversation you must always adopt the position that you may possibly not be right, and bring forward what you have to say modestly, and, if possible, with some good proofs. This will produce a valuable effect; whereas, if you lose your temper, you only weaken your cause, for no one cares to listen to a dogmatist. Don't push to the full extent a discussion which has become unpleasant.

28. Never reveal a secret or betray a trust. Learn to keep your own secrets, for, if you cannot keep them yourself, it is unfair to expect others to do it for you. 'Tell thy friend nothing which thine enemy may not know.'

Correspondence.

29. Be prompt and regular in your correspondence. Dilatoriness will accumulate arrears which it will be afterwards troublesome to get through.

30. When you have written a letter in a fit of anger, put it by till the next morning, and read it again. In nine cases out of ten, you will probably throw it into the fire. It is wonderful what foolish things we say or write when we are angry!

Dress.

31. Beware of foppery. Never be conspicuous in your dress. You can dress in the extreme height of the fashion and yet avoid conspicuousness. Indeed, it is a test of your style being really very good that only the fashionable should be fully able to appreciate it. If it attracts notice from common persons in the street, you may be sure there is something wrong, or that you have gone too far. Avoid everything that is 'pretty' and all apparel with decided colors or pronounced patterns. Select quiet colors and unobtrusive patterns.

32. Do not dress in better style than the company you are in, so as to humiliate its members. To do so is no glory to you; it is only an indication of ill-breeding.

33. When you visit friends in deep mourning, dress very quietly and avoid all costly and brilliant costumes.

Personal Habits.

34. When you visit a friend, don't lean on or stretch your legs across his table; don't stretch yourself on the sofa or in the easy chair; don't sit cross-legged; don't sit with your chair resting on its hind legs. Keep quiet and at ease in your chair.

35. Don't keep shifting your feet about; don't beat a tattoo with your foot; don't drum with your fingers on chair, table or window-pane. Don't hum a tune. Don't keep twisting your thumbs or twirling your moustache or your curls. Don't play with tassels or knots or other articles at hand. Cultivate repose.

36. Don't pick up letters, accounts, or anything of a private character that is lying on another's desk. Don't look over a person's shoulder when he is reading or writing.

37. Regard your pocket-handkerchief (when you are in society) as an article not of use but of ornament. It is said that a certain young lady discarded an accepted suitor on account of the frequent use he made of his pocket-handkerchief to cleanse his nose.

38. Don't, when in company, blow your nose, cleanse your ears, trim or clean your finger nails, nurse your toothpick, gape, hiccup or sneeze, or—need we say it?—chew betel.

39. Don't put your finger into your mouth or clean your teeth with it. It is a nasty habit. Never keep your hair dishevelled or make any indecent exposure of any part of your body.

40. When at meals, don't plunge into your plate or leaf as if you never saw food before, and as if you were afraid some one would run away with it. Don't eat fast or take huge mouthfuls. Don't masticate audibly and don't produce a gurgling sound when you take in any liquid food.

41. Don't take children into company, especially when you are invited for meals. Don't indulge in teasing and tormenting children, cats or dogs.

Miscellaneous.

42. In society, never forget that you are one of many. Don't be sulky because you imagine yourself neglected. Think only of pleasing and try to please. In public places, be not too pertinacious of your own rights, but find pleasure in making concessions.

43. Don't talk at the theatre, or at a concert or musical entertainment, while the performance is going on. To disturb others who wish to listen is gross ill-breeding. Do not abruptly go away in the middle of a performance, thereby distracting the attention of those present, and possibly discouraging the performer.

44. Always pay proper attention to elderly people, especially if they are deaf or otherwise afflicted. Nothing shows a better heart or a nicer sense of true politeness than kindly attention to those advanced in years.

45. Do not stare at the ladies in a house while on a visit. Never turn back to catch a second glimpse of any beautiful woman who may attract your attention. Never walk up and down a street to the annoyance of ladies within view. Be a gentleman.

46. Never play at cards, chess or any other game, unless you can win and lose with equal equanimity and good temper.

47. When you send a present, be sure that the price is not marked on it. Never send one with the carriage unpaid.

48. Never omit to acknowledge a present, with thanks. Don't fail to acknowledge all courtesies, attentions and kindnesses.

49. Don't borrow books unless you mean to return them promptly. If you do borrow books, don't mar them in any way; don't bend or break the backs; don't fold down the leaves; don't write on the margins; don't stain them with grease-spots. Read them, but treat them as friends that must not be abused.

Golden Maxims.

50. (i) The highest happiness is to be good and to do good.
- (ii) Do good to your enemy that he may become your friend; do good to your friend that he may remain your friend.
- (iii) Avoid yourself what you think wrong in your neighbour.
- (iv) Revenge is the only debt which it is wrong to pay.
- (v) When angry, count ten before you speak; if very angry, count a hundred.

II.—Common Accidents and Ailments.

Bees' and Wasps' Stings.

Take out the sting, if it is left behind, with a needle, and apply to the part a liniment made of finely-scraped chalk and olive-oil, mixed together to about the thickness of cream. A little common soil, previously moistened, will sometimes prove an excellent cure, when applied to the part. *Liquor ammonia* is the best application.

Scorpion Sting.

Rub a little quantity of *liquor ammonia fortis* over the part stung and there will be instant relief. *Yekshin Thyl* is an excellent specific for scorpion-stings.

Snake Bites.

The great thing is to prevent the poison getting into the blood; and, if possible, to remove the whole of it at once from the body. A pocket handkerchief, a piece of tape or cord, or, in fact, of anything that is at hand, should be tightly tied round the part of the body bitten; if it be the leg or arm, immediately above the bite, and between it and the heart. The bite should then be sucked several times by any one who is near. There is no danger in this, provided the person who does it has not got the skin taken off any part of his mouth. What has been sucked into the mouth should be immediately spit out again. But if those who are near have sufficient nerve for the operation, and a suitable instrument, they should cut out the central part bitten, and then bathe the wound for some time with warm water, to make it bleed freely. The wound should afterwards be rubbed with a stick of silver nitrate, or, what is better, a solution of it (60 grs. in 1 oz. of water) should be dropped into it. The band should be kept on the part during the whole of the time that these means are being adopted. The wound should afterwards be covered with lint dipped in cold water. A little brandy-and-water should be given to the patient to prevent depression of strength.

Bites of Dogs.

In all cases of bites from dogs, mad, or suspected of madness, tie a cord at once above the part bitten so as to suspend the circulation of the blood, and place common nitrate of silver upon

the wound and allow it to filter freely into it. This remedy is said to be infallible. Nitrate of silver is said to be much more efficacious than caustic potash.

Cuts.

A few drops of creosote on a cut will stop its bleeding. Cut a piece of sticking-plaster into strips, and bind across the wound, first bringing the edges together. In case of cuts from broken glass, or where the dirt is likely to have got in, the wound should be carefully sponged in a little lukewarm water before closing.

Carriage Accidents.

It is safer, as a general rule, to keep your place than to jump out. Getting out over the back, provided you can hold on a little while, and run, is safer than springing from the side. But it is best to keep your place, and hold fast.

Dress on Fire.

The first thing to be done by those who have taken fire is to throw themselves down at full length upon the ground. If nothing is near to cover them, let them roll over and over to stifle the flames by their own weight; but if anything be fortunately at hand, a blanket, carpet, or rug, let them roll themselves up in it as tight as they can, so as to exclude all air, and compress the flames; the head, of course, must be left uncovered, or the confined smoke will cause suffocation. In all cases of fire, every moment is important. There is no time to run for assistance. It may be sought for by cries and screams, but the sufferer should never move about to seek for it.

Escaping from Fire.

On the first alarm endeavour to recollect the readiest mode of escape, if in bed, wrap a blanket or carpet around you, keep all doors and windows shut as much as possible, in order to prevent the spread of the flames; if the smoke is dense, crawl on your hands and knees with your face close to the ground, as the smoke ascends and leaves it comparatively clear at the lower part; or a wet handkerchief covered loosely over the face will exclude smoke and permit respiration.

Prevention of Fires.

Add one ounce of alum to the last water used to rinse children's dresses, and they will be rendered unflammable, or so lightly combustible that in the event of coming into contact with fire they would only smoulder away very slowly, and not burst into flame. This is a simple precaution which may be

adopted in families of children. Bed curtains, and linen in general, may also be treated in the same way. Tungstate of soda has been recommended for the purpose of rendering any articles of female dress incombustible. Any chemist will intimate to the purchaser the manner in which the tungstate of soda should be employed.

Burns and Scalds.

In case of burns and scalds, the exclusion of air from the injured part is of the first importance, as it keeps down inflammation and allays pain. This may be secured by the application of olive oil, or better, corn-flour, or wheat-flour. Any other powder, such as chalk or magnesia, may also be used.

An excellent application for burns, &c., is carron oil—a mixture of equal parts of linseed or olive oil with lime-water; put over the part a piece of lint soaked with the same and over the lint, place cotton-wool and apply a bandage. Hazeline is also a good remedy; applied to the injured part, it allays pain and promotes healing. Corn-flour mixed with castor oil is also a fine healing ointment. Another remedy strongly recommended is a mixture of alum and water, in the proportion of a pound of alum to a quart of water. The burn or scald should be bathed in it with a linen rag, and, if necessary, the linen rag should be bound upon the part and kept moistened for two or three days, or longer, according to the case.

Injuries from Acids.

When caused by sulphuric, nitric, or hydrochloric acid, apply dilute ammonia, chalk, carbonate of magnesia, or the plaster from the ceiling stirred in water. After an hour or so, apply carron oil (olive oil and lime-water in equal parts) on lint. For injuries from carbolic acid, apply olive oil.

Drowning.

1. Handle the body gently. Carry it face downwards, with the head slightly raised, and never hold it up by the feet.

2. Place the patient's face downwards, in a lying position, with a large firm roll of clothing under the stomach and chest. Place one of his arms under the forehead, so as to keep the mouth off the ground. Press with all your weight two or three times, for 4 or 5 seconds each time, upon the patient's back, so that the water is pressed out of lungs and stomach, and drains freely out of the mouth. Remove all froth, mucus, mud, sand, etc., from the mouth and nose.

3. Next turn the patient face upwards with a pillow, or roll of clothing under the back, just below shoulder-blades, letting the head hang back as low as possible; undo all tight clothing from the neck and chest; then try and induce the action of breathing in the following manner:—Take hold of the arms by the elbows (standing behind the head of the patient), and draw the arms gently and steadily upwards until they meet above the head. Keep the arms up in that position for two seconds, then draw down the patient's arms and press them firmly against the sides of the chest. Repeat these movements steadily and slowly, about 15 times in a minute, for at least an hour or until the patient breathes naturally. If there is a second person present, he can assist by placing one hand below the chest, and pressing gently while the arms are coming down; also he should raise and rub the legs. Be careful not to interrupt the first short natural breaths. If they be long apart, carefully continue between them the bellows-blowing movements as before. These directions should be followed immediately after the patient is taken from the water, as a moment's delay may render success hopeless.

4. When the breathing is regular, rub the patient dry; wrap him in warm blankets and give him warm wine and water, or hot spirits and water, or warm coffee, in small quantities, occasionally. Rub the limbs under the blankets firmly upwards. Apply hot bottles or bricks to feet, to pit of stomach, and under armpits. Let the patient sleep if possible. If there is distress in breathing, put a mustard plaster on chest and on back below shoulders.

5. Prevent crowding around patient; plenty of fresh air is important.

Poisoning.

The great difficulty about treating cases of poisoning is that it is not always easy to ascertain what poison has been taken, and that the treatment which would afford relief in one case might prove injurious in another. In most cases, however, it is safe to give an emetic. The cases in which it should not be given are those where the skin has been taken off, and the parts touched irritated and inflamed by the poison taken, and where the action of vomiting would increase the evil. In all cases, a medical man should be sent for at once.

Two table-spoonfuls of common salt, dissolved in a tumbler of warm water, would make most people vomit. Another good emetic is two table-spoonfuls of mustard mixed in a pint of warm water. Ten to 15 grs. of sulphate of zinc in an ounce of water

will also serve as an emetic. The emetic should be repeated in a quarter of an hour if vomiting does not ensue. The back part of the throat should be well tickled with a feather, or two of the fingers thrust down it, to induce vomiting.

Never allow the patient to fall off to sleep in an early stage, and before the arrival of the doctor. Drowsiness, which is very common in almost all cases of poisoning, may be counteracted by walking the patient about, or by occasionally dashing cold water in the face. Smelling salts may be held to the nose; hot mustard fannels may be applied to the feet, if cold, and strong liniments to the back and spine. A list of principal poisons with their antidotes and remedies is given below:—

Sulphuric Acid, Nitric Acid, Hydrochloric Acid, Oxalic Acid.
—Give magesia or soap, dissolved in water, every two-minutes.

Carbolic Acid.—Give flour and water or glutinous drinks.

Prussic Acid.—Smelling salts to nose, artificial respiration, chloride of lime to nose.

Arsenic.—Emetics, lime-water, soap-and-water, oily drinks.

Chloroform. Chloral Hydrate.—Cold water over the head and face, artificial respiration, galvanic battery.

Green Vitriol (iron sulphate), Carbonate of Soda.—Prompt emetic; soap or mucilaginous drinks.

Blue Vitriol (copper sulphate), Zinc Sulphate, Sugar of Lead, Red Precipitate, Saltpetre, Vermilion, Calomel, Corrosive Sublimate (mercury perchloride).—Give milk or white of eggs in large quantities.

Nitrate of Silver.—Give common salt in water.

Caustic Soda, Caustic Potash, Ammonia.—Drink freely of water with vinegar or lemon juice in it.

Opium, Laudanum, Morphia.—Strong coffee, followed by ground mustard in water to produce vomiting. Dash cold water on the chest and face, walking up and down for two or three hours.

Strychnine, Nux Vomica.—Emetic of mustard or sulphate of zinc, aided by warm water.

Poisonous Food.—Emetics and castor-oil.

Sick-Room.

Do not visit the sick when you are fatigued, or when in a state of perspiration, or with the stomach empty—for in such conditions you are liable to take the infection. When the disease is very contagious, place yourself at the side of the patient which is nearest to the window. Do not enter the room the first thing in the morning, before it has been aired; and when you come away, take some food, change your clothing immediately, and expose the latter to the air for some days. Tobacco smoke is a preventive of malaria.

The room that has been used for a sick person, especially when the sickness has been of an infectious nature, should always be thoroughly cleansed before it is used again. The ceiling should be whitewashed and the floor thoroughly scrubbed; in many cases it is advisable even to remove the paper from the walls and put on fresh paper and re-paint. Chloride of lime is a most useful disinfectant, and so also is chloride of soda. The way to use them is to spread thin layers of the dry powder in plates or dishes, and pour water over it. The vapour that arises will completely neutralise all noxious effluvia.

Headache.

When the pain is of a throbbing or congestive character, relief is often experienced by plunging the head into a basin of cold water. Relief can also be obtained by the application of menthol cone or even of a few drops of oil of peppermint. A strong cup of coffee often proves successful. Baithol is an excellent ointment for colds and headaches. A good purgative taken in the morning and attention to general health are recommended when the complaint is of frequent occurrence.

Colds.

Cold in the Head—Symptoms: watery discharge from the eyes and nose, accompanied by a sense of fullness and sneezing. Inhale menthol snuff, or a little quantity of baithol. Another excellent remedy is; valide of potassium tabloids, one three times a day, with an inhalation from ten drops of tincture of iodine in a jug of hot water.

Cold in the Chest—Symptoms: cough, expectoration, pain, tightness of the chest, congestion of throat. A flannel rag wrung out in boiling water and sprinkled with turpentine, laid on the chest, gives the greatest relief. Voice tabloids will be useful for congested throat, or tabloids of chloride of ammonium with borax. One of the latter to be taken frequently.

Cough.

Roast a large lemon very carefully without burning; when it is thoroughly hot, cut and squeeze it into a cup, upon three ounces of sugar-candy finely powdered; take a spoonful whenever your cough troubles you. It is as good as it is pleasant.

Bronchitis.

Chloride of ammonium tabloids afford great relief, and these may be taken without fear of bad consequences. Another good remedy is pure terebene, which should be taken in ten-drop doses every three hours, and inhaled freely either from hot water or from a pocket-handkerchief. Relief is also experienced by the application of hot poultices or the rubbing of baithol on the chest.

Asthma.

The following is recommended as a relief:—Two ounces of the best honey and one ounce of castor-oil mixed. A teaspoonful to be taken night and morning.

Great benefit is often experienced from the use of nitre papers, Himrod's powder, Gosain powder, and Grimault's cigarettes. The administration of ten drops of pure terebene every three hours, with its occasional inhalation, will be found beneficial. Baithol may be used as an external application to the chest. The bowels should be carefully regulated by the use of a mild aperient.

Offensive Breath.

This is sometimes due to bad teeth, and sometimes to dyspepsia. When the teeth are decayed, consult a dentist. When dyspepsia is the cause, soda mint tabloids will be found useful or the inhalation of a few drops of pure terebene from time to time. Attend to the general health and avoid constipation.

Toothache.

Two or three drops of essential oil of cloves put upon a small piece of lint or cotton wool, and placed in the hollow of the tooth, will be found to have the native power of curing the toothache without destroying the tooth or injuring the gums.

American Toothache Drops.—Dissolve common salt in brandy.

Tartar upon Teeth.

The tartar which so generally accumulates at the back of the teeth, forming often a thick crust, may speedily and effectually be removed by brushing it with a soft brush dipped in fresh flower of brimstone. After a few applications the tartar will crumble away. An excellent recipe.

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Earache.

Wet a piece of cotton with equal parts of chloroform and laudanum, place in the ear and cover up. Put five drops of chloroform on a little cotton or wool in the bowl of a clay pipe, then blow the vapour through the stem into the aching ear.

A few drops of hazeline, on cotton wool, put into the ear, will often give relief.

A flannel bag of salt made very hot and applied to the ear at bed-time, will often effect a cure.

Itch.

Mix 4 drams of sublimed sulphur, 2 ounces of lard and $\frac{1}{2}$ dram of dilute sulphuric acid together. An excellent ointment.

Hiccup.

This is a spasm of the diaphragm, caused by flatulency, indigestion, or acidity. It may be relieved by the sudden application of cold, also by two or three mouthfuls of cold water, by eating a small piece of ice, taking a pinch of snuff, or anything that excites counter-action.

Cure for Convulsive Hiccup.—Put a drop of cinnamon oil on a small lump of sugar, keep it in the mouth until dissolved and gently swallowed. Inhalation of eucalyptus or terebene will also afford relief in violent cases.

Fainting, Hysteria, Etc.

Place the patient in a recumbent position with the head slightly raised. Loosen all tight garments, especially about the neck and chest. Dash cold water over the face, hold smelling salts to the nostrils, and if eau-de-cologne is at hand, rub a small quantity of it on the temples. If the patient can swallow, give a little brandy in water. If the extremities are cold, apply hot-water bottles. Open the window, admit plenty of fresh air, and avoid bustle.

Epileptic Fits.

As soon as the fit comes on, place some salt in the palm of the hand—this remedy is simple and efficacious.

General and Nervous Debility.

The best remedy is change of air, change of scene, change of work, and some good blood-and-nerve tonic, such as Easton's Syrup and Durbar Pills.

Biliousness.

Squeeze the juice of a lime or small lemon into half a glass of cold water, then stir in a little baking soda and drink while it foams. This receipt is also good for sick headache. Regulate the bowels and the diet carefully and take plenty of out-door exercise every day.

Excessive Perspiration of Hands and Feet.

Take carbolic acid 1 part, burnt alum 4 parts, starch 200 parts, French chalk 50 parts, oil of lemon 2 parts; make a fine powder to be applied to the hands and feet.

Blotched Face.

Take rose-water 3 oz. and sulphate of zinc 1 dram. Mix.—Wet the face with it, gently dry it and then touch it over with cold cream which also dry gently off.

Wrinkles in Face.

Take alum 1 dram, glycerine 10 oz., water 1 pint. Use three times a day as a wash.

Scars and Pox-marks.

Lotion.—Borax $\frac{1}{2}$ oz., acid salicylic 12 grs., glycerine 3 drams, rose-water 6 oz. Bathe the parts three times a day.

Pitting in Small-pox, etc.

The simplest method of preventing pitting from small-pox, measles, chicken-pox, etc., is to lightly touch every part of the face with a feather dipped in sweet oil. Another successful method is to smear the whole surface of the body, after the eruption is fairly out, with bacon fat, once or twice a day. It is said that if light is admitted into the patient's room through yellow blinds, so that the red and blue rays of the sun are excluded, pitting will be prevented.

Blistered Feet.

Rub the feet, on going to bed, with spirits mixed with tallow, dropped from a lighted candle into the palm of the hand.

Corns.

These are usually the result of tight and ill-fitting boots. A very useful application for corns may be prepared by mixing 6 grs. of salicylic acid with $\frac{1}{2}$ oz. of lanoline ointment. Apply a small quantity from time to time to the affected part; the corn will gradually become softer, and after a time will disappear.

A sure corn cure.—Tincture of iodine 1 oz., chloride of antimony 1 oz., iodide of iron 25 grs. Mix.—First pare the corn with a sharp knife, then apply the lotion with a feather or a small pencil brush.

Warts.

Warts are met with very commonly on the hands and fingers of boys at school, and form unsightly objects. They are probably caused by dirt. They are apt to increase both in size and in number, and the sooner they are got rid off, the better. The following are some of the best modes of treatment:—

Pare the hard and dry skin from the top of the wart, and then touch it with the smallest drop of acetic acid, taking care that the acid does not run off the wart upon the neighbouring skin. If this is continued once or twice daily, with regularity, paring the surface of the wart occasionally when it gets hard and dry, it may soon be effectually cured.

The following is a simple cure for warts:—On breaking the stalk of the crow-foot plant in two, a drop of milky juice will be observed to hang on the upper part of the stem; if this be allowed to drop on a wart, so that it be well saturated with the juice, in about three or four dressings the wart will die, and may be taken off with the fingers.

Another method is to touch the wart lightly every second day with a stick of silver nitrate, or every night with copper sulphate, for a few weeks. Take a piece of silver nitrate, put it in a cut quill to hold it by; dip the end of it in water, and rub it on the wart. Continue to use the caustic in this way until the wart is burnt away.

Baldness.

Lotion for the prevention and cure of baldness.—Eau-de-cologne 2 oz., tincture of cantharides 2 drs., oil of rosemary, oil of nutmeg and oil of lavender, each 10 drops. Mix together. To be rubbed on the bald part of the head every night.

Remedy for baldness.—Tincture capsici 1 oz., glycerine 12 oz., oil of bergamot $\frac{1}{2}$ oz. Mix.—Rub into the skin occasionally.

Another remedy.—Take 4 oz. of castor oil, 8 oz. good Jamaica rum, 30 drops of oil of lavender. Put the mixture into a bottle and shake it well before using. Anoint the head with this mixture three times a week and leave it to dry.

Another.—The celebrated Dr. Dumergue recommends one part of tar, ten parts of lard, together with a plentiful supply of fragrant substances to get rid of the smell of the tar, as one of the best remedies for baldness.

Another.—A very useful oil for baldness or to prevent the falling off of the hair may be made of half pint of olive or almond oil, 2 drs. of oil of origanum, 1 dram of oil of rosemary, and 40 drops of English lavender, well shaken together.

Deafness.

To cure deafness.—Take clean, fine black wool, dip it in civet, and put it into the ear; as it dries, which in a day or two it will, dip it again, and keep it moistened in the ear for three weeks or a month.

Relaxed Sore Throat.

The best remedies are tabloids of chlorate of potassium, or chlorate of sodium with borax. Chlorate of potash may be used for three or four days, and then the chlorate of soda with borax may be substituted. These tabloids should be allowed to dissolve slowly in the mouth, so as to act as a continuous gargle.

An excellent gargle.—Two table-spoonfuls of port wine, 1 table-spoonful of honey, 1 table-spoonful of lemon juice, $\frac{1}{2}$ pint of sage-tea. Mix together.

Another.—One wine glass of port-wine put into half a pint of very thin oat-meal gruel.

Sore Eyes.

Golden Ointment for Sore Eyes.—1 oz. of nitric oxide of mercury to 8 oz. of spermaceti ointment. The oxide of mercury must be of the finest powder, and well-worked into the spermaceti ointment by degrees, so as to insure perfect incorporation with it. If the mixture be imperfect, some portions of the ointment will be too strong and dangerous to use, and other portions not strong enough.

Another remedy.—Sulphate of zinc 3 grs., tincture of opium 10 drops, water 2 oz. To be applied three or four times a day.

Weak Eyes.

When the eyes are weakened or distressed by over-exertion, few remedies will be found more effectual than bathing them every morning with clean spring water, in which has been

placed just sufficient brandy to make the mixture cause a slight stinging sensation when applied to the eyes. This weak brandy-and-water lotion may be kept ready mixed in a bottle.

Squinting.

Squinting frequently arises from the unequal strength of the eyes, the weaker eye being turned away from the object, to avoid the fatigue of exertion. Cases of squinting of long standing have often been cured by covering the stronger eye, and thereby compelling the weaker one to exertion.

Stammering.

When there is no malformation of the organs of articulation, stammering may be remedied by reading aloud with the teeth closed. This should be practised for two hours a day, for three or four months. The advocate of this simple remedy says, "I can speak with certainty of its utility."

Another Recipe.—At a recent meeting of the Boston Society of Natural History, Dr. Warren stated, "a simple, easy, and effectual cure of stammering." It is, simply, at every syllable pronounced, to tap at the same time with the finger; by so doing, "the most inveterate stammerer will be surprised to find that he can pronounce quite fluently, and, by long and constant practice, he will pronounce perfectly well."

Knock-knees.

A correspondent's advice and testimony are as follows:—"I commenced the practice of placing a small book between my knees, and tying a handkerchief tight around my ankles. This I did two or three times a day, increasing the substance at every fresh trial, until I could hold a brick with ease breadthways. When I first commenced this practice I was as badly knock-kneed as possible; but now I am as straight as any one. I likewise made it a practice of lying on my back in bed, with my legs crossed and my knees fixed tightly together. This, I believe, did me a great deal of good."

Sprains.

Rest the part and apply warm fomentations. If inflammation sets in, use cooling applications which may be removed at intervals if necessary. As soon as inflammation subsides, use friction and strong liniments, and bandage with flannel. If severe, apply poultices of bread and vinegar and water. Baithol is an excellent application for sprains.

Another cure.—A large spoonful of honey and salt, and the white of an egg; beat it up well, then let it stand an hour, and anoint the place sprained with the oil which will be produced, keeping the part well rolled with a bandage.

Another excellent remedy.—Put the white of an egg into a saucer; keep stirring it with a piece of alum about the size of a walnut, until it becomes a thick jelly; apply a portion of it on a piece of lint or two large enough to cover the sprain, changing it for a fresh one as often as it feels warm or dry. The limb should be kept in a horizontal position by placing it on a chair.

Stiff Joints.

Beat up the yoke of a new-laid egg till it is quite thin, and add, by a spoonful at a time, 3 oz. of boiled water, shaking it continually, that the egg and water may be united. This is to be applied to the contracted part, either cold or lukewarm, rubbing it for a few minutes, three or four times a day.

Baithol is an excellent application for stiff joints.

Rheumatism, Lumbago, etc.

One raw egg well beaten, half a pint of vinegar, one ounce of spirits of turpentine, a quarter of an ounce of spirits of wine, a quarter of an ounce of camphor. These ingredients to be beaten well together, then put in a bottle and shaken for ten minutes, after which, to be corked down tightly to exclude the air. In half an hour it is fit for use. *Directions.*—To be well rubbed in, three or four times a day.

Baithol is an excellent ointment for rheumatism, etc.

Ague.

Instantaneous Cure.—When the fit is on, take a new-laid egg, in a glass of brandy, and go to bed immediately. This simple recipe has cured a great many, after more celebrated preparations have proved unsuccessful.

Ringworm.

Victorhyl is an excellent ointment for ringworm. It is sold by the *Victoria Depot, Mylapore Madras*. As, 8 per tin.

III.—Useful Recipes, Etc.

Rats.

Rats will be completely driven away from any building by smearing the rat holes which are found near the walls, with tar. In twenty-four hours there will not be found a rat about the house; nor will they return while fresh supplies of tar are kept about the holes.

Chloride of lime is an infallible preventive against them; they flee from its odour as from a pestilence.

Bugs.

The easiest and most simple way of destroying these disgusting pests is hot alum-water. Take 2 lbs. of alum, beat it in a mortar, and reduce it nearly to a powder; then put it into 3 quarts of boiling water and let it stand near the fire till dissolved. When required, it must be used quite hot, and should be well soaked in, with a brush, to every joint and crevice where these odious creatures are likely to resort. Mix plenty of alum in the whitewash to be used on the ceilings and walls of all suspected rooms.

Another method.—Rub the joints of the bedstead with equal parts of turpentine and kerosine oil, and where there are many, fill the cracks up with hard soap.

Another.—A correspondent says:—"I have been for a long time troubled with bugs, and never could get rid of them by any clean and expeditious method, until a friend told me to suspend a small bag of camphor to the bed, just in the centre overhead. I did so, and the enemy was most effectually repulsed, and has not made his appearance since—not even for a reconnaissance!"

Moths and Beetles.

Put a piece of camphor in a linen bag, or some aromatic herbs, in the drawers, among linen or woollen clothes, and no insects will come near them.

A very pleasant perfume, and also preventive against moths, may be made of the following ingredients:—cloves, caraway seeds, nutmeg, mace, cinnamon, and Tongain beans—each 1 oz.; add as much Florentine orris root as will equal the other ingredients, put together. Grind the whole well to powder, and then put it into the bags among your clothes, &c.

III. USEFUL RECIPES, ETC.

Flies.

To destroy flies.—Infusion of quassia 1 pint, brown sugar 4 oz., ground pepper 2 oz. To be well mixed together, and put in small shallow dishes when required.

To destroy flies in a room, take half a teaspoonful of black pepper in powder, one teaspoonful of brown sugar, and one table spoonful of cream, mix them well together, and place them in the room on a plate, where the flies are troublesome, and they will soon disappear.

Insects on Animals.

A wash made of the water in which potatoes have been boiled is a certain means of destroying insects on animals. The first application is generally effectual, but it had better be repeated a few times in order to destroy the eggs. The same means may be used against the parasites in which mange originates, and probably would remove plant lice also. This insecticidal property of the potato is supposed to be owing to the solanine, which is one of its constituents.

Insects on fruit-trees.

In 3 or 4 gallons of water, mix $\frac{1}{2}$ lb. of tobacco, $\frac{1}{2}$ lb. of sulphur, $\frac{1}{2}$ peck of unslaked lime. Syringe the trees well with this mixture, and it will effectually destroy blight.

To preserve wood from decay.

Steep the wood in a solution of chloride of zinc in the proportion of 5 lbs. of chloride of zinc to 25 gallons of water, or brush the solution into the wood and leave it to dry.

Another recipe.—Melt together in an iron boiler 50 parts of rosin, 40 parts of powdered chalk, and 4 of linseed oil; then add 1 part of natural cupric oxide and stir very carefully into the mixture 1 part of sulphuric acid. Apply with a stiff brush. When dry, the mass forms a coating as hard as stone.

Gilt Frames.

To restore gilt frames, rub with a sponge moistened in turpentine.

To prevent iron from rusting.

Warm your iron till you cannot bear your hand on it without burning yourself. Then rub it with new and clean white wax. Put it again in the fire till it has soaked in the wax. When done, rub it over with a piece of serge. This prevents the iron from rusting afterwards.

To remove rust from steel.

Cover the steel well over with sweet oil, leave it for a day or two, then use unslaked lime, and rub until all rust disappears.

Silverware.

Silverware can be kept bright for months if placed with a largish piece of camphor in an air-tight case.

To prevent articles of silverware from tarnishing, first warm them, and then paint them over with a thin solution of collodion in alcohol, using a wide soft brush for the purpose.

Medicine stains may be removed from silver spoons, by rubbing them with a rag dipped in sulphuric acid, and washing it off with soap-suds.

To clean diamonds.

To clean diamonds and other precious stones, wash them with soap and water, with a soft brush, adding a little ammonia in the water, and then dry in fine boxwood saw-dust.

To clean gold-lace.

Burn some roche alum, and reduce the ashes to a very fine powder. With a soft brush, apply this powder to the gold-lace, etc., and rub it gently with a soft clean flannel.

Pile of Plush or Velvet.

To raise the pile of plush or velvet, dampen on the wrong side with clean cold water, then hold tight across the face of a hot iron, and rub up the compressed part with a clean stiff brush.

Grease Spots.

To remove grease spots from clothes, thoroughly saturate with turpentine, place a soft blotting-paper beneath, and another on the top of the spot, and press it hard. The fat is dissolved, then absorbed by the paper, and entirely removed from the cloth.

Another excellent method.—Take one peck of new lime; pour over it as much water as will leave about two gallons of clear liquid after it has been well stirred and has settled. In about two hours pour off the clear liquid into another vessel; then add to it 6 oz. of pearl-ash; stir it well, and when settled bottle it for use. With this liquid wash the clothes, using a coarse piece of sponge for the purpose. If the clothes are of very fine fabric and delicate colour, the liquid must be diluted with clear soft water.

To take stains from silk.

Mix together in a phial 2 oz. of essence of lemon and 1 oz. of oil of turpentine. Grease and other spots in silks are to be rubbed gently with a linen rag dipped in this mixture.

To remove wax from cloth.

This may be done by holding a red-hot iron within an inch or two of the marks, and afterwards rubbing them with a soft clean rag.

To remove fruit-stains from linen.

Moisten the stained places with a little water; then hold them over a lighted lucifer match in such a way that they catch the fumes without burning. The stains will yield to the fumes, and may be washed out. Avoid soap before the remedy is applied.

To remove fruit-stains from carpets.

Wash out with warm soap-suds and a little ammonia water.

Ink Spots.

Ink-spots in linen.—May be removed by directly dropping on them, while wet with the ink, the tallow from a lighted candle and letting it remain a few days before the linen is washed. When the ink is dried on the linen, the spot is to be taken out by rubbing it well with lemon juice, and then using a hot iron till the ink totally disappears.

Ink-spots on silk.—Should be well rubbed with ashes of wormwood, and strong distilled vinegar, and afterwards cleaned with soap-water.

Ink-spots on wollen material.—Take the white of an egg, and mix with it a few drops of oil of vitriol, rub the ink-spots with this mixture, and wash the places well afterwards. Wipe the cloth in the direction of the nap.

Another recipe.—To take out ink or iron mould stains from white goods, wet with milk and cover with salt.

Stains on Hands.

For stains on the hands nothing is better than salt, with enough lemon juice to moisten it, rubbed on the spots, and then rinsed off with clean water.

To remove the stains of acid fruit from the hands, wash your hands in clean water, dry slightly, and while they are yet moist, strike a match and hold your hands around the flame.

To clean furniture.

First rub with cotton waste, dipped in boiled linseed oil; then rub clean and dry with a soft flannel cloth. Care should be taken that the oil is all removed.

To clean marble.

Take 2 parts of common soda, 1 part of pumice stone, and 1 part of finely powdered chalk. Sift these through a fine sieve and mix them together with water into a thin paste; rub the marble well over with this; then wash with clean soap-and-water—all stains will disappear, and the marble will look quite new.

To remove iron-stains from marble—mix well together an equal quantity of lemon-juice and spirit of vitriol; wet the stains with the mixture, and after a few minutes rub with a soft cloth till the marble is quite clean.

Cement for broken china.

Beat some common flint glass to the finest powder in a mortar, and mix it into a paste with white of egg; paint the edges of the china with this paste; fix them well together and leave them to dry.

Another recipe.—Dissolve $\frac{1}{2}$ oz. of gum acacia in a wine-glass of boiling water; add plaster of Paris sufficient to form a thick paste, and apply it with a brush to the parts required to be cemented together.

Another excellent recipe.—Mix some oyster-shell powder with the white of a fresh egg, to the thickness of white paint, lay it on thick at the two edges, and join them as exact and quick as possible; then put it before the fire till the china is quite hot, and it will cement in about two minutes. Pour boiling water into it directly, wipe it dry, scrape clean on both sides with a pen-knife, and it will appear only as a crack. Mix no more than you can use for one or two things at a time; for if the cement grows hard it will be spoiled. The powder may be bought at the apothecary's but it is best prepared at home, which is done as follows:—Choose a large deep oyster shell; put it in the middle of the fire till red hot; then take it out, and scrape away the black parts; pound the rest in a mortar as fine as possible; sift and beat it a second time, till quite smooth and fine.

[To loosen glass stoppers.

Put one or two drops of sweet oil round the stopper, close to the mouth of the bottle; then put it a little distance from the fire. When the bottle gets warm, take a wooden instrument with a cloth wrapped tightly round it, then strike the stopper, first on one side, then on the other: by persevering a little while, you will most likely get it out.

Another method.—Lay the bottle in warm water, so that the neck of the stopper may be under water. Let it soak for a time, then knock it with a wooden instrument as before.

Bottle-cleaning.

Bottles are easily cleaned with hot water and fine coals or sand. To clean oily or greasy bottles—pour a little strong sulphuric acid and let it flow into every portion of the bottle for five minutes. Then rinse repeatedly with cold water.

To cut glass.

It is not generally known that glass may be cut, *under water*, with a strong pair of scissors. If a round or oval be required, take a piece of common window-glass, draw the shape upon it in a black line; sink it with your left hand under water as deep as you can without interfering with the view of the line; and, with your right hand, use the scissors to cut away what is not required.

To cut ice.

Ice may be cut into small pieces, of any shape, merely by tapping into it the point of a fine needle.

To keep milk from souring.

A small quantity of boracic acid added to milk will keep it from souring and delay the separation of cream. It can be kept several days by this means.

Syrup of Roses.

Take 7 oz. of the dried petals of the rose, 6 lbs. of double refined sugar, and 2 quarts of boiling distilled water. Macerate the roses in the water for 12 hours, and then strain them. Evaporate the strained liquor to $2\frac{1}{2}$ pints; and add the sugar to make it a syrup.

Lemon Syrup.

Boil 2 lbs. of loaf sugar in 1 pint of water; when the syrup is clarified, add an equal quantity of fresh lemon juice. Mix these together, and let the syrup simmer for 10 minutes.

Indian Syrup.

A delicious summer drink.—5 lbs. of lump sugar, 2 oz. of citric acid, 1 gallon of boiling water: when cold, add $\frac{1}{2}$ dram of essence of lemon and $\frac{1}{2}$ dram of spirit of wine; stir it well and bottle it. About two tablespoonfuls to a glass of cold water.

Lemonade.

Powdered sugar 4 lbs., citric or tartaric acid 1 oz., essence of lemon 2 drams; mix well. Two or three teaspoonfuls make a very sweet and agreeable glass of extemporaneous lemonade.

Another Recipe.—Ingredients: 2 parts of tartaric acid, 1 part of bicarbonate of soda, 4 parts of powdered lump sugar, essence of lemon. Mode: The first three ingredients may be mixed together and kept quite dry for lemonade powders, using about a teaspoonful with a little essence of lemon in half a tumbler of water for a draught, or two teaspoonfuls of the mixture may be put into a soda-water bottle, and filled up with water; care being taken to cork the bottle immediately it is filled. The essence of lemon in both cases should be mixed with the water before it is poured upon the mixture.

Lemonade Powders.

Ingredients: Citric acid 1 part, finely powdered white sugar 6 parts. *Mode.*—Mix the acid and the sugar in these proportions and keep the mixture in a bottle for use. The quantity to be put into a glass of water to make a pleasant drink must be regulated by taste.

Fruit Salt.

Take carbonate of soda 2 oz., tartaric acid 2 oz., cream of tartar 2 oz., epsom salts 2 oz., sifted sugar 2 oz. Dry the salts in the oven and beat fine; then mix the whole well together and keep in a tightly-corked dry bottle. The above forms a useful family aperient.

Hair-Oils.

1. Oil to improve the growth and beauty of the hair.—Take olive-oil 1 oz., oil of origanum 1 dram, oil of rosemary $1\frac{1}{2}$ dram: Mix well together.

2. Equal quantities of olive-oil and spirit of rosemary, a few drops of oil of nutmeg. Mix the ingredients together, rub the roots of the hair every night with a little of this liniment, and the growth of it will very soon sensibly increase.

3. Hair-oil to strengthen the hair.—*Ingredients:* Sweet olive-oil 3 oz., oil of lavender 1 dram. Apply morning and evening to those parts where the hair is thin in consequence of a deficiency of moisture in the skin.

4. Hair-wash to promote the growth of the hair and to prevent its falling off.—*Ingredients:* Liq. ammoniac fort. 1 oz., almond oil 1 oz., rosewater 4 oz., spirit of wine 2 oz. To be kept in a well-corked bottle and used three or four times a week.

5. For weak and falling hair.—Use olive-oil in which 5 or 6 per cent. camphor (crushed) has been dissolved by means of a gentle heat. Perfume it with a little oil of rosemary.

6. *Athenian water.*—Rose-water 1 gallon, alcohol 1 pint, sassafras wood $\frac{1}{2}$ lb., pearl-ash 1 oz. Boil the wood in the rose-water in a glass vessel, then when cold, add the pearl-ash and spirit. This is an excellent wash for cleansing the hair, strengthening it at the roots, and improving it in every respect.

7. To make the hair grow and curl.—Olive oil 1 lb., oil of origanum 1 dram, oil of rosemary $1\frac{1}{2}$ dram. Mix.

8. Oil for darkening the hair.—Tannic acid 1 oz., glycerine 2 oz., oil of sweet almonds 6 oz., oil of nerole $\frac{1}{2}$ dram, oil of orange peel 5 drams. Mix.

9. To promote the growth of whiskers.—Rub in the following lotion three or four times a week, at night time:—Eau-de-cologne 2 oz., tincture of cantharides 2 oz., oil of rosemary and oil of lavender, of each 10 drops. Also comb and brush occasionally.

10. Beard-promoter.—Croton oil 12 drops, sweet oil of almonds 1 oz. Mix well together and rub on the skin gently twice a day. The oil is poisonous.

Eyelashes.

To increase the length and strength of the eyelashes simply clip the ends with a pair of scissors about once a month. In some eastern countries mothers perform the operation on their children, both male and female, when they are mere infants, watching the opportunity while they sleep. The practice never fails to produce the desired effect.

For superfluous hairs.

Take 2½ oz. of rosin and 1 oz. of bees' wax; make it into sticks for use.

To improve the complexion.

To soften the skin and improve the complexion.—If flowers of sulphur be mixed in a little milk, and after standing an hour or two, the milk (without disturbing the sulphur) be rubbed into the skin, it will keep it soft and make the complexion clear. It is to be used before washing. The mixture, it must be borne in mind, will not keep. A little should be prepared over night with evening milk, and used the next morning, but not afterwards. About a wine-glassfull made for each occasion will suffice.

Wash for the face.—Milk 1 quart, saltpetre ¼ lb. beaten to powder, 2 penny-worth of oil of aniseed, 1 penny-worth of oil of cloves, ¼ gill of the best white wine vinegar: put it into a bottle, and let it stand in sand, half way up, in the sun, or in some warm place for a fortnight without the cork; after which cork, and seal it up.

Lip-salve.

Good lips are indispensable in the estimate of female loveliness. The lips should be fine, smooth, soft, and of a ruby tint. Good health alone can impart to the lips their peculiar beauty; and the appearance of the lips, especially of the under lip, is generally considered as a strong index of the state of the health. Cold cutting winds will often make the lips rough and uncomfortable. A little warm milk-and-water is the best remedy for this, if the lips are not badly chapped. In this latter case, however, it may be necessary to apply some emollient lip-salve. Delicate ladies who value the appearance of the lips, will never use water, either very cold or very hot. Tepid soft water is far more likely to keep the lips comfortable than any other.

Lip-salve.—Oil of sweet almonds 10 oz., white wax ¼ oz., spermaceti ¼ oz., oil of roses 5 drops, cochineal 4 grs. Warm these before the fire till well mixed; then leave them to cool.

Voice Pills.

Take bees' wax 2 drs., copaiba balsam 3 drs., powder of liquorice root 4 drs. Melt the copaiba balsam with the wax in a new earthen pipkin; when melted, remove them from the fire, and while in a melted state, mix in the powder. Make pills

of 3 grs. each. Two of these pills to be taken occasionally, three or four times a day. This is an excellent remedy for clearing and strengthening the voice, and is used by most professional singers in Europe.

Tooth Powders and Washes.

1. Dissolve 2 oz. of borax in 3 pints of water; before quite cold, add thereto 1 teaspoonful of tincture of myrrh and 1 table-spoonful of spirits of camphor: bottle the mixture for use. One wine-glassful of the solution, added to half a pint of tepid water is sufficient for each application. This solution, applied daily, preserves and beautifies the teeth, extirpates tartarous adhesion, produces a pearl-like whiteness, arrests decay and produces a healthy action in the gums.

2. Mix the purest charcoal with honey. This will make the teeth as white as snow.

3. *Quinine Tooth Powder.*—Rose pink 2½ oz., precipitated chalk 1 lb., carbonate of magnesia 1½ oz., quinine sulphate 1 oz. All to be well mixed together.

4. *Myrrh Tooth Powder.*—Powdered cuttlefish 1 lb., powdered myrrh 2 oz.—mix.

5. *Another.*—1 oz. of alum, 1 oz. of myrrh, ½ oz. of camphor, ½ oz. of cream of tartar. Pound these ingredients as fine as possible, and mix them well together.

6. *Another.*—Prepared chalk 1 lb., cuttle-fish bone in powder ¾ lb., myrrh powder 4 oz., otto of roses ½ dram, oil of cloves ½ dram.

7. *Royal Tooth Powder.*—Precipitated chalk 1 lb., cuttle-fish bone in powder 1 lb., myrrh powder 4 oz., powdered sugar ½ lb., carbolic acid 1 dram, oil of cloves 2 drams, rose color 2 drams.

Sealing Wax.

Best Black.—Venice turpentine 183 parts, shellac 300 parts, rosin 16½ parts, and the necessary quantity of lampblack mixed with oil of turpentine.

Best Red.—Venice turpentine 133 parts, shellac 233 parts, cinnabar 83 parts, chalk mixed with oil of turpentine 3 parts.

Writing Inks.

1. *A beautiful writing ink.*—11 parts of gall-nuts, 2 parts of sulphate of iron, one-seventh part of solution of indigo and 33 parts of water.

2. *Glossy black ink.*—Boil 2 lbs. of pulverised gall-nuts in 3 gallons of water for three or four hours; allow the decoction to settle, strain it through a linen cloth and filter it. Then slowly add 1 lb. of sulphate of iron and 1 lb. of gum arabic previously dissolved in 3 quarts of water. Stir the mixture from time to time and expose it to the air until it has assumed a bluish-black colour.

3. *Stephen's blue-black writing fluid.*—Pure Prussian blue 6 parts, oxalic acid 1 part. Triturate with a little water to a perfectly smooth paste and then dilute the mass with a proper quantity of soft water.

4. *Exchequer ink.*—Bruised Aleppo galls 28 lbs., gum 7 lbs., chipped logwood 7 lbs., sulphate of iron 7 lbs., soft water 30 gallons. Pour the water boiling hot on the galls and logwood, and steep for twenty days, then add the gum, and the next day the sulphate of iron; or boil the galls and logwood in the water for one hour, then add the gum, and lastly the sulphate of iron. This ink will preserve its color for centuries.

Invisible Inks.

1. Write with a solution made by dissolving one part of nitrate of silver in 1000 parts of distilled water. When submitted to day-light, the writing appears of a slate color or tawny brown.

2. Linseed oil 1 part, liquor ammonia 20 parts, water 100 parts—mix intimately. Shake the mixture each time before the pen is dipped into it, as otherwise a little of the oil may separate and float on top, which would of course cause an oily stain on the paper. The characters appear when the paper is dipped in water and disappear when dry.

3. Equal parts of sulphate of copper and sal ammoniac dissolved in water. Writing with this solution remains colorless until warmed, when it turns yellow.

4. A weak solution of nitrate of copper gives an invisible writing, which becomes red through heat.

5. Write with a concentrated solution of caustic potash. The writing will appear when the paper is submitted to strong heat.

6. Write with lemon or onion juice. Characters become visible when the paper is heated.

7. Write with buttermilk using a clean new pen. The characters appear when the paper is ironed with a hot flat iron.

[All invisible inks will show on glazed paper. Therefore, unglazed paper should be used.]

Vanishing Inks.

1. Boil gall-nuts in alcohol, put copper sulphate and sal ammoniac into it, and when cold, dissolve a little gum in it. Writing is black at first but will vanish in 24 hours.

2. Boil some gall-nuts in nitric acid and add to the infusion some gum arabic and a little sulphuric acid. However plain the writing executed with this ink may be at first, it will entirely disappear from the paper in a few days.

3. There is a well-known proprietary article in Paris under the name of "Encre pour les Dames" (ink for ladies). Hager, in a recent scientific journal, states that this consists of an aqueous solution of iodide of starch, and is specially intended for love-letters. In four weeks characters written with it disappear preventing all abuse of letters, and doing away with all documentary evidence of any kind in the hands of the recipient.

Of course, it is criminal to use any of the above inks for pro-notes, legal documents, etc.

To renew illegible manuscripts.

Wash the illegible part lightly and carefully with a weak solution of ferro-cyanide of potash in clean water.

Unscrewing a Fountain Pen.

If you use a fountain pen, and find it difficult to unscrew the nozzle, wrap a rubber band a few times around it. That will give a grip almost equal to a pair of pincers, and will not injure the holder. If you haven't a rubber at hand a string or a dampened piece of paper will do. A glass stopper may thus be easily removed from a bottle or inkstand after defying the strongest grip of moist fingers.

To remove a tight finger-ring.

1. Pass the end of a piece of fine twine underneath the ring and wind it evenly around the fingers upward as far as the middle joint. Then take hold of the lower end of the string beneath the ring, and begin to slowly unwind upward, when the ring will gradually move along the twine toward the tip of the finger and come off.

2. The most simple and easy method of removing a gold ring which is too tight for the finger, is to rub it in one spot with a little quicksilver. It will soon break in this spot with a little pressure.

A stamp that would not stick.

A lady's maid, seeing her mistress struggling with a stamp that would not stick, took the stamp, rubbed it on the mucilage on the flap of the envelope and put it in its place. It was an ingenious way out of a common difficulty well worth remembering.

Incombustible Paper.

Make a strong solution of alum, steep the paper in it, and hang it up to dry. Try a strip of the paper in the flame of a candle, and if not sufficiently prepared, dip and try it a second time.

The Multograph.

Preparation.—Take gelatine $2\frac{1}{2}$ oz., glycerine 1 lb., finely powdered chalk 1 oz. Soak the gelatine in enough cold water to cover it well a couple of inches above the mass and let it remain for 20 or 30 minutes. Heat the glycerine in a vessel immersed in another containing boiling water. Pour off from the gelatine all the water remaining unabsorbed and add the jelly-like mass left, to the hot glycerine. Continue the heating for an hour, carefully stirring the mixture occasionally, avoiding as much as possible the formation of bubbles and froth. Lastly, add chalk-powder and stir well. Then pour the composition into a zinc mould, which may be made of foolscap size, depth 1 inch. Take care to place the mould in a perfectly level position and remove all bubbles, froth and scum from the surface, with a broom or a piece of cloth. Keep it in a cool place free from dust and allow it to set for five or six hours.

Use.—Write on thick paper with multograph ink (or any aniline dye), using a new steel pen, and allow the writing to dry. Pass a wet sponge lightly over the composition of the multograph and when it is nearly dry, place the copy face down over it and rub gently on the back to insure the perfect contact of every part. Let it remain so for about a minute, remove and proceed to take copies by placing paper over the transferred writing, rubbing gently and then removing it, always beginning the removal from a corner. After taking the desired number of copies or when the impression is exhausted, wash the composition lightly with a sponge wet with cold water and allow it to dry before using again. The washing is unnecessary when the multograph is left unused for two or three days, as the ink will then sink down so as not to interfere with making a new transfer.

If the composition gets spoiled with holes, etc., it may be recast by melting as before, with a little fresh quantity of gelatine, if necessary.

Multograph Ink.—Dissolve 1 oz., of aniline violet or blue in 7 fluid ounces of hot water, and on cooling, add 1 oz. of spirit of wine, $\frac{1}{2}$ oz. of glycerine, a few drops of ether, and a drop of carbolic acid. Keep the ink in a well-stoppered bottle.

Rubber Stamp Ink.

1. *An excellent recipe.*—Dissolve $\frac{1}{2}$ oz. of aniline dye in 15 ozs. of pure alcohol and add 15 ozs. of concentrated glycerine to the solution.

2. *Another.*—Dissolve 16 parts of fast aniline color (violet, blue, red, etc.) in 80 parts of boiling distilled (or rain) water and add 7 parts of glycerine and 3 parts of molasses. Stir well.

Imitation Gold.

1. Fuse together with saltpetre, sal ammoniac and powdered charcoal—4 parts of platinum, $2\frac{1}{2}$ parts pure copper, 1 part pure zinc, 2 parts block tin, $1\frac{1}{2}$ parts pure lead. This recipe is said to produce a metal which will so nearly approximate the genuine as to almost defy detection without a resort to thorough tests.

2. Take of pure copper 100 parts, zinc or preferably tin 17 parts, magnesia 6 parts, sal ammoniac 3·6 parts, quicklime 1·8 parts, cream of tartar 9 parts. First melt the copper, then add the magnesia, sal ammoniac, lime and tartar, separately and by degrees, in the form of powder. Stir the whole briskly for about half an hour, so as to mix thoroughly; and then add the zinc in small grains by throwing it on the surface and stirring till it is entirely fused. Cover the crucible and maintain the fusion for about 35 minutes. Skim the surface and cast. The alloy has a fine grain, is malleable and takes a splendid polish. It does not corrode readily, and, for many purposes, is an excellent substitute for gold. When tarnished, its brilliancy can be restored by a little acidulated water.

3. Fuse together 16 parts of copper, 7 parts of platinum and 1 part of zinc. This alloy resembles in color gold of 16 carats fine or two-thirds, and will resist the action of nitric acid unless very concentrated and boiling.

Imitation Silver.

1. Fuse together, copper 50 parts, nickel 25 parts, zinc 25 parts. This alloy closely resembles silver and is the best substitute for it. It is very malleable.

2. Fuse together, copper 70 parts, nickel 23 parts, aluminium 7 parts. This alloy exhibits a beautiful silvery color.

Tests for Gold and Silver.

Test for Gold.—Gold is not soluble in either nitric acid or hydrochloric acid, singly, but only in a mixture of both these acids known as *aqua regia*. The specific gravity of gold is 19; the best specimen of artificial gold will be found lighter, *bulk for bulk*, than real gold.

Test for Silver.—In order to ascertain whether any article is of silver, file off a small quantity of it, dissolve it in a little nitric acid, and add a few grains of common salt. If the article be silver, a cloudy-white precipitate (of silver chloride) will at once be formed.

To tell the age of horses.

To tell the age of any horse,
Inspect the lower jaw, of course;
The six front teeth the tale will tell,
And every doubt and fear dispel.

Two middle "nippers" you behold,
Before the colt is two weeks old,
Before eight weeks two more will come;
Eight months the "corners" cut the gum.

The outside grooves will disappear,
From middle two in just one year.
In two years from the second pair;
In three, the corners, too, are bare.

At two the middle "nippers" drop;
At three, the second pair can't stop.
When four years old the third pair goes
At five a full new set he shows.

The deep black spots will pass from view
At six years from the middle two.
The second pair at seven years;
At eight the spot each corner clears.

From middle "nippers" upper jaw,
At nine the black spots will withdraw.
The second pair at ten are white;
Eleven finds the "corners" light.

As time goes on, the horsemen know
The oval teeth three-sided grow;
They longer get, project before
Till twenty, when we know no more.

Medicines for Horses.

1. **Fever Balls.**—Cape aloes 2 oz., nitre 4 oz.; syrup to form a mass. Divide into 12 balls, and give one morning and evening until bowels are relaxed, then give condition powder or worm ball.

2. **Cough Balls.**—Tartar emetic $\frac{1}{2}$ oz., digitalis powdered $\frac{1}{2}$ oz., nitre powdered $1\frac{1}{2}$ oz., Carbadoes tar a sufficiency.—Make into 8 balls. One ball every night.

3. **Cathartic Ball.**—Cape aloes 1 oz., castile soap 1 dr., spirits of wine 1 dr.; syrup to form a ball. If calomel is required, add from 20 to 50 grains. During its operation feed upon mash, and give plenty of water.

4. **Worm Balls.**—Tartar emetic 10 drams, best sulphur 5 oz., Ethiop's mineral 3 oz., powdered cascarrilla 2 oz.—Mix together and make into six balls. Give one each morning early before the horse is fed. Give it a warm mash every other night, and chilled water to drink. It is not absolutely necessary to keep the horse from work while under this treatment; but the work should not amount to more than gentle exercise.

5. **Tonic Balls.**—Peruvian bark 2 oz., camomile 2 oz., gentian $\frac{1}{2}$ oz., sulphate of copper $\frac{1}{2}$ oz., aniseed 40 drops, honey a sufficiency.—Make into four balls. Give a ball once a week for four successive weeks.

6. **Condition Powder.**—Resin 2 oz., nitre 2 oz., levigated antimony 1 oz.—Divide into 10 doses and give one morning and evening.

7. **Astringent for Diarrhoea and Purging.**—Tincture of opium 5 oz., all-spice $2\frac{1}{2}$ drs., powdered caraway $\frac{1}{2}$ oz., catechu powder 2 drs., strong ale or gruel 1 pint. Give every morning until purging ceases.

8. **Foot Powder.**—Powdered orris $1\frac{1}{2}$ oz., powdered boric acid 1 oz., powdered starch 2 oz., powdered fuller's earth 2 oz.

9. **Hoof Ointment.**—Tar 1 lb., tallow 1 lb., turpentine $\frac{1}{2}$ lb. Melt and mix.

10. **Healing Lotion.**—suitable for sprains, bruises, sore-throat, cuts and wounds.—Solution of lead 1 oz., essential oil of camphor or eucalyptus oil 4 oz., vinegar 7 oz., sesame oil 20 oz., yolk of two fresh eggs. Rub the yolk in a mortar, add gradually the sesame oil mixed with the essential oil, then the vinegar, and lastly the solution of lead.

IV. Wonders and Curiosities

Wonders of the Heavens.

The sun is 91,000,000 miles distant from the earth. A railway train travelling at a uniform speed of 30 miles per hour will take nearly 350 years to go from here to the sun. The same train will reach the Moon in 11 months. Light, which travels at the inconceivably rapid rate of 186,000 miles *per second*, takes about 8 minutes to reach us from the sun.

To make a globe like the sun, it will take one million four hundred thousand globes like the earth rolled into one. We talk of spots in the sun; the space occupied or laid bare by the principal spot is 928 millions of square miles!

The total number of stars visible to the naked eye, in a clear moonless night, is about 6000, *i. e.*, at the equator. The total number of stars visible by means of the best telescope is estimated at 500,000,000,000, or half a million of millions!

Many of the stars are much larger in size than the sun. There are 18 stars of the first magnitude. These are at least 211,000 times farther from the earth than is the sun, and their light travelling with its inconceivable speed of 186,000 miles *per second*, takes over 3 years to reach us. There are 55 of the second magnitude, their light taking over 6 years to reach us. 170 of the 3rd magnitude, their light reaching us in over 9 years. 500 of the fourth magnitude, their light taking 12 years to reach us. Stars as distant as those of the sixth magnitude, their light taking 36 years to traverse the intervening space, are visible to the naked eye. A 9-foot telescope reveals stars of the twelfth magnitude, about 10,000,000 in number. An 18-foot telescope reveals about 43,000,000 stars, including those of the 13th magnitude, whose light takes 2,700 years to reach us! Each of these stars is thought to be the centre of a solar system like our own. Astronomers tell us that there may be stars, far more distant than those revealed to us by the best telescope, whose light—which commenced to travel with its inconceivable speed, ever since the beginning of creation—is still at the threshold of its long journey, and it may take several billions of billions of years before the first ray reaches the earth.

The distance from our globe of the nearest fixed star is 19 billions of miles. It is difficult to realise the magnitude of these nineteen billions. A billion contains one thousand millions and

we may convey an idea of this amount by a simple illustration. Supposing Adam—the first man—had commenced to count as quickly as he could, and that when his life was ended his son commenced to count, taking up from the number at which Adam left off, and spent his whole life, day and night, counting as fast as he could, and supposing that at his death he enjoined on his heirs an eternity of counting, and that they had continued doing so up to the present moment, their united efforts would not yet have reached the amount of nineteen billions, the distance in miles from the earth of the nearest fixed star!

Wonders of the Animal World.

1. The elephant has more muscles in its trunk than any other creature possesses in its entire body, their number being, according to Cuvier, no less than 40,000; while the whole of a man's muscles only number 527. The proboscis or trunk of the elephant which contains this vast quantity of small muscles, variously interlaced, is extremely flexible, endowed with the most exquisite sensibility, and the utmost diversity of motion.

2. A horse will live 25 days without solid food, merely drinking water; 17 days without either eating or drinking; and only 5 days when eating solid food without drinking.

3. Sheep have no teeth in the upper jaw. In some parts of the world there are sheep that have most of their fat in their tails. These tails weigh so much that they have to be tied on small carts, which the sheep draw after them when they walk. The carts are made of flat boards on two wheels and are attached by a light string harness to the body of the animal. The fat of the tail is very soft, and is used as butter.

4. The eyes of hares are never closed, as they are unprovided with eyelids. Instead thereof they have a thin membrane which covers the eye when asleep, and probably also when at rest.

5. Nature has enabled some animals to see objects behind them as well as in front without turning around. In insects this is noticeably true. Approach a fly ever so carefully from behind and notice how it sees your movements. The hare has this power in a marked degree. Its eyes are large, prominent, and placed laterally. Its power of seeing things in the rear is very noticeable in greyhound coursing, for though this dog is mute while running, the hare is able to judge to a nicety the exact moment at which it will be best for it to double. Horses are another instance. It is only necessary to watch a horse driven invariably without blinkers to notice this. Take, for instance, those on the horsecar lines. Let the driver even attempt to take the whip in hand,

and if the horse is used to the work he will at once increase his pace. The giraffe, which is a very timid animal, is approached with the utmost difficulty, on account of its eyes being so placed that it can see as well behind as in front.

6. The fecundity of the domestic rabbit is marvellous. It begins to breed at six months, and has 7 litters a-year, each of from 4 to 12, or upwards. It is calculated that the descendants of a single pair of rabbits, if allowed full scope, would, in four years, amount to over $1\frac{1}{2}$ millions. The rabbit, introduced into Australia, has now overrun that continent to such excess as to demand special legislation for its suppression. Some 2,000 men are employed in New South Wales alone in the destruction of this rodent. Since 1870 Victoria has voted considerably over £100,000 for the destruction of the rabbit, and high prizes are offered for a recipe for its extirpation.

7. Hog-breeding has been the subject of some rather startling computations. It has been found that, if permitted, hogs will live from fifteen to twenty years of age, that they commence breeding when they are from nine to twelve months old, and that from one pair only, in ten years, allowing only six to a litter, male and female, upwards of 6,434,838 pigs would be obtained; that is to say that, if a countryman started with some acres and a pair of pigs, he might in the course of ten years count their progeny by millions. This is not reckoning on any out-of-the-way basis, for it has been shown that one sow actually produced 355 pigs in twenty litters; while at an exhibition of the Agricultural Society a boar was shown which, although only twenty months old, was already the father of 1466 hogs. Here, then, is wealth for the million!

8. The owl has no motion in the eye, the globe of which is immovably fixed in its socket by a strong, elastic, hard, cartilaginous case, in the form of a truncated cone; but in order to compensate for this absence of motion in the eye, it is able to turn its head round in almost a complete circle without moving its body.

9. The wren, according to a British legend brought fire from heaven, but lost a part of its plumage. There is a popular legend that this little bird claimed the title of king of birds by a contest with the eagle as to which could mount the highest. Perched upon the back of the larger bird, the little wren soared beyond its competitor and won the title.

10. The vulture is said to fly at times at the rate of above 100 miles an hour. The wild goose and the swallow, in their migrations, make 90 miles an hour. The common crow ordinarily lounges across country at the rate of 25 miles an hour, the speed

of a railway train. The carrier pigeon has flown long distances at rates of speed ranging from 60 up to 80 miles an hour, and for many hours together.

11. *Weight of the whale.* Nilsson remarks that the weight of the Greenland or right whale is 100 tons, or 220,000 pounds, equal to that of 88 elephants or 440 bears. The whalebone in such a whale may be taken at 3,360 pounds, and the oil at from 140 to 170 tons. The remains of the fossil whale which have been found on the coast of Ystad, in the Baltic, and even far inland in Wangapanse, Westergothland, betoken a whale which, although not more than 50 or 60 feet in length, must at least have had a body twenty-seven times larger and heavier than that of the common or right whale.

12. The frog, owing to its peculiar structure, cannot breathe with the mouth open, and if it were forcibly kept open the animal would die of suffocation.

13. *Age.*—The elephant lives 200 years, camel 40 years, horse 30 years, ox 20 years, dog 12 years, cat 10 years. The toad lives about 15 years; parrots and storks 100 years; some fish live 150 to 250 years; the whale 400 years.

14. A fly lays four times during the summer, each time 80 eggs. The total progeny of a single fly in one summer has been calculated to be 2,080,320.

15. A bundle of spider's webs, not larger than a buck shot and weighing less than one dram, would, if straightened out and untangled, reach a distance of 350 miles. According to experiments and calculations of the scientist Lenwenhock, 10,000 threads spun by a full-grown spider, when taken together, will not be equal in substance to the size of single hair.

The cow tree.

The cow tree, the botanical curiosity of South America grows on the broad, barren plateaus of Venezuela, where it would be next to impossible to find fluid sufficient to slack one's thirst were it not for this wise provision of nature.

The sap of the cow tree, as its name implies, resembles milk, both in look and taste. A slight balsamic taste has been reported by some naturalists who have drank of the strange liquid; otherwise it was said to "have the flavour of rich cream, and to be very wholesome and nourishing."

The tree itself frequently attains a height of 100 to 125 feet, it being not unusual to see a trunk of this species seventy to eighty feet, perfectly smooth and without a limb. A hole bored

into or a wound made in the bark of this wonderful tree is almost immediately filled with a lacteal-like fluid, which continues to flow for some days, or until it coagulates at the mouth of the wound and forms a waxy mass, which stops further flow.

Humboldt, the first to give a scientific description of the baobab tree of Africa, was the first to tell of the wonders of the cow tree, as it was called in his time.—*St. Louis Republic*.

Big Trees of California.

The "big trees" are among the most sublime of the natural wonders of the world. One who has never seen them can have no conception of their immensity. The largest of them are over 30 feet in diameter 10 feet from the ground, and the tallest are over 300 feet high. The principal ones in the Yosemite park have distinctive titles or names.

"The Fallen Monarch" was one of the grandest in the grove. As it now lies prostrate upon the earth, its diameter averages over twenty feet for more than a hundred feet of its length. The top and part of the butt end have been destroyed by fire. How long the tree has lain there is unknown; it may have been there for more than a thousand years. The wood of the "big trees" is a species of cedar, and it is well nigh imperishable in atmospheric influences. Fire, however, has been the great destroying element in those wonderful relics of the past. You climb to the crest of the "Fallen Monarch" by the aid of a ladder of some ten rungs. You can have no just conception of the immensity of the tree until you walk along its mighty back for over a hundred feet.

Near by are some more wonders. I give your readers some idea of some of them. "The General Grant" tree is not far off, a huge and grim specimen, looking as stern as the great warrior ever appeared. There is one known as "The Grizzly Giant," a monster 27 feet in diameter, 9 feet from the ground. At the height of just 100 feet the first limb comes out; that limb is 6 feet in diameter. The tree gives you a deep sense of awe as you gaze on its sublime yet grizzly aspect.

Within close walking distance is "The Telescope Tree." This is about 100 feet high, the top of it above that height having been destroyed by fire. This tree is a hollow tube. From the base you look up through this tube into the deep skies above. You can ride on horseback into the opening below.

Not far away is another hollow monster prostrate on the earth. You can ride in at the lower entrance, and go 100 feet, and out at a knot hole.

The most conspicuous and most celebrated of the trees is one that stands directly astride of the broad avenue made for driving through the park. The avenue, a highway, makes directly towards this tree, and an opening for the road bed is cut directly through the heart of the very tree itself. You drive right in under the archway of solid wood, and the driver stops, the great stage and four horses all covered by the sheltering tree; and there is, furthermore, ten feet of solid wall on either side of the wheels of the coach. The tree is about thirty feet in diameter at the height of the stage top.—*Cor. Atlanta American*.

Age of Trees.

Certain Brazilian cocoa-nut palms live 600 to 700 years. The date palm is said by the Arabs to live 200 to 300 years. Wallan's Oak, at Ellersley, near Paisley, is more than 700 years old. Eleven olive trees on Mount Olives, Jerusalem, are known to have existed in 1099, that is 800 years ago. Adanson computes the age of certain Baobab trees in Africa at more than 5000 years.

Gold Leaf.

The gold-beaters of Berlin, at the Paris exposition, showed gold leaves so thin that it would require 282,000 to produce the thickness of a single inch, yet each leaf was so perfect and free from holes as to be impenetrable by the strongest electric light; if these leaves were bound in book form it would take 15,000 to fill the space of ten common book leaves.

A grain of musk.

A grain of musk has been kept freely exposed to the air of a room, of which the door and window were constantly open for ten years, during all which time the air, though constantly changed, was completely impregnated with the odour of musk, and yet at the end of that time the particle was found not to have sensibly diminished in weight.

Depth of the Ocean.

The greatest known depth of the ocean is $8\frac{1}{2}$ miles; the average depth of all the oceans is from 2,000 to 3,000 fathoms.

Rivers and Mountains.

1. The Missouri-Mississippi in North America, is the largest river in the world; length 4,194 miles. The Nile in Africa is the next largest; length 4,020 miles. The Yang-Tsze-Kiang in Asia comes next; length 3,158 miles. The length of the Indus is 1,800 miles, and of the Ganges 1,570 miles.

2. The loftiest mountain-peaks in the world are Deodhunga (29,002 ft.) and Dowlgiri (28,178 ft.) in the Himalayas.

3. The loftiest active volcano is Popocatepeti—"smoking mountain"—in Mexico. It is 17,748 feet above the sea-level, and has a crater three miles in circumference, and 1,000 feet deep.

4. The noise produced by the great eruption of Cotopaxi, in 1744, was heard over 600 miles.

The largest pyramid.

The largest one of the Egyptian pyramids is 543 feet high, 693 feet on the sides, and its base covers 11 acres. The layers of stones are 203 in number. Many stones are over 30 feet long, 4 broad, and 3 thick.

The largest desert.

The largest desert is that of Sahara, a vast region of Northern Africa, extending from the Atlantic Ocean on the west to the valley of the Nile on the east, about 3,000 miles; average breadth about 900 miles; area about 2,000,000 square miles. Rain falls in torrents at intervals of five, ten, and twenty years. In summer the heat during the day is excessive, but the nights are often cold. In winter the temperature is sometimes below freezing point.

Notable Bridges.

1. *Trajan's Bridge* over the Danube, 4,770 feet in length, built A. D. 115.

2. The *largest suspension bridge* is the one between New York city and Brooklyn; the length of the main span is 1595 feet 6 inches; the entire length of the bridge is 5,980 feet.

The longest railway tunnel.

The longest railway tunnel in the world is that of St. Gotthard on the line of railroad between Lucerne and Milan. The summit of the tunnel is 900 feet below the surface at Andermatt, and 6,600 feet beneath the peak of Kastlehorn, of the St. Gotthard group. The tunnel is $26\frac{1}{2}$ feet wide, and is 18 feet 10 inches from the floor to the crown of the arched roof. It is $9\frac{1}{2}$ miles long.

A wonderful canal.

The most remarkable canal in the world is the one between Worsley and St. Helen's in the north of England. It is sixteen miles long and underground from end to end. In Lancashire the coal mines are very extensive, half the country being undermined.

and many years ago the Duke of Bridgewater's managers thought they could save money by transporting the coal underground instead of on the surface. So the canal was constructed and the mines connected and drained at the same time. Ordinary canal boats are used, but the power is furnished by men. On the roof of the tunnel arch are cross pieces, and the men who do the work of propulsion lie on their backs on the coal and push with their feet against the cross bars on the roof.

The deepest mine.

The deepest mine in the world is the Lambert coal mine in Belgium, 3,490 feet.

The longest span of wire.

The longest span of telegraph wire in the world is over the Kistna, near Bezwada. It is more than 6,000 feet in length, and is 1,200 feet high.

The Chinese wall.

The Chinese wall is the largest in the world. It was completed by the first emperor of the Tain dynasty, about 220 B.C., as a protection against Tartars. It traverses the northern boundary of China, and is carried over the highest hills, through the deepest valleys, across rivers, and every other natural obstacle. Its length is 1,250 miles. Including a parapet 5ft., the total height of the wall is 20 ft.; thickness at the base, 25ft., and at the top, 15ft.

Huge Temples.

The Temple of Diana at Ephesus was 425 feet long and 225 feet broad, with 127 columns, 60 feet high, to support the roof. It was 220 years in building.

The Temple of Ypsambul, in Nubia, is massive, and cut out of the solid rock. Belzoni found in it four figures 65 feet high, 25 feet over the shoulders, with a face of 7 feet, and the cars over 3 feet.

Large Churches.

St. Peter's, Rome, will accommodate 54,000; Duoma, Milan, 37,000; St. Paul's in Rome, 25,000; St. Sophia, Constantinople, 23,000; Notre Dame de Paris, 21,000; the Dome of Florence, 20,000; the Cathedral of Pisa, 13,000; St. Marc in Venice, 7,000.

Theatres and Halls.

There are in London 65 theatres and about 500 music halls, providing entertainment for 325,000 people every night, or 100,000,000 in the course of a year.

The largest theatre in the world is the opera-house in Paris. It covers nearly 3 acres of ground; its cubic mass is 4,287,000 feet; it cost about 100,000,000 frs.

The Coliseum at Rome, built by Vespasian for 100,000 spectators, was in the longest diameter 615½ feet, and in the shortest 510, embraced 5½ acres, and was 120 feet high.

Large Parks.

Hyde Park, London, contains 400 acres; Phoenix Park, Dublin, 1,760; Bois de Boulogne, Paris, 2,160; Prater, Vienna, 2,300.

Libraries.

The first public library, now known to have existed, was founded at Athens by Pisistratus, about 540 B.C. The Alexandrian library contained 400,000 valuable books, 47 B.C. British Museum has 32 miles of shelves and over 1,100,000 volumes.

The largest library is the Bibliotheque Nationale, in Paris, founded by Louis XIV. It contains 1,400,000 volumes, 300,000 pamphlets, 175,000 manuscripts, 300,000 maps and charts, and 150,000 coins and medals.

The smallest book printed.

The smallest book ever printed since type was invented is, perhaps, the microscopic edition of Dante's "Divine Comedy," which was exhibited at the Paris exposition of 1882. The volume of 500 pages was somewhat less than half-an-inch square. Two sheets of paper sufficed to contain all the 14,323 verses. The type in this little book was cast in 1834, but no complete book had hitherto been turned out, the difficulties for compositors and revisers being so arduous that no one would continue the work for any length of time.

The tallest tower.

The tallest tower in the world is the Eiffel Tower, Paris, 900 feet.

The largest bell.

The largest bell in the world is the great bell at Moscow, at the foot of the Kremlin. Its circumference at the bottom is nearly 68 feet, and its height more than 21 feet. In its stoutest part it is 23 inches thick, and its weight has been computed to be 433,722 pounds. It has never been hung.

A wonderful clock.

The most wonderful clock in the world is exhibited in St. Petersburg. It was originally manufactured for the late Duke Charles of Brunswick, who bequeathed it to the Swiss Confederation. There are no fewer than 95 faces to this colossal timepiece. It indicates simultaneously the time of day at 30 different spots of the earth's surface, besides the movement of the earth around the sun, the phases of the moon, the signs of the zodiac, the passage over the meridian of more than 50 stars of the northern hemisphere, and the date according to the Gregorian, Greek, Mussulman, and Hebrew calendars. The works took two years to put together after the clock had been sent in detached pieces from Switzerland to Russia.

The largest gun.

The U. S. A. is about constructing a 16-in. experimental gun. Length 50 feet, weight 125 tons, will hurl projectiles weighing 2,370 lbs. to an extreme range of 16 miles, with an initial velocity of 2,000 ft. per second.

The largest painting.

"Paradise" by Tintoretto, is the largest painting in the world. It is eighty-four feet wide, thirty-three and a half feet high, and is now in the Doge's palace, Venice.

The British Empire.

Queen Victoria is now sovereign over a continent, 100 peninsulas, 500 promontories, 1,000 lakes, 2,000 rivers, and 10,000 islands. She waves her hand and 900,000 warriors march to battle to conquer or die. She bends her head and at the signal 1,000 ships of war and 100,000 sailors perform her bidding on the ocean. She walks upon the earth and 30,000,000 human beings feel the least pressure of her foot. The Assyrian empire was not so populous. The Persian empire was not so powerful. The Carthaginian empire was not so much dreaded. The Spanish empire was not so widely diffused. The Roman power was weak in comparison, and Greece was as a small village.

Money made by Inventors.

The inventor of the stylographic pen has made £200,000. Edison has made £1,250,000 by his inventions.

Pins.

About 1,500 tons of iron and brass wire are yearly manufactured in England into pins. The Newhall Works, Birmingham, make 10,000,000 pins per day. What becomes of them?

A modern Hercules.

An article under the title of "An Athlete of the Eighteenth Century," published some years ago and recently unearthed, contains the following:—

By an athlete of the eighteenth century we do not mean the Prince Frederick August of Saxony, king of Poland, commonly called August the Strong, who could knock off the head of an ox with one stroke of his sword, and besides distinguished himself in all kinds of respectable performances of strength, but another Hercules who would have wrapped the strong August around his little finger, if such a thing would have been permitted. This man was the athlete Johann Karl von Eckenberg, who in the twenties and thirties of the last century showed his productions of strength in public. He was the most stately of all gymnasts, and was born in the town of Harzgerode, and out of respect to his native town he called himself for a time, on his bill posters, Sampson Hercules Harzmann.

It borders on the fabulous what his contemporaries related of his remarkable exhibitions of strength. He broke an anchor rope as if it were ordinary thread, iron nails and bolts he turned playfully between his fingers into screws, a cannon pipe he carried around as if it were a baby. His teeth were as strong as iron. He bit into a piece of oakwood; then a strong cart horse was harnessed up to it. In spite of the horse being urged on it was unable to pull the stick out of the juggler's mouth or to pull the athlete from the place where he stood. A bench made of wood, sixteen feet long, he grasped with his teeth by one end and carried it around while a trumpeter blowing his instrument sat on the other end.

His arm was more powerful than his teeth. He spread out his hands, on each one was placed a bottle of wine, then a rope was attached to each wrist and to each rope there were three men from the audience who pulled with all their might, so as to make it impossible for this Hercules to convey the wine to his

month. All their zeal was without avail, as the arms of the gymnast bent themselves irresistibly and brought the jug to his mouth without spilling a drop of wine.

He generally saved his grandest performance of strength until the close of the exhibition. He ascended a scaffold of beams under which was a platform of thick planks fastened on strong chains. A trumpeter mounted on a horse, clad as a herald rode upon the platform and played his tune. The Hercules then took a place on the point of the scaffolding, held a glass of wine in one hand and with the other, by means of the chains, lifted the heavy platform, the horse, and the trumpeter high up from the floor, and for a little while held the whole weight, the trumpeter shrilly blowing a tune, while the athlete drank the glass of wine, at the same time giving a toast to the magistrate and the citizens of the city in which he happened to be staying.

When Herr von Eckenberg became older, his power gradually left him. He died in the year 1754.

Living on water only.

Dr. Tanner, at New York, in 1880 lived 40 days on water only, losing 36 lbs. in weight.

Doctors' Bills in China.

People generally pay doctors when they are sick, and sometimes not even then. The Celestial method, as shown by the example of the Emperor of China, is to pay the doctor only when one is well.

As soon as the Emperor is sick it is a notification to his physicians that their salary is cut off till he is perfectly well again. The passionate zeal with which the regulars go to work to get his majesty back where their salaries will begin again is said to be something astounding. The result is that the Emperor is about the healthiest man on this planet, and his physicians seldom lose a day's salary.

Curious Customs.

In China, old men play ball and fly kites, while children fold their arms and look on; men wear long petticoats and carry fans, while the women wear short jackets and carry canes.

When a Chinaman meets another, he shakes and squeezes his own hands and covers his head. If great friends had not seen each other for a long time they would rub shoulders until they got tired.

The Burmese way of greeting friends is to pretend to smell of a person's face, pronounce it sweet and then ask for a "smell."

The Australian natives practise the singular custom, when meeting, of sticking out their tongues at each other.

A striking salutation of the South Sea Islanders is to fling a jar of water over the head of a friend.

The number 'seven.'

The number 'seven' has been invested with more mystery than all the other digits together, and to it were ascribed magic and mystical qualities possessed by no other number. It is indeed interesting to note that there were seven days of creation, seven wise men in antiquity, and seven wonders of the world. It was an ancient belief that a change in the body of man occurs every seventh year. For seven days seven priests with seven trumpets invested Jericho, and on the seventh day they encompassed it seven times. Elisha sent Naaman to wash in the Jordan seven times, and Elijah sent his servant from Mount Carmel seven times to look for rain.

Wonders of the Human Body.

1. The average height of a newly-born infant is 18 inches, average weight 6½ lbs. It takes 3 years for the child to grow the second 18 inches, so as to be three feet high.

2. The average weight of an adult male is 145 lbs; height, 5 ft. 7 in.; chest-measurement 36 in.

3. The human skeleton weighs about 14 lbs. and contains about 240 bones.

4. There are more than 500 separate muscles in the human body, with an equal number of nerves and blood-vessels.

5. The human body contains about 12 lbs. of blood; about 6½ ozs. pass through the heart in each beat, and in adults from 65 to 70 beats occur per minute.

6. The heart is a little larger than the fist, and weighs about 9 to 11 oz. It beats 100,000 times in 24 hours, and 2,869,776,000 in a lifetime of 84 years.

7. There are 175 million cells in the lungs, which would cover a surface 30 times as great as the human body. The capacity of the lungs is about 320 cubic inches.

8. The area of the surface of the body is about 2,500 square inches; it contains about 7,000,000 pores, each about $\frac{1}{4}$ of an inch long, or a total length of nearly 28 miles of pores.

9. The adult male brain weighs 49 to 50 oz., female 44 to 45 oz.

10. The following figures give the duration of the pulse at different ages.

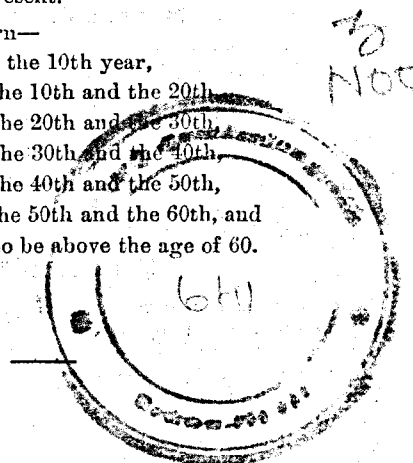
Age.	Beats per minute.
At birth ...	130 to 140
One month ...	120
One year ...	120 to 108
Two years ...	108 to 90
Three years ...	90 to 80
Seven years ...	85
Puberty ...	85 to 80
Adult Age ...	75 to 70
Old Age ...	65 to 60

Duration of Human Life.

The following table, founded on experience, gives the relative duration of human life at present.

Of 100 men who are born—

- 50 die before the 10th year,
- 20 between the 10th and the 20th,
- 10 between the 20th and the 30th,
- 6 between the 30th and the 40th,
- 5 between the 40th and the 50th,
- 3 between the 50th and the 60th, and
- 6 only live to be above the age of 60.



V.—Card Tricks, Amusements, Etc.

Back to Back.

This is a simple but very astonishing trick. Seat yourself so as to have the whole of the company as much as possible in front of you, and at some distance. Take the pack of cards as it usually lies, and, in passing it behind you, glance at the card which happens to be exposed; then, pretending to shuffle the cards, place the one you have seen back to back on the other side of the pack, and holding the cards firmly by the edges, raise your hand between you and company, and show the card you have seen, calling out, at the same time, what it is. While doing so observe which card is facing you (for you have now the whole pack facing you, except the one card which is shown to the spectators), pass them behind you again, and transfer the card which you have just seen to the other side of the pack, handling the cards as if shuffling them; again exhibit, and cry out the name of the card turned to the company, taking care to notice the card that faces yourself, which change as before, and so on. By this means you may go over the whole pack, telling each card as it is exposed without looking at the cards, except when they are held up between you and the spectators.

Red and Black Packs.

Separate the pack into two parts, placing all the red cards in one pile, and all the black cards in the other. One of these packs you conceal in your pocket. You let any person draw a card from the other pack, and while he is examining the card, substitute the pack in your pocket for the one you hold in your hand. Let him place his card in the pack you have taken from your pocket, and shuffle as much as he pleases. On receiving back the pack, you will at once recognize the card he has drawn by the difference of colour.

The Gentle Bend.

Take a pack of cards, shuffle it and keep it on the table. Ask anyone of the company to give you a portion of the pack, holding it in your left hand, say about a half. Shuffle it and ask him to take a card out of it very carefully, without himself seeing it. Then tell him to take a glance at the card as secretly as possible, and while he is doing so, give a gentle bend—either lengthwise or breadthwise—to the pack of cards in your hand, which

may be done by slightly depressing with the fingers in the centre of the pack. Then ask him to replace his card in the pack, anywhere, any way he pleases. Give the whole pack into his hands and tell him to shuffle it as he likes, only he must not let any cards fall on the floor. When he returns the pack to you, you can easily put your finger on the chosen card, as it is the only straight card in the pack and is visibly separated from its bent neighbour by a gap. Having thus noted the card, you can unbend the whole pack and taking hold of your friend's hand, request him to think of the color of the chosen card. "How is it my mind sees a mixture of two colors?" You say, "O, I see you are allowing several pictures to be before your mind. Do please think only of the color of the card, nothing else." With this preface, make a mental effort and reveal the color. Next request your friend to keep the picture of the chosen card before his mind, and after a little hesitation, guess the card.

This is a most astonishing trick and can be performed with very great dexterity after a few trials.

Chosen card in a particular place.

After discovering the chosen card in the manner described above, secretly bring it to the top of the pack while you are engaging the company with your conversation. Then ask somebody to mention some number within ten, without any special thought. Suppose he mentions 7, transfer six cards more from the bottom to the top, taking care, while you are doing this, to keep the company engaged by some kind of talk, as by questioning whether the number mentioned is the one which struck the mind in the very first instance. Then count out the cards from the top, saying one, two, three, etc., until you come to the number mentioned, at which, of course, you find the chosen card. Turn it face upwards to the amazement of the company.

Magnetic Circuit.

The above trick may be varied in the following manner. After discovering the chosen card, keep it at the bottom of the pack, and say that you are going to form a magnetic circuit. Invite three or four persons from the company for this purpose and while arranging their seats, make one of them your confederate by a secret wink of the eye or scratch of the palm, giving him a glimpse at the bottom of the pack at the same time. Then form a circuit of the persons by joining their hands, yourself holding the confederate on the one side and the

chooser of the card on the other. Then close your eyes; put forth a great mental effort; request the chooser to fix his mind on the chosen hand; and then ask your confederate to give out whatever card comes to his mind on the spur of the moment. He hesitates a little and you hurry him, and ultimately, he mentions the name of the chosen card to the great amazement of everybody.

Striking off.

The above trick may also be varied in the following manner. Place the chosen card at the bottom of the pack and hand it to the person whom you have to show the card to; desire him to hold it between his finger and thumb, close to the corner; then after telling him to hold it fast, strike the pack sharply, and the cards will all fall, except the bottom one, which is the card chosen. You can vary this by placing the card chosen at the top of the half pack, and giving the cards face upwards, so that when you strike, the chosen card will actually remain staring him in the face.

Corners cut off.

Take a pack of cards with the corners on one side slightly cut off or ground round. Place them all one way, and ask a person to draw a card; when he has done so, while he is looking at it, reverse the pack, so that when he returns the card to the pack, the corner of it will slightly project from the rest; let him shuffle them; he will never observe the projecting card. Hold them behind your back. You can feel the projecting card—draw it out, and show it. Simple as this trick is, it will excite great astonishment.

Reflector.

Several tricks may be successfully performed by sheer audacity. If you happen to stand opposite a mirror, window pane, or other reflector, while your unsuspecting friend stands with his back to it, you may completely astonish him by holding the pack towards him and naming the cards one by one.

Turning the chosen card.

Offer the cards to any body, and let him draw one. Tell him to place his card on the top and then hold the cards behind your back. Pretend to make a great shuffling, but only turn that card with its back to the others, still keeping it at the top. Then hold up the cards with their faces towards the spectator, and ask him if the bottom card is his. While doing so, you inspect his card at your leisure. He of course denies it

and you begin shuffling again furiously. "Let me do that," he will probably say; so, as you are perfectly acquainted with his card, you let him shuffle as much as he likes, and then, when you get the cards back again, shuffle until his card is at the bottom. Then pass them behind your back, make a ruffling noise with them, and show him his own card at the bottom.

Calling for cards.

Take the cards, shuffle them, and spread them out, face downwards, upon the table, without entirely separating them. Before doing this; however, you must carefully note the bottom card.

You now say to the person to whom you wish to display your skill, "I will now ask you to give me certain cards, which I will name to you beforehand. The cards which I ask for you must give me from this heap, the faces of which neither you nor I have seen, and yet in the end I shall have all the cards that I direct you to give me."

The person you address will, of course, be very much astonished at this, and will refuse to believe you. You assume a confident air, however, saying, "Look sharp!"

You then call for the card which you know is the undermost one, say the seven of hearts. Suppose now the person gives you the queen of spades, you boldly call out for your next card "Queen of Spades!" the other not knowing that you have it already in your hand. He gives you, perhaps, the king of hearts, and you at once ask for this as your next card. He now gives you the ace of clubs. In this way you can ask for any number of cards, but these are enough for explanation. Now you say, "The last card that I want is the ace of clubs, but this I will find out for myself, by means of my very nice sense of smell."

Hereupon, with a grave face, you commence shuffling around among the cards until you reach the bottom one, which is the seven of hearts. This you take from the table, place it first in order among the cards in your hand, and you are now able to display all the cards that you have directed him to give you.

Secreting a card.

The above trick may be shown with better effect by secreted a card beforehand in the drawer, or the pocket, or somewhere about your person, and then calling for the cards as above. The last card of course should be kept away and the secreted card substituted for it.

The card in the book.

Secrete a card between the board and the fly leaf on one side of a book, turn it with the other side up and keep it on the table. Then give the pack of cards to any one of the company, ask him to take a card from it, and telling him to look at it secretly, lift the upper board of the book on the table and ask him to place the card there and close the book. Then take the book above the head of the person, with a sharp jerk, turning it upside down, request him to force his mind on to the card, and pretending to make a very great mental effort, name the card and place the book back on the table. Lift up the board and ask your friend to take out the card and examine it; when lo! it is the very one which you named!

Cards in Couples.

Choose twenty cards, and, after they have been well shuffled, lay them in pairs upon the table; desire ten (or less) persons to look at different pairs, and to recollect the cards which compose them. Take up the cards in the order in which they have been placed, and replace them with their faces upwards according to the situation of the letters, in the following words:—

M	U	T	U	S
1	2	3	4	5
D	E	D	I	T
6	7	8	9	10
N	O	M	E	N
11	12	13	14	15
C	O	C	I	S
16	17	18	19	20

These words, which have no particular meaning, contain ten letters repeated, or two of each sort. Ask each person separately which row or rows the cards he looked upon are in; if he say the first, they must be the second and fourth in that row, these being the only duplicates in them; if the first and third rows, they must be the first and fifteenth cards, and so of all the rest.

Striking 'Thirty' on the card thought of.

Place sixteen cards in a circle with their faces upwards assigning to them, as you put them down, the numbers, one, two three, etc. up to sixteen, in order. Ask four or five of your

friends to note in mind, each for himself, some one of the sixteen cards as well as the number assigned to it. Request them to close their eyes and tell them that you will go on striking on the cards with your finger, that each of them should count the strokes in his mind, continuing from the number of his own card, and that he should open his eyes only when the count reaches 30, which you undertake to strike on the card thought of by him. Thus, if the card thought of be No. 8, your first stroke will be counted as 9, the second stroke as 10, and so on. The beauty of the trick is that all the people are simultaneously satisfied in one and the same round of strokes. It is nevertheless very simple. You may hit the first 13 of your strokes on any of the cards, at random, but the 14th stroke must fall on No. 16, the next stroke on No. 15, the next on No. 14, and so on, in the reverse order up to No. 1 on which will fall your 29th stroke.

Court cards always together.

Take the pack, and separate all the kings, queens, and knaves. Put these all together into any part of the pack you fancy, and inform one of the company that he cannot in twelve cuts disturb their order. The chances are 500 to 1 in your favour. This is a very amusing and easy trick.

The White and Black Sailors.

With this trick you tell some sort of story, as follows:—
 "Thirty sailors, fifteen of whom were white (these you represent by fifteen red cards), and the remainder of whom were black (for these you of course take fifteen black ones), having run short of provisions, determined, until they were rescued, that every ninth man should each day be thrown overboard, so that the provisions on board should last longer. It was arranged that they should at once take up the positions they would always occupy, which was agreed to by all. The aim, of course, of the white men was to arrange that the ninth man should always be a black man, which they succeed in doing."

You then proceed to lay out the cards, by learning the following doggerel lines:—

"From numbers, aid, and art
 Never will fame depart."

Observe that every vowel in each word forms the key by which you lay the cards down—beginning with the white men. Thus the first vowel is in from, which is an o. O, being the fourth vowel in English grammar, you lay down four red cards. The next vowel is the u in numbers, which, being the fifth vowel,

you must lay down five black cards. The next vowel is e, which you represent by two red cards; and so on, laying down alternately the red and black cards, to correspond in number with the position held by the vowel. When you have the thirty cards laid out, begin counting from the first card you placed down, throwing out each ninth card, which will always be a black one. When you have disposed of the last black card, you conclude your story by stating, "Scarcely had the last black man been thrown overboard than a ship hove in sight, and the white men were saved."

The Knaves and the Constable.

Having selected the four knaves from a pack of cards, and one of the kings to perform the office of constable, secretly place one of the knaves at the bottom of the pack, and lay the other three, with the constable, upon the table. Proceed with a tale to the effect that "Three knaves once went to rob a house; one got in at the parlour window (putting a knave at the bottom of the pack, taking care not to lift the pack so high that the one already at the bottom can be seen); one effected his entrance at the first-floor window (putting another knave in the middle of the pack); and the other, by getting on the parapet from a neighbouring house, contrived to scramble in at the garret window (placing the third knave at the top of the pack). The constable vowed he would capture them, and closely followed the last knave" (putting the king likewise upon the top of the pack). Then request as many of the company to cut the cards as they please, telling them, at the same time, that you have no doubt the constable has succeeded in his object, which will be quite evident when you spread out the pack in your hands, as the king and three knaves will (if the trick is nicely performed) be found together.

You can also vary this by telling the following tale. After you have, as previously explained, placed one of the knaves at the bottom of the pack, lay the other three down upon the table, and exclaim, "Here, you perceive, are three knaves together. They are after no good, that's certain." After saying this put a king close beside them, adding, "But here comes the constable and catches them together. Well, the next time I catch you together I will punish you severely for all your rogueries." "Oh but," say they, "you shall not catch us together in haste," for they are resolved upon running in three different directions. "Well, I will go here," says one (now take one of the knaves, and put him at the top of the pack); "And I will go here," says another (put this one at the bottom); "Then I will

go here," says the other (put him in the middle). "Nay," says the constable, "if you run I will make sure of one, so I'll follow the first! Then take the king and put him at the top, and allow any person present to cut the cards two or three times. After this deal out the cards singly, and the three knaves will be discovered together, along with the constable."

Extraordinary Feat of Memory.

Take a pack of cards, shuffle it well and request one of your friends to take a card and to keep it underneath a book without either seeing it himself or allowing any one to see it. Then throw the remaining cards, one by one, face upwards, telling your friends to note them carefully. When you have come to the last card, ask if any of your friends could mention the missing card. They will probably ask you to show the cards again, one by one, but you refuse to do so and astound them by giving the name of the missing card. If your friends challenge you to repeat the feat, do it and you may be sure none of them would succeed with the very best effort of memory, in discovering the card with but one examination of the pack.

Your friends will naturally remark that you performed the feat by a concentrated effort of memory and that they could do it themselves with a bit of practice. "Just so," you say, and you tell them that they have only to repeat mentally the name of each card as it is thrown on the table, and at the end ask themselves, "what is the missing card?", and lo! there is the picture before the mind. Of course, they may do this any number of times, but they can never succeed.

The clue is however very simple and depends merely on the addition and subtraction of the value of the cards. For this purpose, note that ace counts 1; two, three, etc., up to ten count as 2, 3, etc.; Jack counts 11, Queen 12, King 13. Now, taking the two red suits to be *positive* and the two black suits to be *negative*, the sum total of the values of the 52 cards must be zero. So when a card is taken out, if the sum of the values of the remaining cards be for instance, +12, it indicates that the missing card is -12, *i. e.*, a black queen. The only further clue required is for the differentiation of hearts and diamonds, and of spades and clubs. This can be managed in a simple way. In counting the values of the cards, whenever you come across a heart, besides adding its proper value, add 100 more, and whenever you come across a spade, besides deducting its proper value, deduct 100 more. Calculating in this way, the sum total of the values of all the 52 cards must be zero, and it is therefore quite

easy to know the missing card. The following examples illustrate the method. If, on the calculation of the values, you get—

Result + 108, the missing card is — 108, i.e. 8 of spades;	
" + 9	" — 9 " 9 of clubs;
" — 113	" + 113 " king of hearts;
" — 101	" + 101 " ace of hearts;
" — 5	" + 5 " 5 of diamonds.

The calculation is quite easy and will enable anybody to discover the missing card at the end of the very first examination.

The Changeable Ace.

Take the ace of diamonds, and place over it with paste or soap, so as to slip off easily, a club cut out of thin paper, so as to entirely conceal it. After showing a person the card, you let him hold one end of it, and you hold the other, and while you amuse him with discourse, you slide off the heart. Then laying the card on the table, you bid him cover it with his hand; you then knock under the table, and command the club to turn into the ace of diamonds.

The Convertible Aces.

This trick is similar to the foregoing. On the ace of spades fix a heart, and on the ace of hearts a spade, in the manner already described.

Show these two aces to the company; then, taking the ace of spades, you desire a person to put his foot upon it, and as you place it on the ground draw away the spade. In like manner you place the seeming ace of hearts under the foot of another person. You then command the two cards to change their places; and that they obey your command, the two persons, on taking up their cards will have ocular demonstration.

Same card shown both at the top and the bottom.

To perform this trick you need a pack in which there are two similar cards; for example, two queens of clubs. You place both these cards at the bottom of the pack, and shuffle them so that they will keep their places. Then lay the pack upon the table, draw out the bottom card, show it, and place it on the top.

You then say that at your command the top card will pass to the bottom of the pack. You repeat "one, two, three," and draw forth the bottom card, which, to the general surprise, is the card which the company have just seen placed upon the top.

This trick may be repeated once or twice, yet not too often, for fear of discovery.

Restoring a torn card.

After you have shuffled the pack, and placed it upon the table, you let any person draw forth the lowest card, of which there are two alike, at the bottom of the pack; tear it in small pieces, and throw them out of the window.

You then assure the company that the pieces just thrown out will join themselves together again, and return as a whole card to the pack. You go near the window and call "Come, come, come!" Then approach the table, assuring the spectators that the mutilated card has returned complete to its old place in the pack; and let them satisfy themselves that such is the fact.

The same trick in a more surprising manner.

After the person has drawn forth the bottom card as above, and has torn it to pieces, you beg him before he throws them out of the window, to give you one of them. For this piece you secretly substitute a piece torn out of the other similar card. You now step to the open window, and call "Come, come, come!" Approach the table again, and declare that the torn card is again whole, and in its old place, except that it wants the piece which that person omitted to throw out of the window. You then invite the company to convince themselves of the fact, and to fit the torn piece into its place.

Hold it fast.

You commence by asking the most athletic person in company whether he is nervous; he will most probably answer in the negative; you then ask whether he thinks he can hold a card tightly. If he answers, No, ask the question of some one else, till you obtain an answer in the affirmative. You then desire the party to stand in the middle of the room, and holding up the pack of cards, you show him the bottom card, and request him to proclaim what card it is; he will say it is the knave of hearts; you then tell him to hold the card tightly at the bottom, and look up to the ceiling. While he is looking up, you ask him if he recollects his card; if he says, Yes, desire him to draw it away, and ask him what it is; he will, of course, answer, the knave of hearts; tell him he has made a mistake, for if he look at his card, he will find it to be the knave of spades, which will be the case. You then give him the remainder of the pack, telling him that if he looks over it, he will find the knave of hearts in quite a different situation.

This feat, though it excites much admiration, is very simple. You procure an extra knave of hearts, and cut it in half, keeping the upper part, and throwing away the lower. When commencing your feat, get the knave of spades to the bottom of the pack, and lay over the upper part of it, unperceived, your half knave of hearts; and, under pretence of holding the pack very tight, throw your thumb across the middle of the knave, so that the joining may not be perceived, for the legs of those two knaves are so much alike that there is no danger of detection. You, of course, give him the legs of the knave of spades to hold, and when he has drawn the card away, hold your hand so that the faces of the cards will be turned towards the floor, and take an opportunity of removing the half-knave: you may vary the feat by having a half-knave of spades.

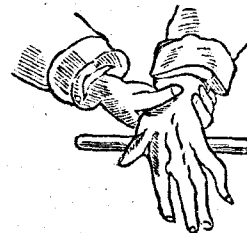
The rose in the button-hole.

Begin by saying, ladies and gentlemen, I propose to try to entertain you this evening with a few sleight-of-hand tricks—Dear me! I have forgotten something. It is contrary to my rule to appear before an audience without a flower in my button-hole. Will you excuse me while I retire to get one? No, on second thoughts, I think I can manufacture one on the spot, for I remember I have a little magic seed in my pocket. I will place a pinch of it on the tip of my wand, so, touch my button-hole, and there is my flower." The flower instantly appears. The secret is as follows:—Procure a small artificial rose; fasten to its stem a piece of round black silk elastic; pass the other end of the elastic through the top button-hole in the left lapel of your coat, and also through an eyelet hole, which must be specially worked in the breast of the coat, immediately under the button-hole, and make it fast to the tab at the back of the collar of your coat. Regulate the length of the elastic so that it will hold the flower in position when the coat is on. Previous to appearing before your audience pull the flower from the front of the lapel, and place it under your left armpit (the elastic will not be seen against your black coat), where it must be securely held. When you tap your button-hole with your wand raise your left arm slightly, which will release the rose, and it will fly into position.

The pencil under the palm.

This feat is really an excellent one, and has astonished crowds of spectators in different parts of the United States. It was one of the favourites of a late professor, by whom it was

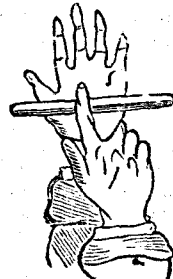
promulgated. Before you perform it in public, you must practise it until you are quite perfect, in private, for it would be a pity to spoil its effect by making a blunder in it. Begin by stating that you are going to perform what you have no doubt will be re-



garded as a very extraordinary feat, and you will leave the company to decide upon what principle of natural philosophy it is accomplished. The mode of performance is as follows:—Lay a pencil across the palm of the left hand, which keep wide open, with the thumb and all the fingers far apart, lest you be suspected of supporting the pencil with them. Next, take your left wrist in your right hand, and grasp it tightly

for the purpose, as you state, of giving the hand more steadiness. Now, suddenly turn the back of your left hand uppermost, and as your wrist moves in your right hand, stretch out the forefinger of your right hand, and as soon as the pencil comes undermost, support it with the fore-finger. You may now shake the hand, and, after a moment or two, suffer the pencil to drop. It is two to one but the spectators will suppose it to be produced by the air, and try to do it themselves; but, of course, they must, unless you have performed the feat so awkwardly as to be discovered, fail in the performance. If

you have no objection to reveal the secret, you can do it again, while they are gravely philosophizing upon it, suddenly lift up your hand (*vide* Cut), and expose the trick. This will, doubtless, create much amusement. Observe that, in doing this feat, you must keep your fingers so low that no one can see the palm of your left hand; and move your finger so carefully, that its action may not be detected; and if it be not, you may rest satisfied that its absence from round the wrist of the left hand will not be discovered, some of the fingers being naturally supposed to be under the coat; so that, if the spectators only see two or even one, they will imagine the others are under the cuff. When you have turned your hand over, do not keep the pencil too long upheld, lest the spectators should take hold of your hands, and discover the trick; before their surprise is over, remove your forefinger, and suffer the pencil to fall.



The String Trick.

This trick consists in suffering a person to tie your thumbs tightly together, and yet that you shall be able to release them in a moment without assistance and tie them together again. The mode of performing this trick is as follows:

Lay a piece of string across the palms of your hands, placed side by side, letting the ends hang down; then bring your palms quickly together, at the same time privately catching hold of the middle of the string with your fourth and fifth fingers. Then direct any person to tie your thumbs together as tight as he pleases, but he will not of course in reality be tying them, because you have hold of the string, yet it will nevertheless appear to him that he is doing so. Request him to place a hat over your hands; then blow upon the hat and say, "Be loose," slipping your thumb from under the string; direct him to remove the hat, and show your thumbs free. You then request the hat may again be placed over your hands, and blowing upon it as before, you say, "Be tied," slipping your thumbs under the string again, and when the hat is removed your thumbs will appear to be tied as at first. After you have performed the trick you must convey the string into your pocket that it may not be detected.

Swallowing the Stick.

Get a piece of thick brown paper, 1 inch wide and some 60 inches long; to one end of it, attach a piece of broom-stick $1\frac{1}{2}$ inches long, make a roll of the whole, and gum up the outer side. If you now take hold of the projecting end of the broom-stick and pull it out slowly, the whole will assume the appearance of a real solid walking stick and remain quite stiff. Bring the stick before the company and, hitting the table with it as if to prove its solidity, tell them that you are going to swallow it. Keep the thick end of the stick in your mouth and collapse the stick, little by little, pretending all the while to make room for it in your stomach by jerking your body, striking with your fist on your sides, etc. When the whole stick is nearly collapsed into a roll, scream out as if you could not swallow it any more, begin to pull it out again until the original stick is taken out and kept on the table, to your great relief and the astonishment of the spectators. The trick is best performed at night time and at the distance of some ten yards from the spectators.

Ring suspended by a burnt string.

A scientific experiment which may interest some of the older as well as the younger members of the family may be made by suspending from the ceiling a thread which has previously been soaked in very salt water and then dried.

To this fasten a light ring, and announce that you are about to burn the thread without making the ring fall. The thread will burn, it is true, but the ashes it leaves are composed of crystals of salt, and their cohesion is strong enough to sustain the light weight of the ring attached to the thread.

The Incombustible Handkerchief

Mix the whites of eggs and alum together; then smear a handkerchief with it, all over. Wash it in salt and water, and when dry, fire will not consume it.

The Miraculous Apple.

To divide an apple into several parts, without breaking the rind. Pass a needle and thread under the rind of the apple, which is easily done by putting the needle in again at the same hole it came out of; and so passing on till you have gone round the apple. Then take both ends of the thread in your hands and draw it out, by which means the apple will be divided into two parts. In the same manner, you may divide it into as many parts as you please, and yet the rind will remain entire. Present the apple to any one to peel, and it will immediately fall to pieces.

An Egg put into a Phial.

To accomplish this seemingly incredible act, requires the following preparation: You must take an egg and soak it in strong vinegar; in a few days, its shell will become quite soft, so that it may be extended lengthways without breaking; then insert it into the neck of a small bottle, and by pouring cold water upon it, it will re-assume its former figure and hardness. This is really a complete curiosity, and baffles those who are not in the secret to find out how it is accomplished. If the vinegar used to saturate the egg is not sufficiently strong to produce the required softness of shell, add one teaspoonful of strong acetic acid to every two tablespoonfuls of vinegar. This will render the egg perfectly flexible, and easy of insertion into the bottle, which must then be filled with cold water.

A simple storm-glass.

A very useful instrument to forecast a coming storm may be constructed by dissolving 4 parts of camphor, 3 parts of nitre, and 1 part of sal ammoniac in 32 parts of spirit, and putting the mixture into a clean glass tube, which should be nearly filled by it. In fair weather the liquid in the tube will be quite clear; as stormy weather is approaching, the liquid will become turbid and filmy.

Wine-glass and Water.

Place a card on a wine-glass filled with water, invert the glass; the water will not escape, the pressure of the atmosphere on the outside of the card keeps it in its position.

The Mysterious Dropper.

Get a cocoanut, the pulp of which has been taken out, and see that the hole at the mouth is as small as possible. If you fill the nut with water and turn it upside down, you will find that not a drop will flow out. Now, with some fine instrument, bore a small hole at the top of the nut, close it with your finger, fill the nut with water and invert it. The water will not flow out, but if you raise the finger a little so as to allow the passage of a little quantity of air into the nut, water will begin to flow. Close the small hole, the flow ceases. The trick may be made very interesting by alternately opening and closing the small hole, commanding the water to dribble or to stop. If you get small pieces of broom-stick, say $1\frac{1}{2}$ inches long and feed at the mouth of the nut, it will be amusing to see them swallowed up one by one.

Codes for Secret Correspondence.

Codes for secret correspondence may be constructed on any principle which does not seriously interfere with ease in writing and deciphering. The following are examples of some easy methods:—

- (1.) *Thindur cloves bletterst hist athel stillet doff I every damu-
sings sandy minterestings obooki, crevealings uthet
sworkingst rofi safectiony dint ilhem skindut thearto.*
- (2.) *Udnh evol srettel si eht eltit fo I yrev gnisuma dna gnitseretni
koob, gnilaecer eht sgnikrow fo noitceffa ni eht udnh trach,*

The sentence transcribed in both the above examples is the following:—"Hindu Love Letters is the title of a very amusing and interesting book, revealing the workings of affection in the Hindu heart."

In example 1, a letter is added at the beginning and another at the end of each word; sometimes only at one place. In example 2, each word is spelt in the reverse order of its letters. In both examples I stands for A.

Benjamin Franklin wrote from Passy, in 1781, a letter to M. Dumas. He said:—"I have just received a 14, 5, 3, 10, 28, 2, 76, 203, 66, 11, 12, 273, 50, 14, joining 76, 5, 42, 45, 16, 15, 424, 235, 19, 20, 69, 580, 11, 150, 27, 56, 35, 104, 652, 20, 675, 85, 79, 50, 63, 44, 22, 219, 17, 60, 29, 147, 136, 41, but this is not likely to afford 202, 53, 580, 10, 227, 613, 176, 373, 309, 4, 108, 40, 19, 97, 309, 17, 35, 90,

201, 100, 677." This has never been deciphered. The state department at Washington has no key to it.

Magic Squares:

A *Magic Square* is one divided into several small squares, in which numbers are placed in such a manner that every column of numbers, whether vertical, horizontal, or from corner to corner, shall amount to the same sum. We give below the method of forming magic squares which have an odd number of squares in each band.

Imagine an exterior line of squares above the magic square you wish to form, and another exterior line on the right hand of it. These two imaginary lines are shown in the figure on p. 68. Then attend to the following rules:

1st. In placing the numbers in the squares we must go in an ascending oblique direction from left to right; any number which, by pursuing this direction, would fall into the exterior line, must be carried along that line of squares, whether vertical or horizontal, to the last square. Thus, 1 having been placed in the centre of the top line, (see the first table on p. 68,) 2 would fall into the exterior square above the fourth vertical line; it must therefore be carried down to the lowest square of that line; then, ascending obliquely, 3 falls into the square, but 4 falls out of it, to the end of the horizontal line, and it must be carried along that line to the extreme left, and there placed. Resuming our oblique ascension to the right, we place 5, where the reader sees it, and would place 6 in the middle of the top band, but finding it occupied by 1, we look for direction to the

2nd. Rule, which prescribes that, when in ascending obliquely, we come to a square already occupied, we must place the number, which, according to the first rule should go into that occupied square directly under the last number placed. Thus, in ascending with 4, 5, 6, the 6 must be placed directly under the 5, because, the square next to 5 in an oblique direction is "engaged."

Magic squares of this class, however large in the number of compartments, can be easily filled up by attending to these two rules.

The invention of magic squares has been traced back to the early ages of science, and talismanic properties were attributed to them. Modern philosophers have amused themselves in bringing them to perfection, and none has contributed so much as "the model of practical wisdom," Dr. Franklin.

18	25	2	9	
17	24	1	8	15
23	5	7	14	16
4	6	13	20	22
10	12	19	21	3
11	18	25	2	9

30	39	48	1	10	19	28
38	47	7	9	18	27	29
46	6	8	17	26	35	37
5	14	16	25	34	36	45
13	15	24	33	42	44	4
21	23	32	41	43	3	12
22	31	40	49	2	11	20

The Fortune Teller.

Ask any question or think of any topic in your mind, and with the point of a pencil, touch a number in the following magic square, and note it. Dividing it by 12, the remainder, if any, will indicate the number of the house in which the answer is to found; if there be no remainder, look in house No. 12. Dividing the number touched by 9, the remainder, if any, will indicate the line in the above house which contains the answer sought; if there be no remainder, then the question must be given up. When the question relates to the sex of a child to be born, the answer is indicated by the number of asterisks at the end of the line—one * indicating a male, a pair ** a female.

58	69	80	91	12	23	34	45	56
68	79	90	20	22	33	44	55	57
78	89	19	21	32	43	54	65	67
88	18	29	31	42	53	64	66	77
17	28	30	41	52	63	74	76	87
27	38	40	51	62	73	75	86	16
37	39	50	61	72	83	85	15	26
47	49	60	71	82	84	14	25	36
48	59	70	81	92	13	24	35	46

HOUSE 1.

1. There is luck. *
2. Don't worry yourself. *
3. Great success. **
4. Bread and butter. *
5. Undoubtedly. **
6. Not at present. **
7. A gilt jewel. *
8. Unreliable. *

HOUSE 2.

1. Do not doubt. **
2. Some good. **
3. Time favourable. *
4. A closed leak. **
5. A little trouble. *
6. Castle-in-the-air. **
7. Light and darkness. *
8. Bad days over. *

HOUSE 3.

1. Not impossible. **
2. Why anxiety? **
3. In a trice. *
4. Rely on self. **
5. Don't you hurry. *
6. A sharp sword. **
7. Depends on events. **
8. Great delusion. **

HOUSE 4.

1. Some anxiety. **
2. Good may come. **
3. A hard nut. *
4. Rather bad time. **
5. Wait a bit. *
6. Ship on the sea. *
7. Favourable. *
8. It is nothing. **

HOUSE 5.

1. Doubt not. **
2. Probably good. *
3. Ice in hand. *
4. Never evil. **
5. Be patient. *
6. No fear. **
7. A mare's nest. **
8. Don't be puzzled. *

HOUSE 6.

1. Certainly. **
2. A soap-bubble. *
3. Good at last. *
4. A man of straw. **
5. Avoid danger. *
6. God's grace. *
7. Favourable. **
8. Either chance equal. **

HOUSE 7.

- | | |
|-----------------------|----|
| 1. Fishes and loaves. | * |
| 2. Give up doubt. | ** |
| 3. Praise God. | * |
| 4. Be on the alert. | ** |
| 5. Pumpkin pride. | * |
| 6. Are you blind? | ** |
| 7. No bad luck. | * |
| 8. Time must elapse. | ** |

HOUSE 9.

- | | |
|---------------------|----|
| 1. Good result. | ** |
| 2. A nice balance. | * |
| 3. Be cheerful. | ** |
| 4. You know it. | ** |
| 5. Hobson's choice. | ** |
| 6. Just a little. | * |
| 7. A great puzzle. | ** |
| 8. Bad at present. | ** |

HOUSE 11.

- | | |
|----------------------|----|
| 1. Hard at first. | ** |
| 2. Be pure in heart. | * |
| 3. Very well. | * |
| 4. A ship in storm. | * |
| 5. Good very soon. | ** |
| 6. Never fear. | ** |
| 7. Don't brag. | * |
| 8. Hot and cold. | ** |

HOUSE 8.

- | | |
|------------------------|----|
| 1. God luck near. | ** |
| 2. Don't be mad. | ** |
| 3. May succeed. | * |
| 4. Snake in the grass. | * |
| 5. No grief. | ** |
| 6. Bird in the cage. | ** |
| 7. Not quite easy. | * |
| 8. Be calm. | * |

HOUSE 10.

- | | |
|----------------------|----|
| 1. Do your duty. | ** |
| 2. Don't be proud. | * |
| 3. A couple of days. | ** |
| 4. Pearls in the sea | ** |
| 5. Pleasure. | * |
| 6. Be courageous. | * |
| 7. Not quite good. | * |
| 8. A lion's rage. | ** |

HOUSE 12.

- | | |
|----------------------|----|
| 1. Foolish fear. | * |
| 2. Very good luck. | ** |
| 3. A little trouble. | * |
| 4. As you think. | ** |
| 5. Light and shade. | * |
| 6. Must endure. | ** |
| 7. Take care! | ** |
| 8. Widow-marriage. | * |

How to tell the age of any person.

Hand this table to anybody and request him to tell you in which column or columns his age is contained and add together the figures at the top of the columns in which his age is found and you have the secret. Thus, suppose his age to be 17, you will find that number in the first and fifth columns; add the first figures of these two columns.

1	2	4	8	16	32
3	3	5	9	17	33
5	6	6	10	18	34
7	7	7	11	19	35
9	10	12	12	20	36
11	11	13	13	21	37
13	14	14	14	22	38
15	15	15	15	23	39
17	18	20	24	24	40
19	19	21	25	25	41
21	22	22	26	26	42
23	23	23	27	27	43
25	26	28	28	28	44
27	27	29	29	29	45
29	30	30	30	30	46
31	31	31	31	31	47
33	34	36	40	48	48
35	35	37	41	49	49
37	38	38	42	50	50
39	39	39	43	51	51
41	42	44	44	52	52
43	43	45	45	53	53
45	46	46	46	54	54
47	47	47	47	55	55
49	50	52	56	56	56
51	51	53	57	57	57
53	54	54	58	58	58
55	55	55	59	59	59
57	58	60	60	60	60
59	59	61	61	61	61
61	62	62	62	62	62
63	63	63	63	63	63

How to tell a person's age.—Another Method.

Among many ingenious schemes for telling a person's age this is one of the easiest and best. Let the person whose age is to be discovered do the figuring. Suppose, for example, if it is a boy, that his age is 15, and that he was born in August.

Let him put down the number of the month in which he was born and proceed as follows:—

Number of month	...	...	...	...	8
Multiply by 2	...	...	...	...	16
Add 5	...	...	...	...	21
Multiply by 50	...	...	...	...	1050
Then add his age, 15	...	...	...	...	1065
Then subtract 365, leaving	...	...	...	...	700
Then add 115	...	...	...	...	815

He then announces the result, 815, whereupon he may be informed that his age is 15 and August, or the eight month, is the month of his birth. The two figures to the right in the result will always indicate the age and the remaining figure or figures the month the birthday comes in. This rule never fails for all ages up to 100. For ages under 10 a cipher will appear prefixed in the result, but no account is taken of this.

Page, Line, and Word puzzle.

Open a book at random and select a word within the first ten lines, and within the tenth word from the end of the line. Mark the word. Now double the number of the page and multiply the sum by five. Then add twenty. Then add the number of the line you have selected. Then add five. Multiply the sum by ten. Add the number of the word in the line. From this subtract 250, and the remainder will indicate in the unit column the number of the word, in the ten column the number of the line, and the remaining figures the number of the page.

The Auction Game.

Let two persons begin to bid, each being at liberty to advance alternately, not less than 1 and not more than 10 at a time; the person who bids 100 to be the winner.

Thus, A starts with 8, B says 13, A-21, B-28, A-36, B-39, A-40, B-50, A-56, B-65, A-67, B-73, A-78, B-87, A-89, B-90, A says 100 and wins.

It will be observed that to secure 100, one must get 89, and to get this, one must secure 78, and to get 78, one must get 67, and so on, diminishing 11 at a time. The secret is contained in the following

Rule.—Divide 100 by 10 + 1, i.e., by 11, and you get remainder 1. To be sure of winning, begin with 1, and whenever you get the turn for bidding, advance 11 on your last bid, irrespective of the bid of your opponent. Thus, it will be found that 1, 12, 23, 34, 45, 56, 67, 78, 89 are safety bids. If your opponent is ignorant of the secret, you may bid at random in the early stages of the auction, taking care towards the close to get on to a safety bid.

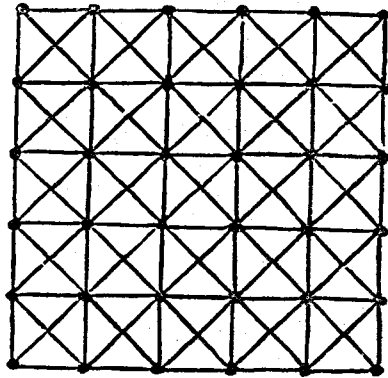
The game may be varied by changing the maximum and the minimum of the bids as well as the finishing point. Thus—To reach 75, by advancing not less than 2 and not more than 7 at a time. [Divide 75 by 2 plus 7, you get remainder 3.] Therefore, the safety bids are 3, 12, 21, 30, 39, 48, 57, 66, 75.

Word-Games.

1. A company of five, six or more persons may spend a pleasant half-hour in word-making. Let somebody begin with a letter; the next person must add a letter to it such, that the two letters may not form a complete word, but so as to make it possible to form a word with the addition of more letters; the third person must do the same, and the fourth also and so on. The person who is at last obliged to form a complete word is the loser. For example—the first person begins with *m*; the second loses if he adds *e*, because he then forms the word *me*, so he adds *a*; the third person will lose if he adds *n*, because he will then form the word *man*, so he adds *s*; the fourth adds *e*; the fifth adds *u*; the next man must necessarily add *l*, the next *i*, *n* and *e*. The person who adds the last letter *e*, is the loser. If any one should add a letter which does not suggest a word, the next person has the right to challenge him, and if he fails to answer the challenge, by giving out the word he intended to form, he will be considered to be the loser.

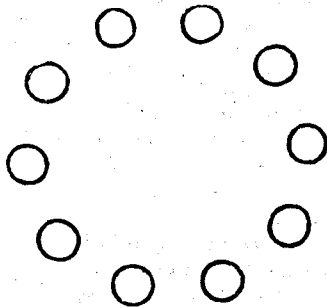
2. Word-progression is another simple yet interesting pastime. Examples:—

- (i.) Progress from cat to dog in three moves. Cat—cot, dot, dog.
- (ii.) Progress from ape to man in two moves.
- (iii.) Change hand to foot in six moves.
- (iv.) Make wife love in three moves.

The Pin Puzzle.

This is an innocent looking puzzle, but try it and you may not find it so trifling as it looks. Any one can easily make the diagram here shown with a bit of paper and a pencil. The object is to stick six pins on six of the black dots in such a manner that no two pins shall be on the same line, either horizontal, vertical or diagonal.

Solution.—Place the pins on the following dots and lines, reckoning from the top and from left to right. Put a pin on 3rd dot line 1, the 6th dot line 2, the 2nd dot line 3, the 4th dot line 4, the 1st dot line 5, and the 4th dot of line 6.

Crossette.

Start from any circle, and, counting that circle "1," count the next "2," the next in the same direction "3," and the next "4." Cross out the circle counted "4."

Start again from any circle not crossed out. Count as before either in the same or in the reverse direction, and cross out the circle counted "4."

Crossed circles, though not to be started from, are to be included in the count of four, and are not to be passed over because crossed out.

Problem.—Continue to count four from any circle not crossed out, and to cross out the fourth, until all the circles but one are crossed out.

Solution.—Having crossed out one circle, miss the next three, and begin counting again from the fourth, and so on round and round. Missed circles are to include those already crossed out.

The general rule for any number of circles, counting any number each time, is always to miss the number that will bring the next count to the circle previously started from. Thus if there are eleven circles, and the count is five, miss two each time; if there are eleven circles, and the count is four, miss four.

This will solve all the possible cases, but some numbers do not admit of a solution, such as ten circles counting five. The reason for this is that the number of circles, and the number of the count minus one, have a common factor.

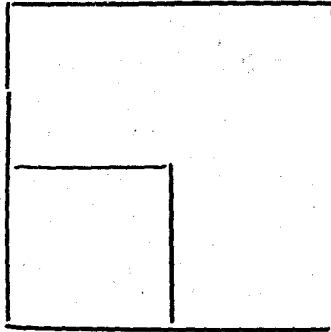
The Fifteen Puzzle.

Apparently simple, this puzzle is really difficult of solution. Fifteen cubes of wood severally marked from 1 to 15, are placed indifferently on a board marked with 16 squares; thus—

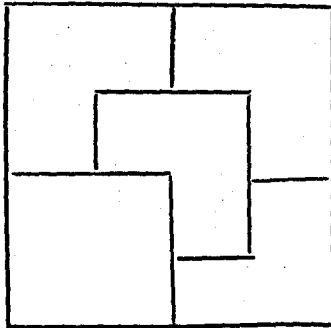
9	11	3	7
8	14	10	15
6	12	13	2
5	1	4	

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	

The puzzle consists in sliding the cubes from square to square, without lifting them or removing them from the board, until they are placed in their natural order. It is easy enough to move the squares up to 12; but to get the last three into order is often a puzzle indeed.

Geometrical Puzzle.

A man has a square of land, out of which he reserves one-fourth, as shown in the above cut, for himself. The remainder he wishes to divide among his four sons, so that each will have an equal share and in similar shape with his brother. How can he divide it?

Solution.**The Wager of "My Watch."**

Request a friend to lend you a watch. Examine it, and give a guess as to its value; then offer to lay the owner a wager, considerably below the real value of the watch, that he will not answer to three questions which you will put to him consecutively,

"My watch." Show him the watch, and say, "What is this which I hold in my hand?" He, of course, will not fail to reply, "My watch." Next, present to his notice some other object, repeating the same question. If he name the object you present, he loses the wager; but if he be on his guard, and remembering his stake, he says, "My watch," there is but one chance more for you to win; and you, therefore, to divert his attention, should observe to him, "I am certain to win the stake, but supposing I lose, what will you give me?" and if, confident of success, he replies for the third time, "My watch," then take it and leave him the wager agreed on.

The Three Jealous Husbands.

Three jealous husbands, A, B, and C, with their wives, being ready to pass by night over a river, find at the water side a boat which can carry but two at a time, and for want of a waterman they are compelled to row themselves over the river at several times. The question is how those six persons shall pass, two at a time, so that none of the three wives may be found in the company of one or two men, unless her husband be present?

This may be effected in two or three ways; the following may be as good as any: Let A and wife go over—let A return—let B's and C's wives go over—A's wife returns—B and C go over—B and wife return—A and B go over—C's wife returns—A's and B's wives go over—then C comes back for his wife.

The Fox, Goose, and Corn.

A countryman having a Fox, a Goose, and a peck of Corn, came to a river, where it so happened that he could carry but one over at a time. Now as no two were to be left together that might destroy each other, he was at his wit's end, for says he, "Though the corn can't eat the goose, nor the goose eat the fox; yet the fox can eat the goose, and the goose eat the corn." How shall he carry them over, that they shall not destroy each other?

Let him first take over the Goose, leaving the Fox and Corn; then let him take over the Fox and bring the Goose back; then take over the Corn; and lastly take over the Goose again.

Mathematical Nuts.

1. If you have only a 5-gallon measure, a 3-gallon measure, and an 8-gallon measure, the last being full of wine, how can you measure out with these exactly 4 gallons of the wine?

2. A piece of marble, weighing 40 pounds, falling upon the pavement was, by a most singular accident, broken into four pieces of such varying weights that by means of them a neighbouring grocer could weigh articles of any integral weight from 1 to 40 pounds. Required, the weights of the four pieces.

3. I make a present of ten mangoes to two boys A and B. A takes 6 mangoes and gives two annas to B who takes the remaining four, and the account is squared. What is the price of a mango?

Funny Indeed!

1. A Bedouin dies, leaving by will 17 horses to his 3 sons. To the eldest he leaves one-half his horses, to the next one-third, and to the youngest one-ninth. A dispute arising as to how the will can be carried out, without sacrificing one of the horses, the matter is referred to a Dervish, who puts his own horse with the 17, then gives the half of 18 to one son, one-third to another, and one-ninth to the last, and then takes his own horse again.

2. A very perplexing question, one well calculated to catch the wise as well as the unwary, was that proposed to the Roman senate: "Why does a pail of water, with a fish swimming in it, weigh no more than the same pail of water without the fish?" It called forth much discussion from the members of that august body, who explained the singular circumstance in different ways to their entire satisfaction, but found at last by experiment that the pail of water *did* weigh more when there was a live fish in it!

3. Take a piece of paper and pencil and without first looking at your watch, try and put down the Roman numerals as they are on the watch-dial. If you have never tried it before, you will fail to do it correctly.

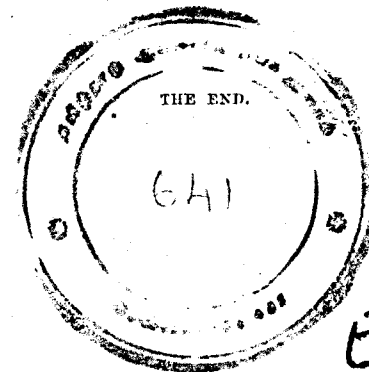
How to enjoy life.

To enjoy life does not mean going or staying. If you can watch a tree growing, a flower blooming, or the blue sky deepening; if you can listen to a goose squawking along a dusty lane, to a pullet cackling over a first egg, to a sleepy child crooning itself to sleep with a little tune; if you can watch a cow licking her calf, a young mother suckling her babe, and take a big interest in all these little things, feeling in the marrow of you their meaning, and that they are a true part of life's sweetness and simplicity, why then I think you may truly answer "Yes, oh yes," when one questions you, "Do you enjoy life, good sir?"

It is not a good habit to be bored of things, to cultivate ennui. Every day the sun comes up and shines, and hearts beat and people are born, and some die and some marry and some hate and more love, so who are you and what are you to strut around like a fool of a turkey gobbler the week before Thanksgiving, and say you are bored and life is too dull for your palate? After all you fill no more space than a fool takes on the sidewalk or under the green grass; so be careful how you venture to draw about you a circle of exclusiveness. Be careful how you fall into the way of thinking the earth was made for you. Do not insist, as many selfish people do, on going through the world with an air cushion upon which you may sit in luxurious ease, while there are only stony benches for the rest of poor mortality.—CATHERINE COLE.



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