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MAGIC NO MYSTERY

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MAGIC NO MYSTERY

CONJURING TRICKS WITH CARDS
BALLS, AND DICE; MAGIC WRITING,
PERFORMING ANIMALS, ETC. ETC.

EDITED BY

W. H. CREMER

L. Frickell, Wiljalba



WITH NUMEROUS ILLUSTRATIONS

Edinburgh
JOHN GRANT

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PART 1.

**MODERN MAGIC BY SLEIGHT OF HAND
AND MECHANISM.**

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MAGIC NO MYSTERY.



PART I.

MODERN MAGIC BY SLEIGHT OF HAND & MECHANISM.

A CAPITAL ROPE TRICK.

LET your wrists be tied together with a handkerchief, then have a length of clothes-line, about twelve feet, passed through the space enclosed by your arms, and the ends be tied. Let the assistant stand away at the end of the doubled rope.

To release yourself from the rope without untying the handkerchief, you must first pull hard against the holder of the rope so as to get it well between the wrists. Now, on slackening the rope, the fingers can seize it

and work it through the handkerchief till a loop is within, through which one hand is slipped. A pull from the assistant will disengage the rope wholly from the hands and arms.

THE LITTLE GOLDEN HEAD ON THREE RINGS,

Dancing and Jumping in a Glass, to answer different Questions.

To show that this head is free from mechanism, several crown pieces are placed in the bottom of a glass, covered with a close lid, which, notwithstanding, does not hinder this head from jumping into the glass, to answer any questions proposed. At the same time a bunch of rings, seen in another glass at a little distance, perform the same motions as by sympathy.

Explanation.—A second head, both being of putty baked and gilded, is put in the place of the first shown to the company, which is taken off the table on which the operation is to be made. This second head is fastened to a thread, which, passing through the table, reaches under the floor to the confederate, who dances either the rings or head at pleasure, in order to correspond properly with the conjurer; and the rings jump in like manner at pleasure.

A SIMPLE BIRD-SCARER.

Cut the bottom off a wide bottle by heated wire, continuing a crack begun with a file or diamond, or otherwise. Fasten a cork in the neck firmly, and through it pass a wire, the lower end to reach about half-way within the bottle, where it ends in a loop, to which a button is secured. The upper end of the wire is

fastened to a strong but supple branch of a tree. There is thus made a glass bell, which will tinkle at every breath of air.

THE MAGIC WAND AND SANDALWOOD SANDALS.

There was lately introduced the following trick. The performer takes up his wand with one hand and suddenly shows that he can retain it suspended, and even make it describe all manner of figures in the air, with only the slightest contact of one finger. Apparently, the wand is smooth ebony, and that it is devoid of any glutinous matter is sufficiently proved by its being rolled among feathers and yet taking up none.

Explanation.—Though apparently smooth, in the wand is set firmly a fine steel point, barbed on the side towards the wood, and inclined at an angle. There may be one at each end and one in the centre of the wand at need. All are japanned to be of the colour of the wood. The flesh of the fingers each side of the nails, and the thick part over each root of the fingers within the hand, are tough enough to give a good hold to these points.

One of the most telling feats of the Oriental jugglers is founded on this same deception: a man with naked feet steps upon two small smooth boards of wood, when they become sufficiently firmly attached to his soles for him to dance, as if they were bound to them like sandals.

THE NEWSPAPER MASK.

As a simple feat, to amuse the juvenile during some accidental delay, take a newspaper and fold up a

portion about twenty inches square. Double it, and, without stopping, tear off all the superfluous paper from

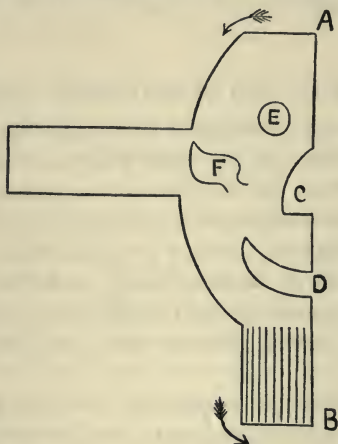


Fig. 1.

A to B, A to B being the line of the doubled edge. Then tear out the gap C, that of D, and that of E; and tear down the piece F, so as to nearly detach it, but not quite. Three or four rents parallel at the end B will form a fringe. Now open all out, when will be presented a capital comic mask, holes for the eyes and tongue being in place, the beard made, and the ears prominent. Practise this so as to perform it most rapidly.

PARACHUTE AND DART.

To make a parachute quickly, fold a square piece of tissue-paper four times, so as to have a wedge-shaped mass; now, fold back the thinner three-cornered mass upon the rest and tear it off, as well as the corners at the opening of the angle. Punch a hole through the

centre of the broad end, and tear off the tip of the cone. Unfold, and you will have an almost circular sheet with a tooth-like edge. With a pin tied to the end of a long thread, pass the thread in turn through each of the regular holes, and pull out the loops to such a length as will convert the whole into a parachute. Tie the loops at the lower ends in one knot, and there suspend a bunch of paper for a car, in which is the flower, ring, or other article to be restored to the owner. Now take up a bow and put the head of the arrow, across which is a tight bar to prevent the shaft passing through altogether, up the parachute, and out of the central opening. The apparatus when closed by the hand will much resemble a shut-up parasol. Shoot the arrow up in the air, and the parachute, on expanding at the cessation of flight, will sail slowly down and among the audience. As a finale, especially in the open air, a squib may be substituted which will shatter a thin glass phial of perfume, so that the parachute will float in a spray of scent.

THE WONDROUS RESTORATION.

Preparation.—Have ready several rings, all alike, and insert all save two in oranges or lemons, by driving a table-knife rounded point into each. To one of the other rings fasten a bit of elastic, and sew that to the inside of your coat-sleeve, so that, when the ring is slipped off the finger, it will spring up inside the sleeve quite unperceived. Have a piece of tape and a bodkin also ready.

Performance.—Enter wearing the spare ring, which should be shown ostentatiously to the company. Just before commencing the trick, substitute the one suspended by the elastic up your sleeve. Call for the fruit,

and the bodkin, and tape. Point to the lemons on your table with a knife or your wand, and let it rest on the one selected by the audience. Send the others away. Make a speech, saying that your powers will enable you to conjure the ring off your finger, into the very core of this lemon, which you now proceed to cut into slices, but not quite severing them, and holding it so that if anything were between the slices it would fall out. Take care that the ring inserted remains in the middle slice. Now slip the end of the tape through the eye of the bodkin, and push it lengthwise through the lemon, so that it passes through the ring. Call two of the audience to stand near you, and give both ends of the tape to be held, and tell the persons who hold them to stand so as to keep the tape at full stretch.

Now slip the ring off your finger, and hold it between the finger and thumb, taking care to place it so that the spectators cannot see the thread. Point your hand towards the lemon, suddenly spread the fingers, and away flies the ring up your sleeve. Look into your hand as if surprised at the disappearance of the ring, show that it is empty, and then go to the lemon. Separate the divisions one by one, and push them apart. Take each outer slice alternately and pull it off the tape, keeping the central slice to the last. When you come to this, the ring will pull against the tape; you wonder audibly what is the matter with it; you take your knife and cut the slice gradually down, of course taking care to destroy the slit through which the ring was introduced, and continue to cut until the glittering metal becomes visible. Then let anyone disengage the lemon from the imbedded ring, and acknowledge that the latter is the same which you were seen to wear.

THE CONJURER'S ILLUMINATION.

I.—In the wick of a candle is placed a drop of sulphuric acid, enclosed in a thin glass ball. On breaking this with your wand the acid fires the wick. Unfortunately for this trick, devised by Herr Wiljalba Frikell, the *fizz* betrays its causes.

II.—Insert in the cold wick of a blown-out candle a small piece of phosphorus. Have a glass rod, instead of your wand, resting on your table, with one end beyond the edge, and over a lamp or gas jet a shelf on the side away from the audience. On touching the phosphorus with this heated end, the wick will be ignited.

III.—A simple apparatus for lighting gas, suggested by the *electrophorus*, may be thus described:—A bracket is arranged with a brass cup or vase resting upon it, with a connecting piece of hard rubber. The cup is lined with lambskin covered with silk, and contains the hard rubber electric piece which corresponds in form to the inside of the cup. A coiled covered wire connects the cup with a wire attached to the burner, and terminating just above the the burner. In order to light the gas, the stop is turned, and the hard rubber piece lifted partly from the cup, thus liberating the spark and lighting the gas. A portable lighter was also shown, consisting of the same vase or cup, with the addition of a non-conducting handle. When the brass cup is lifted from the electric piece and held to the conducting wire of the burner, the gas is immediately lighted.

COLOURED FLAMES.

BLUE:—Parts *by weight*: burnt alum, 6; carbonate of copper, 6; sulphur, 8; chlorate of potash, 30.

CRIMSON:—Chlorate of potash, 30; carbonate of strontia (calcium), 12; sulphur, 8. Another for Demon Torches:—Add as much powdered chloride of calcium to an ounce of spirit of salt as will make a mixture like thick mortar, lay a gridiron over a slow fire, and on it place the cup containing this compound; let it boil two hours or more till nearly dry. *Note.*—The fumes are noxious. After letting it cool, add four to five ounces of pyroxylic spirit, and pour all into a white bottle for use. Use but little of the sediment, which will settle down. For use, wind common cotton wick round a nail into a ball of two inches diameter, and fix on a torch, or where needed. Pour on as much as the cotton will drink in without waste. Light with a bit of lighted paper.

GREEN:—Boracic acid, 5; chlorate of potash, 35; sulphur, 8.

GREENISH BLUE:—Shake up in a phial, in a table-spoonful of spirit of wine, two or three pinches of sulphate of copper (nitrate or chloride will answer also); wind some wick on a rod or wire, and ignite.

ORANGE:—Chalk, 16; chlorate of potash, 26; sulphur, 7.

PURPLE:—Chalk, 12; chlorate of potash, 30; sulphur, 8.

YELLOW:—Chlorate of potash, 30; dried soda, 12; sulphur, 8.

PALE YELLOW:—Same as for greenish blue, with the addition of a teaspoonful of common table salt.

Variations in the proportions of the substances will cause different shades. *Observe* that the materials must be powdered separately in a mortar, be perfectly dry, and be mixed with the hand. Make only enough for one performance, as they will not keep, from their liability to spontaneous combustion.

JAPANESE PAPER MATCHES,

When lighted, burn with a small, scarcely luminous flame, a red-hot ball of glowing saline matter accumulating as the combustion proceeds. When about one-half of the match had been consumed, the glowing heat begins to send forth a succession of splendid sparks. The phenomenon gradually assumes the character of a brilliant scintillation, very similar to that observed on burning a steel spring in oxygen, only much more delicate, the individual sparks branching out in beautiful dendritic ramifications. A mixture of carbon, 1 (powdered wood charcoal); sulphur, $1\frac{1}{2}$; and nitre, $3\frac{1}{4}$, produce the phenomenon. English tissue-paper may be used for the wrapper. The finest matches are, however, obtained by employing genuine Japanese paper.

JAPANESE DAY FIREWORKS.

That inventive nation, the Japanese, imagine pyrotechnic displays visible by daylight. Instead of bombs containing fiery stars and serpents, they send out jets of smoke, which in exploding assume various shapes, as of animals and other creatures. One of the most effective is a cuttle-fish, with its limbs reaching out on all sides. Or the shells enclose parachutes of many colours.

LUMINOUS BUST.

As an aid to a powerful ventriloquial effect, the apparent speaker might be the bust of some appropriate personage for the chosen speech. In the dark, this bust would be wonderfully impressive if covered with a luminous glow. To do this, warm a plaster bust before the fire and anoint it with olive oil, in which, while hot,

some phosphorus has been dissolved. The bust will then shine in obscurity.

THE WONDERFUL ASCENDING GLOBES.

A box is produced with solid sides, and a hole in the upper part of the front, enclosing a piece of transparent glass. On looking through this aperture, there is apparently seen an inclined plane, *up* which, in a serpentine groove, is seen a ball continuously rolling—no sooner disappearing at the top edge than it reappears for a fresh ascension at the bottom, and so on uninterruptedly.

Explanation.—The box is made of wood, with the long sides about seven feet long, and the ends a foot square; the front half of the top is of ground glass, admitting a dull, even light. The interior is thus represented:—

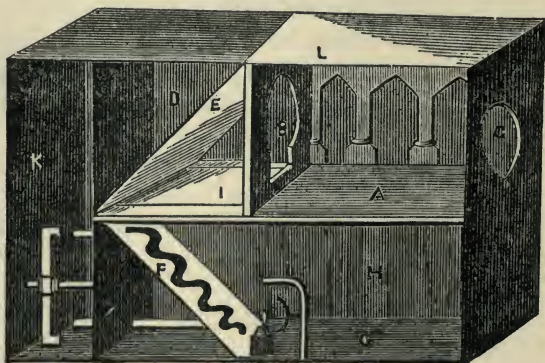


Fig. 2.

The box is divided within into the three compartments, A, K, and H. The compartment A, into which one looks by the eyehole C, is enclosed on both sides by solid walls painted with a fantastic design as of a Gothic

colonnade, in grissaille with black shading, lit by the light passing through the ground-glass roof, L. The end B is painted the same, but the archway is cut out entirely, giving a view of the chamber D, or rather of the plane mirror E. This mirror, set at an angle of 30° or 40°, reflects through the opening I in the floor the inclined plane F.

The chamber H is closed in on all sides with dead-black walls, pierced only in the roof at I. A board, inclined at the same angle with the mirror E, but at an angle opening from it, is solid, and has a uniting groove upon it ending at top and bottom with holes, being mouths of pipes leading off as marked into the chamber K. This chamber K contains the following piece of simple mechanism :—

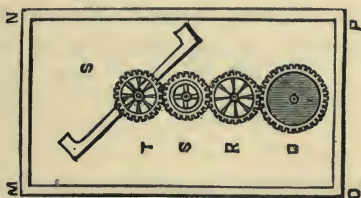


Fig. 3.

M N O P is a brass frame, holding the wheels Q R S T. Q is a drum with a mainspring, which, when wound up, turns the other wheels, and finally acts on the fly.



Fig. 4.

wheel T. The axle of the wheel R comes out beyond the frame, so that the brass rod U X can be fixed to it. At each end of the rod is fixed a metal box Z, the two

being exactly alike, with a small movable brass plate, Y, on a pivot, bent back as shown, so that a ball rolling down the plane and by the tube containing the groove F, will fall into the box past the plate, but must there remain until the movement of the wheels shall have made the rod describe half a revolution. Then the box containing the ball is brought to the top tube, into which it is dropped, so that it must then roll down the plane, to be caught, carried up, and sent downwards anew. This descent, seen inverted in the mirror, has the appearance of being an ascent, and forms a most excellent optical illusion. The ball should be of bone, ivory, or bright silver, so as to be plainly perceptible in the light from the lamp and its reflector G.

Variations.—In lieu of an inclined plane there may be a column made of wire, through which the ball may be plainly seen running; or two such columns turned round each other, so that one ball may seem to be running through the other, &c.

IMPROVED "SPHINX" TABLE.

Although we have, in an earlier volume of this series, furnished particulars by which can be made the table

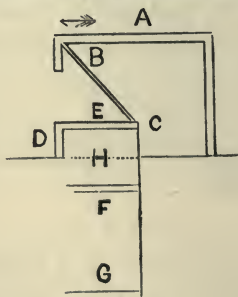


Fig. 5.

for the performance of "The Sphinx," or "Head of the Decapitated Speaking," an improvement has struck us which we hasten to place before the reader. A is the table, with a rim and cloth in front. A plane mirror is set at an angle of 45° , C B, so as to reflect E, F, and G. This mirror extends the whole length of the table. E and F are the table legs, and G a flat board, covered with the same papering as the back of the room. D simply guards the front end of the false table-leg E. The mirror, in reflecting these objects below it, shows them to the audience as if they were real objects on the horizontal line, and consequently all must be persuaded that they can see under the table. To maintain this illusion, the performer must not cross the stage behind the table. The stage trap, H, is open.

THE AUTOMATON STATUE OF MEMNON.

An image of Memnon is shown seated on a pedestal which has a glass front, covered inside with gauze. On being placed in the sun, music will presently appear to issue from the Egyptian's dusky lips.

Explanation.—The image sits on a case, within which is placed a barrel-organ, which, when wound up, is prevented from playing by a catch that takes a toothed wheel at the end of the barrel. To one end of this catch there must be joined a wire, at the end of which there is a flat disc of cork, of the same dimension as the inside of a glass tube, in which it is to rise and fall. This tube must communicate with a reservoir that goes across the front part of the bottom of the case, which is to be filled with spirit, such as is used in thermometers, but not coloured, that it may be the better concealed by the gauze.

This case being placed in the sun, the spirit will be

rarefied by the heat, and, rising in the tube, will lift up the catch or trigger, and set the organ in play, which it will continue to do as long as it is kept in the sun; for the spirit cannot run out of the tube, that part of the catch to which the circle is fixed being prevented from rising beyond a certain point, by a check placed over it. Care must be taken to remove the machine out of the sun before the organ runs down, that its stopping may be evidently affected by the cold.

When the machine is placed against the side of a room on which the sun shines strongly, it may constantly remain in the same place, if you enclose it in a second case, made of thick wood, and placed at a little distance from the other. When you want it to perform, it will be only necessary to throw open the door of the outer case, and expose it to the sun.

But if the machine be movable, it will perform in all seasons by being placed before the fire; and in the winter it will more readily stop when removed into the cold.

THE SYMPATHETIC EXECUTION ;
or, **The Paracelsus Trick.**

The name of Theophilus Paracelsus is given to this trick, because it is pretended that a man so killed his brother by stabbing his picture with a dagger. The anecdote, which undoubtedly is not related by contemporary historians, nor by eye-witnesses, should be considered without doubt as apocryphal, though founded on a belief widely current in the age of romance.

A puppet is shown to the audience, and they are allowed to handle it, to see that the wax neck is perfectly solid. A ribbon is tied in the middle around the

doll's neck, and each end of the ribbon is fastened to a pillar, two of these standing parallel on your magic table. The stage and room are then darkened, and a lamp, with a reflector placed behind the pendent puppet, casts its shadow upon the stage at a distance from it. Drawing a sword, the performer recites some lines, treating of the doctrine of sympathetic action by which injury done to a representative of a living person in wax or on canvas was felt by the original himself, drawing freely on the annals of witchcraft for a telling story. Then flourish your sword, and say that the modern conjurer has progressed far beyond the necromancers of yore, as by action on the mere *shadow* of an object, that object will suffer the like fate. So saying, draw your sword across the neck of the shadow, when simultaneously the head of the puppet will be severed and fall on the table.

Explanation.—The head, shoulders, and neck of the doll are indeed of solid wax. The ribbon contains a watchspring with sharpened edges, and in tying the band around the neck, the steel is set "edge on" into the wax. One end of the ribbon is made fast to one of the columns, which is solid; but the other column is hollow. The other end of the ribbon is fastened to a wire running up the second column, which is hollow, though it appears to be wound round the column just like the first end. The wire is carried down into the magic table, and thence to your confederate's hand, under the stage or elsewhere out of sight. When you make the cut, you stamp your foot or speak some agreed-upon signal, and the assistant's jerk to the wire severs the puppet's head.

THE INSEPARABLE HEAD.

A figure is shown to the audience, and a knife is allowed to be handled by them. This knife is seen, and does pass clean through the neck from front to back, and then in reverse, and yet the head remains on the shoulders, though the figure may be shaken violently or held heels up.

Explanation.—The head and the shoulders end in magnets, or one has a magnet and the other a piece of soft iron, so that the blade in passing through but transiently severs the contact.

THE CONJURER'S CANDLES.

A borrowed handkerchief having undergone mysteriously the phases of being torn in shreds, and then the tatters being tied all into one strip, it is finally used as the wadding for the conjurer's pistol. This is fired off. A couple of candles are on the table, and in whichever one of them the audience chooses, the handkerchief is found entire and unharmed, upon the breaking in two of the *ozokerit*.

Explanation.—One of the candles is real the other is prepared as follows:—The prepared candle is made of two metal tubes, painted white, within which the handkerchief is placed by your assistant. The upper end holds a portion of real candle, which burns at the same time as the other, so as to effectually puzzle the company.

There is never any difficulty about choosing your own object when there are but two or three of a mixed assembly for the selection. If the majority should noisily insist upon your taking the real candle, boldly break it in two, and let it be carried down on a salver

among them, to prove that both are genuine—which is Irish, and conjurer's logic.

Additional trick.—The other candle may be of similar construction. After having made the previous discovery, say: "Strange candles these! I wonder if they all run alike?" and on opening the second, discover some other previously borrowed article, or anything to cap the climax.

THE TELESCOPE OF POWER.

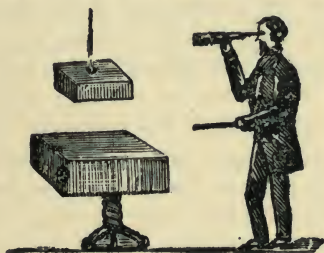


Fig. 6.

A number of various articles are collected from the audience, in a small box, which is locked, and a person is allowed to retain the key. On returning to the stage, the box is wrapped up in paper or in a handkerchief, and held thus enveloped by one of the company. The performer takes up a telescope, which he pretends to be of extraordinary power; and, indeed, while looking through this instrument, levelled at a suspended casket, or a large box elsewhere in the room, he enumerates fully all the borrowed articles, as if he saw them within the casket. The casket is now taken down, and, on opening it upon the table, the small box is discovered within it, still locked and containing the objects. Now, on undoing the paper or handkerchief, it is found empty.

Explanation.—The small box is genuinely made, and locks. But instead of being wrapped up in the handkerchief, a duplicate, as far as outward appearance goes, is substituted for it. This duplicate is constructed on the principle of the opera-hat—to collapse; and when the handkerchief is retaken, it is juggled away, or may contain a bird, &c., the flight of which will distract attention. The box containing the objects is passed off so that the assistant has it, and holds it ready at the trap in the table. Meanwhile (for this is a trick where time is gained by the performance of some other feat in the interval), a list of the articles is made, which you detail while pretending to look through your telescope. The list may even be written out minutely, with a Gillott's crowquill, and inserted in the telescope, to gain time. The casket is at present empty. On placing it on the table, you set it so that the part in the bottom where there is a slide comes just over the trap. Up this the assistant puts his hand, pushes back the slide, inserts the box, and closes the slide and trap. The casket is opened, and the box found as described.



A HANDKERCHIEF TRICK.

There is nothing an audience so much enjoys as the distressed look of the owner of property borrowed by the conjurer, which the latter seems to maltreat and destroy.

After having borrowed several handkerchiefs, let your attendant bring in and place on the table a tub. To prove that it contains water, scoop up and pour back into it several times cupfuls of the fluid. Then carelessly toss the handkerchiefs into the tub, and apparently dabble them about in the water, to and fro, at the end of your wand. Then lift up the mass, hopelessly dripping.

Variations.—The tub may be on the table. After throwing the handkerchiefs into it, you pour a quantity of water upon them, and, as before, lift them out thoroughly saturated. This mass is then to be placed in a box, or otherwise disposed of. At the conclusion of the trick, the handkerchiefs reappear, ironed smooth, folded, and scented.

Explanation.—The handkerchiefs which were borrowed are thrown into an inner receptacle, within the tub, where they lie waterproof. B the tub;

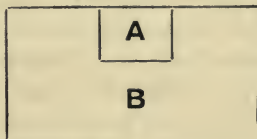


Fig. 7.

A the compartment, that side of the vessel being towards the audience. A trap in the bottom at A corresponds with a trap in the table, so that the assistant can carry away the borrowed handkerchiefs,

and prepare them, by moistening them with perfume and ironing them out, for their restoration. There is already in the tub as many handkerchiefs as the performer intended to borrow, and they are the soaked ones which he exhibited.

There can be used in connection with this a box containing a drawer at the bottom, and a wheel within, working against a flexible lath, with its teeth like a large rattle. This is turned by a crank outside. In the top of the box is a hopper. You put the torn or wet handkerchiefs into the box through the hopper, and speak magniloquently of the conjurer's washing and ironing machine, while working the crank. Then pull out the drawer, and show the real handkerchiefs, scented, dried, and folded.

THE DESTROYED HANDKERCHIEF RESTORED.

Preparation.—Your ordinary silver or china salver, a pair of scissors, a handkerchief of no value, a newspaper. A hat is borrowed from the audience, or one remains from a previous experiment, being at the back of the stage, but in plain sight.

Performance.—Announce your intention of executing the Phoenix feat with an article borrowed from among your patrons, and select from the handkerchiefs; you call for one resembling your duplicate. This you have secreted up your left sleeve or in your vest, and on returning to the stage, you pass the borrowed handkerchief from the left to the right hand, as the right is drawing the duplicate from cover. You now have both in the right hand, and while affecting to examine the borrowed one for marks, you really crush it up small and show the other. This you throw on the edge of the hat, wherein the real one is dropped. Bid the

owner keep an eye on his property, and get your scissors. Lift up the false handkerchief and cut the centre clean out, which piece you call up someone to hold tightly in his hand. Turn to get a plate, and invert the hat over the trap in your table, down which the handkerchief should be drawn in order to be washed, ironed, folded, and perfumed for discovery in the next feat. Or, carry the hat out of the room with you while you get a plate. On your return lay the real handkerchief flat between two pages of the newspaper, fold the paper, and return with both paper and plate to the company. Now set fire to the edges of the destroyed handkerchief, and let the fire burn itself out in the plate. Spread the paper out on the table, all but the last fold, which conceals the other handkerchief. Place the cut centre on the paper; empty the ashes from the plate upon the centre; fold up the paper and crush it as much as possible, so that the folds or creases may not betray anything. Lastly, pick the paper to pieces until the restored handkerchief is gradually developed; pull it out, and throw the paper all into the fire.

THE PARADOX OF ASCENSION.

The following startling experiment was unearthed from Muschembroeck's "Philosophy" by Decremps ("Jerome Sharp"), the father of "white magic" revelations, but he gave no explanations. In the *Poggendorf Annals*, Professor Kommerel went widely into the matter, and, thanks to a correspondent of the *English Mechanic*, the descriptions can be given in full.

The apparatus required is:—

1. An inclined plane, the angle of which can be changed from 0° to about 80°. No special dimensions

are required: say a board (smooth) 5 or 6 ft. long, by 9 in. wide, with a slight ledge along the two edges of the plane.



Fig. 8.

2. A cylinder (A, Fig. 8) of wood, or any other material. The ends, B C, of the cylinder are reduced, so as to receive movable wheels, as above; no special dimensions required.

3. Movable wheels, each pair of different diameter. Thus, for example, let the cylinder be 1 in. in diameter, the first pair 2 in. in diameter, the second pair 3 in., third pair 5 in., and so on up to about 12 in. These wheels (discs of wood) should fit so tight as to roll *with* the cylinder only.

4. Two narrow strips of ribbon, or tape (Fig. 9, A B), pass *under* the cylinder, and are glued on the side of the cylinder, facing the reader, as in the Fig., C D. The free ends of the tape are kept parallel by a very light bar of wood, E, from which they, the tapes, are drawn together to G, where a light cord is joined and passes off to a pulley disposed as may be convenient. The tapes should be something longer than the inclined plane. They are shown as *cut*, not to take too much of the page; the cord, too, for the same reason.

Experiment 1.—Roll the cylinder in the direction of the arrows (Fig. 9, *a*), until two or three coils of the tape are laid over; now, taking the bar E in one hand, and the cylinder in the other, if the cylinder be let go, it will of course, in the air, unroll the tape and fall. Not so on the inclined plane, when the wheels are on the cylinder. Put on wheels No. 1, roll the tape as before, raise the plane, say to 10°, place the cylinder upon it, hang on the end of the cord G a weight, W,

just enough to prevent the *sliding down* of the cylinder as a whole; the cylinder will remain at rest; it will not *roll down*, uncoiling the tape.

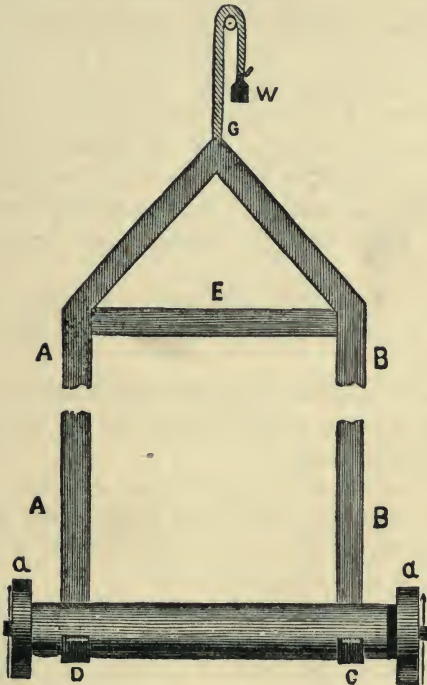


Fig. 9.

Experiment 2.—Let the plane remain at the same angle, place the cylinder at the foot of the plane, the tapes as in Fig. 9, the balancing weight, W, as before; draw the weight gently down; the cylinder will *roll up* the plane, coiling the tapes, and will remain at rest at any part of the plane, if the additional force on W be withdrawn.

Experiment 3.—Raise the plane (*i.e.*, increase the angle) gently, a point *will* come at which the cylinder can no longer hold ; it rolls down, uncoiling the tape.

Experiment 4.—Leave the plane at the angle just reached ; put on wheels No. 2 ; place the cylinder, &c., as in Experiment 2. The cylinder will roll up the new incline. The limiting angle of equilibrium is found as in Experiment 4. In fine, as the difference between the diameters of the cylinder and its wheels is increased, the angle of the plane may be increased, and Examples 1 and 2 still realized. It will be found that even at an angle of more than 70° , Experiments 1 and 2 are possible.

N.B.—1. Kommerel proposes one broad ribbon, centred on the cylinder ; the two tapes seem more manageable.

2. There is required some sort of movable roller to keep the tapes, or ribbon, parallel to the plane when the wheels are changed.

3. The motion of the wheels up the plane is well seen by a large audience, by one radius marked on the wheel next them. Thus, *e.g.*, if the wheel be white, one black radius shows the least motion.

4. The tapes might end at the bar E, from the ends of which a light cord might form the angular joining to G. There is thus secured a means of delicate adjustment of the single cord, so that its *pull* may draw the cylinder *straight* up the plane.

A simple variation is thus made of this experiment : Lay two billiard or bagatelle cues on a table level, the points together and the butts a little apart. On placing a ball on the small ends, it will roll *up* the rods.

THE "DAVENPORT" CABINET.

(As Improved by Miss Fay.)

Colonel Fay commences by pretending to tie a knot with a strip of calico round Miss Fay's right wrist. On doing so, he explains to the audience that *he* would tie the first knot. This knot is so manipulated that it forms a number of apparently firm knots, that easily slide up and down the length of the calico. The ends of the knots are sewn with thread, which is a safe precaution against the possibility of the fastening, or sham knot, slipping undone. The fastening round the left wrist may be a good knot, as that is immaterial to the success of the manifestations. Both hands are tied behind and fastened to an iron staple. The committee of persons chosen by the audience take their seats on the platform, and manifestation number one is to be accomplished. The guitar is laid on the lady's lap; the curtain of the cabinet drops; the sliding noose or knot is drawn with the left hand, to allow the right hand to pass out; the guitar is played; the hand slipped again into the noose—a jerk, and it tightens over the wrist, and all is ready for the report of the committee, who say that Miss Fay is fastened in exactly the same way as before the manifestation. An examination of the knot at the conclusion of the first part on the third evening proved that the noose, or knot, we have described *was* used, and, moreover, Miss Fay's right wrist and arm were exceedingly bruised and sore from the constant friction experienced in drawing her hand out of the noose; the left arm is free from this.

 THE GORDIAN KNOT UNLOOSED.

A cabinet is brought upon the stage, with three solid sides and a front door. It is perfectly empty, save for

an upright post in the centre, secured to the sides of the cabinet by a series of parallel horizontal bars, the whole fastened firmly by strong bolts. One of the audience is allowed to inspect the cabinet and post, and pronounces it devoid of trickery.

The performer's assistant is asked to step into the box, where he is tied to the centre post, the cord being knotted by one of the audience, and sealed with a seal borrowed from among them. The door is closed and locked, when suddenly magic hands are seen waving out of an air-hole in the door, and presently the assistant's coat is flung out of the same aperture. The door is instantly unlocked and flung open, when the man is discovered tied to the post as before, with the knots still tied and the seals untampered with, but in his shirt-sleeves.

Explanation.—The cabinet is perfectly free from secret machinery; but not so the post. To all appearance and ordinary tests, it is a solid piece of wood, solidly attached to its place. But, in reality, a decep-

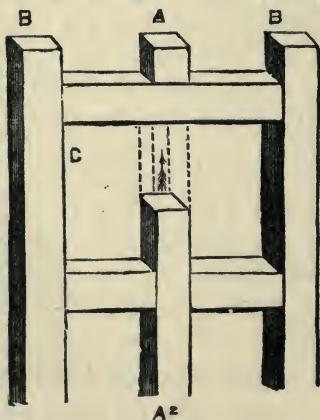
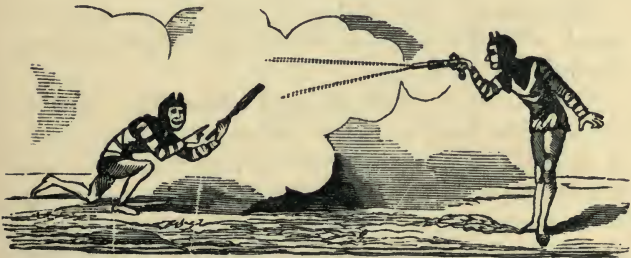


Fig. 10.

tion lies in it. A, the upright post ; A 2, lower position of post, which drops out of the socket in crossbar C, on the pressure of the central screw-head, and leaves the open space D ; B B, the sides of the cabinet ; C C, crossbars.

The crossbars and post are very thick, to give an idea of excessive strength to the structure ; and so with the screw-bolts.

Operation.—The man being tied to the post at the point D, the release of the bolt, which lets the post drop, is sufficient to set him free. He then slips out of bondage and performs the feats agreed upon, returning to the first position. His release is effected either by his own pressure on the deceptive bolthead—easily done, since he ostentatiously has his hands tied behind him—or by the spring being acted on by the closing of the door. He signals with his foot to the performer on the stage in case he is not ready for the opening of the door, so that the latter may keep talking to the audience and give him time.



THE CONJURING PISTOL.



FAN AND BUTTERFLY TRICK.

THE CONJURER'S FAN.

(*A Lady's Trick.*)

A fan is shown which can be used like any other, but all of a sudden it breaks to pieces in the performer's grasp, each *pallet* becoming separated from its neighbour; and though the fragments of the silk which covered it at first have been seen fluttering, the whole is made perfect again, without the fan once leaving the owner's hand.

Explanation.—The *pallets* of the fan are made as usual, with the exception of the two end-pieces being somewhat thicker.

The silk used to cover the fan is rather stiff. Through loops at the back of it run two parallel elastic cords, A A, B B. The two end-pieces are split from the base nearly to the top, in order that these two cords may move freely up and down them. A spiral spring on each end-pallet drives a series of thin tubes, constructed to slide into each other, on the telescopic plan, at the performer's will, while the spring is strong enough to push

the cords, and the silk they carry, up into their places, as at first; the top tube, or rather rod, has the ends of the cords fastened to it; the other pallets have their tops tipped with down, and on them is glued pieces of silk like the pattern of the cover itself, with rough edges.

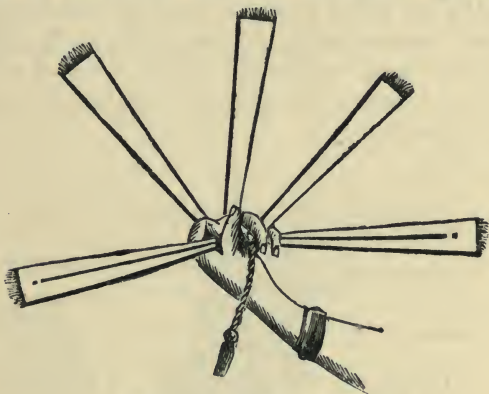
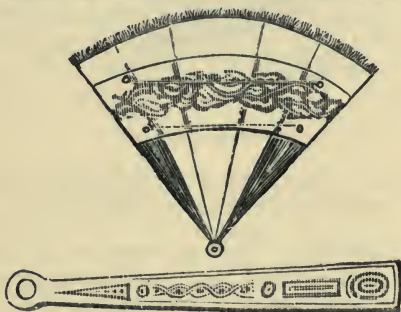


Fig. 11.—The Fan broken.

Action.—In closing the fan, the silk is drawn down and gathered up in the hand at the base of the fan. Besides, the knuckles of the hand are turned towards the audience.



Figs. 12, 13.

Another Way.—Instead of the above plan, there may

be adopted that of making a double fan. That is to say, in one end-pallet is sufficient space to contain six thin pallets, which are opened out as if those first seen were separated. The fan proper with the silk on it is made thinner than usual, and can, in its turn, be contained in the pallet, to which one end of it is solidly attached, together with its pallets, agreeing in number with those shown separated. Unless this work is very well done, however, the increased bulk may betray the *modus operandi*.



FAN AND TOP TRICK.

**MAGIC TRAPS FOR HORIZONTAL AND
PERPENDICULAR APPEARANCES.**

One of the latest works on legerdemain, purporting of course to be written by a professional, but as usual merely relating antiquated tricks of the simplest nature, and therefore so unlike this series of papers, where hardly an illusion of the latest contrivance is

not laid bare,—his work, we repeat, deploras the deficiency in magic tables of a trap for objects to be made to appear through a table by simple means at the beck of the performer. The readers of "The Secret Out" and its sequels will remember the ample descriptions of several such devices.

We now add a few more to the list.

THE "VAMPIRE" TRAP

Is of ancient invention. When "Frankenstein," on account of its great success, with Wallack as the Student and T. P. Cooke as the Monster, was translated to the Parisian stage, the Vampire Trap was brought into action for the first time there, for, strange to say, ingenious as the French are, our stage mechanism is much admired among them for its novelty and excellence. By this trap, a person can pass through walls and the stage, without leaving any trace of an aperture.

The trap is simply an opening (generally a parallelogram a little more than of man's height), in which works a frame of two shutters or a double door. Each of the shutters is divided horizontally into a number of slats, kept in place by the application of canvas glued to the back; on this back is again applied a series of whale-bone strips (or thin steel laths, very flexible), with the ends fixed firmly in the frame. The two shutters are thus kept level with the frame and the scene in which it is set.

Now, any heavy body dashed against the centre of this trap with violence will pass clear through it, though the spring of the strips will make them fly back into their first position again so rapidly that the eye will not often detect the opening. A man can leap through, or, on a smaller scale, a heavy object be hurled through.

The common "vampire" is simply a double door,

with the two flaps held in place when shut by weights, sand-bags, or leaden cylinders, so that after an object forces them open by its passage, they fly rapidly shut.

THE "STAR" TRAP

Is made for magical tricks—such as the disappearance of a heavy object placed on a table, or hurled at the wall—of strips of canvas painted to match the wall or table, and backed by whalebone or steel laths. The opening is circular, and the strips, beginning at a certain width, taper gradually to a point, all of which points meet at the centre of the circle.

THE TRAP FOR SECRET APPEARANCE.

A trap-hole should be cut in your table top, rather

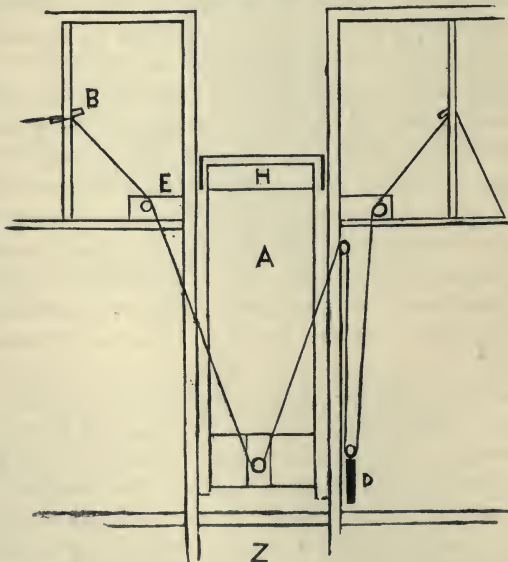


Fig. 15.

nearer one edge than at the centre, with the edges of the cutting bevelled downwards.

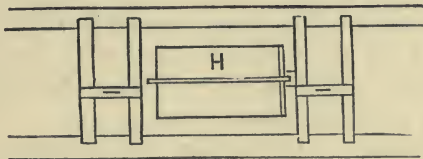


Fig. 16.

To fill this hole is a trap divided into two equal parts, with bevelled edges, so as to fit the aperture accurately. It is fastened by two rods at each of two sides (or by a single pair at the centre) to the small platform, H, which slides freely up and down in the frame. H is a box, of which usually only the top is used to carry any article wanted to be brought to the surface of the table; but as it is hollow, it can be fitted with a hinged top, so that the interior may be filled with the contents of any receiver placed on the table over the trap. This top is painted or covered so as to look exactly like the table top, and has bevelled edges to fit the trap-hole, as do the pieces attached. A strong but fine cord is fastened at B, comes down under the grooved wheel, turning on an axle at Z in the bottom of the box, H, goes up and over the other wheel, and passes by a hole into the interior of the table leg. This leg is hollowed out longitudinally, so as to give free play to the descent and ascent of the weight, M. The cord passing over and half round the grooved wheel is fastened to this weight.

Action.—A knob at the level of the knee on the outside of the table leg works a catch, which holds the wheel, O, firmly till pressure on this knob releases it and suffers the weight to descend. In descending it draws

up the box, D, and it, in its turn, forces the two sections C C of the trap to part and move off under the table, so as to give free passage for the rising of the box-top to take its place and fill up the gap. On this top has been placed the article or articles desired by the performer. A ring keeps the rods well together at their point of intersection. Blacklead is an excellent lubricant for the channel up which moves the box.

Performance.—Some articles collected from the company are juggled away and passed to an assistant, who places them on the top of the box-trap; or the borrowed articles may be such things as watches, rings, or coin, of which duplicates have been already placed on the box. The real articles are juggled away and placed where wanted for the conclusion of the trick. Meanwhile a hat is borrowed and proven to be empty, but hardly has it been placed upside down over the trap in the table, than, simultaneously touching the knob with your knee, the trap opens, the box ascends with its load, and on instantaneously lifting the hat, the discovery is made.

Not to render our diagram and explanation too complicated, we have omitted any detailed description of an addition to the apparatus which renders it complete. The lower trap was left to fill up the hole in the table. Now, if the weight is hollow and contains quicksilver, and has a valve at the bottom, one has but to let a second knob in the table leg release a spiral spring armed with a pin, which, moving upwards, shall open the valve, when the metal will run out and be caught in a receptacle a little lower down in the leg, the box D, being heavier than the cord, and the quicksilver container will at once descend and let the other trap close again as at the first. But this time, the two sections may carry up any thin, flat objects, such as coins, envelopes, bank-notes

rings &c., being themselves fitted with two miniature traps, circular, or square, moved by springs of only sufficient resistance to make the trap rise flush with the surface on the removal of the coins or rings.

LULU'S LEAP EXPLAINED.

It is pretty well understood by this time that the daring young lady of the name of "Lulu," who appeared with Signor Farini at the Alhambra and elsewhere, and whose astonishing spring upwards from stage to flies, some twenty feet was a London sensation, is a young man. Mr. George Conquest and other acrobats soon performed the same feat, which is executed by the following means.

Under the stage is a wrought-iron framework, like a gigantic office-stool. The four legs are eight feet high and two inches square. Three sets of iron cross-bars run from limb to limb—one at the top, one at the middle, and one near the bottom. At the top and middle also crossbars run from each corner to a point in the centre, where they support a small cylinder. Through these two cylinders—the one at the top, the other at the middle of the framework—an iron piston, about seven feet long and two inches in diameter, runs. The upper end of this piston is covered with rubber, and is attached to the bottom of the small trap in the stage on which Lulu stands when about to be sent aloft. About half way down the piston it has around it a barrel-shaped expansion about one foot in diameter and a foot long, which is fastened to it and makes part of it. Round the top and bottom of this barrel, as it may be termed, are iron hooks. Similar hooks are fixed to the lower side of the crossbars at the top and to the

upper part of the crossbars at the bottom of the iron framework. Five strong rubber straps, side by side, each an inch square, and let into an iron socket, with a thimble at each end, next come into use. Of these quintuple rubber straps, which are about eight inches long, there are about fifty. The thimble at one end is just slipped over the hooks attached to the lower side of the crossbars at the top of the framework. When every hook has a rubber strap thus suspended from it, the piston is lifted by leverage, and the remaining thimble of each strap is slipped over the hook which corresponds to it on the top of the barrel. Another set of rubber straps precisely similar to those already described, only more powerful, are then attached by one end to the hooks on the bottom of the barrel. The other end is left dangling until it is time to set the trap. When that time comes, powerful leverage forces down the barrel until the straps which connect it with the crossbars at the top of the framework are distended to their utmost. Then the lower thimbles of the rubber straps, which dangle from the bottom of the barrel, are slipped over the hooks fastened to the crossbars near the bottom of the framework. The trap is then ready for use. One set of powerful rubbers is hauling up the piston towards the trap, and another set of more powerful rubbers is hauling it down to such purpose as to keep the upper set of rubbers at the greatest possible tension. When the time for Lulu to make the ascent arrives an electric battery is used. A wire is so brought to bear on the thimbles of the lower set of rubbers attached to the hook on the bottom crossbars, that one application of electric force instantaneously dislodges all the thimbles. The rubber straps at the top of the band thereupon contract with enormous power, the trap is shot up three feet above the stage, and Lulu over

twenty feet beyond that. A number of rubbers of suitable strength are attached to the lower end of the piston previous to the discharge of the trap, and when the discharge is complete these instantly draw down the piston and restore the trap to the level of the stage. Lulu wears under her dress steel mechanism of a novel description. By one motion of her shoulders she can protect every joint of her limbs and make her form perfectly rigid. Those who watch her closely when she takes her stand on the trap may observe her throw the mechanism into gear by a motion of her arms just before she is shot into the air. To enable her to do this at the right moment, a small plug is removed from a hole in the stage, through which she can see every motion of the men in charge of the apparatus.

CATCHING A CANNON BALL.

A few years since the public flocked to the Holborn Amphitheatre, London, to see the sensational feat performed of a strong man catching the ball fired from a cannon. It is a century old, and an account appears in the *Annual Register* of 1772. A correspondent of that publication describes the new feat "of a man's standing the shot of a cannon at a small distance, with the method of doing it with safety." A man boasted that he could, at ten yards' distance, stand the shot of a nine-pounder cannon charged with a full quantity of powder and a proper ball. His friends, not desiring to be accessory to his death, desired him not to oppose his body when the cannon was fired, but to catch the ball in his hand. This he did, receiving no hurt, although the ball was of full weight, and the loudness of the explosion left no doubt but that he had put in the full charge of powder.

Explanation.—The secret is to put very little of the powder behind the ball and the rest in front of it, the wadding being put in last of all, and rammed down tight. In any case, the feat is not to be performed with impunity, for Mr. Cremer of Regent Street, amateur of exploits of leger-de-main, as he is, had the unpleasant chance of being at a circus in Germany when this last experimentalist was disabled by the ball striking his chest with great violence. The man fell terribly injured, but having recovered, he is still performing, and without rivalry.

PROFESSOR ANDERSON'S MAGIC PORTFOLIO.

One of the late Wizard of the North's most surprising tricks was the production of many things of considerable dimensions from a large portfolio or scrap-

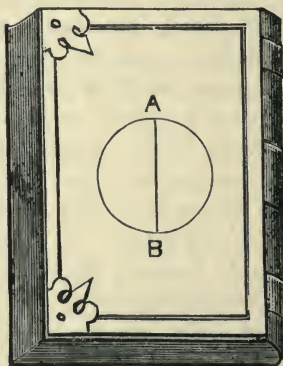


Fig. 17.

book. As we have made clear, in previous volumes, the construction of bird-cages, hats, cups, and other things which fold up and fit into one another, it is sufficient to say that such apparatuses played their part in this

deception. But, though a human being can be made to take up a far smaller space—as the Maskelyne and Cooke sealed chest sufficiently shows—than is generally imagined, the audience was always startled into applause when the professor produced from the book one or two of his children. This trick has been much improved since Mr. Anderson practised it, and we give the latest emendation.

Explanation.—You must have your magic table with a large trap, in working order. The book, which is a large one, with wooden covers and pasteboard leaves, is so placed that its centre lies just over the centre of the trap. The upper cover is solid, but the lower and all the leaves are cut out circularly in the middle, so that a child can pass through. A sheet of white india-rubber covers the opening, with a slit down the middle, A to B.

Note.—Professor Anderson's book was merely a portfolio and but half opened, so that the top stood at right angles to the table on which it was placed, and acted as a screen. Thus, he could draw out of the interior, and through the trap in the table, whatever he pleased. It is true, after placing the child within, he shifted the portfolio to a second table, without a cover, under which one could see uninterruptedly, but as the child was already in it, he had no difficulty in taking it out; the modification here given is far more deceptive.

To continue, the leaves of the book are painted with various pictures, butterflies, gnomes, birds, and so on. Whatever the picture, the living object which it represents is lifted up from the leaf as each page is turned. To crown all, upon the likeness of a miniature Mephisto presenting itself, a little devil leaps up from the animated page. As we know, he simply came up the trap, clean through the book, and thus appeared, though the leaves show no dissolution of continuity.

THE CONJURER'S CANARY.

Three eggs being shown to the company, they select one, and that one dances, in time to music, on a cane. This part of the trick is done by an empty egg, to which a fine horsehair is fastened, being substituted for the selected one; the other end of the horsehair is fastened to the performer's vest-button, so that by an almost imperceptible movement of the body while the cane is dexterously managed, the egg appears to caper of its own volition. This empty egg is replaced unseen by the real one, which is broken on a plate, to prove there was no deception. Now the company is asked to choose one of the two other eggs. On breaking it, a live bird flies forth. It is caught and given to a lady to be pronounced a real canary, but on taking it back from her, it is found to have lost life. However, it is put under a glass-dish on the magician's table, which dish is covered with a handkerchief. The handkerchief is instantly taken off with the cover, when the bird flies away once more.

Explanation.—Two eggs are emptied, and the half of the shells are adjusted together with two strips of paper, glued in the form of a zone or an equator. Being thus prepared, they represent a real egg, and can contain a small living canary bird, provided a small hole be made in it with a pin, to permit free respiration. Of course, it little matters which egg is chosen. On taking the live canary from the lady, it is juggled away, and a stuffed one held up in its stead. This is put on a trap in the table surface, and covered over, as stated. Instantly the confederate pulls a wire to let the trap work, and substitute the live bird. One can even exchange the live for the dead bird without the trap business, but with it the first bird can be used again, for a startling *finale* to some other part of the entertainment.

THE CONJURER'S ORANGE-TREE.

(Robert Houdin's Invention.)

Though Robert Houdin was the unprompted originator of this surprising and beautiful trick, there seems little doubt that a similar piece of mechanism was known in earlier times, even in the Dark Ages.

An orange-tree in a tub is placed on the table. A filbert, a walnut, an egg, a lemon, and an orange are juggled with, and finally the filbert is passed into the



Fig. 18.

walnut, the latter into the egg, and so on, till the orange has apparently swallowed them all up. After this exhibition of its amazingly absorbent powers, few are surprised when a borrowed handkerchief and ring are also passed into it. For an incantation, spirits of wine is poured over the orange, and ignited, and this is set before the orange-tree. At once the leaves are agitated, buds expand into blossoms, and these, in turn, become real oranges—indeed, two or three are plucked and given to the juveniles in the company,

to remember the conjurer by. The last orange is threatened with the wand, and hastens to unfold in halves, showing a white object crumpled up within; it is the handkerchief, which is seized at two corners by two birds, which fly with it so as to unfold it and discover the borrowed ring in the centre of it.

Explanation.—The trunk of the orange-tree contains or conceals a rod, which acts upon several branch rods. Their respective actions is to thrust forward through the foliage the buds, the blossoms, and the oranges, in regular order. The last orange is an imitation, hollow and containing the borrowed ring and handkerchief, which are placed in it by your assistant. This orange-shell opens in half on a hinge. The birds are mounted each on thin wires, and a string makes their wings flutter naturally: as the handkerchief is taken from them the wires are withdrawn under cover of it.

Note.—Another version of this striking illusion is given in the following pages.

For the diagrams explanatory of this machinery, see "The Secret Out."

THE CONJURER'S POST OFFICE.

A letter being folded up and put in a box, it vanishes. In its stead is found an envelope containing, not the original writing, but an apt reply.

Explanation.—One side of the box is double, and works on a hinge in the lower edge. The double is folded up against the side, so as to enclose and conceal the duplicate envelope, with its appropriate answer. When the letter is put in the false side falls down upon it, and covers it from sight, and the answer is alone found. The box is useful for many similar tricks.

THE DICE OF REVELATION.

A box is shown to the audience on which stands a small hollow column, with an open top. A dice-box and two dice, all of which can be examined, are given to someone of the company, who throws the dice upon the pedestal, leaving them covered. They are then taken up, without being looked at, and thrown down

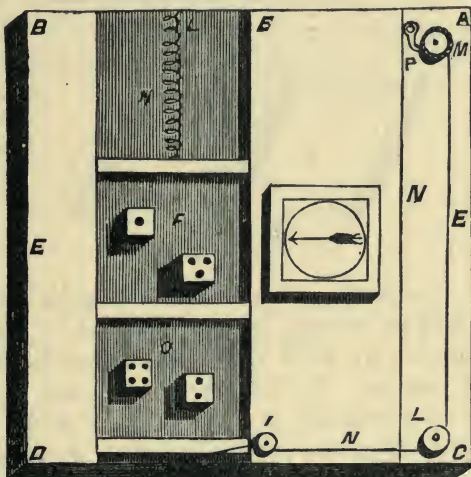


Fig. 19.

within the column. A sealed envelope is then produced and given to one of the audience to be opened, and meanwhile you remove a cover from a part of the pedestal, and show, under a glass, the two dice, the numbers on which agree with those written in the envelope. The experiment can be repeated with no less certainty of success.

Explanation.—You write on paper two sets of numbers on the face of two dice, and enclose these papers

one in each of two envelopes, which you seal. You require, besides the two dice thrown by the company, four more.

The box is thus constructed—beginning with its base, which is a square of six inches, three quarters thick. It has an edge round it, E E E E; the left hand portion of the interior forms a channel, in which glides, from end to end, a board divided into two equal spaces, from three slabs, thus; a a, the spaces formed on the

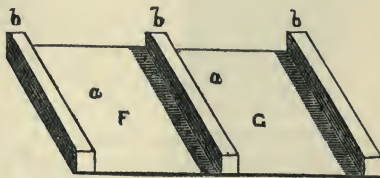


Fig. 20.

board by the partitions b b b. These divisions agree in width with an opening in the cover, which entirely covers the board; which opening has a glass-lid, lifting up. At one end of this board is fastened a spiral spring, again attached, at L, to the side of the large board, and sufficiently powerful to draw this slide up to the side. At the other end is attached a cord, N, which passes through a ring, K, and thence through the thin partition, T T, to the pulley blocks, T L and to M. M is a drum, to which the end of the cord is attached; it has a catch, P. When the catch ceases to lock the wheel by its toothed edge, the drum spins round, unwinding the cord and consequently letting the slide run along the channel by the pull of the spring. The catch is released by the turning of one of four brass knobs, which apparently are only used to hold the cover on the box. It is, therefore, easy

to present the space, G, in the very place which F previously occupied.

Over all is a board secured by the brass screw-knobs first spoken of. This board is pierced about the centre of the left half with an opening exactly the size of one of the divisions of the slide, and a lid of glass fits into it, which can be lifted out. A screen of coloured silk, or a slide or lid of wood, protects it and prevents looking through the glass.

On the cover, about the centre of the right hand half, is a hollow column, in which is an inclined board, seemingly, to anyone looking down the tube, designed

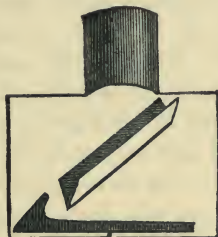


Fig. 21.

to direct the dice thrown in to fall upon the slide, F G. But at the bottom of the column is a revolving trap, X. This trap is shaped something like a shoe, being scooped out, so that the dice, coming down the inclined plane or trough, are caught in it. The inclined plane is formed of two boards, forming a trough, so that the dice must run down the hollow of it at the centre.

Action.—Two dice are put in each of the compartments F and G, the numbers of which are written on the papers in the envelopes. The slide is then drawn back to the full extent and kept there by the catch on the drum, M. The cover is over the glass-

opening in the lid. One of the company throws the dice, leaving the dice-box over them, and then the dice are thrown down the column. They run down the inclined plane, and are caught in the shoe-trap. There they remain until the performer spins the trap on its pivot, when they may be spilt out behind the inclined plane, to be taken out afterwards in private. Then, while the envelope is being opened, you remove the cover over the glass, and show the first pair of dice. Offer a little resistance to the repetition of the trick, but finally consent. Open the glass lid and take out the dice, which are examined and put in the dice-box. While the throw is being made you may write down what it must be, and enclose the paper in another envelope. You secretly make the shoe-trap spill out the dice, so as to be empty to catch the second set, and also release the drum, M, a second time, so that the division G will be drawn up to the place previously taken by F. On its surface are the second pair of dice, arranged as you have written in the other envelope.

THE IMPENETRABLE SEALED BOX TRICK.

Everyone has now seen the very effective deception of the unaccountable release of a man from within a chest in which he was placed, and the box corded tightly, and all the knots sealed. The man may even have been enveloped in a sack, and tied up in that.

The box is placed in a cabinet and shut up there, the man's voice within being heard up to the last moment through the air-holes in the bottom of the chest, to prove that he has not been spirited away through the box and a trap in the stage.

Explanation.—The chest is such a magic box as those

of which we have given diagrams in "The Secret Out," apparently solid, but having a trap-door ingeniously concealed in one side. The man extricates himself from the sack, or the handcuffs, or rope, which may hold his wrists together, and, when in the cabinet, opens the trap. The sides collapse upon him, and the sealed cords fall off, though retaining their positions. In fact, the more they are crossed and interlaced the better, as thus they form a cage around the box and retain the shape they form. The man is now free. He closes the box and the trap (leaving in the sack or removing it), and replaces the cords just as at first. He may now be discovered, in or out of the sack, on the opening of the cabinet doors.

The chest need not be of such dimensions as the novice might imagine, for a man with but little of the acrobat's training can pack himself away in a space much less than appears possible.

THE CONJURER'S CLOCK.

A clock, invented by Mr. Stewart, is exhibited at Newcastle. All that can be seen in the way of mechanism are two pointers, each having a cylindrical brass box at one end and a steel balancing-piece at the other. That the works were contained in the brass boxes was obvious, but how they moved the pointers was a problem that few could solve. Yet their motion depends on a very simple natural law, namely, that the centre of gravity of a body always seeks its lowest position. For example, if the centre of gravity lay in the centre line of the pointers, and on the same side of the pivot as the brass boxes, the pointers would point to twelve o'clock, as then the centre of gravity would be in its lowest position, namely, directly under the pivot. Now, if the centre

of gravity could be moved into a new position, the pointers must turn round a certain distance, in order to bring it to its lowest point. Therefore, if the centre of gravity could be kept moving, the pointer would be kept turning. This is just what is done. By means of clock-work contained in the brass boxes, a weight is made to move round the inside of each box. In the minute-hand the weight moves round once in an hour, and in the hour-hand once in twelve hours. As the weight moves it alters the centre of gravity, and consequently turns the pointers. There are two peculiarities about this clock—1, each pointer moves independently of the other; 2, the time indicated by the pointers cannot be altered by turning them round with the finger, as when the finger is taken away they will instantly return to their proper position.

MUSICAL BOX MECHANISM.

As a number of mechanical tricks, such as automata, depend on the simple action of the musical box, we subjoin its description.

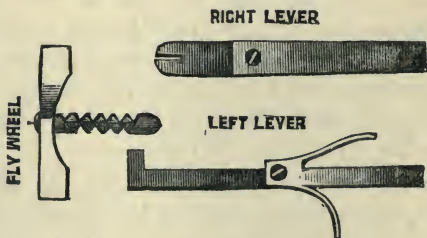


Fig. 22.

A side-toothed wheel, on the axle of which is fastened one end of the winding-up spring (which is enclosed in a small circular box on the left), is put in

gear with one end of the roller, on which are fastened the fingers or pins which lift the teeth of the comb, from whence the sound comes. The motion is regulated by means of a small fly-wheel playing before the spring-box (which, by-the-by, goes out of sight during business). This fly, standing upright and having a thread round the stem, is acted on by finer wheels, which are in gear with the end of the roller. The right end of the roller comes slightly over the edge of the same, and is caught in a slit in a small lever (worked by a pearl button outside), which moves the roller up and down its axle, thus altering the tune, or position of the pins. The left button stops the revolution of the roller by the end of a lever, turned like the letter L, popping into a hole in the roller-wheel at the end of each tune.

THE MECHANICAL TUMBLER.

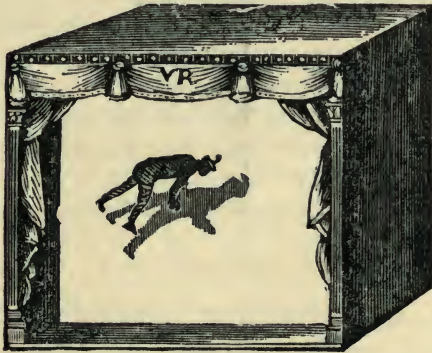


Fig. 23.

A small box is shown with a little proscenium front, where a cardboard figure, clad like an acrobat, executes

the most startling feats on a horizontal bar. In a previous volume of this series the mode of working a somewhat similar figure with wires was revealed. A still simpler plan is followed here.

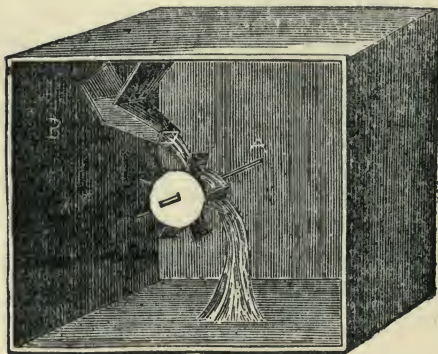


Fig. 24.

Explanation.—The rod, which passes through the front of the box, freely turns on a pivot in the opposite side of the box within, and is the axis of a wheel with large paddles, like a water-wheel, A. Sand, running out of a hopper, B, falls on the wheel and gives it motion. To refill the hopper, the box is turned upside down with a twist, easily learnt, when the sand follows the direction of the arrows, and is caught in the feeding-box.

THE MECHANICAL LEOTARD.

Though the mechanical Leotard, or automaton trapeze performer, is apparently a purely modern invention, the principles by which it is actuated were revealed in Decrep's "White Magic Unveiled" a century ago, and described at length in "Hanky Panky."

The figure is detached from all communication with other things, except by its hands grasping a bar. This, in turn, is suspended by two cords, which are fas-



Fig. 25.

tened to a bar in the ceiling of the room, when the figure is of large size, or to a bar in the top of a box, when the automaton is on a small scale. The arms and legs of the figure turn on a ball-and-socket joint at each junction with the trunk, which is really a strong but light shell, covered with wax, moulded to resemble a man, where not clothed. The hands are fixed immovably to the bar, which, therefore, must carry them round with it in its revolutions, and consequently impart a motion to the arms and the body. The bar is made to turn by its ends terminating in cogwheels, which are acted on by a second cogwheel set at right angles at the extremity of each shaft, concealed in the cord. The upper parts of the rods enter a horizontal shaft, which "rocks," or turns itself but the portion of an entire revolution, and then reverses its actions. The movement is imparted by clockwork, or by steam when the figure is life-size or three-quarters life-size.

For more minute particulars, refer to the "Automaton Performer on the Horizontal Bar," in "Hanky Panky."

THE MECHANICAL HARLEQUIN.

The same model of the figure used for the mechanical trapeze performer just described will serve for the harlequin.

He is contained in a box, the lid of which opens and shuts several times at the word of command. Then, as the lady at the piano obliges with a little music, the harlequin springs out of the box and dances a lively step, kicking and turning about outrageously. He can smoke a pipe or cigar, or blow a whistle any time called for by the audience.

On studying his movements closely, you will observe that the figure has never let go of the box, in fact, its arms are secured at the shoulder in ball-and-socket joints, and they are acted on by wheels at the point of junction, as described in the previous article.

Connection is made between wires or rods in the hands and arms, and piston-rods working within the box and coming up through the magic table: for which see "The Secret Out," wherein all such contrivances are comprised.



THE MECHANICAL SHIP,

Pitching and Rolling on a Stormy Sea.

Everyone has seen in toy-shop windows, if not elsewhere, "a painted ship upon a painted ocean," which has been agitated on a tempestuous sea in so natural a manner that old and unpleasant recollections of "bad crossings" of the Channel have heaved up before you. Though the idea has been long pursued, the first good clear revelation of the working secret was not published until some forty years ago, when an Italian paper, the *Poliorama*, supplied the deficiency. We copy its engraving, with the improvements which time has brought up.

There is required a glass shade or case to keep the dust off the model, a toy vessel, with all sail set, and a piece of oiled silk, painted green, with irregular shading of dark green and blue, and likewise irregular splashes and lines of white; these lights resemble the spray and combs of the waves. A square box for the works is lastly needed, which serves also as pedestal to all. An ordinary coiled spring movement turns the main wheel (not shown) and thence a transmission wheel sets A in motion; A, by its cogs, turns B, and its cogs catch in the cogged axle of C. C moves D up and down by the screw on its axle; this up and down movement is, therefore, imparted to the arm E; this again carries the up and down movement to the second arm, G. F is a counterweight to make up for the weight of the hull of the ship, K; the hull is mounted upon a keel and the support, H. In the centre of the support is a pin on which it freely turns. The action of the wheels A and B, moving reversely as they do, gives the support a see-saw motion, the pitching and recovery of the ship, by means of the rods I I.

The arms E and G impart another motion, which being partly checked by one or other of these rods acting for the moment as a detainer, forces the ship to assume the rolling motion.

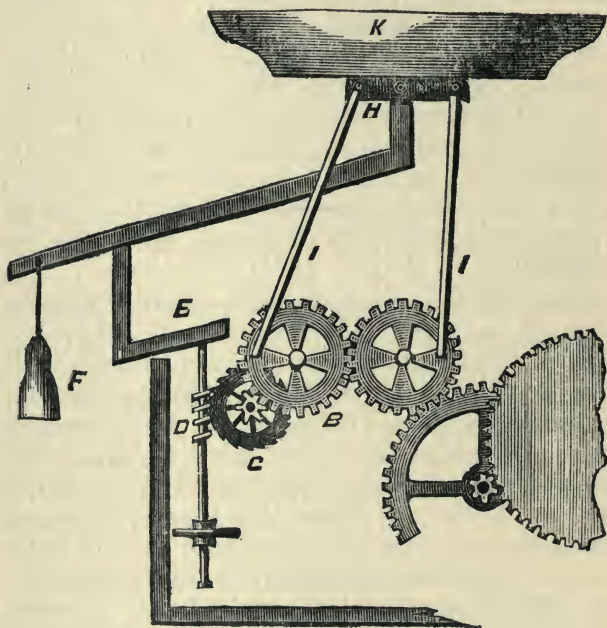


Fig. 28.

The driving power may be any other than clockwork, such as a model steam or electric engine, running sand or water upon a wheel, and so on. A slit is cut in the centre of the cloth and the edges glued to the side, of the ship and all round. The air and the stiffness of the cloth will make it crumple up and expand in concord with the movement.

THE BEWITCHED PALANQUIN.

In our description of the Indian Basket Trick we showed how the person placed in the basket, and supposed to remain there, really takes refuge in a "bellows-trap," or a bag constructed on the principle of the collapsible open hat. A machinist of the Paris Lyric Theatre adapted the idea to the stage, and it figured, first in "Les Amours du Diable" and then in "The Black Crook," at the Alhambra Theatre, as well as in New York.

In the piece, the heroine is carried upon the stage in a light litter, borne on the shoulders of four slaves. There is no appearance of a double bottom. Suddenly the silken curtains are drawn, and on their opening almost instantly, the actress is gone!

Explanation.—The four posts, though thin, were metal tubes, in which worked the counterweights. The cords by which these were suspended ran up over pulleys in the top corners, and were secured to a board on which rested the cushions, on which again the actress reposed. When the spring was released by the performer or one of the bearers, at the same time as the curtains closed, the board rose and carried the lady up to the top of the structure. The dome had an openwork centre, through which she could breathe, and there she lay quite invisible. The bearers were stout fellows, who upon the curtains being withdrawn and revealing the empty palanquin, trotted away with it like a feather.

PART II.

**MAGIC WITH CARDS AND GAMBLERS' TRICKS
EXPOSED.**

PART II.

TRICKS WITH CARDS.

THE THREE-CARD TRICK.

We explain here one of those tricks of gamblers which, though as old as cards themselves, deceives hundreds every week at race-courses, in hotels, &c.

The "banker," or chief gambler, shows a few cards, at the bottom of which is revealed the knave of hearts, for instance. To all appearances he lays this knave on the table at the point A.

A B
 C

On B and C two other cards, not shown, are put. Then with the right hand the knave is pushed from A to B, from B to C, and so on, while the left hand shifts another card from B to C, and from C to A. In short, the cards cross each other's path in the utmost confusion. It is then wagered that no one can tell which card is the knave of hearts, as if it must have been lost sight of in its zig-zag course. The spectator accepts the wager, under the impression that he will find it at one point, but that one which he lifts up is another card, and the knave is elsewhere.

The error arises from the looker-on believing that he saw the knave in the first place laid on the point A, for another was actually placed there. The dealer seemed to take hold of it, but really he left it, and dealt out the following card. And while he seems to shift the three cards rapidly, he does so bunglingly, to let the spectator keep the supposed knave all the time in sight. (See "Rogues and Vagabonds of the Race Courses.")

THE TRICK OF THIRTY-ONE.

A trick often introduced by "sporting men," for the purpose of deceiving and making money by it. It is called "thirty-one." I caution you all not to play or bet with a man who introduces it; for, most probably, if he does not propose betting on it at first, he will after he gets you interested, and pretend to teach you all the secrets of it, so that you can play it with him; and perhaps he will let you beat him if you should play in fun; but if you bet, he will surely beat you. It is played with the first six of each suit—the *aces* in one row, the *deuces* in another, the *threes* in another; then the *fours*, *fives*, and *sixes*—all laid in rows. The object now will be to turn down cards alternately, and endeavour to make thirty-one by so turning, or as near it as possible without overrunning it. The man who turns down a card, the pips of which make him thirty-one, or so near it that the other cannot turn down one without overrunning it, wins.

Never play at this game, even though you flatter yourself you fully understand it. Gamblers never calculate on being beaten at their own game, or, if so, only by another and more clever expert. A novice has, in plain words, no chance.

But if you cannot refrain from playing, do so at stakes too ridiculously small to tempt artistes in trickery to put forth their secret powers. You will not then share the surprise of that Oxford gentleman who was wont to wonder that he always won at chess when he played his tutor for a crown a side, but as invariably lost when the stakes were five pounds.

THE CARD THAT CHANGES TO A FLOWER AT
THE WORD OF COMMAND.

A card is shown to the company, say the deuce of spades. At the word "Change!" the card disappears, and it is a rose which the performer holds up in full view. He can also bring back the card on the vanishing of the rose.

Explanation.—The card is really in three pieces, being divided horizontally by two parallel cuts. A tape is run through them in the thickness of the card,

FRONT VIEW.

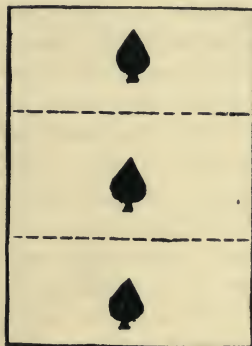


Fig. 29.

BACK VIEW.

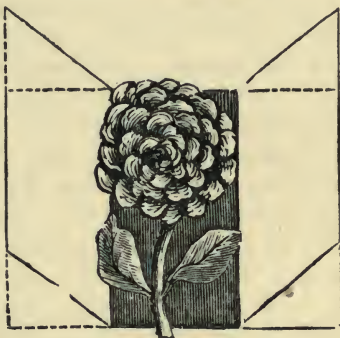


Fig. 30.

as in the Jacob's-Ladder toy, which serves as hinge and to keep the card flat, though the slightest pressure will make the two end strips fold over upon the centre piece. On the back of the card (Fig. 30) is glued a paper or muslin rose with a stem and leaves.

Action.—When the hand closes on the card, it shuts up the folding ends, and, reversing the whole, the flower is triumphantly shown.

THE OLD GRANDMOTHER'S TRICK—PUG UGLY, OR
THE MAN THAT TOLD AGES.

This trick is often played upon the unsuspecting, and seldom fails to accomplish the ends of the gambler. The most common way of introducing it is as the way "Pug Ugly was in the habit of playing." Pug would take from a pack of cards two of the same size, say, for illustration, two jacks, or aces. He would then remark that he could tell any man's age. This would soon call some person to test him, as such a thing would appear very strange indeed. Pug would then take the two cards selected to perform the trick with, say, for illustration, the ace of clubs and ace of diamonds, lay them side by side in the pack, cut the cards several times, and then remark, if they would come out three times side by side, without shuffling, he would tell their age. He would then take them from the top of the pack, one at a time, throwing each card face upward, as it fell, repeating their names, ace of clubs, ace of diamonds, &c., remarking, that if they come out three times together, he would tell the person's age. They come out twice in the same way they went in, and the third time he would assure his audience was the charm. He then would separate the pack about the centre, and take one half and lay it upon the table. Then he would take one of the two cards which he had selected and passed twice through the pack, and lay it down by the portion of the pack he leaves; he then would ask the person whom he wishes to fleece to place his fingers upon it that it may not get out. This the "green-un" generally would do without hesitation. Pug would then take the other part of the pack and the other card, and step aside, at the same time remarking, "Keep your finger close upon it." It has now arrived at the point where the secret

partner steps up and remarks to the novice, "Let us fool him just for the fun of the thing, by placing that card in the centre and substituting another." The change is made, and the Pug returns, picks up the card which the novice has under his finger; calling it by the name of the one his secret partner had changed. He would remark, here is the ace of clubs, and ace of diamonds, they are going in the third time together." This causes much laughter, and several bets of glasses round would be offered they would not come out together. All of those bets Pug would take, and commence turning the cards off of the top of the pack, face upward, one at a time, saying all the time "Ace of clubs, ace of diamonds," repeating until the one placed in the upper part of the pack comes; he then will say, "There comes one, and the next card is the other ace, and I will bet." His secret partner would offer to take a bet that the top card is not the ace he says it is, and at the same time Pug would start the card off, as though he would turn it, showing it to be another card. This he would be prevented from doing by the secret partner, who would insist upon a bet that the ace was not on top. Pug would contend that it was, if the man whom he had told to place his finger upon it had not removed it. The man denies having done so, which is true, as the Pug's secret partner had done it for him. Pug would always offer to bet a larger amount than the secret partner proposed to bet, and he declines betting, for this reason, that he has not sufficient money. Pug would then banter the victim for a bet, that the ace is the next card. The victim sees that it is not, and is disposed to take the bet, that the top card is not the ace spoken of. The money being staked, the victim takes off the top card, which, to his great surprise, he finds is the identical card spoken of, and that, instead of having his age told,

F

he is "sucked in" by a robber. All he can do is to bite his fingers, and have more hard sense the next time than to be "done for" by "Pug Ugly," or any other villain.

Explanation.—The way Pug would do to deceive, he would take the ace he had and put it on the top of the card, which he would claim to be the other ace, and then lay these two cards upon the top of the portion of that pack he held in his hand. He then would take the other part of the pack, which would have the ace in, that he had left on the table; this would leave one ace on the bottom of the pack faced, and the other ace about midway of the part on top; he would then keep saying over the names of the two aces until he would come to the ace in the centre, then he would turn that up, when it is well understood that the next card is not an ace, and the bet is made to that effect that the ace is not the top card. But Pug never lost, as he could turn over the pack in the twinkling of an eye, and thus make his trick a great mystery to all who see it performed. Only such gentry are always provided with cards. The "Munster Bible" often leads persons into awkward predicaments, such as the gentleman of York of our acquaintance. On leaving the Minster one day, with his wife and child, the gentleman swung his overcoat over his arm, when from his pocket there dropped a pack of cards. This revealed what books he had been writing up on Saturday night to keep him out so late. He looked dumfounded, smiled a ghastly smile at his wife—who hastily passed on—stooped, and hurriedly scooped up the cards, and was hurrying away, when some of them slipped a second time. These he picked up, when, in his nervousness, they slipped a third time and fell upon the steps. This was the last straw upon the camel's back. He snatched at them, and picking

them all up but two, made tracks for home, not waiting to shake hands with anybody.

EUCHRE, OR YOUKER.

This game, of German origin, was taken by the Hessian and Alsatian emigrants to the United States, and of late years, thanks to English travellers being indoctrinated with its mode of playing on the Atlantic steamers, and throughout America, has become a little known in London and Liverpool. It is played thus in this country. With every pack of playing cards sold, there is one blank card at the top of the deck, used in America frequently as a marker. But we English make a better use of this whitefaced card. We include it in the suits, making fifty-three to the deck, instead of fifty-two, and to the euchre deck thirty-nine instead of thirty-two cards. This blank card at first was called Louis Napoleon, but that name has been corrupted into the less euphonious title of *yerker*, ghost, spectre, or phantom. The *yerker*, then, is the highest ranking card in the euchre deck, having capacity to capture either of the bowers or the ace, so that a player *may* be euchred with even the ace and bowers. Whenever the *yerker* is turned up by the dealer, that person has the privilege of making the trump, and can make it to the most advantageous suit in his hand. The game is short and lively, but, like others, is subject to various cheats, such as marking the cards, sometimes stocking, playing by signs, playing two and three secret partners against one, stealing out and retaining cards from one deal to another; besides, a man will often take, when it is his deal, more cards than his proper number, and secrete some of the poorest until a good opportunity for

putting them back in the pack arrives. A jack is the most desirable card to retain, as it will be a trump in two suits. In playing four-handed, the game may be played in partnership. If two of the company should be of the card-sharping order, they are certain to beat the other two players; this they will do by signs previously concerted on between them, by which they will tell one another what is in their hands, when to turn the trump down, what to make the trump when it is their turn, how to play when it is the other's lead, as follows: A and C are sitting opposite, and are, in secret, partners; B and D are partners, but not one of the order of thieves; B, who sits to the left of C, has the deal, and plays alone. C knows, by marks, what he holds in his hand, and if he has an odd card that is not a trump, C will give a sign to lead that suit if he has it, and if B's card is larger, C will trump it, and break his march, and B can then make but one point; when, if A and C had not played by signs, B would have made four points; for even if B should hold ace of the suit which A led he must play it, and C would win it by trumping. Another case in which signs are much used, is this: B may deal, and all the players may pass; B, the dealer, for the want of good cards, turns the trump down; it then becomes A's turn to make the trump; C, his partner, holds a hand sufficient to venture alone; he gives A the sign, and A makes the trump to suit him, and he plays alone, and makes four points, where he might not, but for this artifice, have made anything. Again, by the artifice of signs, they know how to preserve trumps, and not play two when one will answer: B may lead—A will not trump, knowing by signs that C, his partner, has a high trump. He will play some unimportant card, and let the trick still belong to B; D may trump or leave it B's trick, but C will by all means win

it by high trumping, if he must; this artifice saves A's trump for another trick. Then the cheat of so scratching and bending the corners of the aces and jacks, and some other principal cards, that one cut, so that his partner or himself would get them, is often practised by a swindler.

PRICKING THE GARTER.

Double a long strap of stiff tape, and wind it up, beginning at the bight, or doubled end. Down into the centre of the coil stick a knife or peg, and show that it

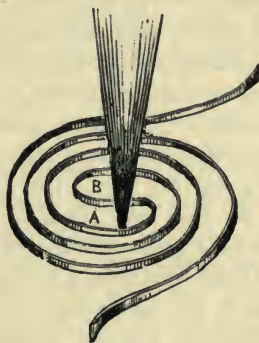


Fig. 31.

is as you please about the strap being pulled off, or remaining pinned at the double. This is done thus :

If the knife be thrust in at A, the pulling the strap by its two loose ends must catch the knife at the double. If at B, it will come freely off.

CARDS AT LEAPFROG.

Take the ace, tray, deuce, and so up to the ten, inclusive. Lay them out in a row in order. One of the

series is to be put on another, provided that one card is always jumped over. Repeat until no one stands alone.

"DOG" LOO.

Among the dwellers in Brighton in the Regent's days was the notorious Dr. Benn, well known from his relations with "Dally Dalrymple the Tall." The doctor had many friends as well as enemies among the good people. By the latter he was treated as all gamblers should be. In other words, they gave him the cold-shoulder. Among these was an Israelite,* who was one of the speculating kind. He had never been known to make a bet, although a great shaver in his business, which amounted to about the same as that the doctor was concerned in. He was a discounter of promissory notes. The doctor being a shrewd man, discovered the Israelite's weak points, and laid a bait for him. The doctor had a very fine dog, which he shut up two days without feeding him. He then told a secret partner to go and get into conversation with the broker, and he (the doctor) would soon come by with his dog, which the partner would call into the office and tell the broker to weigh him, while he (the owner) would pass on and make no stop. The partner was also to suggest the great probability of winning some champagne on the weight of the dog, as he, after weighing him, would know his weight better than the owner. The plan pleased the Israelite, as he knew the doctor to be a man always ready to bet. He weighed the dog, and turned him loose. The dog went home to his owner, who then gave him some two or three pounds of meat to eat, and then walked back

* The difference between a Jew and an Israelite, is that the former is a Hebrew who has a smaller income than £500 a year.

by the office with his dog, and made a stop to converse with some of his acquaintances. The broker proposed to make a trifling bet that he could tell the dog's weight as near as the owner; and finally a very large bet was made. The merchant guessed first, and the owner guessed about one pound more, and won; for the meat he had just given his dog made about that difference. The broker was loo'd, and could not, for a long time, account for his being deceived, as but a few minutes had elapsed since he had first weighed the dog. But he had unwisely suffered himself to be drawn into a bet with a man who had made betting his whole business, and who never calculated to be beaten, or do an honest act as long as he could find dishonest one as a substitute

DROPPING THE PIGEON.

This fraud is often practised upon the unsuspecting. Sometimes by a pin-box or needle-case, at other times coin. Men who will not play cards are often swindled by this trick. The way it is done I will explain by relating a game which was played in Nottingham (in 1868). A young farmer had come to town for the purpose of buying a lease of Lord C——'s solicitor. Some tricksters became acquainted with his errand, and determined to have his money. They could not get him to play any game, for he knew none. Two of them combined to effect their purpose, and they agreed to drop the pigeon on him, saying that they knew he would bet on it. This pigeon is a curiously-contrived needle-case, which opens at both ends, but has but one visible opening. This is filled with needles. The secret opening at the other end also has needles in it, but they are stuck into cork, or some such substance, to keep them from rattling.

In this affair the two gamblers pretended to be entire strangers. One of them invited the young man to take a walk with him; he consented to do so; the other took the case, and went on ahead out of sight, and dropped the case in the road. The gambler and the young man behind came up to the case, and the gambler, who was watching, picked it up, and said, "See here, we have a fine needle-case, and we will have a joke on the owner, if we meet with him." He then opened the visible opening, and turned out the needles into the young man's hand, and told him to keep them while he put pins in their place. This he did, and shut the case up again. Presently the secret partner of the gambler came, meeting them as a stranger, and inquired if they had seen a very nice needle-case, which he had lost a while before. The young man, who still held the case, replied, "Yes, I have it here; but it is not a needle-case. It is a pin-case." "Oh, no," said the man, "it has some very fine needles in it." The gambler then said, "I would like to bet you that there are no needles in the case." The owner of the case gave it a shake, rattled the pins, and then said, "I will bet there are." The gambler pulled out a sovereign, and offered to bet it. The owner of the case replied, that he would bet twenty pounds. The gambler said that he had not so much money. The young man felt so confident that he would win, if he should bet, that he offered to bet ten pounds. "No," said the owner, "I will bet a hundred pounds, and no less." The gambler said to the farmer, "Let us bet him the hundred pounds; I will go one-half of it." The young man put up his half, and the gambler then said, "I have not the money now with me; do you put it up for me, as we can but win." Young Yorkshire said he had not so much with him, but he would put up his gold watch

to make up the balance. He did so, and the gambler held the stakes. The owner of the case pulled out the stopper, and turned out the pins. They then laughed at him; he said there should be needles somewhere in it; he then opened the secret opening, and there were some dozen or two fine needles stuck there, and of course he won, as he bet there were needles still in the case. The young man's feelings can better be imagined than described. My exhibition was at the Mechanics' Hall at the time, and I saw the victim, who told me the story, and that he had not written home since, and should not until he should have retrieved his loss. He told me that if it should be known at home how he had lost his money, he would be ruined in the estimation of all who knew him, and that he never intended to go or write home until he had made as much or more than he had lost.

Variation.—Folding up two sixpences in a paper, the two being separate, one on each side. The paper is dropped and managed the same way as the needle-case or pin-box.



THE CONJURER'S CARD-CASE.

After having performed several tricks with a pack of cards, a common card-box is shown, proved empty by being held upside down and the wand being freely rattled about in it. The pack of cards are thrust in, the cover put on, but instantly removed, when, on reversing the box, not the cards, but a handful of bran flows out.

Explanation.—The card-case is free of mechanism, and can be examined by the audience, as well as its cover. But it is not the pack of cards which is taken up to be put in the case, but a box accurately fitting the interior of the latter; which box has one side formed of a court card, and the other of the figured back of a card. This box has one end open, thus serving as a container for some bran.

Action.—The dummy pack is half filled with bran, and is ready to take the place of the real pack. It is inserted in the card-case bottom down, and kept in it, when it is opened anew, by pressure on the card-case, or the mere tightness of its fit. The bran naturally runs out when the case is held upside down: *voilà tout!*



**TO MAKE A CARD WHICH A PERSON HAS DRAWN
DANCE ON A WALL**

One of the company is desired to draw a card, which you shuffle again with the others; and it not being found in the pack, you then order it to appear on the wall. The very card which was drawn instantly obeys; then advancing by degrees, and according to orders, it ascends in a straight line from right to left, and disappears on the top of the wall.

Soon after it appears again, and continues to dance upon a horizontal line. (*See Explanation to "The Card Locked Up in a Box,"* which follows.)

TO CHANGE A CARD LOCKED UP IN A BOX.

You ask a person to give you any card he pleases out of the pack, and you let him put it into a box which is locked up before the company. You then take a few cards, and desire another to draw one and remember it, which he does, and the cards are laid aside. You now unlock the box, and the card which the second person drew is in the box, instead of the one which is locked up.

Explanation.—A box must be made on purpose with a double bottom; on the false one is laid the card which the first person chose.

In locking the box by a secret spring, the false bottom is raised with the card, and firmly united to that part where the hinges are. On the real bottom lies another card, which had been previously and secretly deposited there.

In making a person draw a card a duplicate of this is forced upon him; for if he attempts to draw another, under some pretence you shuffle the cards again, till at

last he takes the very card you intend for him. This card you know by feeling it, it being purposely longer than any of the rest, and is in fact a conjuror's secret card. You must never let one of those particular or brief cards remain in a pack when you give it to be examined.

N.B. This trick may be varied. A Scotch or pound note can be changed into an English or five-pound note, &c., but it ought to be something which will lie in a narrow compass, in order that the false bottom may fall closely into its place.

GAMBLERS' PRETENDED WITCHCRAFT EXPOSED ; Which Way to Tell the Card you Think of.

The gambler is always ready to make a penny by any means he can. If he cannot get a man to sit down to play a game of cards with him, he will by degrees introduce some trick at cards, which he will be likely to bet on.

A gambler will take a pack of cards, and say to a bystander, "I can tell the card you think of," which would be doubted, yet it can be effected. And for the purpose of preventing such imposition, I will lay down the principles of the trick so plainly, that the detection of the cheat will require no great sagacity or penetration. He will throw upon the table, or give to the dupes, some five or ten cards to examine, of which they are requested to make a selection. They each select one, and then return him the cards, which he takes, and makes a false shuffle, keeping the ones he gave out for selection either at the top or bottom. He then takes them by parcels from the other part of the pack, with the exception of *one* which he takes from the parcel given for selection, and throws down, say from ten to fifteen of the main

body, with one of the selected exposed. Turning them face upwards, he will remark, "When any of you who had the privilege of selecting, discovers the card exposed, please say, 'I see it;'" and when the person selecting discovers the card he selected, he says, "I see it." The gambler can then tell that the card he throws down, which has been taken from the main body, is the one he in his mind had previously selected; and thus he continues until all are thrown upon the table. After he has been told by each that there is one among the ones exposed, he will proffer a bet that he can tell which. He can; and if all should happen to think of the same, it makes it the more easy for him to recollect, and in that case only one parcel will be exposed. He then puts them into the pack and shuffles them thoroughly, and will tell you to draw any card you please, and lay it on the top, and he will make it the one you thought of. You do so; and supposing you to have first thought of a ten of clubs, and in drawing you draw the ace of diamonds, he tells you to lay it upon the top. You do it. He then remarks that the card upon the top is the card. You feel confident he is mistaken, as you thought of the ten of clubs; the one on top is the ace of diamonds; but don't bet, for in the twinkling of an eye he puts the ten upon the top, and removes the ace to the centre of the pack. The change being effected, he may even pass the cards to you, that you may be more certain that you cannot be deceived. You make your bet, and when it is too late discover that you have been imposed upon. He pockets your cash, and laughs at your ignorance and simplicity. From this any one can understand this trick, as well as learn to what an extent villains will tax their ingenuity to plan out and practise such despicable cheats for the purpose of swindling those who do not understand them.

THE FORCED CARD TRICK EXPOSED.

There are other methods of putting up cards for the purpose of knowing the order in which they will run off. The preceding, however, are sufficient to satisfy any one that this can be done, and that none need bet against it with the expectation of winning.

There are other tricks of drawing cards. A man will hold you a pack of cards, and tell you to draw one; and after you have drawn one, put it back in the pack, and shuffle the pack. He then offers to bet that he can tell what it is. You might, after the pack had been so well shuffled, suppose it quite impossible. But do not bet on it, for he can tell. If they should be advantage cards, he can tell by the back when you draw it out; if they are not, he will sometimes force a card. This is done by projecting a little some three or four cards that he knows, and has previously looked at. These cards, by projecting a little, are most handy to you, and you will be likely to take one of them: if so, he knows what you have got as soon as you draw it.

BENDING, SHIFTING, TURNING, STEALING, &c.

There is another trick of bending the whole pack back a little; you then draw one, and while you are looking at it, the gambler bends the pack in a contrary direction, and when your card is put in the pack, from being bent in a contrary direction, it will press against the others, and wherever it may be, will cause a slight opening, and by that he can always tell where it is.

This trick is sometimes practised as follows: A man will take a pack of cards, and show you the top card, and say, "You see this card on top;" and after you have

looked at it, he puts it back ; perhaps it may be ten of hearts. He will say, "I will bet you it is the ace of spades ;" but you have seen it, and you know it is not. He then has the ace in the middle, and slips the bottom part of the pack on the top so quickly that you cannot see him do it. He will then say, "Now, sir, I will bet you that this top card is the ace of spades ;" and you might be willing to bet, not knowing that he has changed them ; but, in betting, you would certainly lose by his artifice.

At other times he will face one half of the pack against the other, and after showing the top card, he will turn the pack over, and the one on that side will be what he said the one on the other side was ; and you will be deceived by not noticing his turning the pack over.

THE THREE JACKS.

There is a trick often played called "the three jacks." A man will seemingly have three jacks on the top of the pack. He will put the three top cards, which you suppose to be jacks or aces, whichever he shows you, in various parts of the pack. He will then take one and put it near the bottom, and another near the middle, and another higher up, and then let you cut the cards. He then offers to bet that they are all three together in some part of the pack, which they cannot fail of being, as he has three other cards on top of the jacks when he shows you their faces, which he disperses in their stead, not moving the jacks, and the cut only places them in the middle of the pack.

THE SELF-RESTORING CARD.

The company having, by one of their number, chosen a card from the pack, it is torn to pieces. These fragments are wrapped in paper or a handkerchief, while a hat is borrowed. Though the performer keeps at a distance from the hat placed on the table, he throws the parcel towards the hat, when from the latter is produced the card, perfect except for a corner being missing. On opening the paper, that piece is found in it, whereupon the performer, holding the torn card between thumb and finger of one hand, throws the fragment at it, and the card immediately becomes whole.



Fig. 33.

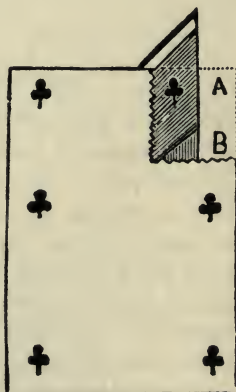


Fig. 34.

Explanation.—The card torn up is a duplicate of a prepared card. The corner-piece shown is already in the paper or handkerchief, into which the fragments of the torn card are not placed at all, but juggled away.

The prepared card is constructed on a simple principle, thus :

A portion of the card at the back, B, works on the hinges C C C, so as to fold over on the rest of the back of the card, and is prevented going forward by the front of the card, E. On the piece B (Fig. 36), is fixed the piece A, on the front of which is pasted the missing portion of the card.

BACK VIEW.

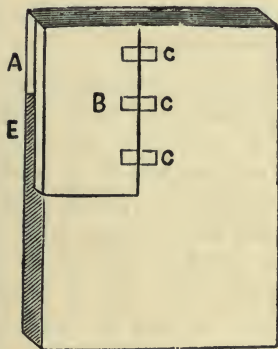


Fig. 35.

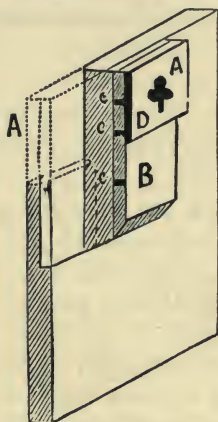
BACK VIEW
(with the corner vanished).

Fig. 36.

Action.—With a touch of the thumb, the movable flap is folded back upon the rest of the card. The material can be pasteboard, and there is no necessity of the card being very thick, but metal may be used for more accuracy of fit.

PLAYING IN PARTNERSHIP.

It frequently happens in this game, as well as at whist, that three secret partners will be playing against one whom they have seduced into a game; and they have an advantage here that they do not have in whist, as they can play four-handed, and still be in no visible partnership; but they always play into one another's hands, as it matters not which of them wins, they being partners. This is frequently done also by two against one, playing three-handed.

PLAYING BY SIGNS.

This is done perhaps in this game more than at whist, as it is done when cheats are playing in open partnership at a four-handed game, or when they are playing in secret partnership at a three, four, five, or six-handed game. By signs they tell one another what they have in their hands, when to beg, and when to stand, and what to play; all this can be done, and they will defy an old gamester to detect them, as their signs have no appearance of being designed as such; so that the nicest observer would always fail to get any ocular evidence that they were playing by signs.

BIG HANDS.

This is a hand that is stocked, and is put up very often in playing for fun, in order to get bets on it, as it is much more easy to stock in playing for fun than otherwise, as there seems to be no occasion for watching, and the dealer will so stock them as to give his opponent a hand that he would be easily enticed to bet on; for, to

all appearance, it would be as easy for him to make four as two, and he very readily bets on it. Now, we will suppose him to be three. He gets, at the next deal, an ace, king, queen, jack, ten, and deuce of diamonds, and clubs are turned up trumps. He gives himself six low cards without any game. You then beg: he runs them, and gives you the remaining three kings, and himself the remaining three aces, turning a club for trumps. If you are silent, he will say, "My hand is poor, and I will give you all you can make," and, you having a very superior hand, viz., ace, king, queen, jack, ten, and deuce of trumps, with the kings of spades, clubs, and hearts, will claim four times, and so would any player, from the poorest to the best; your hand bids more than fair to make it. But he will readily offer to bet you cannot; the greater the amount, the better for him, as he is sure of winning. He takes your bet, and plays; and after you have played out your trumps, his three aces catch your three kings, which altogether count him twenty-one, while your ace, king, queen, jack, and ten of trumps count you but twenty, and he wins the game. This hand is very deceptive, and unusually enticing; it will deceive the very best players, and I have seen men bet on it the second and third time, thinking they had surely made a misplay; but it is impossible for them to win unless the dealer chooses to let them, in order to entice them still further on, or to get a larger bet on the same game again; for which purpose they sometimes choose to play in a manner that is called "throwing the game away," in order to make you think that when you lost you might have won if you had played rightly. I have seen bets run as high as five to one in favour of this hand; so certain was the holder of winning, that he readily risked this odds; but he invariably lost.

Variation.—You may be playing for amusement only;

the dealer will lay out two hands, with their faces upward; one will be a very good hand, and the other a very poor one. He will then tell you that you can make any suit trumps which you please, and take choice of hands. Of course you will make the trump to suit the best hand. He will then offer to bet you a sum that you cannot take the good hand and make four, or the poor hand and make one. The good hand promises so fairly to make four, that you would be very likely to bet and take the good hand. But you would lose; for you could only make high, low, jack, and ten for game, while he would make eleven and beat you. This is a very enticing trick, and I would advise all persons not to bet on it, if it should ever be proposed to them. The player says, you may have choice; but he, by all means, prefers that you would take the large hand, and try to make four; for the little hand can always make one if played right; but very few men who play cards will make one from it. None but veterans, or such as have, through particular favour, been initiated into the secret by them, will do it: for there are so many ways to play it wrong that it is seldom played right. There are, also, other games where the cards are turned up similarly to the one just described; but never suffer yourself to be enticed into betting on any of them; for the man that will propose them will always beat you.

THREE UP.

The points in the game of all-fours are sometimes reduced to three, to enable the gambler to strip his victim much sooner than he might otherwise be able to do; it being a well known fact that the habitual gamester generally prefers short games. When this game is

so rendered, it is called "three up;" at which each player receives but three cards, and a trump is turned. It is just like five up in every other respect; and the person who makes three points first is out, and wins the game. There is great room in this game for the gambler to exercise his tricks. Every cheat that is practised in all-fours can be practised in this game.

Variation.—A and B may be playing; A steals out seven cards, as follows: he takes the ace, king, queen, jack, five, and six (as we will suppose) of hearts, and a five of spades. He then puts down the six of hearts, back up; this is meant for the trump. On this he places next the five of hearts, then the ace, then the five of spades, then the queen, then king, then jack. A has these cards stocked in this manner, and when it is B's deal, A will take the pack to cut and has a right to shuffle them; in doing which, he palms those seven cards on the top; then cuts and slips the cut on top again, and hands the card to B to deal. A gets the king and two fives, while B gets the ace, jack, and queen. A will then beg, and at the same time say to B, "If you will give me one, I will make three;" B thinks this almost impossible, as he supposes that his ace, queen, and jack are good for high, jack, and game. He will be apt to bet that he will make it. And if he should bet, as he would be likely to do, A will play his five of spades, B will play his jack, and leads his ace. A plays his five of hearts; B leads his queen, and A takes it with his king, and makes low, gift, and game. B having given him one, and his five being low, he has king and queen, which makes him five for game. B has ace and jack, which makes him five also: but as he dealt (the dealer losing all tie games), A makes three times, and wins.

Another.—A and B are at play; A is one, and B is

two points. A deals, and gives B three aces; that is, the ace of spades, hearts, and diamonds, and clubs will be trumps. B begs, well knowing that some one of the suits of which he has the ace will be the next trump. He will then feel sure of winning, as his ace will be high. He will be very apt to say, "It matters not what is trumps; I shall go out." A will say, "If you will bet me three to one, I will bet you do not go out." And as B considers that A is ignorant of what he holds, he will feel safe in betting him; which if he does, A will run them, and turn up for trump the jack of clubs, which makes him, also, two. Now, as clubs was first trumps, he must still run further, and A turns another jack, which wins him the game, as high is of no avail when the dealer has but one to make, and turns jack. This trick is done by stocking and palming, and is well understood by all the gamblers.

How to Hold Four Kings in your Hand, and by Words Alone seem to Change Them into Four Aces, and afterwards to Make Them all Blank Cards.

Take four kings in your hand, and apparently show them, then after some words as charms, throw them down upon the table, taking one of the kings away, and adding another card; then taking them up again, and blowing upon them, you show them transformed into blank cards, white on both sides; then throwing them down with their faces downward, take them up again, and blowing upon them, you show four aces. To do this feat, you must have cards made on purpose, half cards we may call them; that is, one half kings and the other half aces, that by laying the aces, one over the other, nothing but kings will be seen, then turning the kings downward

the four aces will be seen; but you must have two whole cards, one a king, to cover the aces, or else it will be perceived; and the other an ace, to lay over the kings when you mean to show the aces; when you would make them all blank, lay the cards a little lower, and hide the aces, and they will appear all white.

TO CHANGE A CARD BY WORDS.

You must have two cards of the same sort in the pack, say the king of spades. Place one next the bottom card (say seven of hearts), and the other at top. Shuffle the cards without displacing those three, and show a person that the bottom card is the seven of hearts. This card you dexterously slip aside with your finger, which you have previously wetted, and taking the king of spades from the bottom, which the person supposes to be the seven of hearts, lay it on the table, telling him to cover it with his hand.

Shuffle the cards again, without displacing the first and last card, and shifting the other king of spades from the top to the bottom, show it to another person. You then draw that privately away, and taking the bottom card, which will then be the seven of hearts, you then lay that on the table and tell the second person (who believes it to be the king of spades) to cover it with his hand.

You then command the cards to change places; and when the two parties take off their hands and turn up their cards, they will see, to their great astonishment, that your commands are obeyed.

WORKING THE TELEGRAPH.

Behind the victim of the card-players a confederate of the rogue places himself, and, on viewing his cards, conveys intelligence of their value to his accomplice.

WHIST.

Whist is probably one of the most scientific of all the games that are played with cards, requiring deeper study and longer practice than any other to be thoroughly understood and successfully played. Hoyle has given a very particular account of this game; and when it is played as he directs, it is comparatively fair. But this game, as played by the habitual votaries of gaming, is a continual series of intrigue and fraud.

The principal cheats in the game of whist are stocking, palming, marking, signs, mis-dealing, and changing packs. These I have explained, or will explain; and first—

STOCKING.

This fraud in playing cards is, to the gambler, an important one, as it generally enables him to get such cards as he wishes, or to give them to his partner in a manner that seems to be accidental good luck. Stocking is placing cards in such a position in the pack that the cheater is able to know whereabouts in the pack they are, and to know to whom they are dealt. But the grand object is for the person who stocks them to get them himself; which if he or his partner should do, he wins; if not, he cautiously acts on the defensive. Gamblers, when they have stocked cards, can almost always shuffle* in so deceptive a manner as not to alter

* See *The False Shuffle* in "The Secret Out."

the positions of the particular cards they have stocked ; and by that means they will, although the pack appears to be well shuffled, go where the gambler intends they should go.

One way of stocking, in games that are played with a trump, is this : if a particular suit is wanted for trump, this will be obtained by placing one of the desired suit at the bottom of the pack ; and keeping it there throughout the shuffle. Then, when the pack is cut, the gambler will put it under at the bottom of the pack ; but the dealer, instead of putting it there, takes it in his left hand, and draws the other part of the pack to him with his right, as if he would put it on top ; but as his two hands come together, he so dexterously slips the cards in his right to the bottom of those in the left, that the keenest eye cannot detect the cheat. The pack remains the same as before cut, with the one at the bottom which he placed there ; and as all the pack is dealt out, and the bottom one turned up for trumps, he has the one he wants. The base cheat of stocking is apt to be practised to a greater or less extent every deal, and gives advantages that could not be obtained without its use. It is done in almost all games, and in a great variety of ways, some of which I shall explain as I proceed. None need think of detecting it but the most expert gamblers ; and even they have it often practised upon them, and are beaten by it.

In whist they stock principally to get the honours, that is, ace, king, queen, and jack, of the suit that is trump. These, when they are all on one side, count them four, and this is a great stride toward the game. It is also of some consequence to a gambler to get a "sequence" by stocking the cards ; but they prefer making sure of the honours, and running their risk for

an equal share of the good cards. A still more dangerous method of stocking is at times carried on by the gambler, and by means of which he is certain of winning any amount which he can succeed in enticing a man to bet with him ; and I know of no baser piece of villainy in the whole routine of card-playing than this vile artifice, which gives the gambler every advantage, by which he is enabled to rob his victim with as much ease as he will deal his cards, and without the least remorse of conscience attending this and the like intrigues.

When a gambler intends practising this cheat, that is, the mode of stocking of which I have just spoken, he retires, and obtains a pack like those in general use, which is always easy to be done. He will then retire and stock them just as he wishes, which he can do so as to make any number of points, from one up to ten, and is enabled to go completely through a game the first hand, if he choose to do so. Should he wish to go out the first hand, he will stock them as follows : Making any suit trumps that he chooses—we will suppose that he makes clubs trumps—he will take the ace, king, queen, jack, ten, nine, and eight of clubs ; then, of spades, the ace, king, queen, and jack ; of diamonds, the ace and king. He then takes the balance of the pack, and lays out three cards face up, and puts one of those he has selected out upon these three, and goes through the whole pack in this way, having one of the clubs for the last and top card ; this will be the trump ; and as the cards he picked out were placed every fourth card throughout, the dealer or the one who stocked them gets them. He will then trump the first, if necessary, in order to win it, and will keep the lead throughout, winning every trick, which counts him six ; and possessing the four honours, counts him four, which makes him ten, and the game is won. And the way this pack, already

stocked, is introduced on the table, is as follows, it is called

COMING THE CHANGE.

The dealer will have the stocked pack lying privately in his lap, and when the cards they will be using have been cut, and are ready to be dealt, the dealer slips his left hand up to the under edge of the table, as if to receive the pack which is on the table, and which, at the same time, he is drawing to him with his right hand, as if to place it in his left, in which he would hold it to deal from; but in reality he carries his right hand down into his lap, and lodges its contents there, and brings up his left hand over the table, and commences dealing from the stocked pack, while some of his secret partners, who are seated about in the same room, will privately take the pack out of his lap, and convey it away, that there may be no means of detecting the fraud by the discovery of two packs. This fraud is put in practice when bets run high, and there is a probability of winning a large wager.

STOCKING TO CHANGE THE PACKS.

This trick is sometimes put in practice; the object of it is to deceive the opponent in his own hand, by giving him a hand from which it would appear quite certain that he could make from four to eight or nine points. This is done in order to entice him into a bet. We will suppose a player to lack five points of the game; the dealer deals him a hand of the highest order, having in it the four honours, and other good trumps, with regular sequences of other suits, and he feels quite sure of winning; and when the dealer proposes to bet him that he cannot make two, or even one trick over six, he will be readily induced to bet on the strength of his

hand ; and this is just what the dealer has been striving for.

Explanation.—The person who intends practising this cheat will retire, and if he makes clubs trumps, he will select out the ace, king, queen, jack, ten, and nine of clubs ; these are the six highest trumps. He will put with these the ace, king, jack, queen, ten, nine, and eight of spades ; this hand is for his opponent ; and from having two regular sequences, he will be very sanguine of beating, thinking it more than likely that his partner has some of the seven remaining low trumps, or that they are scattered between the other three players. By the time his are all played out, he will have drawn from the other players their trumps, and can win, as he supposes, the other tricks by leading from his spade sequence ; but he will be deceived, for the dealer gives himself the seven low trumps—a regular sequence of diamonds from ace to nine ; that is, the ace, king, queen, jack, ten, and nine. This hand is for himself, and the way in which he puts the pack together so as to get these cards, and to give his opponent the other cards is this : he will take the first selected hand, and lay down one card from it, face up ; then put upon it two cards from the part of the pack left after the selection, then one card from the hand which he wants for himself, then one from his opponent's hand, and two from the other portion, &c., until the whole are put together. Then, when they are wanted they are introduced upon the table as in the other case. We will suppose that A and C are partners, and B and D are their opponents : A will introduce this pack upon the table when B and D are yet wanting five points ; his left-hand opponent, B, gets the hand containing the high trumps. A's partner, C, knows that this pack has been introduced, and in order to entice B and D to a

bet, C will say, "We have nothing, and might as well give B and D all they can make." Then B, holding so good a hand, will claim the game, as he has the four honours, which count him four, and, besides, a regular sequence of spades, which is good for every trick after the trumps are all played, and he feels sure that he can make three or four old tricks, and one is enough to win the game for him. He will persist in being allowed the game; but A opposes, and offers to bet on it, and B feels so very confident, that he will accept of a bet on such a hand; and if A should fail getting a bet on better terms, he will bet B that he will not make one odd trick. This bet he will be certain to take, and they then play. B trumps, and wins the first and the five succeeding tricks; A still has one small trump, and wins the seventh trick, and leads from his sequence of diamonds, and makes every trick after that, and of course gets the *odd* trick, and B loses. These methods of stocking cards for the purpose of winning the game are but a few among the many methods by which the gambler pursues his way.

PLAYING THREE AGAINST ONE.

Wherever gambling is carried on, there is always more or less partnership existing. When gamblers are in cities, they frequent those places of resort that are most likely to furnish them with the greatest number of victims, and where they can best carry on their nefarious occupation to the ruin of all whom they may be able to seduce into play; and where there is a great deal of travel, there are, on nearly every train, some of this class of men. By travelling, they fall in with many business men who have money, and many who, for sport,

or with the hope of gain, will play cards almost at any time. And if they have not before fallen in company with gamblers, they are very apt to consent to play readily. As this class of men are generally as cautious, polite, and genteel in their manners as possible, in order that they may the better conceal their true character, and as there are, mostly, several of them in partnership, they will not be long without getting up a game. Three of them will get to a card-table, and as they will want four, they will politely inquire of a gentleman if he plays whist, this being a game very generally understood, and considered genteel; and hence they will have very little if any hesitation in asking a gentleman to play it. And if he consents to play, but protests against betting, they will content themselves with a proposition to play for the cost of the cards, or for glasses for the company. This will hardly be objected to; but the next sitting, having become somewhat acquainted, they will insist on playing for a sufficient sum to make the game interesting; and there are few men who, under such circumstances, play cards, that will refuse to play for a shilling each, in order to render the game of some interest. Now, when a man sits down to a table where there are three secret partners, it makes no difference whom he draws for his partner: he will, of course, get one of the three. He is then at play with three well-skilled adversaries, and the man who is perforce his partner will play as much as he can that he may lose, that he may in the end win; for whatever the other two win will be divided after the game is closed.

A man can never win against such odds; and after losing a few games, he will become somewhat excited, and think himself unlucky, as all men like to win, whether it be little or much they are playing for. A man will, in cases like the above, be apt to propose

doubling the bet, and if he does not, his partner will do it, holding out at the same time the probability of winning some of the games; and every game which they may win that has been doubled, will make up for two that were lost before. This is generally enough to do away with his predeterminations, and he puts up again and again, but still continues to lose as long as he has anything to lose and will play: and finally gets up from the table bitterly regretting the unlucky moment he suffered himself to be beguiled into the commission of an act he had ever considered as sinful and ruinous in the extreme.

I have known young men to be invited to play whist, and at first they would play for sixpence a game. They would lose, and become excited, and then double, in the hopes of winning, thinking it unreasonable that they should not win a single game: but still they lost, for they could have no chance of winning a game against the professional skill of the old gambler, and played on till penniless.

DECEPTIONS USED IN THE GAME OF ALL-FOURS.

The reader will see what changes the sporting gentry have made in this game, in order to render it more suitable for their purpose. It is usually played by two persons, but can be played by four; but more than six cannot play, for, if there should be a beg, the cards would not go round. When played by four persons they may, if they choose, play in partnership, as at whist. Any other number than four cannot play in partnership; consequently, each is for himself, and scores his own game. The points to be made before the game is concluded are ten.

The game of all-fours has, perhaps, as many advan-

tages for gamblers as any other game that is played by them, and, consequently, as many inducements for *them* to master it. There is no game so generally known by all classes of persons, and very often it is learned in the parlour at a very early age. Children of both sexes under twelve years of age often play well at this game. Hence the professional gentleman will find victims at this game when he might in vain seek for one to engage in any other. The nobleman, gentleman of ease, the merchant, the clerk, and some of almost all classes of persons will engage in this game. Perhaps, at first, merely to while away a few leisure hours that pass heavily by, and in order to divert the mind, they will make the game interesting by making small bets, which generally have the effect of engaging the man's whole mind in what he is then about; and thus is the desire for amusement and diversion, coupled with a probability of gain, so fed and strengthened, that it ere long grows into a passion for the card-table, as strong and as difficult of restraint as any passion that actuates the human bosom.

STEALING OUT.

In all-fours the best cards to steal out are the ace, the deuce, and the jack. After having possessed themselves of these, they will make a trump of the suit they have stolen, by slipping the cut. Suppose, for instance, the dealer has three points to make: he steals out the ace, deuce, and jack of one suit; he then makes that suit trumps, his adversary leads, generally, some low card, in order to turn the lead to the dealer. The dealer then plays his jack, and saves it, and then shows ace and deuce, and is declared out. In such cases he may or may not keep all the cards he has in his hand, as the

cards are scarcely ever counted when one shows out; or if he is afraid of it, he may put three low cards in his lap, or he will palm three; by either of which tricks he hides his theft. The cards, in this game, are marked that they may be known by their backs.

STOCKING.

Stocking is practised more, perhaps, in all-fours than in whist, as it is more easily done. As the cards are not shuffled as much, it renders stocking far more easy and certain. The object of stocking, in this game, is to get high, low, jack, and ten of a suit, and make that suit trumps. By slipping, they are often stocked as follows: while gathering the tricks that have been won, the player who intends to stock will put three low cards on the top of three high cards; and, his deal coming next, he keeps them at the top by deceptive shuffling, and places one of the same suit as the high cards were of at the bottom, and then he slips the cut. And, if he is playing two handed, he gets the second and third, or, if four handed, his partner gets them, which is all the same. And then, while dealing off the last card, he very adroitly turns up the bottom card for trumps, and is not suspected, as it is very common for the dealer at the last to deal off four cards, and let the bottom one of that four fall face up for trumps. But instead of all four coming from the top of the pack, the fourth one is from the bottom. This trick, from its being so simple and easy to perform, is often practised.

WATCHING THE TENS.

As the tens and aces are of much importance in making the game, they are particularly marked and

watched by the gambler, so that he can make quite accurate calculations as to the amount of game that is out, and will know how to play accordingly. This, of course, is not thought of by any except the professional gentry.

TURNING JACKS EVERY DEAL

This is a gross deception, accomplished by stocking and dealing from the cut. Tricksters do it as follows: they will take a jack of a suit, and place three good cards of that suit upon it, and then three low cards of some other suit, on these again; they will then keep these cards on the top, and not alter them while shuffling. They are then cut by the other party, and the cut lies on the table until they have dealt and turned a trump; which they carelessly throw on the cut, and then lay down the pack and look at their hands. Now, if you beg, he picks up the cut that has the trump on it, and deals from it, and gives his opponent the three low cards, and himself the three high cards, and turns the jack. The opponent not bearing in mind that the trump was placed on the cut, the deception passes undetected.

CHANGING PACKS

Is practised in this game to a great extent, and of course any kind of a hand the person wishes is got by this trick. Frequently a player will supply himself with a pack of cards such as he knows are in general use where he is, and then retire and mark all the principal ones, and then, when playing, "ring" this pack in for the purpose of having cards that are marked all through by himself.

THE CONJURER'S CARD CHANGING FROM A FIVE
TO A FOUR.

A playing-card is shown to the audience which they plainly see is a five of some suit. Yet in the twinkling of an eye—indeed, merely upon the closing and opening of the hand, the card is transformed and becomes a *four* of the same suit.

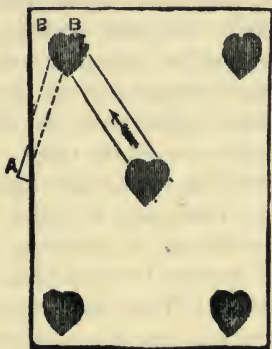


Fig. 27.

Explanation.—The card shown is really a four spot, but it is thus prepared: the central pip is movable, running freely on two parallel threads or horsehairs, B B, from the centre to the left hand upper pip. The card is thicker than usual, giving room in its thickness for the free play of a lever, A, fixed on a pivot, one end extending a little beyond the edge of the card, and the other being fastened to the horsehairs—which are endless bands, in fact.

Action.—When the lever outward end is moved upwards, it carries the horsehairs with it, and drags the pip attached to them from the centre to the left-hand upper pip. This is done by the thumb—and is

quite imperceptible. You have a real four of the same suit to give to the audience for their scrutiny.

THE OBEDIENT CARDS AND THE WREATH OF FLOWERS.

Several cards are drawn from the pack by the audience, and rings or other articles are borrowed. They are all crammed into the conjurer's pistol or gun. He looks about for a target, but can only see a wreath of flowers suspended either from the ceiling or against the wall, or from a rest on the table. He fires at it, and on the instant, the borrowed rings are seen dangling within the wreath and as many cards as were borrowed appear among its flowers. Unfortunately, as the company hasten to point out, these were not the cards borrowed. "What, sir!" says the performer, "you did not select that five of diamonds?" "No, sir; it was the four I chose!" "Indeed! and," joins in another, with the usual good nature of a man when he thinks he has caught his neighbour tripping—"and I chose a nine of clubs, not an eight!" and so on. At the end of the complaints, you say "Oh, very well! we'll soon cure that!" and taking up a peashooter and a tray containing clubs, diamonds, hearts, and spades, cut out of cardboard, you load your peashooter with them, and fire. Thereupon the five becomes a four and the nine an eight, or even more accommodating still are the cards.

The reader of the explanation of the foregoing trick will understand that upon it is founded the changing of the pips. It is, in fact, only a multiplication of the same. As for the rings, &c., being found in the wreath,

and for the way all the action is imparted to the mechanism, please consult "The Secret Out," where ample information is afforded.

THE MYSTERIOUS BOUQUET.

A pack of cards, into which have been shuffled again several cards drawn by the audience and to be remembered, is thrown into the heart of a bouquet. The chosen cards, while the performer merely holds the bouquet, appear, one by one, at the top of his wand.

Explanation.—The audience take cards "forced" on them, and the duplicates of them are already in place in the bouquet. They are driven upwards and out by several means, among which is the running a thread over and under each card in turn, and pulled by its being wound upon a wheel, moved by a spring. The conjurer has but to release the wheel. Other ways have been described in earlier volumes of this Series.



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PART III.

DECEPTIONS WITH DICE, THIMBLERIG, &c.

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LOADED DICE.

When it is intended to throw low, two sides of the dice having the numbers four and five, or five and six, are loaded in the following manner: the corner spot of the four-side, adjoining the five-side, is carefully and neatly drilled to the depth of an eighth of an inch. A similar operation is performed with the corner spot of the five, adjoining the four-side: so that the two holes thus made, meet. One of the holes is then covered with a very strong cement of copal, or other varnish, and quicksilver (sometimes gold is used) is poured into the orifice of the other, which is still open, until it is quite filled, when it is stopped up with the cement, and the spots blackened as before. The person playing with a die of this description would generally call seven as the main, and would mostly get six, five, or four as his chance. He would then take the respective odds; which, as the bias of the dice tends to throw these numbers, are considerably in his favour, and against throwing the main called.

COGGING, NOW CALLED SECURING,

Is a species of fraud very often had recourse to: it consists in securing or retaining one of the dice, either with the first and second finger against the inside of the box—the second finger covering the top of the dice—or taking hold of one of them on the little finger, and land-

ing it on the table, as if it had come from the box. The first named method is not easy to accomplish, and requires long and continued practice to be an adept at it; still, when well done, it is extremely difficult of detection; for the dice, being inside the box, and covered with the finger, cannot be seen; and if a word of suspicion be uttered by the players, it is dropped at once into the box, and then fairly thrown out. A quick ear, however, among the players, and one accustomed to the "rattling" of dice, will be apt to discover by the sound the absence of the die from the box. In this case the throw is barred, after the main is called, which is a hint for the caster to keep the points of his fingers from off the top of the box, or to make himself scarce before he is kicked out of the room.

The securer of a die generally calls five for a main, because, if he have secured a four, there is only the number six on the loose die that can come up against him; and the odds are only four to three against him. If the *one* of the loose die comes up, that is a nick, and he wins it; if the *three* is thrown, he has seven to five, and that is three to four in his favour; and if *five* should come up, it is an even go. But should a large stake be at issue, the sharper secures a five every time, so that if the main and chance be six to five, seven to five, eight to five, nine to five, or ten to five, he makes sure of winning, without a chance of losing, as he cannot throw out, so long as the five is secured.

In calling nine, also a favourite main of the sharper, four is the number secured; so that the main and chance are either five to nine, six to nine, seven to nine, or eight to nine. It is here obvious, that by securing the *one* or the *two*, it will be impossible to throw out, and without securing a second time the odds are much in favour of the caster; and he sometimes calls *seven* as the main, in

which case he secures a five, when he has two chances of nicking it, out of the six chances of the loose die; but if *one* or *three* are thrown, with the five secured, the odds are six to five against him; and if the four, it is then three to two against him. Should the main and chance be six to seven, he will take the odds, and by securing either the one, two, three, four, or five, every time he throws he will render the chances even, for the loose die is as likely to make the throw a six as a seven. In calling *seven* as the main, and securing the five, the odds, instead of being seven to two against the *nick*, are reduced to four to three. As may be supposed, it will not do to try these experiments too often on the same night, as suspicion would be awakened. Still "securing" dice is reckoned the sheet-anchor of scoundrels who prey on the gambling public.

DESPATCHER.

The top and bottom surface of fair dice should make, added together, *seven*; top, 1; bottom, 6; top, 2; bottom, 5; top, 3; bottom 4. The dots marking the numbers should not project from the surface; and, when twisted between the thumb and finger, after the manner of a teetotum, they should spin, which they will not do if they are either loaded or unequal. Now, the dice called "Despatchers" have their number, or pips, varying according to the favourite main, or chance required. For example, those for calling "nine is the main," should have the middle pip on the sides marked three and five taken out, by which arrangement it is evident that the main dice could not by any possibility be thrown, but the player must have seven, eight, four, five, six, or ten, for his chance. He can only lose by throwing crabs, viz. aces, or deuce, ace and twelve.

Again: "Despatchers" for calling "eight is the main," are thus described:

6 pips at the top, 6 at the bottom.

4 " 4 "

3 " 3 "

On the other side:

6 pips at the top, 6 at the bottom.

3 " 3 "

1 " 1 "

With two dice thus marked, it is possible to nick eight, by throwing twelve, by which the caster would lose; but this can be obviated by taking the odds against the nick; and if it is not nicked, the amount risked on the odds can easily be regained by taking or betting the usual odds on the issue of the main and chance, which, by the impossibility of throwing eight, is reduced to a certainty. The principal caution in the manufacture of these dice consists in putting the same number, if it appears twice on the same dice, at opposite sides—that is, if one 6 be at top, the other should be at bottom, and so on. That these nefarious instruments, made to secure any main, are frequently resorted to in private play, there is not the smallest doubt, especially when the "pigeon" is well primed with wine for the occasion. If the simple precaution be taken of examining whether the top and bottom pips on each die, added together, make seven, they are not "Despatchers," but thus far, fair ones.

SCRATCHED DICE.

These cannot be used at public tables, because they are all covered with cloth to prevent noise; but on one which is bare they are very destructive weapons in the

hands of a practised sharper. They are made by drilling a hole in the centre part of the three, five, or ace, which is filled up with a small piece of ebony, or other hard black substance, having a portion of it projecting. Upon a mahogany table, uncovered, it is evident that dice thus made cannot fall perfectly flat, when the ebony inserted comes in contact with the surface of it. Moreover, the thrower of them—the caster—by gently moving the box before he lifts it up, can discover by the sound whether the scratched side is underneath or not. This is a species of robbery not often resorted to, from the ease with which it would be detected, and one which could only be practised on either a very young or very drunken player.

“THE DOCTOR DICE-BOX.”

It is a common practice, when fair dice are introduced, to have recourse to unfair boxes. A fair box has several rims cut on its inside, and a projecting ridge; and the absence of these, which is ascertained by putting a finger into the interior of it, constitutes an unfair one. But the most destructive box is that called the “Doctor.” There is nothing remarkable in the appearance of its outside, but the inside is very differently manufactured. Three-fourths of the internal space at the bottom are filled up, leaving only sufficient room in the centre for the dice, placed flat, to fit into, the portion of the box towards the top gradually becoming enlarged, and the sides made smooth. When the dice are once introduced into this box their position cannot be altered by shaking; they can merely rise up and down, and when thrown out carefully on the table they fall in the same way, with the exposed surface underneath. For example, if two dice are introduced with the five and two uppermost,

when thrown out, the surface upon which the five and two are marked would be upon the table, the reversed side, which is also five and two, uppermost. Again, if the caster sees six and two uppermost, he would call *seven*, six and one being on the opposite side. It does not signify what main he calls when using this box, because whatever he throws one time he can throw again; and the only thing he has to guard against is throwing *crabs*. Neither is there any great difficulty in taking up the dice, to drop them into the box with the proper number uppermost; but in landing them on the table there is a great difficulty, if thrown boldly, for, as is the usual method, they naturally turn over, and the intended effect would be lost; but by what is called "boxing the dice—" that is, merely turning the box, mouth downwards, on the table, and raising it up after the dice are landed—it is secured, and with a certain description of players, with little chance of detection, if not too often had recourse to. Indeed, by way of lulling suspicion, the following finesse is practised: Supposing a six and a four appear to be uppermost in the "Doctor," the sharper, by way of variety, calls *seven*. He, of course, throws *four*, and has the odds two to one against him. These he takes to a certain sum, when, after having thrown several times any numbers except seven and four (still taking the odds as he proceeds), he at length places six and four uppermost, when out comes three, and on making four, he wins his main.

UNEQUAL DICE

Are used at French and English hazard; and from the difficulty in detecting them, if not made "to work too strong," as the phrase is, are said to be introduced, with-

out much hesitation, at many "hells," when a certain description of persons are present. They are not, however, so destructive in their operations as the "Despatchers;" although, in the long-run, they would create a great balance on their side. They are made somewhat in the pyramidal form; and if it be intended to win upon low numbers, the sixes are put at the base of each die—that is, on the largest squares; because these being the heaviest, and having increased surface, are most likely to be the undermost. When high numbers are the game, of course, *vice versâ*, because Number 1 is the reverse of Number 6.

TABLE WITH THE HOLLOW LEG, &c.

Formerly I knew men, apparently engaged in business, whose shops were, in the upper apartments, extensive gambling establishments. There seems a revival of this evil pastime at present. These men will invite persons to call at their place of business, saying that they have there a very nice room very retired, and secure from all intrusion, where their friends can come and enjoy themselves in quiet, and plenty of wine with which to regale themselves, but of those who go to such places, none ever come out winners. In Doncaster a wine merchant had to his shop such a room attached. He had a great number to play with him, and all of them continually lost. Men who were professed gamblers here found their tricks and artifices set at naught, and themselves losing at every trial. They became dissatisfied, and suspected some extraordinary trick being used. They combined, for the purpose of ascertaining, and soon learned, from some person in his employment, the whole secret. His card table was constructed with a hollow leg, and in

that leg, where the knee would rest against it, was fixed a small peg, which would strike against his knee on a small wire being pulled. This wire was attached to the peg, and passed out at the bottom of the leg, and under the floor to the side of the room, thence up stairs directly over the table. And from the centre of a fine moulding in plaster hung a rich lamp; the moulding was hollow, and so constructed that a man, who was a secret partner, could be overhead, and see into the hands below, and give his partner signs from above, previously agreed upon, by pulling the wire. This advantage was sufficient to ruin any man who played with him, and enabled him to make money faster than he would be apt to do in the common course of honest business; which, in fact, he cared nothing about, only as a cover for his gambling. This man's establishment was broken up, and he fled to the Continent.

SPRING TABLES.

What are called spring tables enable a man to play an undue number of cards quite secure from detection. There is in the table a crack or split, which seems to be a mere defect in the wood. The whole bottom of the table is boxed up, as if it had a drawer, and the inside is so arranged, that a card let down into this crack will stand upright. The player can at any time push it up by means of a peg, which projects a little from the bottom of the table, using his knee for the purpose. This enables the player to keep cards in reserve, as well as to deal himself more than his number, and hide the poorest.

THE PULLEY.

This apparatus is very similar to the table just described; but this table itself is without any machinery. A man takes his stand overhead, and has a string that passes down the wall and under the floor immediately under the player's foot, where a spring is fastened to the floor in which is a small peg which passes through a hole and comes in contact with the foot. The string is made fast to this spring on the under side, and the peg protrudes and strikes the bottom of his foot whenever the string is pulled.

THE BITERS BIT.

A small company of gamblers had prepared a room and table in this way, by which they were very successful in fleecing the old as well as the young player. They continued to practice their wicked artifice in this room for some time, until they enticed a couple to their room, whom they supposed to be unacquainted with the tricks of gambling, and consequently easily fleeced. One of these was a young man, called Perch. They played, and tricked Perch out of his money. This he could not account for, as he was a clever gambler, except on the supposition that mechanism were used. He accordingly set his wits to work to contrive a plan by which he might be equal with them. And as the table was in a lower room, he was sanguine of success. On a favourable opportunity, he went to the house, and prized off an outside brick or two opposite to the table, and saw the string; this at once determined him what to do. At night he placed *his* partner outside, with instructions to intercept all signs by holding the cord, while he went inside and engaged in play. And soon Mr. Perch got

a very fine betting hand: but the winner, who was depending on the customary sign, not receiving it, supposed that Perch's hand was good for nothing, and he bet freely until the stakes were several hundreds. The man overhead seeing him about to lose their money, pulled with all his might, but the sign did not reach his partner below, who staked all his money that his cards were the best, and lost. By these means, Perch was enabled to win several hundreds, and made good his retreat without his plan being discovered. By this discovery which Perch had made, the house was broken up, and the gambler was frequently tantalized by his acquaintance, who would say to him, that he had been fishing for bullheads, but had caught a Perch instead, that ran off with the bait.

THE GAME OF THIMBLERIG.

Who has not heard of the game of Thimbles? For the edification of those who have been so *fortunate* as never to have seen it, we will briefly describe it.

The sporting *gentleman* produces three common sewing thimbles and a small ball, and placing them on his knee or some smooth surface, commences operations by rolling the little ball by his third finger under each of the thimbles, which are in a row, lifting first one and then another, as the ball approaches it, with his thumb and forefinger, and playing it along from one to the other. When all is ripe he suffers the ball to stop, half disclosing, half concealing its resting-place. Hands are then lifted, and the easy dupes make their bets as to the identical thimble under which the ball may be found. The strength of the game lies in the legerdemain by which the gamester removes the ball and places it under any thimble he may choose, after the bet is made.

A STORY IN ILLUSTRATION.

Thousands have been lost at this game. Some years ago I took a trip upon one of the fine boats on the Highland lochs. As usual there was a large number of passengers on board; among them a professional gambler. He frequently amused the passengers with several games, particularly one called "Calculation," which seemed to be his favourite, and brought him quite a revenue during the trip. The Captain himself was quite a subject of curiosity and study to us, having heard so much of his unrivalled shrewdness as a "juggler in private circles."

At length it was insisted by some of the passengers that the Captain should exhibit the old game of Thimble-rig, which, with his usual modesty, he declined to do, protesting, among other things, that he had no thimbles. This difficulty was easily remedied, by having recourse to the stewardess for the required number. The Captain made a little ball of paper and commenced his performance. At first he was quite unlucky—but he paid up punctually, and consoled himself with a favourite expression of his, that "Sometimes I am very severe, then again not quite so sly."

Among the lookers-on was a gentleman from America, on his first visit "home." This Mr. Sinclair soon manifested much interest in the game, declaring he knew the thimble under which the ball might be found. The Captain gave him a knowing wink, and told him in a whisper not to tell. But so often did our friend "guess" right, that he laid aside all scruples of conscience, and desired to be permitted to bet a few pounds. To this proposition the performer at first objected, declaring "he did not like the young man's eye, it was too keen," that "he saw the ball," &c. This seemed to please the Scotch Yankee very much, and made him more anxious to bet.

After much parley and a good deal of reluctance on the part of the Captain, it was at last agreed that Sawnee Slick might bet a *few* shillings, "*just a few*," if he would allow the gambler a little chance against *two such piercing eyes* as he had, by betting two to one. This being at length settled, our young friend put up his sovereign against the other's ten shillings. Hands off and all being ready, he lifted the thimble, and sure enough there was the ball. The Captain gave up the money, and all enjoyed a hearty laugh at his expense. This was the largest bet that had been made. The Captain observed, "Sometimes he was not so sly." The ball and thimbles were again put in motion—again all being ready our lucky friend proposed to bet; but the performer declared he must have some chance against such great odds as "*Yankee eyes*," and insisted on three to one being made. This was also accepted: again the thimble was raised, and sure enough there was the ball. Our friend again pocketed another half-sovereign, and again the welkin rang with laughter at the victim's expense.

The thimbles were again arranged; this time we observed the game closely, as we thought from his repeated losses the Captain was hardly entitled to that great reputation for cunning and sagacity which had ever been attributed to him. Now, in the moving of the little paper ball, we thought we discovered the source of the gentleman's misfortunes, for becoming a little unrolled, a portion of the paper of which it was made stuck out from under one of the thimbles. This our Transatlantic friend plainly saw, and we presumed the Captain, through old age (then about 70), had his sight so impaired as not to be able to see it, and could not, therefore, play his game with his accustomed adroitness. But the tale was soon told. Our "*American cousin*"

proposed to double the bet, "having the thing so dead sure." The Captain, impatient of repeated losses, told him to make it tens instead of ones. This was done, and our friend bet a hundred pounds against thirty. (Just here I thought it a shame to take advantage even of a professional gambler's blindness, for the position of the ball was evident.)

The money up, Mr. Sinclair was all impatience to realize his expectations, and in great eagerness he again raises the thimble—but, sure enough, it was not there! He had reached the climax of the Captain's expectations in regard to his ready cash and willingness to bet, and he did not win. We have seen many pictures of disappointment, but the appearance of that young traveller's countenance we can never forget. The laugh was now uproarious. As much as you might have pitied the poor dupe the laugh was irresistible—but the poor fellow, "like the boy the calf run over, saw nothing to laugh at." He was a statue of amazed misery. The Captain coolly pocketed his cash, while our friend stammered out his astonishment with the declaration that all was not right, that he had never been "beat" before, and had surely been taken in.

"Never mind," says the old gentleman, with old-fashioned politeness, "what's a hundred pounds to a young gentleman with your eyes? The ladies all admire them—I have heard them speak of them—and you won twice out of three times—that's the best two in three, at all events!"

ALL FAIR ABOVE BOARD.

The game of "loo" is a favourite one among the persons employed in the management of iron works in the

Black Country. There, too, as in other places, are found men of whom better things should be expected, entering into plans by which the unsuspecting may be fleeced. At one of the most extensive works near Dudley, the proprietor was one of the first to "shave" any stranger that might be so unlucky as to fall in his way. Among the principal victims was the subject of this article, known by the sobriquet of Patch-coat. This name he took from the fact that large patches of different colours covered the principal part of his coat, or, what had been a coat. Patch-coat was the butt of the day; and Patch-coat, at loo, was the victim at night. Several months had the party fed themselves at the expense of Patch-coat. Patch-coat was such an one as would naturally make a man *suspicion* him for "knowing a thing or two, providing he could think of it." But the time had now come for some evidence of his sagacity to be put forth. Mr. M——, the owner of the works, and some others of the same stamp, rough fellows who had risen from the pick and hammer, had learned that Patch-coat was in funds; and accordingly that night Mr. M—— declared to him he would have a *jintlemanly* game of loo at the parlour of Mr. O'Donoho. Patch-coat gave his consent to make one of the party. At the hour appointed, the party met—five in number. Patch-coat had a hundred pounds; and the *gentlemen* knew it. The game commenced at dusk; and soon a large amount was on the board. Patch-coat had stood his hand for several "deals," by which means he subjected Mr. M—— and his party to a severe loss. M—— was much excited, and offered to bet two fifty pounds that he would "loo the board." Patch-coat signified as though his antagonist had better not banter too much; for, if he did, there was no knowing what might occur. M—— still boasted upon the honour of an Irish

jintleman (his grandfather had been a Cork pig-jobber in no large way) that he could bate any man that wore patches on his coat, that would play his game; and that was the jintlemanly game, trusting to the cards for the first three tricks. About this time Patch-coat noticed the *honest* Mr. M—— drop three cards, and before the deal, proffered to “bate any gintleman prisent, if *clubs* were trumps, and that he would ‘loo the board.’”

Patch-coat gave him a significant look, as much as to say, “Don’t push the banter at me too hard,” at the same time casting a wistful look at the money on the table, which had increased to a hundred or more. He remarked,

“Mr. M——, I will try you a fifty pound bet that you don’t win the first loo, if clubs comes trumps.”

“Down with your brads,” said M——, “before the dealer turns trump.”

Patch-coat drew from his pocket the money, and placed it on the table. Mr. M—— followed. In the mean time, Patch-coat gently raised the three cards from Mr. M——’s lap, and substituted the three given him by the dealer thereon. This was done without the slightest suspicion of foul play from M——, or the O’Donoho party. The trump was turned, and showed itself a *Club*. Here the eyes of M—— brightened, as well as those of Patch-coat.

“It’s meself that stands,” said Mr. M——, striking his hand upon the table, and, at the same time, cautiously taking from his lap the three cards.

“I stand, too,” said Patch-coat.

“You’re a brave lad, Patch-coat,” was the quick response of Mr. M——, laughing at the same time at what he supposed would be the result.

“It is your first draw, Mr. M——,” said the dealer. “How many will you take?”

“And sure it’s mesilf that will stand, on the faith of the trump, that I am bountifully supplied.”

“I will stand, too,” said Patch-coat. “I think this hand will answer my purpose this time. So, Mr. M——, give us a lead.”

“Thin play to that, my lad,” said Mr. M——, at the same time throwing from his hand a card, which fell face upward, and proved to be a diamond. There and then the scene changed. The astounded M——’s eyes opened, as it were, to the magnitude of saucers, as Patch-coat played the ace, king, and queen of clubs, and gracefully pulled over the stakes.

Mr. M—— sprang quickly to his feet, and as soon as he could give utterance, said, “Jintlemen! I’ll *quot!* There’s chating about the board. I sat down here to play a jintleman’s game.”

Patch-coat gathered up the cash, and left Mr. M—— and the trio to settle their losses.



PART IV.



MISCELLANEOUS MAGIC.

PART IV.

MISCELLANEOUS MAGIC.

INSTRUMENT TO IMITATE THE VOICES OF ANIMALS.

Make a very long drum, covered at one end only with sheep or ass skin. On this head is fastened a length of catgut, attached at its centre to another such catgut cord which runs through the drum to the other end.

Action.—The drum is held between the knees, while the operator, wearing a glove soaked in *colophony*, rubs the catgut more or less briskly; whence result growls, groans, and other sounds imitating the roars of wild animals, long or short as one pleases.

THE MUSICAL KALEIDOSCOPE.

This is the invention of Maestro Agnelli and was lately published in Paris. It consists of sixty sheets, octavo size, printed on both sides all over with musical notes—twenty blue, twenty red, twenty black. You select three sheets at hazard, but all of the same colour, and placing them before you on the piano, you have a pretty waltz. Change any one of them, and a different dance results, which adapts itself perfectly to the other two cards: other colours produce mazurkas, polkas, and various other measures.

ECHO LINES ON AN UNPOPULAR M.P.

When I speak, thou must hear me, nymph Echo!

ECHO.—Oh!

Am I not far above all vulgar scoff?

Off!

Are not my speeches wrought of splendid stuff?
 Stuff!

When is the time I was not eloquent?
 Went!

Is not my wit a rare thing here below?
 Low!

When I leave court, who is more deeply missed?
 Hissed!

Out of the ballet-box, I'll rise like phoenix!
 Nix!

Or should I lose my seat, the world will cry, Alas!
 Ass!

CURIOUS PROBLEMS.

The French schoolboys test new-comers with the following problem:—A litter of wolf-cubs is twelve a year, in which time a sheep gives birth to but one lamb. Thirty-five million French eat lamb and mutton every day, but not one eats wolf, and the proverb says “wolf does not eat wolf” likewise. Everywhere lambs and sheep are seen in the butchers’, but a dead wolf is as rare as a deceased donkey. Besides, wolves eat sheep and sheep do not feed on wolves. Where do the wolves go to?

FREEZING WATER IN A RED-HOT VESSEL.

Into a platinum cup heated red, pour a small quantity of water. Then pour in sulphuric acid in liquid, and quickly turn the vessel upside down, upon the sudden evaporation taking place, when a block of ice will roll out.

visible in dispersed daylight; but when made to reflect the rays of the sun, or those of a divergent pencil, will be beautifully displayed by the lines and tints occasioned by the diffraction of light, or the interference of the rays passing through the film with those which pass by it.

OF WOMEN. By JANS BIFRONS.

The following quaint lines, which form either a eulogy or a satire, are taken from The Percy MSS.

The feminine kind is counted ill,
 And is, I swear : the contrary,
 No man can find : that hurt they will,
 But every where : doe shewe pittie,
 To no kind hearte : they will be curst,
 To all true friends : they will bear trust
 In no parte : they will worke the worst,
 With tongue and minde : but honestye,
 They doe detest : Inconstancye,
 They doe embrace : honest intent,
 They like least : lewd fantasys,
 In every case : are patient,
 At no season : doing amisse,
 To it : truly contrarye,
 To all reason : subject and meeke,
 To no bodye : maliciouslye,
 To friend and foe : of gentle sort
 They be never : doing amisse,
 In weal and woe : of like report,
 They be ever : be sure of this,
 The feminine kind shall have no hearte,
 Nothing at all : false they will be,

In worde and minde : to suffer smart,
And ever shall : believe thou me.

Explanation.—Take away the colons throughout and the satire becomes a song of praise.

THE EVERLASTING SOAP BUBBLE.

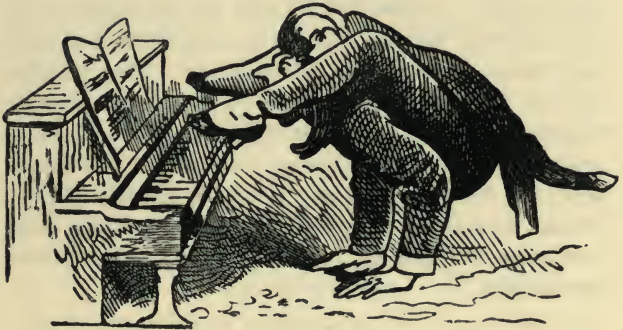
As the film obtained from the ordinary solution of soap in water lasts but little over a minute, the following preparation has been invented for greater durability. This liquid is formed by mixing, in proper proportions, glycerine, water, and soap. The mixture must be prepared when the temperature is at least 66 deg. Fahrenheit. Dissolve, at a gentle heat, one part by weight of Marseilles soap, previously cut into thin shavings, in forty parts of distilled water, and when the solution is cold, filter it. This done, carefully mix in a flask, by violent and continued agitation, two volumes of glycerine with three volumes of the above mentioned solution, and then allow it to stand. The liquid, which is at first clear, begins in a short time to grow turbid. After some days a white precipitate will be seen to have risen to the top of the liquid: draw the clear portion off with a syphon, and preserve it for use, this liquid which is called *glyceric liquid*, gives films of great permanence; for instance, by means of a common tobacco-pipe, a bubble four inches in diameter may be blown, which will remain in the open air of a room for three hours, if supported upon an iron ring $1\frac{1}{2}$ inch in diameter. If kept under a glass shade, a bubble has remained unbroken for three days, and all the studies, Newtonian and more recent, can be tranquilly pursued. The use of the double-bubble

blower, sold at toyshops, with this liquid is recommended. If the bubbles are filled with tobacco smoke, they will ascend and float at a height.

Another way.—Put into a six-ounce phial two ounces of distilled water, and set the phial in a vessel of water boiling on the fire. The water in the phial will soon boil, and steam will issue from its mouth, expelling the whole of the atmospheric air from within. Then throw in a piece of soap about the size of a small pea, cork the phial, and at the same instant remove it and the vessel from the fire. Then press the cork further into the neck of the phial, and cover it thickly with sealing-wax; and when the contents are cold, a perfect vacuum will be formed within the bottle,—much better, indeed, than can be produced by the best-constructed air-pump.

To form a bubble, hold the bottle horizontally in both hands, and give it a sudden upward motion, which will throw the liquid into a wave, whose crest touching the upper interior surface of the phial, the tenacity of the liquid will cause a film to be retained all round the phial. Next place the phial on its bottom; when the film will form a section of the cylinder, being nearly but never quite horizontal. The film will be now colourless, since it reflects all the light which falls upon it. By remaining at rest for a minute or two, minute currents of lather will descend by their gravitating force down the inclined plane formed by the film, the upper part of which thus becomes drained to the necessary thinness; and this is the part to be observed. Bubbles of glass can be blown until so thin that they burst.

SENSATIONAL PIANO PLAYING.



Let a pianist turn his back to the instrument, cross his hands behind him, resting his fingers upon the keyboard. Let an assistant get under the piano and affectionately embrace the principal, extending his (the coadjutor's) arms where the pianist's ought to be, with his hands grasping the latter's knees. Let drapery be arranged with a view to the concealment of the gentleman under the piano; then let the bell ring and the curtain be drawn. If, at this moment, the artist will make his bow and forthwith strike up a lively tune behind his own back, while the other two hands keep time upon his knees and in the air to the mysterious music, the effect will be quite electrifying. See for this "doubling," "The Art of Amusing," where a description of such substitutions is given at greater length.

A NATURAL TIMEPIECE.

Father Huc relates the singular mode by which the natives of some rural districts of China divined the time of day. "Three or four cats were brought us by our converts," says he, "and it was explained to us what they meant by a Feline Chronometer. They pointed out that the pupil of the cat's eye diminished proportionably to the sun's nearness to noon: being at midday exactly a perpendicular line extremely fine: after that hour, the dilation began and gradually dilated. When we had attentively examined the cats, we found their eyes agree in pointing out by this means that it was past midday."

RIDDLE.

Once fam'd physician when transpos'd a being great
 will show,
 Who, when commissioned from above, takes care of
 men below.
 The physician Galen, when transpos'd will show.
 That an angel may guard a poor mortal below.

ANAGRAMMATICAL FANS.

It is easy to make a fan an instrument of diversion as well as that of its proper designs. On the blades can be painted letters forming a word when read in their regular order or in the exact reverse, as ROMA, which becomes, on the backward unfolding of the fan. AMOR, and so on.

A CURIOUS LOVE LETTER.

An actress at the Paris Vaudeville Theatre, imitating our own habit of assuming foreign names on the stage. chooses modestly to call herself "Miss Lovely;" this title prompted the following play upon it, sent in a bouquet :

| | | |
|------|------|-----|
| Miss | LOVE | ly |
| My | | you |
| I | | |

CURIOUS SONG OF A LOVER TO HIS SWEETHEART.

The lines may be read from either left to right, or from above downwards. They may also be read in various directions.

| | | |
|-------------|--------------|-----------|
| Your face, | your tongue, | your wit, |
| So fair, | so sweet, | so sharp, |
| First bent, | then drew, | then hit, |
| Mine eye, | mine ear, | my heart. |

| | | |
|------------|--------------|------------|
| Mine eye, | mine ear, | my heart, |
| To talk, | to learn, | to love, |
| Your face, | your tongue, | your wit, |
| Doth lead, | doth teach, | doth move. |

| | | |
|-------------|--------------|------------|
| Your face, | your tongue, | your wit, |
| With beams, | with sound, | with art, |
| Doth blind, | doth charm, | doth rule, |
| Mine eye, | mine ear, | my heart. |

| | | |
|------------|--------------|-------------|
| Mine eye, | mine ear, | my heart, |
| With life, | with hope, | with skill, |
| Your face, | your tongue, | your wit, |
| Doth feed, | doth feast, | doth fill. |

| | | |
|-------------|--------------|--------------|
| O face! | O tongue, | O wit, |
| With frown, | with check, | with smart, |
| Wrong not, | vex not, | wound not, |
| Mine eye, | mine ear, | my heart. |
| | | |
| This eye, | this ear, | this heart |
| Shall joy, | shall bend, | shall swear, |
| Your face, | your tongue, | your wit, |
| To serve, | to trust, | to fear. |

CURT LETTERS

The Duke of York, eager to befriend the son of the Earl of Harrington, wrote to a high dignitary of the Church:—

“Dear Cork! ordain Stanhope!—Yours, YORK!”

To which the Irish bishop rejoined:—

“Dear York! Stanhope’s ordained!—Yours, CORK.”

A PUGILIST’S LOVE-LETTER.

The following letter, from a pugilist to his ladylove, will be found interesting by all who have a knowledge of the meaning of the pet words of the “fancy.”

“Dearest Emma:—Your last reached me the day after the mill. Blessings on the darling bunch of fives that scribbled it. I kissed the signature for the sake of the dear little daddle that will one day make me the happiest buffer going. I can’t begin to describe my feelings on reading it. If I had been auctioneered on my knowledge-box, I couldn’t have been more completely grassed. Any boy might have floored me by a tap

on my snuffer-trap. And the sight of the photograph of your lovely mug almost knocked me out of time. How I recall those features! Those ogles, blue as the sky; that conk, with its aquiline curve; that rosy-lipped tater-trap; those ivories; that fair skin, where the claret blushes. Oh! would that the original were present, her nut reclining on my bread-basket, her oration-trap murmuring in my lugs, and her mauley clasped in the flipper of her adorer. Ah! love has got my pimple in chancery, and is fibbing away. I can't counter on his nob, and care not how soon the sponge is thrown up."

A "GRAMMATICAL" LOVE-LETTER.

Madam:—If there be yet no *proposition* towards a *conjunction* with you, be pleased to admit of this *interjection* of my respects. I do not *pronounce, ad verbum*, that I desire to be *adjective* to you in all cases, for I *positively* declare that, *comparatively* speaking, I should be *superlatively* happy should I *agree with you* in all moods and tenses. I hope you will not think me *singular* at my desiring to have a *plural* number in my family, for I am too *masculine* to be *neuter* with regard to the *feminines*—the *substantive* good of earth! therefore do not *decline* this *conjugation*, though I am not the *first person*, the *second person*, nor the *third person* who has solicited you to be *subjunctive* to love. I presume you will not be in the *imperative* when I am in the *potential*. It will make a *participle* of happiness if you will engage your voice to be *passive* hereafter. Instead of *syntaxes*, believe that I will pay all the debts of duty, so that we need be afraid of no *accidence*. My whole income shall be *dative* to you for the *present*; nothing shall be *accusa-*

tive of you for *the future*, and your sweet name be ever my *vocative*, till cometh Death, the great *ablative* of all things, to turn our poetry into a *prosydie*.—Yours, &c.

PRISCIAN.

S A to L N.

R ! L N, can't U let me B,
 Now U R rescued from the C,
 And still remain my friend ? So D
 Lighted am I that U R she,
 Although U still look so C D ;
 For U R such an R T D R
 That U and I are ever N R ;
 I O U nothing but good-will ;
 And that I am a-O N still ;
 I'll tell U Y, B 4 its P T
 Y H of us composed a D T ;
 For everybody knows full well,
 That in this rhyming U X L :
 And many men have said, 'tis true,
 L N ! U C I N V U ;
 For each 1 has his N M E,
 Some have strange F M N A C ;
 No one can ask me R U E ?
 For U R head never was M T.
 No achings ever trouble U,
 Nor people try 2 W.
 There's no X Q's for us 2 say
 That we shall not go to D K.
 And I V twine around our U.
 The reason Y I send this 2
 U, with A beautiful P N,

Is because that will produce U 10.
 The other E V when drinking T
 B L S was burnt in F E G,
 And then they wrote his L E G,
 In course of X P D N C.
 Farewell, my friend ! I hear it said,
 "O, I C U R A Y Z."

Coined Words.—"DR 1/6 : Meet me at the 5/-.
 Yours, &c., 4½d."

Explanation.—"Dear Bob Tanner : Meet me at the
 Crown (or, the Bull). Yours, &c., Joey Brown."

MAYBE YOU DOUBT IT.

THE writer of the following actually saw what he describes, and any person may see the same things every day :—

I saw a pigeon making bread ;
 I saw a girl composed of thread ;
 I saw a towel one mile square ;
 I saw a meadow in the air ;
 I saw a rocket walk a mile ;
 I saw a pony make a file ;
 I saw a blacksmith in a box ;
 I saw an orange kill an ox ;
 I saw a butcher made of steel ;
 I saw a penknife dance a reel ;
 I saw a sailor twelve feet high ;
 I saw a ladder in a pie ;
 I saw an apple fly away ;

I saw a sparrow making hay ;
 I saw a farmer like a dog ;
 I saw a puppy mixing grog ;
 I saw three men who saw these too ;
 And will confirm what I tell you.

Explanation.—To render the above intelligible and credible, just take away the semicolon at the end of each line and put it after the first noun in each.

CONDENSED READINGS.

E C C C C. What a prophet can do. *Answer:* E
 four C's (he foresees).

U O 2 N V N O 1. A moral precept. *Answer:* You
 ought to envy no one.

100 1 6 50. What every person should be. *Answer:*
 C I V I L.

HOW TO WIN IN A SPIDER RACE.

Any student of insect life will have noted how frequently small creatures will snugly roll themselves up, gathering in their limbs, at a sudden shock, and wait till they deem it prudent to try to make off. A gentleman bantered a friend that, if each put a spider on his plate *his* favourite would be the first to run off it and away. Each caught a spider and put them on

the plates, when A's spider indeed took to his heels and shot away like lightning, while the other, rolled up in a ball, defied even the urgings of a spoon. It was some time before A could explain, through his laughing, that he had employed a *hot* plate!

THE ALPHABET OF 1800.

The following clever squib was circulated throughout Paris in 1800.

The lily is now F A C D (effaced),
 The Jacobites are D C C C D (deceased),
 The rich are P N I L S (penniless),
 The Directory has no N E M E E S (enemies),
 The First Consul is S T M D (esteemed),
 The priests are in their A B C C C (abbacies),
 Conspirators are C C C D (seized),
 Public spirit is in K O S (chaos),
 Our soldiers have always 1 (won),
 Our workmen are O Q P I D (occupied),
 Laws are not X C D D (exceeded),
 And the mob are 0 0 0 (ciphers).

THE OBEDIENT COURIER.

Select a *lapis calaminaris* vaguely in the shape of a man or animal, as the chance may be. Let some fine iron-flings stand in aquafortis for seven or eight hours, and then pour the preparation into a wide-mouthed phial an inch in diameter. Put in the stone, which will move until you cork the phial. Every time you withdraw the stopper the little stone will begin coursing about like mad.

THE YEAR OF ILL-OMEN.

The following table, founded on the dates of the events in the life of King Louis Philippe, the figures being so placed as to add up in every instance into a sum denoting the red year of revolution, is noteworthy.

| | | | |
|--|---|-------------------------------|--|
| 1830. | 1830. | 1830. | 1830. |
| Birth of the King. 1 7 7 3 | Birth of his Queen. 1 7 9 1 | Marriage. 1 8 0 9 | Death of the King. 1 8 5 4 |
| 1848. | 1848. | 1848. | 1848. |

Fig. 40.

HOW TO CUT A HAIR.

There are teeth, so to say, on a hair, that lie all at an angle from the length, which angle opens out from the root end. Therefore, to ensure the knife not sliding along the hair, draw the edge towards the root end, and the hair will be severed most easily.

DIORAMIC PICTURES.

On a sheet of paper which will be semi-transparent on being held up to the light, draw a picture—a landscape, let us say, by daylight. Back it with tissue paper, blue for the sky and water, green or brown for the deep shadows and ground. Moisten the “lights” of the picture with transparent varnish. Cut out the moon in the tissue paper, and where great brightness is wanted in the ground or on the water; which latter spaces you may back with orange tissue if a firelight effect is wanted. On holding up the picture thus prepared to the light, a more striking and beautiful result will be obtained than the simplicity of the means employed would promise.

STORM-GLASSES.

1. *Simple Method.*—Fill a common pickle-jar (previously cleansed from oil with soda and warm water) with water to within two or three inches of the top: plunge the neck of an empty Florence oil-flask into it. Before rain the water will scarcely be in the tube at all, but will rise according as fine weather may be expected. When very dry weather may be expected it will rise quite into the globe of the flask. The water does not require changing as long as you can see through it.

2. *Chemical Preparation.*—Have ready what is called a test-tube (but a long, narrow phial will suffice), about ten inches in length by one in width, sealed at one end, and with a brass cap at the other, or, instead, a cork, through which a minute hole is made with a red-hot needle. Nearly fill the tube with the following solution: camphor, $2\frac{1}{2}$ drams; nitrate of potash, 38 grains;

muriate of ammonia, 38 grains ; water, 9 drams ; rectified spirit, 9 drams. Dissolve with heat. At the ordinary temperature of the atmosphere, plumose crystals are formed. The weather indications are: 1, If the weather promises to be fine, the solid part of the composition remains closely collected at the bottom, while the liquor above is quite clear. 2, If rain is approaching, the solid matter gradually rises, and small crystal-like stars float about in the liquid. 3, On approach of wind, the solid matter gradually rises and forms a crust on the surface of the liquid. 4, On the approach of stormy weather, these crystals appear compressed into a compact mass at the bottom of the tube ; while during fine weather they assume their plumose character, and extend a considerable way up the glass. These results depend upon the condition of the air.

THE ARTFUL SOLDIERS.

(*A Trick with Draughts.*)

There are twenty-four soldiers in a guardhouse, under command of Sergeant Martinet. There are nine rooms in the building, thus arranged :

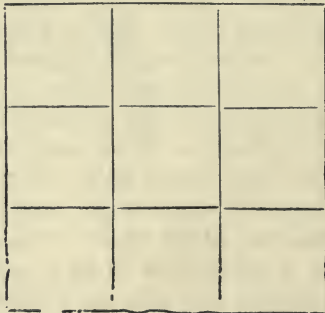


Fig. 41.

The sergeant takes the central chamber, and arranges his men in such a way that there shall be nine on each side of the house, as follows :

| | | |
|---|---|---|
| 3 | 3 | 3 |
| 3 | | 3 |
| 3 | 3 | 3 |

Fig. 42.

But, in course of time, the soldiers became weary of watching and asked leave to assemble in various groups. The sergeant agreed, on condition, mark you, that there should still be nine men on each side of the fort. On going the rounds some time after, he found his men thus located :

| | | |
|---|---|---|
| 4 | 1 | 4 |
| 1 | | 1 |
| 4 | 1 | 4 |

Fig. 43.

As there were nine men on each side, he went calmly

to bed, confident that all was in order, and never dreaming that four of his double-file had taken French-leave, as will be found on reckoning up the men remaining.

About midnight, the four rogues came in, bringing with each a comrade, which made the number of soldiers in all twenty eight, who bestowed themselves so that the sergeant found the rooms thus occupied.

| | | |
|---|---|---|
| 2 | 5 | 2 |
| 5 | | 5 |
| 2 | 5 | 2 |

Fig. 44.

However, nine being on each side, he suspected nothing, and went his way, without dreaming that there were four more men in the house than at the beginning, and eight more than at his first round. Soon after his

| | | |
|---|---|---|
| 1 | 7 | 1 |
| 7 | | 7 |
| 1 | 7 | 1 |

Fig. 45.

departure, four fresh soldiers climbed in at the windows and made the whole number thirty two ; but as they thus added up nine on each side, he could remark nothing.

But when four more men entered, the soldiers, thirty six strong, had much ado to find how to carry on the deception ; they placed themselves in this order :

| | | |
|---|---|---|
| | 9 | |
| 9 | | 9 |
| | 9 | |

Fig. 46.

Having exhausted the pleasures of the post, the new comers departed, with several of their hosts, in all eighteen men, leaving the same number, who hastened to collect in this manner to baffle their superior :

| | | |
|---|--|---|
| 5 | | 4 |
| | | |
| 4 | | 5 |

Fig. 47.

And he was far from noticing that he was six men short on the original muster and eighteen less than on his fourth round.

The illusion is easily cleared up, resting as it does upon the corner rooms of the house counting in two rows each time. The more soldiers you put in them, the less there need be in the entire house, and *vice versa*. The problem should be acted out with "fish," half-pence, or draughts.

TO TELL THE WEIGHT OF AN OX BY
MEASUREMENT.

Measure with a string, or measuring tape, the body of the beast obliquely, passing round outside one of the hind legs and behind the other in returning to the withers. A circumference of seventy inches agrees with the nett weight of thirty stone.



AMBIGUOUS POEM ON THE LADIES.

Happy he must pass his life
Who's free from matrimonial chains ;
Who is directed by his wife
Is sure to suffer for his pains.

Adam could find no solid peace
When Eve was given him for mate
Until he saw a woman's face
He dwelt in happiest state.

In the female race appear
Hypocrisy, deceit, and pride ;
Truth, darling of a heart sincere,
In woman never did reside.

What tongue is able to unfold
What failings do in woman dwell ?
The worth in woman men behold
Is almost imperceptible.

Confusion take the man, I say
Who makes a woman his delight ;
Who no regard to woman pay
Has reason always in his sight.

They're always studying to employ
Their time in malice, clack, and lies ;
Their leisure hours in virtuous joy
To spend ne'er in their thoughts arise.

So, cursèd be the man, I say,
Who changes from his singleness ;
Who will not yield to woman's sway
Is sure of blessedness.

Explanation.—The first and third and second and fourth lines of each quatrain are to be read without paying attention to the others, when the meaning is reversed.

TO TELL ANY ONE'S AGE.

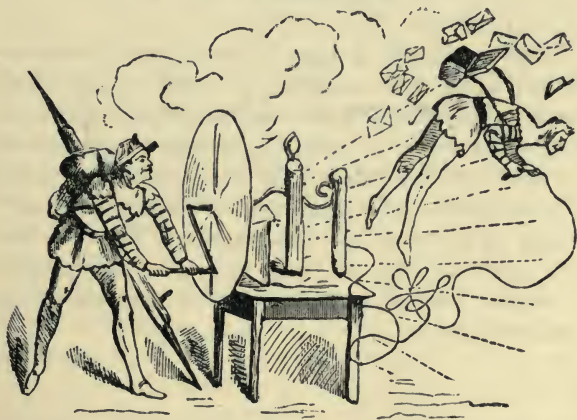
The following Magical Table of figures will enable you to tell how old your friends are. Just hand this table to a young lady, and request her to tell you in which column or columns her age is contained; add together the figures at the top of the columns in which her age is found, and you have the great secret. Thus, suppose her age to be seventeen, you will find that number on the first and fifth columns; add the first figures of these two columns, and the sum 17 is found :

| | | | | | |
|----|----|----|----|----|----|
| 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 |
| 32 | 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 |

The figures can also be written on cards the first figure on each card on which the thought-of number appears, to be as before.

THE COMIC PLATOON-FIRE.



A conjurer let a file of soldiers deliver a whole volley at him, though the cartridges seemed to be genuine.

Explanation.—The cartridges were really well made, but the wrapping paper was not at all strong, so that

the bullets were pinched off in the act of loading and juggled away. The soldiers were picked men of intelligence, but the performer always "stood fire"—but with deep misgivings, the risk of accident being so great.

**MAGIC BALLS FOUND IN A CANNON-BALL
IN A HAT.**



Make a number of balls of cloth, about the size of billiard balls, each containing a spiral spring. They can be pressed flat, so as to be a third of their dimension when expanded. All these balls thus compressed are put into a hollow wooden ball large enough to nearly fill a hat (see the cannon-ball trick in "The Secret Out"), having an aperture for this purpose. The balls take their spherical shape on being removed. The quantity in volume will at least double the contents of the borrowed hat.

**TO BE INVISIBLE TO THE AUDIENCE, THOUGH
UNMASKED AND BEARING A LIGHT.**

It is far easier than is generally imagined to be unseen, without the ring of Gyges being required.

In the first place, the room where is the audience

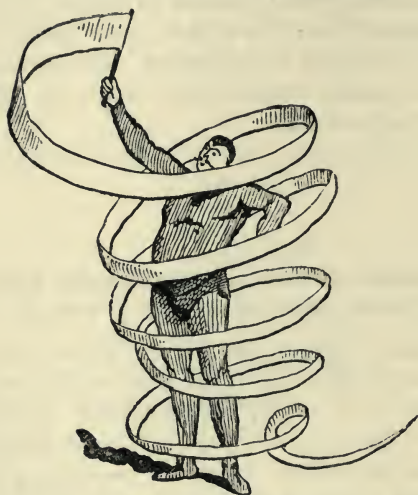
must be as devoid of light as a spiritualistic dark séance. Then placing in the bottom of the cavity of an opaque reflector, semi-globular in shape, a lamp or candle lighted, hold this against your person, so that you will be wrapped up in shadow. The darkness will be all the greater around you because of the light dazzling the spectators.

WONDERFUL APPEARANCE OF MARKS UPON THE HAND, SENT THROUGH A TABLE.

The conversation having been turned upon the appearance of stigmata, and the like, on religious enthusiasts, state your willingness to exhibit something of the sort. Take a piece of chalk, and make three strokes on some surface behind which the hand can be put, as for instance, a door, a partition, a table, or even simply a deal board. Supposing the chalk-marks are on the table, the hand is held underneath, and someone strikes the chalk-marks. Instantly, the hand is brought into view again, when there are seen on it, in the palm, three strokes of chalk, corresponding closely with those on the board.

Explanation.—There has been previously made a “dab” of chalk on each nail of the second, third, and last finger of the hand, and at the time of the marks being tapped on the table, the hand is doubled up smartly, and opened with a strong pressure of the nails against the palm, by which three marks are made.

MULTIPLICATION OF FLAGS.



This is one of the most charming Christmas and birthday-feast tricks ever invented.

Make a number of little flags of very thin material, a third long as broad, glueing the stuff to short, thin wires or wooden rods. Roll them up, a dozen together, leaving one open, to mask each bundle.

In displaying the parcel, the back of the hand is kept towards the spectators, so that the mass of the flags is not seen. The one displayed conceals all the others. The other bundles are hidden in the sleeve or breast-pocket, or on the shelf of the magic table.

You address some youngster who has been holding a card, or a box, or some such thing during the performance, saying, "You've been very obliging, my little friend; suppose I give you a trifle as a keepsake."

Hold out the parcel of flags, saying, "You must

not think this is an ordinary flag. Oh, dear no! It's an enchanted one, and will grow upon you if you keep it carefully." The child is about to take it, when you pretend to notice that the other children rather envy him; so you add, "Does anybody else feel like parading about with a banner? There's plenty for all, as the Irish drummer boy said when he went into the battle and heard the shots whizzing."

With that, unroll and spread out the flags, which multiply into what seem an amazing number. As you get to the last, manage to add to it another full bundle, and go on with that expanded as you did before. Each time one supply is nearly exhausted, you use the last flag to mask the addition of a fresh collection. And so on till all are gone. The usual termination is to have the last flagstaff made of a "pulling cracker," which goes off between yourself and a boy whom you have bidden pull hard if he wants the prize.

THE ACROBATIC FEATHER.

Preparation.—Take three quill-pens, and dye one blue and another red, and leave the third intact. Take a piece of elastic steel, or other metal, an inch long by three eighths broad; cut it lozenge-shape, and bend it in the middle, bringing the points together, but not to touch; this becomes a spring. Roll some paper round the spring and fasten it to hold the bent band with a bit of wafer, tying it while it is drying with string, which is afterwards removed.

This prepared spring is hidden in the hand. A china cup, examined by the company, is put on the table, along with the three quills. A half-crown is borrowed, which also is examined, to show there is no mechanism

in it. The feathers, too, may be handed round. Meanwhile you have slipped the spring into the cup unseen.

You show an ordinary bottle of good wine to the audience, and even ask the opinion of someone upon it. He tastes nothing peculiar, and pronounces it a fair sample of port or sherry, as the case may be. Then you inform them that the wine is bewitched, and has astonishing properties. For example, having put the three feathers in the cup, you ask one of them to be chosen, which shall leap out at the word of command. In touching that one, to show that you fully understand the choice, set its point at the spring's tip. Then pour some wine into the cup; the liquor will dissolve the sealing stuff, and out must leap the selected feather. You pour the wine away into another cup—and all hear the piece and spring drop, but as they make but one sound, none suspect the trick. The coin is returned, and the cup and feather may be again examined by the incredulous.

THE RING FOUND IN AN EGG.

Performance.—Borrow a ring and put it on your table, asking all to watch that it is not juggled away. Show a wooden egg-cup, and put it also on the table. Let an egg be examined, and put it in the cup. Take up the ring, and order it to pass into the egg. The ring disappears. Break the top of the egg-shell without touching it with the fingers, introduce a wire with a hooked end, and fish up slowly the ring. Put it on a napkin in a salver, and hand it to be identified by the owner. Let it be washed and returned.

Explanation.—In the bottom of the egg-cup is a little

mortice cut, in which a ring can enter about a third of its circumference.

To exchange the ring for a duplicate which you have (for you must borrow a plain one, a keeper or a wedding-ring), act as follows:—Go down among the audience with a plate, holding the false ring under your thumb on the plate. The plate is taken to make it clear that no substitution is even attempted. On the way back to the stage, let the real ring slide down to your thumb, and then make the exchange. The false ring is therefore put on the table, and there remains invisible; the real one is secretly held in the hand.

Show the egg-cup boldly, as the wood should be dark box-wood, so that the interior is not clearly seen; but do not let it go out of the hand. While pretending to wipe it inside and out, stick the real ring into the slit. Stand the cup on the table, and take up the examined egg, which you chip a little at the small end. Holding it deliberately between finger and thumb, to prevent any doubts of innocent manipulation, press it down into the cup, whereupon the ring pushes up into it. Then take up the false ring, put it in the palm of the left hand (or fire from a pistol at the egg, &c.), and juggle it away. Break the egg-top with your wand, insert the hooked wire, and produce the ring. This is a capital trick.

SPONTANEOUS GROWTH OF A FLOWER.

Paint and varnish a tin vase, rather high and narrow. It is double; so made that, between the inside and the jacket, there is room for three-fourths of the general capacity. A hole is pierced at the bottom of the inside and on the edge of the outside. Fill the outer shell by the bottom hole within, as much as possible, by means

of a fine funnel, or a machine-oil-can spout, having plugged up the upper hole with a little wax, before this operation. A plug in the bottom hole keeps in the water.

Cut a slice of cork to fit easily within the vase, and fasten in the centre a small tin holder, painted green. In this holder place a short-stemmed flower; this is not seen when the cork rests on the bottom of the vase.

Speak of a magical discovery to manufacture bouquets from little or nothing, and sprinkle a few pinches of the wonderful compound in the vase. In so doing you pull up the plug in the bottom, and remove the wax in the upper hole. The pressure of the air and movement of the water, to equalize its level, floats the cork up, and the flower gracefully and gradually rises into view. It is as well to stand the vase on a plate, to prove there is no secret communication.

ROBERT HOUDIN'S WATCH TRICK.

(Never before fully Explained.)

The father of modern magic by ingenious mechanism, Mr. Robert Houdin, was a watchmaker, and hence his many telling diversions with chronometers. The following is one of his best illusions.

Performance.—Borrow half-a-dozen watches and spread them on the table for one to be selected. The others are left on one side, not being wanted.

Take the chosen victim and let all see what hour it denotes. Out of a large number of counters let some be taken at random.

State that the watch will show as many hours as there are counters in the hand of one certain person. It is found that this is an unerring fact.

The watch is placed on the table, face down, two dice are thrown, and its hands mark the number of points.

The watch can also tell beforehand the number of cards in a pack chosen from a number of packs, unequal in quantity, or how many pips there are on a card, and so forth.

The finale is to change the hour over and over again, each time it is presented to a different person. The watches are returned—unless the owners refuse to ask for them—when they become the prestidigitateur's perquisites, as may be observed.

Explanation.—You must have a prepared watch, so arranged that at each pressure of the knob, as in a repeater, to make it strike, the small hand moves an hour; the large hand moves as in ordinary watches. The material is aluminium gold, which is as good as gold for the magician, and cheaper.

At the commencement of the trick you hide this watch in your hand, and borrow five to put with it, having slipped it first in the hat used as a collecting dish. You hold the hat so that the inside at the bottom is not seen. As the spectators see six watches, and have not counted how many you actually borrowed, they are satisfied. Range the watches in a line on the table, yours being the second, from right to left, so that it will be the centre of three, when three are removed.

To make your watch be the selected one, first ask a person to point out three. If your watch is among them, put the other trio aside. Again ask that person to point out one of the three. If the middle one is named, as generally happens, you are right. The two not wanted are put with the first lot. If one of the end watches, however, is named, you put the other end one or that same with the discarded one. That leaves two. Now, instead of saying "Point out," say "Select

which you like." You will see the ambiguous word is of utility.

Having thus made your watch the separate one, you take it and have the present hour noticed. You then secretly make the hand move to the hour agreeing with the number of counters, which you intend to have taken. The counters are presented in your hand, in a large number, but so arranged that only the desired number can be taken, as explained among the counter tricks in our foregoing volumes.

Suppose the watch said eight o'clock, and your counters are ten, you push on the hand to ten. The watch is given to a person to put in his pocket without his looking at it. It is then found to agree with the number of counters.

As for the dice trick, the watch-hand is moved on as before to the number wished. The dice-box is the magic one described in full in this same book, where the dice put down a pedestal are held in suspense, while another pair, already arranged to show certain faces, are discovered.

At the conclusion, you show the watch to one person and ask him aloud to name the time. So with another and yet another. This always causes fun, especially as nobody doubts that some neighbour's watch is having these pranks played with it.

The way of working this deception by the magnet is not nearly so good.

THE SIAMESE DOLLAR AND CREESE TRICK

After having performed the Dancing Egg trick already described in a former volume, being the egg-shell held by a thread and made to move by the play of a cane,

you remark: "Many persons have fancied that this little diversion is operated by some mechanism, more or less complicated; that is quite an error. If any lady has an ostrich egg in her pocket, I will be happy to show that it can dance as well as the hen fruit which I have exhibited. Nobody with an ostrich egg, or any other sort of egg! Well, a coin, a snuff-box, or the like will do. I even lay aside the cane, to prove that the material has nothing to do with the feat. Here is the sword I have used before in other diversions, a Malay creese, which is often a weapon of the Oriental magician. You can freely examine it."—And it is handed round.

Meanwhile a crown-piece is borrowed, laid, edge on, on the sword, which is held so as to be perpendicular as to its edge, and yet the coin remains there. To prove it is not fastened, the sword is gently inclined, and the coin runs up and down it at command, stopping wherever told. The coin is exchanged for another, and with that the same incredible process is gone through. So can snuff-boxes and the like be served, providing they are not too heavy.

Explanation.—You have two buttons joined by an axle closely, like shirt-studs, about an inch in diameter. Let one have a thin, flat surface, on which are a few scores to hold the shoemaker's wax applied to it. The other button must be heavy and thick enough to counterpoise the borrowed article.

The button is hidden in the left hand during the preliminary speech, the offered coin is taken in the right hand, and in carrying it to the other it is attached to the thin button. The coin's unattached face being kept towards the audience, no one can see the exact working of the rest.

MAGICIAN'S BOTTLES FOR HOLDING BIRDS, &c.



It is a very good ending to a feat to produce the juggled-away bird, mouse, rabbit, and other articles, from a bottle which has to be smashed to get them out.

You cut off the bottom of a wine-bottle with a file, smoothing the edge with the same instrument. Have ready a tin cylinder fitting the inside of the bottle as far up as the swell, smeared with pitch coloured with lampblack; while the pitch is hot, the cylinder is inserted, and it prevents there being any leakage by making the junction hermetical. Pitch is inserted warm in the other part of the bottle, so as to take away the transparency and make it seem a full bottle. The pitch is kept in running order by heating the bottle while this work is done. If there is to be wine poured out, the cylinder has a top, so that the upper part of the bottle may hold the liquor. In this case, to get out the prisoner, the bottle is broken at the bottom.

A false bottom is made of pasteboard in a conical shape, smeared with black pitch and resin, or mastic, which is heated so as to stick in its place, after the objects have been inserted by one's confederate through

the trap in the conjurer's table. It softens at a moderate temperature, and hardens quickly.

Another Way.—A funnel is so placed that its open mouth takes the place of the removed bottom, and around its tube there is a reservoir for wine.

CARD-PRINTING ON A HANDKERCHIEF WITH A PISTOL-SHOT.

A borrowed handkerchief is spread on the table to make it more clearly visible. A chosen card is torn to pieces, and used as wadding for a pistol. The handkerchief is thrown up, and the pistol fired at it, when the card is found printed on it.

Explanation.—Cut out in relief on a block of pear-wood, the points of a playing-card. Rub them with vermilion or lampblack, according to the colour of the card.

(Some use water-colours, but these dry too quickly. Oil-colours will not injure the handkerchiefs, if these are washed a little extra carefully.)

The block is placed among the things on the table. Upon it the handkerchief is thrown, and after spreading it out, you may even put a book on it to keep it from being blown away. Thus you get the impression on the underside.

After loading the pistol, and ramming home the torn card, you go for the handkerchief, throw it up, and fire. In picking it up you display the printed side, asking if it is the card selected. The block may even have the outline of the card cut on it.

The card drawn is, of course, a forced one.

THE CARD STUDDED WITH PINS.

A paper of pins is presented to the spectators for them to take a certain number. A pistol is loaded with these pins, and fired at a pack of cards, comprising a drawn one, and flung into the air. The chosen card is found full of the pins to the number selected.

Explanation.—On the return of the paper of pins to the conjurer, he sees at a glance how many rows or parts of a row are emptied, and hence the number of pins taken. By a word agreed upon he conveys this intelligence to his assistant, who at once plants the same number of similar pins in the duplicate card to that which must be drawn. The card and the pin-heads are blackened over a candle, to give them the semblance of being discoloured by gunpowder smoke. This will also prevent the pins slipping out of the card. The prepared card is put with a duplicate pack.

In the meantime, the performer has caused a card to be drawn. Returning with the pack with which it has been shuffled, he removes the “long” card secretly. In getting the pistol, he exchanges this pack for the other; or, he may merely substitute the pin-adorned card for the fellow. The pistol is taken to the person who had the pins, with which he loads them. The pistol is fired by the magician as he throws the cards into the air, and the card is found among them with the pins.

TO STAND BEFORE A CANNON-SHOT.

About 1820-5, Breslaw, we believe it was, let a cannon be fired at him. Certainly a real solid ball had been put in the gun, but the head of the rammer was hollow, with a trap in which the ball went, and was

conveyed away. A duplicate ball was let fall at his feet in the midst of the smoke.

TRICKS AT DOMINOES.

As so many persons are under the impression that the game of dominoes is a most innocent one, we hasten to show their error.

To mark the bones most ingenious devices are resorted to. There may be in your antagonist a Brummell of the first water—not a speck in his fashionable linen or guileless hands. But you may notice that, after the habit of the great Napoleon, he now and then pinches his ear. (Nap. pinched others, it is true, but the simile is all the more novel from it being incorrect, and so let it pass). He conveys on the tip of his nail to the domino which he wishes to “spot,” a minute grain of natural wax which leaves “a shining mark,” easy for the experienced to follow.

Or, suppose your fellow-player is sipping punch. He finds it too acid, and adds some sugar. Then he takes off three parts of it, without stirring, leaving the thick syrup at the bottom. Shortly after, on finishing the rest, he wipes his moustache with his handkerchief, it is true, but a little of the sugar goes on his finger—enough for him to mark the dominoes as before.

RESTORATION OF A TORN-UP COAT.

This trick comes in most timely for the conclusion of the first part of an entertainment.

The audience is asked if one of the number is not obliging enough to lend his coat for an experiment. The greatest hesitation is at once manifested. But

finally, some jolly, rough-and-ready, hearty, old-fashioned chap, agrees to wait in his shirt-sleeves, not to spoil the sport of the evening. It may be an overcoat, though, thus offered, in order to spare the ladies their blushes.

“I am very much obliged to you,” says the performer, offering to help the gentleman off with the coat, and doing it in the quickest manner possible, by ripping away the tails, the sleeves, the collar, and all, spite of the repentant man’s struggles. All the pieces are put in a small basket, set on the stage at hazard.

“There is one thing to be said in favour of magic,” remarks the disciple of Anderson and Hermann,—“the promptness in the carrying out of the master’s orders. If you were to take these fragments of a coat to a tailor, and give him, say an hour, to set them to rights, I am afraid he would not be much advanced in that time.” You stir the shreds about at random. “But note how I act with my mighty wand. I merely dabble them about thus, and thus, and a coat is born like another phoenix, if my Irish friends will allow the expression, from its *ashes*.”

A piece or two is dangled in the air at the end of the wand, when on dropping them, and taking up what seems another, it lifts up into the coat perfectly uninjured, in which state it is triumphantly returned to the wearer.

Explanation.—The bottom of the basket has a trap corresponding to a circular trap in the stage. The first opens down into the stage trap-hole.

The lender of the coat is a confederate, of course. He will not be suspected if he acts his part fairly, because several persons will refuse to lend their garments before he speaks. The coat, being torn up, is put into the basket, which basket is moved about some time before it is settled at last upon the trap.

The assistant under the stage gets a duplicate coat ready, while the prestidigitateur is making his speech, and substitutes it for the shreds at the last moment. The conjurer rests his hand on the edge of the basket, to steady it. One fragment is left in the basket. But on its return, after having served its purpose of making the spectators believe that the basket holds only the pieces, it is stuffed into one of the pockets of the coat, which is lifted up whole into view. The basket is then tossed aside.

THE TAGLIONI CARD.

The readers of our previous works will remember the Obedient Card Trick. In this, a number of cards rise from the pack on their names being called, though this pack, after having been handled by the audience, is placed in a card-case on top of a decanter full of water. To repeat briefly, the card-case is a tin box, with a glass front in two compartments. In one is placed the pack, from which several forced cards have been drawn, and in which they have been shuffled again. The audience does not know or see that the box is double. In the second and narrower division is a lesser number of cards, a thread running over and under several of them; the cards which are to rise up from the rest being always on the thread. The front end of the thread has a knot, and is secured by a few cards. The other end runs down behind the decanter, unseen to the assistant. On drawing the thread tight, the cards on it must be lifted up each in its turn. The king, for instance, is slowly drawn up; the queen will not move unless respectfully addressed, or, to evince her spite, if one of a French pack, rises heels first; the knave, if called a rogue, springs out angrily, and so on.

Variation.—The queen having presented herself contemptuously head downmost, and leaped out, she is put back, but into the front compartment of the case this time. The audience does not know this, and therefore a duplicate queen, still in the behind division, is taken for the same.

This card, to prove the queen harbours no enmity (pasteboard queens being models in this respect), rises anew, and bows thrice to the audience. To make things still more pleasant, the piano strikes up, and she dances a minuet with surprising taste and precision.

Explanation.—Open the end of the card and fasten in a strip of lead, glueing paper over the slit. To this lead in the middle of the card, as to its width, fasten the thread by which the terpsichorean diversion is produced.

THE CARD OF REVELATION.

It is a singular fact, and one useful for the conjurer to know, that any card of a new pack which ought to be traceable among the others after a shuffle, can be found as follows:—Simply pull it out sideways or longways, and ever so slight a gain in surface will suffice for the conjurer's sensitive fingers to recognise it.

THE MARVELLOUS LEMON-TREE.

This trick has been but little practised, but we hasten to explain it, all the more readily because two or three persons, laughably enough, are each asserting an unique possession of the secret. It is over thirty years old, nevertheless, and we believe it was Comte who first performed it.

A small shrub is shown on which are half-a-dozen fruits—apples, oranges, lemons, or the like—fastened to the boughs by ribbons, a different colour to each. Five cards are drawn by the audience, and then, on the little shrub being presented to them, and each cutting off a lemon, a card is found in each, being the same as those selected from the pack, and then shuffled into it. “A *rum* shrub, indeed,” some one will probably observe. Not at all.

Explanation.—The cards which are to be compulsorily chosen are placed beforehand in the fruit. It is done thus:—Take a large quill and cut it squarely off to make a tube, which, being driven into the fruit, will extract a cylindrical plug. Remove the meat from the quill, and plug up the hole with the disc of rind upon the cards rolled up and inserted. Bind the fruit to the tree with ribbons of different colours, this being the means of recognition. For instance, the fruit hung by a red ribbon will be the king of clubs, and so on. The cards are then drawn, it being borne in mind which each person has selected. The best way to manage this is by using prepared cards (see the “Secret Out”), so that the selected ones can be easily removed; thanks to their variation from the regular ones, and being gone when the cards are again examined, all will be well. After all are drawn, let them be returned to the pack, and in order, so that their names will be impressed on the mind, and shuffle them, or have them shuffled. The number of selections should be one less than that of the fruit, the reason for which will be shown.

On again handling the pack, pretend to shuffle it again as a superfluity of confusion, and in so doing juggle away the prepared cards; then give the pack, less these, for some one to hold.

Present the tree to each person who had drawn a card, so that he must take the lemon with the corresponding one—an act more easy than appears, but it must be done without any anxiety or nervousness. The fruit being in the hands of the spectators, ask each to name his card; the fruit being cut open, those cards are found therein. Then the pack is examined, and the missing cards are named and found to agree.

As there was one card less drawn than there were lemons, there still is left one of the latter on the tree. A confederate, or a spectator may do it naturally, points out the fact, and, in the tone of such bores as always haunt the mixed assemblages, wants “to know, you know,” if he might try a card, to find it in that last lingering lemon. Here the prestidigitateur hesitates, which brings several of the audience to the nuisance’s aid. Then the magician admits that he ought hardly to object, and holds out the pack to let the man select. But he says that he would prefer to make his choice quite freely. The performer hands over the pack, from which the other selects one, which he shows to his neighbours, and then returns to the pack.

“I see, sir,” observes the conjurer, “that you think to catch me napping; but to prove effectually that that is not so readily done as you fancy, I tell you what I will do. You may have your card found inside of this lemon, or the name of the card already on a scrap of magic paper within the same.”

As the two agreed, of course the matter is settled. If it was fixed that the card should appear in the lemon, the accomplice will have juggled away the chosen card in pretending to replace it in the pack. This final incident crowns the feat nicely.

THE MAGIC CARD-BOTTLE.

Bore a hole in a bottle, a real bottle, or a conjurer's prepared one of tin or wood, a little distance from the bottom. If wine is to be poured from it, to give more mystery to this trick, you stop up this hole with wax until you wish to perform, and you have poured out enough wine to bring its level below the puncture. Pass an end of a thread of the same colour as the bottle from within the bottle out at the mouth and at the hole. Bring the upper end down along the bottle, and attach it to the middle of a card, say the queen of hearts. Place this card under the bottom of the bottle, so as to be held there unseen. The other end of the thread comes out of the lower hole and down through the table, partition, or shelf, as the case may be, to where your assistant can handle it.

Present a pack of cards for one to be selected, and force the choice to fall on a duplicate queen of hearts. Shuffle it into the pack again and draw out the queen of spades, which you hold up in plain sight and lay on the table. Stand the cards up against the bottle, but in so doing mix the card which was held under it amongst them.

Now, before all, set the queen of spades on top of the bottle. To spare her royal limbs from fatigue, say, after trying in vain to make her stand up on the mouth, that she must fain lie down on the flat of her imperial back; then, pretending to hear a voice the audience cannot hear, you finally settle that it must come from the pack, and, indeed, you assert it to be that of the queen of hearts, who does not understand why, after being selected by the audience, the other queen should have been stood—you mean lain—over all their heads.

"Well, ladies and gentlemen," observes the performer,

“ may the wronged personage contest that exalted position with her rival ? ”

The request being granted, you, standing off at little distance, wave your wand. Thereupon the cards flutter in great agitation : one is seen to struggle several times to leave the mass, and at last flies up to the top of the bottle and there installs itself, displacing ignominiously the unhappy queen of agricultural implements.

It is easy to detach the card and hold it up in plain sight.

The writer prefers a plain-looking bottle for this feat, as being most effective. But precisely the same principle acts in the more showy apparatuses, tubes called “ Magic Card Columns,” and so on. The trick is even less surprising if complicated mechanism is suggested.

COMIC MAGNETISM.



Thread a needle. In the middle of a cane-bottomed chair, one of the old sort where the four sides of the

seat meet triangularly, drive the needle down head first, till the point is flush with the straw. The thread is run between two of the straws, and the loose end hangs down over the edge. On pulling the thread, the needle will rise like the most upright of men.

A person being upon the chair, and the thread pulled gently, the tickling which he will experience will gradually become more and more intolerable, and not to be endured. He will probably emit an exclamation on first feeling the electrical shock, and as he can hardly relate before a mixed company the cause of his outcry, he rises from his seat.

The experiment is done after you have stated your ability to magnetise persons, and chosen, with carefully feigned indifference, the unhappy martyr.

WRITING IN SNUFF THE NAME OF A
CHOSEN CARD.



In your magic scrap-book (which has been described) write with a pencil of tallow the name of the card

which you are to force on one of the audience. The paper will appear blank. Ask the person to write the name of the card on it, when he will call for pen and ink, or pencil. You say you can dispense with them, and thereupon get a pinch of snuff from some bystander. On shaking it over the paper, the name will appear. For this trick you should be sure of the presence of a snuff-taker.

THE CELEBRATED RING, GLOVE, NUT, AND EGG TRICK.

Performance.—A glove and a ring are borrowed, and put in a small box. An orange, a melon, an egg, and a walnut are freely examined by the company. The glove and ring mysteriously leave the box. The melon, egg, and nut, though covered over on the table, also vanish, but are found, as well as the two other articles, in the orange held in the hand.

Explanation.—The little box containing the glove and ring is put on the trap in the table, and there covered with a vase; the confederate below the table-top takes it, removes the ring and glove, and replaces it empty. He quickly puts the ring in a nut, prepared as follows, places this nut in a finger of the glove, the glove in an egg, which is enclosed in an orange and a melon.

To give the confederate time for his task, an orange, a melon, an egg, and a nut, are handed round among the audience for their examination. Then the performer goes up to the table where the small box is, in which the ring and glove are supposed still to be; it is put aside, and where it stood is left the melon, egg, and nut, the orange being retained. It is while this is being

done that the assistant substitutes a prepared orange for the one the conjurer has.

As soon as this exchange is made, the assistant opens the table-trap and down fall the melon, egg, and nut. Then the magician takes the little box, saying that he is going to play a very pretty trick with the glove and ring in it; but his surprise is great, on opening the box, to find it empty. The vase or cover then being lifted off the table, his surprise increases at nothing being seen there either. He looks round, and at last wonders if some brother conjurer in the audience has played him the trick of sending the missing articles into the orange. The orange is cut, when the small melon appears just within it—a tight fit; that is cut open, and the egg laid bare; on breaking that, the glove appears; and in the glove is the nut; the breaking of the nut discloses the ring, which is recognised by the owner.

Preparations.—Cut about a fifth out, wedge-shaped, of an orange, and extract all the meat by means of a sharp-edged spoon; so treat a small melon, which should pass within the orange-rind; in this melon has been put a small full egg, for an empty shell would break, and the contents are best extracted when it is in its place. The assistant has the prepared orange ready. On getting possession of the casket containing the glove and ring, he puts the latter in an empty walnut, the two halves being joined together with a little shoemaker's wax smeared on the edges. He stuffs the nut thus treated into a glove, and the glove containing the nut and ring into the egg-shell. When he does this, he must take heed to so present the orange that the opening of the egg will be hidden in the hollow of the conjurer's hand, in order that orange and egg may both appear intact.

The oranges should be all alike, and ripe ones, so that the prepared orange shall seem to be the one selected. The resemblance need not be so close with the other articles.



THE ASTRONOMER'S ANAGRAM: NO MORE STARS.

THE BITER BIT.

There was a rascal at a Newmarket meeting who was fairly skinning his victims alive at the simple game known as "Turning up Jacks," three-card monte, or *birlibibi*, as the country may be. A professional magician happening to pass, turned back to see how childlike was the simplicity of the dupes. The gambler, thinking our friend a prey, sang out: "Wouldn't you like to lay a wager on, my noble captain? This is the real sport for gentlemen's sons!"

"I'll risk half a crown," was the answer, smiling in his sleeve.

He did not even look on as the three cards were shuffled about, the trick being simply to make the spectators think that they still see the chosen card, when really another is the aim of their eyes. The conjurer lifted up the supposed card, and found, of course, quite a different one.

"To be sure, I'm done," said he, with a soft air, "for you juggled away the real one altogether."

"Juggled, my lord! why, here it is."

The conjurer pretended not to believe it until he had actually handled it. In so doing he marked it delicately with his thumb-nail, and dropped it on the table. The sign was imperceptible to anybody but a practised hand. Hence the gambler worked the cards as merrily as he pleased before laying them out, but every time the true card was still pitched upon. The trickster would have cut and run, but the crowd, being mostly losers by him, swarmed round delightedly, and kept him at the game until his paltry bank was broken.

"I don't want to rob you, my fine fellow," said the prestidigitateur, handing him back his money; "but just remember that, however cunning a thief is, some day he will meet with more than his match."

And away he went, leaving the laughing crowd to mob the swindler off the course.



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PART V.

MYSTERIOUS MAGIC.

THE
UNIVERSITY OF CALIFORNIA
LIBRARY

PART V.

MYSTERIOUS MAGIO.

ILLUSIONS OF TOUCH.



Apply the points of a pair of compasses, distant from each other one or two lines, to the cheek, just before the ear; then move them successively to several other parts of the cheek, and you will find, on approaching the mouth, that the points will appear to recede from each other; this effect being produced by the great difference of the sense of touch in these parts. It is a general law that, in the more sensitive portions of the skin, any two points appear to be further asunder from

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each other than points of equal distance appear to be to a less sensitive portion. The same experiments may be made by holding together the extremities of the fore-finger and thumb, and then passing the tips of both in a line from the ear to either the upper or the under lip; as they approach the latter, they will feel to the cheek as if they were becoming more and more distant from each other.

If the skin be touched with the points of a pair of compasses, one inch asunder, the person so touched, while he shuts his eyes, will instantly be aware that his skin is touched in two places; but by continually drawing the two points closer, a degree of nearness may be reached at which the person will imagine his skin to be touched by only one body; he will, however, describe this body, or the compasses, to be a little longer in one direction than another; and it appears that this difference of length corresponds with the distance between the two points of the compasses. When these points are brought still nearer together, the inequality will no longer be felt, and the person will fancy he is being touched by one body only.

Handle a pea: it is *one*—place it between the first and second fingers of the right hand, in their natural position, and you will still feel the pea but as *one*. Then cross the two fingers, bringing the second over the first, and place the pea in the fork between them, so as to feel the left side of the pea with the right side of the second finger, and the right with the left of the first. The impression will then be that you have *two* peas touching the fingers, especially if the eyes be shut, and the fingers be placed by another person. The illusion will be equally strong if the two fore-fingers of both hands be crossed, and the pea placed between them.

THE JUGGLER AND THE PAINTER.

The conjurer Clevermann, who has given a name to a magician's theatre in Paris, and some of whose choicest tricks have been explained in these books, was rather fond of practical jokes in connection with his art.



MR. CLEVERMANN SUPPORTS HIS OWN CHILD ON HIS NOSE.

One day, some twenty years since, Eugene Delacroix, the celebrated artist, spent a guinea for a pineapple at the noted purveyors, Potel and Chabot, the rivals of Chevet, and the Solomon or Fortnum and Mason of the gay city. On leaving the shop, a shower came on, and the great painter had to scuttle away for the nearest shelter like a humbler man. The café into which he

was driven contained the conjurer, who recognized his neighbour. A chat springing up as rapidly as such things will do during rain, the free-and-easy performer observed:

“I shall not be considered impertinent in inquiring, to pass the time away, what you are hiding under your cloak—eh?”

“Not at all, sir,” was the reply; “it’s a fine pine from the Antilles.”

“Dear me! Now, from the glimpse I had of it, I really took it to be a splendid specimen of the red cabbage!”

Nothing could be truer, for there was the vegetable in the painter’s hand.

Excitable, like all real artists, Delacroix started with amazement and anger. How came it to pass that, after having bought a superb pineapple at a respectable tradesman’s, a commonplace vegetable should have been carried away by him in his own hands? It was enough to make the genius doubt his sanity. However, after ten or fifteen minutes more, spent by the victim in anxiety and bewilderment, and the trickster in a dozen feats equally as astounding, Clevermann solemnly drew the pineapple out of a coffee-pot carried past by a waiter, and took back his cabbage, which he had “annexed” from the counter.

COMUS’S CHAMPION CARD TRICK.

The forefather of the late Ledru-Rollin, Comus or Conus the elder, like Robert-Houdin, could do many feats in prestidigitation with one hand alone. Opening a watch, executing the false cut of the cards, or palming away articles with the unsuspected left hand,

for instance, whilst all eyes are upon the other hand, are acts of prime value to a conjurer.

Do not imagine that any extraordinary skill is absolutely needed for the tricks here described: if your application is sincere, more or less of practice will make anybody a master in a reasonable time.

The Comus Card Trick is the boldest known, and, like all deceptions depending on an arrangement in the magician's mind, has a powerful effect on an audience.

You arrange the cards of a pack by eighTEENS, and the four suits are given in order, say clubs, diamonds, hearts, and spades—alphabetical arrangements being easy to recall; of course, though, so long as you remember your arrangement, this one may be altered.

With this prepared pack you come forward, making a pretended shuffle and cutting the cards several times as if for amusement, but really to prevent any suspicion of pre-arrangement.

To learn the disposition of the cards, a glance at the undermost is taken. For instance, if that one is the Jack of hearts, the ten of that suit must be the next before it and precede it in the dealing out.

Performance.—Ask a lady of the party to think of a card—which will turn out the top card—and name it.

Supposing you saw the knave of hearts undermost, and the lady named the queen of spades. You reason rapidly to yourself: the knave of hearts being undermost, there are still four cards of that suit at the base of the pack, namely, the knave, queen, king, and ace. On them is the set of clubs, on that again the set of diamonds, and on it the spades and the rest of the hearts. It will be most easy to cut secretly off the top to reach the spade queen, being nineteen cards to remove, the nine hearts at the top, and the nine spades, with the knave—the one picture card which precedes the queen.

Whilst holding the pack in one hand, you make the cut secretly at the proper place, the ring finger entering at the separation. In the act, the card which is now going to take the lowermost position shows itself, and, if it is the knave of spades, you know you are right. If it is another spade, the nine or ten, or the king, &c., you know just where you are and how little you are in error. If wrong, you repeat the unseen cut. There is nothing to call undue attention upon you in this act, as you seem simply to be mingling the cards, and the spectators, seeing nothing but the backs of the moving boards, never dream that you are inspecting the faces.

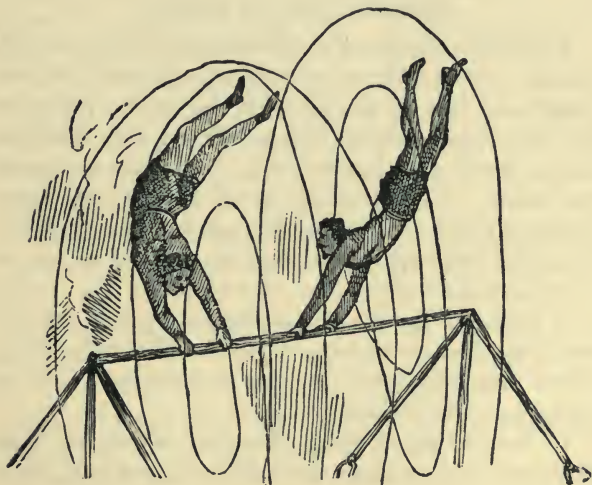
Variation.—When you have bungled, and the named card comes next to the desired one, make a happy use of the mistake, as a magician should always be prepared to do, by showing the top card. Naturally you will be told that the wrong one has been exhibited. Placing the card apparently once more on the pack but really thumbing it under all, you hold out the pack, to the nearest spectator, saying, in a pretendedly put-out tone, “Do you mean to say you did *not* think of the queen of spades?” The answer being that you have just named the “correct card,” which was more than you have shown, as it was the king that appeared, you must let the nearest spectator take off the top card himself and hold it up and call out its title. Everybody seeing the true card, will imagine that you made the feint solely to make your success more striking.

A SIMPLE COIN TRICK.

The following are mere make-shifts to insert between complicated diversions. The knowledge of them is none the less useful to the magician.

Supposing you wish to change a borrowed coin for another, you have secretly in one hand a duplicate of the former. As you take it, you ask if it is genuine, and, to assure yourself, ring it several times on the table. In lowering your hand in the act, you let fall the borrowed coin upon the cushioned ledge of the magician's table, and throw the other on the table. This second piece is naturally taken for the other.

If you intended to perform a trick, you take up the coin; but if the whole affair is only a joke, you substitute a leaden or brazen counter for the true piece, which makes everybody laugh by its false ring, and then tender it to the owner as being his offering. On his refusal, you double it up to load a pistol, or otherwise employ it in a feat at the end of which the real coin is made to appear in its entirety.



VICTIMS OF REVOLUTION.

CURIOUS NAPOLEONIC PROPHECY.

N A P O L E O N
 A P O L E O N
 P O L E O N
 O L E O N
 L E O N
 E O N
 O N

These diminutions of the original word are to be read consecutively after it, as if Greek words, when the meaning is: "Napoleon, being the Lion of the Peoples, will go destroy cities."

COMICALITIES OF SOUND.

Everybody knows the Whispering Gallery in St. Paul's, and similar aural marvels elsewhere in the kingdom. The Irish echo which answers an inquiry as to the nymph's health with a "Pretty well, thank'ee, sir, an' how's your honour's self?" has also a marked reputation. It is a tradition of the lately-burnt Opera House in Paris that one certain plank in the stage denoted the best spot for standing on if the voice was to exert its utmost power over the audience.

A legend of the old British Museum, which seems to have suggested an amusing episode in "Valentine Vox" which most will remember, has never before been recounted, to our knowledge.

In the Montague House Museum, which has since expanded into so vast a caravansera of wonders, was a pair of large Etruscan vases, possessing the singular acoustic property that a whisper into either one of

them was clearly audible to anyone posted near the other, although they were at a distance apart. It is probable that the sound rising from the vase was deflected from the ceiling and gathered by the other open-mouthed receptacle on the principle of a speaking-horn and an ear-trumpet respectively.

At all events, the fact was indisputable; and from the attendants, who were the first to remark the peculiarity, others in the town learnt it.

Some of these merry wags, who comprised in their circle of acquaintances a believer in mesmerism and the then infant creed of spiritualism, brought him one day to the Museum. After leading the conversation upon the subject of spiritual invocations, Cock-lane ghosts, drummers of Tamworth, and the like, they challenged him to prove that spirits could communicate with man. He was so driven to the wall that there and then he offered to attempt the experiment. They stood him up against one of the vases, where he whispered :

“ Spirit of Solon, art thou here ? ”

After a slight pause of anxiety, a solemn murmur seemed to rise from the depths of the same vase into which the summons had been made, and it was intelligible as “ I am here ! ” in good vernacular.

The essayer, who could hardly credit his own success, turned beamingly upon his incredulous companions and cried :

“ Solon has spoken, the spirit of the sage has answered ! ”

“ And not in Greek, either ! ” said another.

Again the conferrer with the shade of the departed lawgiver asked, in a low voice :

“ Spirit, knowest thou who speakest with thee ? ”

“ Verily I do ! ”

“ Then what am I ? ”

“A stupid blockhead!”

A roar of laughter burst forth, amidst which the spiritualist, who lived too long before his proper era, fled into Russell Street.



A NOVEL-T.

MYSTERIOUS REVOLVING DISC.

Cut out a circle of white cardboard nine inches across, and paint half the surface a dead black. Arrange clock-work so as to make it revolve at various rates, and let a strong light from a window fall upon it.

Provide a stereoscope, from which the ground glass has been removed, with a cardboard in which are cut two square apertures, at such a distance asunder that their binocular union can be easily effected; and while

the disc is at rest, the stereoscope is arranged so that through the right hand aperture some of the white portion of the disc is seen, and through the left-hand aperture a part of the blackened surface. On communicating rotary motion to the disc, a more or less rapid alternation of black and white results. With slow rates of rotation the strength of the lustre is not impaired, and it is just as plainly perceptible with more rapid rates. But when the disc revolves so fast that its surface seems covered by a uniform tint of grey, and the so-called flickering ceases, no lustre can be seen, the appearance being exactly that which is presented to a single eye under similar circumstances.

THE BEWITCHED HANDKERCHIEF.

This is a variation of a trick hitherto explained. Where no accomplice is at hand, the box of substitution must be used. The present case is for the stage.

Performance.—Borrow a handkerchief, and make an exchange of it for your duplicate in your hand—a bold stroke, but yet not difficult.

Hidden in the hand is the duplicate, wound up tightly and concealed by the hand and arm being pendent along the thigh. Take the borrowed handkerchief in the free hand, and carry it lightly to the other hand, where you mingle them together. Now you are at your ease, as the two seem but one.

Go to your table, and there let drop into the hands of your confederate, who is beneath it, the borrowed handkerchief, the other being kept displayed, and then tossed on the table.

Take up the latter by the middle, at the same time joining to it a long strip of the same material, which

your assistant has passed to you. Somebody is asked to cut the handkerchief; the strip is presented so as to be snipped in two several times; but on bringing the handkerchief to the gas or candle and singeing the cut ends, they reunite mysteriously, in harmony with your remark that that is the best way known for making two ends meet. The handkerchief is drawn back over the fore-arm, as if to stifle the flames, but so doing is to hide the hand from which the cut ends of cambric are removed by thrusting them into the sleeve covered by the handkerchief. Then the latter is opened out to demonstrate that it is perfectly intact.

This preliminary is not telling enough for the audience to believe that the handkerchief was ever cut, and some loquacious parties may even express their wise opinion loudly. Upon which you observe, "Ladies and gentlemen, I missed showing you clearly the state into which this handkerchief of tribulation has fallen. Since you doubt it was much cut up—I mean materially—I shall go through the performance again."

Nip the handkerchief by the middle, grasping it up by the other hand so as to form a sort of ear, such as the strip of cambric presented. Let a long strip be now cut from this by the same person who handled the scissors so charmingly before, and show that the handkerchief is but a square rim with such a broad gap as to admit of one's head passing through. The audience can no longer conceive a doubt.

Put fire to the two portions of the handkerchief, and let them burn a little while; still lighted, bring it to the table, put it on a trap there, and mask it with your hands whilst rolling the piece about as if to extinguish the flames. This action enables the assistant to open the trap, make away with the rags, and substitute the real handkerchief, which the magician seizes whilst he

is still moving his hands ; this done, the trap is closed, and the handkerchief is unfolded in the best state of reparation.

The audience will often be excessively surprised at this finish, since its remarkable simplicity leaves no secret assistant to be suspected.



A FINNY FINISH

A MAGICIAN'S ADVENTURE, WITH EXPLANATIONS.

Explanations.—Whoever has read Mr. Hingston's lively work upon "the Genial Showman, Artemus Ward," will not have forgotten his vivid description of Dr. Lynn, the reigning genius of magic at the Egyptian Hall, when that adventurous spirit was exploring California and

the South Sea in search of those chief feats of the conjurer's skill which nightly divert his large audience. A writer who travelled in much such pleasant company in the western wilds of America recounts the romantic "fix" out of which the prestidigitateur's art and skill were alone sufficient to extricate them. We may know the story as that of

"PROFESSOR GRIGNON AND THE ASTONISHED NATIVES."

It was a pleasant event in my life when I was thrown into the company of Grignon. I was on my way to California, and had taken the overland route in preference to any other. It was on my journey across the plains that I made his acquaintance. Our party overtook a single waggon. It contained a solitary man. The horses were dead, and the man nearly so. This man was Grignon. I paid the utmost attention to his wants. Being a medical man, I gave him all the benefit of my skill and care. As he recovered, he naturally entertained a strong friendship for me. His waggon had fallen behind the train to which he belonged, and they had been compelled by their own necessities to desert him.

The conjurer, however, was destined for a far more glorious fate than to die miserably in the desolate American desert. He was to become an astonisher to the natives (Indians), a saviour of civilized lives, and a lion in California.

We resumed our journey. We had started, however, like many others in those days, with insufficient preparations. As soon as we found our mistake, we had to be very economical in our provisions. We killed buffaloes whenever we found them, and always replenished our water-cask at every stream. At length,

however, we came to a dry and parched waste, where there was scarcely a drop of water, scarcely a blade of grass, and not a single living animal of any description.

And now began the troubles of our journey. We had come into the country of the warlike Indians, and they were not slow to acquaint us with the fact. Every day they prowled around us in great numbers, threatening and insulting us. Occasionally they used to snatch up something and dart away on their horses. We did all we could to be friendly, and determined to avoid an open rupture as far as possible, for there were only twelve on our side, and on their side apparently twelve hundred.

Every day, however, only made matters worse. In spite of our precautions, the Indians grew more and more abusive and insulting. We became watchful, and tried to be more forbearing, but our forbearance was taken for cowardice, and the savages began to think that they could do anything with us.

We held a council of war, and determined to bring matters to a crisis at once.

The crisis soon came.

One day a big Indian came riding along by us. He began talking in a contemptuous way, and gesticulating furiously. At last he asked one of our men for his gun. The man refused. The Indian repeated his question, and attempted to take the gun from his hand. The man drew back. The Indian sprang forward, flourishing his knife and threatening. At this the man calmly levelled his piece and shot the Indian through the heart.

As the wretch fell shrieking from his horse, the plain seemed to be alive with other Indians. From behind every clump of trees, every hillock, every rock, and every rising ground, they poured forth in countless

numbers. We had never before seen so many assemble together as now.

And now our companion, the conjurer, came out conspicuously. He had been once in the French army, he said, and understood all its admirable discipline. A few words of warning and a short explanation sufficed to make us form a circle of the waggon, and draw up behind them, with baggage heaped up for breast-works. There we waited for the savages.

But they did not come just then. With loud whoops and screams they gathered upon the plain at a distance from us. The wretched cowards! as soon as they saw our slight preparations, they were actually afraid to attack.

They waited till night, but that attack in the early morning which is the savages' custom, we successfully repulsed.

At last there arose a wild tramp of horses, the sound moving away from us, and seeming to show that our enemies had retired baffled from the assault.

Yet we were afraid of some plot. Grignon made us keep our watch, and we lay on our arms, expecting every moment to hear the Indian yell which announced the assault of the savages.

After a long watch, which seemed interminable, morning dawned. As the light illumined the wide plain we looked around anxiously for our enemies, but saw none whatever. Most of us thought we had better hurry on; but Grignon gave it as his opinion that the Indians were yet in the neighbourhood, and were waiting to attack us on the march. He thought that we had better wait at least another day. We all yielded to his opinion, and waited as best we could.

We had not long to wait.

After a few hours, at about ten o'clock, ten or a dozen

horsemen appeared over a hillock in the distance, riding slowly towards us.

“They wish to have a parley,” said Grignon. “Some of you step forth and see what they want. I wish to have a word to say, but will wait.”

One of our men was selected, and went outside of our enclosure to meet them.

Meanwhile Grignon lifted a trunk out of the waggon which belonged to him, drew it outside, and busied himself coolly in arranging and turning over the things. To tell the truth, he was preparing himself to execute his astounding experiments, of which more in the proper place.

We all thought this was done for the purpose of assuming an air of indifference. So none of us noticed him particularly.

Our representative stood outside, waiting for the Indians. Ten of them dismounted, and walked towards us in a friendly manner, while the rest held the horses.

One of them addressed our men in broken English.

The Indians, he said, did not want our lives. They wanted powder. If we would give them what we had they would let us go in safety, and protect us from other tribes till we got beyond the plains.

Give them our powder! A pleasant request. It scarcely needed debate. We refused.

Well, then, would we give them our bullets? They were very much in want of bullets.

One of us said in low voice that bullets were the only thing they would get from us, but the Indians did not hear him. Our representative refused very mildly.

The Indians now stood talking with one another. Grignon advanced towards them. He whispered some-

thing in a low voice to our representative, who immediately withdrew.

Grignon then stood facing the Indians.

"Are you captain?" said the spokesman of the Indians, suddenly, as he noticed Grignon.

"No; I'm the medicine man; you can't shoot those men nor these horses. I save them."

The Indian translated this to his companions, who burst into roars of laughter.

Grignon advanced more closely. He was looking steadily at the Indian, and we noticed that the latter appeared to be uncomfortable under his gaze.

"See," said Grignon, "you can't shoot me. Here"—and he drew a pistol from his pocket, a revolver—"fire at me."

The Indian smiled.

"You don't want me to kill you?" said he, scornfully.

"You can't."

The Indian's eyes flashed.

"Shoot!" cried Grignon, folding his arms.

The Indian hesitated a moment. He looked at us suspiciously. Then he looked at his companions and said something in their language. They all responded vehemently.

The Indian took aim.

"You tell me to shoot?" said he.

"Shoot!" said Grignon again.

The Indian fired.

Grignon smiled, and walking forward to the Indian, he handed him a bullet.

The Indian looked paralyzed.

Grignon showed him how to fire it again.

The Indian fired the other five shots.

Grignon caught each bullet, sometimes seeming to catch it from his breast, sometimes from his face, and

each time he handed it to the Indian. The other Indians were now in a wild excitement, for they had never dreamed of that useful little article, the conjurer's pistol, much less that to make a revolver on the same principle is no great extra pains. The bullets were real, of course, and the charges in the chambers were mere frauds and deceptions.

"They may all shoot if they choose," said Grignon, accommodatingly, and saying this, he went to his trunk, drew out nine pistols, and, coming up to them, proceeded to load each one. He took the powder and put it in, then the wadding and bullet, and the Indians saw him do it. He handed a pistol to each on loading it. Suddenly one of the fellows took aim and fired. Grignon, without seeming to have noticed him, raised his hand and seemed to catch a bullet from his forehead. He tossed this towards the Indian, who picked it up with an air of stupefaction; but instantly his look was changed to one of horror, for the bullet of lead suddenly melted in his hand and became a clot of gore. Brandishing over his head his blood-dripping hand, he dashed away in a tremor, crying aloud: "Medicine! medicine; him know heap medicine, for sure!"

Meanwhile the professor bade the rest to fire, and eight reports sounded in rapid succession.

Grignon took off his hat and walked up to the Indians. To their amazement eight bullets were in his hat. Each man took and looked at it in wonder. To their unsophisticated eyes those large pistols were even sounder weapons than the more modern repeater, but, as we know, they were the magical firearms, from which, in the act of apparently ramming home the ball, the latter is seized secretly by the hollow head of the ramrod and brought back to the performer's hand.

"Do you want to fire again?" asked Grignon.

They all expressed a wish to do so.

“ Well, hand me the pistols.”

To their amazement the pistols were gone, by the simplest act of jugglery known—the palming away of an object—but to them incomprehensible.

They looked at one another in wonder.

“ You see,” said Grignon, “ they fired the pistols at me, too; and I swallowed them.”

“ Swallowed them ! ” faltered the Indian, and he told this to his astonished companions.

“ Yes; do you want them ? ”

The Indian nodded.

Whereupon Grignon opened his mouth, and, rolling back his eyes, he inserted his fingers and drew a pistol apparently from his throat. Another followed. Then he drew forth a third, then a fourth, and so on, until he had drawn forth the eight pistols from his throat, while the Indians stood looking on in utter bewilderment. And no wonder, for we ourselves felt no less astonishment. We could not account for it: we were as much stupefied as the Indians themselves, for we had not been part of audiences at séances of magic.

After this Grignon calmly drew forth six or eight more pistols, then a number of cartridges, and finally a carbine.

“ I’m the medicine man,” said he, solemnly.

The Indians said not a word.

“ Do you want to fire again ? ” said he, and he offered pistols to the Indians.

They all shrank back in horror.

Grignon tossed the pistols, cartridges, and carbine over to us, and smiled benignantly on the astonished savages.

He then shook his hand.

A knife fell out of the palm. Another followed, and

another. He shook three more out of his left hand, and drew a score or so out of his ears.

"Perhaps you would like something to drink?" said he, smilingly, to the Indian who spoke English.

The savage looked at him suspiciously.

"What'll you have? Rum, brandy, gin, whisky, ale, porter, wine, or cider?"

The Indian brightened up, and spoke to his fellows. They all preferred whisky.

Grignon asked the Indian to lend him a loose blanket which he wore. The Indian took it off doubtfully. Grignon shook it; a bottle rolled out. He shook it again: a glass fell out. He shook it a third time: nine more tumblers fell out. He shook it up again: a corkscrew tumbled down.

"Will you take it raw, or with water?" asked Grignon, as he proceeded to unscrew the cork.

The Indian said nothing.

"Isn't that good whisky?" asked Grignon as he poured out a glass.

The Indian smelt it suspiciously. Then he tasted it. The taste was enough. He drank it all off, smacked his lips, looked around triumphantly on his companions, and then—held out his glass for more. At this all the other Indians, encouraged by this experiment, clamoured for some. Grignon poured away from his bottle. Each one drank, and wanted more. Grignon was quite willing to pour. He was not forgetful, however, of the duties of hospitality. He walked off to the Indians who were holding the horses, who had been watching the scene in stupefaction, and offered some to them. The smell of the whisky was enough for them. They drank, and wanted more.

But Grignon shook his head.

"Not now," he said to the spokesman. "I'll give

you a bottle apiece to carry home with you." And going up to the blanket, he shook out a dozen bottles of the same kind as the last, but, holding them up with the open mouth downward, not a drop fell upon the ground, which proved them empty, of course. But, lifting up the bottle which had already supplied more than its natural contents, it would appear, he proceeded to fill the dozen new ones from it. The least impressionable of the tomahawkers were amazed at this display of the inexhaustible bottle and this new application of the principle of the Tantalus-cup.

The prospect of ever-flowing fire-water made the Indians feel in the jolliest mood conceivable.

"Before I give you any more," said he, "let me make you so that you will not get drunk."

He walked up to the first Indian, took his hands in each of his, and looked him steadfastly in the eyes for some time. Then he stroked his brows and left him; this he did to each. The Indians had all got over their suspicions, and merely expected that something good was coming. So they allowed him to do as he chose.

Grignon then stood off a little distance, and in a loud voice ordered them all to look at him. Whether they understood or not made no difference. They certainly all did look at him.

I had seen plenty of experiments before in mesmerism and electro-biology, so that the present scene did not surprise me so much as it did my companions and the other Indians.

Grignon simply stood at a distance, waving his arms at times, and giving words of command. Every word was obeyed.

First they all began to dance.

Then they all knelt down.

Then they touched hands, and could not sever them-

selves from one another's contact. One Indian suddenly rushed wildly around, with the others all joined to him, trying to free themselves, but utterly unable, yelling and howling like wild beasts.

At last, at a shout from Grignon, the charm was dispelled. They sprang back from one another and stood motionless, like so many statues.

Suddenly they all began to shiver, as though they were suffering from intense cold. They gathered their blankets closely around them, their teeth chattering and every limb trembling.

In an instant they were panting as though with extreme heat, drawing difficult breaths, gasping and flinging off those blankets which but a moment before they had wrapped so tightly about them.

This then passed.

They began to bark like dogs. They went down on all-fours, and evidently imagined that they were of the canine species.

Then they tried to imitate the motion and croaking of frogs. After this they went through performances too numerous to mention. At one time they became rigid, and arranged themselves like the stakes of a tent—heads together, feet outward. Then four of them knelt down and tried to run about with four others on their backs; then they all jumped wildly up in the air, and began to flap their hands. At last they made a furious onset upon one another with fists, nails, and teeth, and if they had not left their weapons behind, they certainly would have done some frightful injury.

The two Indians who held the horses looked on in horror, bewildered and stupefied, not knowing what to do. They would have fled, in their fright, but dared not leave their companions behind. Grignon stood calm, with frowning brows, watching the uproar, him-

self the presiding spirit of the scene. My companions were confounded. Even some of them, as they afterwards told me, thought that Grignon was the devil.

At last Grignon gave a loud shout.

The Indians fell flat on the ground.

They lay there for some time as if dead.

Then Grignon waved his arms, and they rose to their feet. All looked bewildered and frightened. With terrified glances they regarded first Grignon and then one another.

The Indian is superstitious, like all savages; in fact, like all human beings. These men saw in Grignon a terrible demon, who could exert over them any power which he chose.

He advanced towards them.

They recoiled.

He walked up nearer.

They turned and ran towards their horses.

Grignon ran after them.

Away they went. They urged their horses at the top of their speed; but, fast as they went, a small, almost imperceptible pellet from the magician's hand preceded them, and suddenly turned to a globe of incandescence, visible, from its excessive brightness, even by daylight, which, again, burst into a shower of innumerable fiery serpents. These rushed hissing down upon the heads of the terrified crew, who lashed their ponies into a still madder gallop, and disappeared.

Grignon followed them but a short distance.

Then he turned back and came into our enclosure.

"Gather up these bottles," said he. "Tackle up the cattle, and let us be marching."

Instantly our men rose and obeyed.

Grignon then lay down in one of the waggons, utterly exhausted.

We travelled all that day and all the next night unmolested. Grignon slept long and soundly. After resting a long time, we pushed on our teams, so as to get as far beyond the hostile Indians as possible.

We saw nothing more of them.

“They won’t dare to pursue us,” said Grignon, confidently. “They’ll go back and tell such a story as will be the wonder of the savages for many a long year.”

Grignon was right. Not only did they not pursue us, but for all the remainder of that year, and for the next, no travellers on that route were molested.

“I don’t see,” said I, “how you managed to do those tricks on the open ground, without any table.”

Grignon smiled.

“Only clumsy performers use tables nowadays,” said he. “I could have done far more wonderful things, but they would have been thrown away on those savages. They are not even as keen-witted as the Arabs whom Robert Houdin amazed by a simple entertainment of electrical and mechanical deceptions, by order of the French Government. I’ll reserve my good tricks for San Francisco.”

And so he did; for, of all the wizards, magicians, and conjurers that have visited the Golden State, none have won such fame, or excited such wonder, as friend Grignon, as we call him to the end: for though his real name, sufficiently known at present, would authenticate this narration, that fact would make the whole seem but one of the “puffs” which surround public performers more or less thickly.

CHINESE MAGNETIC CHARIOTS.

The invention of the mariner's compass has hitherto been awarded to Flavio Gioia, a Neapolitan, in 1302 or 1303. But this statement has rested on no satisfactory evidence; and when it was discovered that the Chinese and Arabian authors had spoken of the magnet's polarity before the fourteenth century, it began to be suspected that the Neapolitan was merely the introducer of the compass into Europe. To settle the question, Baron Humboldt wrote to M. Klaproth to ascertain the epochs—(1st) when the Chinese discovered the polarity of the magnet; and (2nd) when they began to apply it to the purposes of navigation. M. Klaproth replied in a work in which the most remarkable proof of the Chinese claims to this invention is in the history of the magnetic chariots, whose origin is lost in the obscurity of the mythological ages. The astrologer sat in a two-wheeled car, drawn by men or animals, probably in the vanguard of an army. Before him was a figure of a man with its right hand and arm extended; it was on a pivot, and was made of such light material that it spun round freely. Its index finger invariably pointed to the south, that pole being the *kibleh*, or sacred point, of the Chinese, to which they always turned when performing their devotions. It is intimated, rather obscurely, that these magnetic chariots were first invented for a religious purpose, namely, to enable the devout to discover their *kibleh* when the sun and stars were obscured by clouds—a purpose to which the compass is frequently applied in the present day by Mohammedan nations; but there are very full descriptions of the use made of these chariots in directing the march of armies as we have stated, and guiding ambassadors. Chinese authorities give many curious

anecdotes of the use made of these chariots ; under the Tsin dynasty, they formed a part of every royal procession. In the *Tsin-tchi*, or history of that dynasty, we find : "The wooden figure placed on the magnetic car resembled a genius wearing a dress made of feathers ; whatever was the position of the car, the hand of the genius always pointed to the south. When the emperor went in state, one of these cars headed the procession, and served to indicate the cardinal points."

In the history of the second Tchao dynasty, which lasted from A.D. 319 to A.D. 351, we read : "The Chang-Fang (president of the board of works) ordered Kiai Fei, who was distinguished by his great skill in constructing every kind of instrument, to build a number of magnetic chariots, which were sent as presents to the principal grandees of the empire." There are several accounts of the manner in which the magnetic figures were constructed. As our readers have probably anticipated, a magnetized bar passed through the arm of the figure, and the only variety of ingenuity displayed by the architects was in balancing the figure upon its pivot.

The antiquity of these magnetic chariots is established incontrovertibly ; the step from them to the compass is so very easy that we may safely assert that the one must have led immediately to the other.

ARTIFICIAL MAGNETS.

Pass the north pole of a magnet from the eye to the point of a common sewing-needle, pressing it gently in so doing. After reaching the end of the needle, the magnet must not be passed back again towards the eye, but must be lifted up and applied again to that end,

the friction being always in the same direction. After repeating this for a few times, the needle will become magnetized, and attract iron filings, other needles, &c.

"TOP AND BOTTOM" DICE TRICK.

This is one of those apparently child-like games into which Johnny Newcomes are easily led. It is played with dice. Sharper A. and B. invite their intended victim into a public-house. Standing at the bar, says A. to B., "I'll throw the dice with you to see who pays." "Agreed!" says B. "I bet the beer," says A., "that, counting tops and bottoms, I'll throw twenty-one every time." B. bets that it cannot be done, and has to pay for the drinks. While the party are enjoying the fun, Sharper C., apparently a stranger, walks in and is invited to join in a drink. Sharper A. gives a knowing wink to their victim, and offers to bet C. half a sovereign that, counting tops and bottoms, he will throw twenty-one three times in succession. "I'll bet you don't," says C. Taking greenhorn a little aside, A. tells him that he has only five or six shillings with him, and asks whether he wouldn't like to put up the other crown and divide with him. The victim, sure of winning, assents, and the stakes are put in the hands of B. While this little conference has been going on, Sharper C. has deftly substituted for one of the dice another made entirely of sixes. A. throws the dice, and of course loses the bet, and C. pockets the stakes and walks out.

TO BREAK A STONE WITH A BLOW OF THE FIST.

Select two stones from three to six inches long, and about half as thick; lay one flat on the ground, on

which place one end of the other, raising the reverse end to an angle of forty-five degrees, and just over the centre of the stone (with which it must form a T), supporting it in that position by a piece of thin twig or stick, one, or one and a half inch long; if the raised stone be now struck smartly about the centre, with the little-finger side of the fist, the stick will give way, and the stone will be broken to pieces; the stones must be laid so as not to slip, otherwise the experiment will fail.

Another way.—Select such cobble stones as are really friable, though on the face of them solid enough. Wrap the hand in a handkerchief to prevent injury from splinters, and strike with the fist.

THE OBSERVANT CONJURER.

Over twenty years ago, a young member of the white magical craft employed in his most telling feat that same scientific fact of which much is promised this day by the instructors of the deaf. This is the reading, so to say, what words are spoken by a person whom one does not hear, by closely watching the movements of their lips. It is remarkable, and the magician in question deserves great credit for having noted the peculiarity, that all the names of playing cards compel in their enunciation different movements of the lips, which can be readily interpreted. By giving a whole-souled attention, and practice enough, the watcher seldom goes wrong; but, of course, he must hold such a position as regards the speaker as will furnish him with a clear view of him. Those who think a perspicuity so powerful even more than prodigious will be undeceived when they find the matter so easy that out of half-a-dozen experimentalists, four or five will succeed in their guesses almost always.

But to the feat. Whilst chatting with several persons, the performer would ask one of them to think of a card of which he would call out the name immediately afterwards. "But," he would add, "to be sure of the truth, and to let nobody imagine that you acknowledged me right merely out of kindness, whisper the name of your choice to a neighbour, while I stand at a distance."

This being done, he would succeed by the simple means mentioned.

THE MAGIC DUTCH BALLS.

(Courtois' Prize Trick.)

This mechanical trick is a great improvement on an old one which was the chief triumph of a once famous magician, M. Courtois.

Formerly, the apparatus was a ball and a vase, or handless urn, with a cover large enough to hold a billiard-ball, half in the vase, half in the cover, when closed. In the cover, about the same size as the vase, and the same hemispherical shape, there was a thin lining of half a hollow globe, made of the same wood as the ball. In the cover, this lining seems to be the inside of it, and when turned round outward it seems to be the lower half of the ball shut up in the cover. The edge of the cover is ornamented with carving, with a view to hide the works of the inside hemispheres.

Performance.—The cover is lifted off the vase to show the ball, which is thrown upon the table. The vase is covered, the ball is juggled with and put secretly away while it is supposed to follow the magician's order to return to the vase. On lifting the cover, the inside hemisphere is made to descend, and, to all appearance, the ball has come back. Again the vase is closed, and the hand being run under the table as if to catch the

ball there, it is taken from its hiding-place and held up in view, while the other hand lifts off the cover and "exhibits the absence of itself," as our Irish friends would say.

This performance is worn out, like the egg-cup trick, and no one would produce it even at a village fair. But rejuvenated, it is quite a feature in the entertainment.

Apparatus.—The vase is of the same shape as the old one described, but it is made simple, without the false lining. The cover, however, is capacious enough to hold the ball entirely within it, and not let it drop unless released. The secret of the trick lies in making the ball leap up into the covers by a quick, sharp, unnoticeable movement. It is done during the gesture naturally accompanying the words—"Will you please to hold this box?" or, "I place this vase upon the table," &c. When the ball is up in the cover, the mere closing of it and the vase sharply will make it drop again.

For the trick, two balls exactly alike are provided. One is in the vase, the other concealed at the table, where the magician can obtain them. Only one is in sight at a time.

After having the ball and the dish and its cover examined freely, you place them upon the table. In plain sight, you put the ball in the vase and make it jump up into the cover, when you close it all in.

Now, secretly get the second ball from the inner ledge of your table, hiding it in the hand, and while nipping the knob of the cover in lifting it up, you show this ball as if you had drawn it through the wood itself, and then reveal that the vase is empty.

Close the vase, and in so doing make the ball fall down into the vase. Take up again the ball on the table and juggle it away, placing it unseen on the table-ledge or in the bag worn round the waist as in the egg-bag

trick. On opening the vase, the ball which is disclosed is supposed to be the one which vanished.

In again putting on the cover, you skilfully take up the ball from the ledge, and holding out the vase to some one, you ask him to handle the real ball, to make sure of its being solid. He takes it out, convinces himself, replaces it, and himself puts on the cover. You give him the vase to hold, and in so giving it him, make the ball spring up into the lid. You now pretend to draw the ball from the solid foot of the vase by suddenly showing the other, which you have held concealed in the right hand.

You yourself lift off the cover to make it plain that the box is empty. Replace the cover, and take the vase from the holder. Go to your table, on which you stand the vase, and again juggling away the ball in your hand, you bid it enter the vase. Uncover it as before, and again show the balls.

By using two boxes, as is sometimes done, the trick can be prolonged and varied. The passage of the ball from one box to the other, and *vice versa*, is always effective.

THE ELEPHANT TRICK IN SIAM.

A recent traveller in Siam gives the following very superior version of the mango-tree feat of the Indian jugglers. This performer took an orange, cut it out, and produced a serpent. This he took down into the audience, and borrowing a robe from one, cut the snake's head off and covered it with a robe. When the robe was lifted again, a fox was in the place of the snake. The fox's head was cut off, two robes borrowed, and when they were raised there was a wolf, which was killed with a sword. Three robes, and a leopard appeared; it was

slain with a javelin. Four robes covered a most savage-looking buffalo; that was killed with an axe. Five robes covered in part, but not altogether, a lordly elephant, who, when the sword was pointed at him, seized Minhman, the juggler, by the neck, and tossed him violently up. He mounted feet foremost, and finally clung by his toes to the capital of one of the columns. The other performer, Tepada, now leaped from the stage and alighted upon the elephant's shoulders. With a short sword he goaded the beast on the head, until shrieking, the unwieldy animal reared upon his hind feet, twined his trunk about one of the great columns, and seemed trying to lift itself from the ground and to wrap its body around the great pillar. The music clashed out barbarously. Norodom flashed forth a dazzling firework of some sort, and the elephant had disappeared, and Tepada lay upon the stage writhing in the folds of a great boa-constrictor and holding up Minhman upon his feet.

THE PHYSIOGNOTYPE.

By the aid of this instrument, a person may have a plaster-cast of his face taken without submitting to the usual unpleasant process.

It consists of an assemblage of very fine movable wires, confined closely together within a broad hoop or band, after the manner of the bristles in a telescope hearth-brush, but not closed at the back, in order to allow to the wires a free passage. The wires slide in a metal plate, perforated all over with holes, very fine and close together. The apparatus is surrounded by an outer case, which is filled with warm water, in order to

prevent any unpleasant sensation on the contact of the instrument with the skin.

When it is desired to take a likeness, the instrument is applied to the face with a gentle and gradual pressure; the wires easily yield and slide back, conformably to the prominences of the countenance; they are then fixed tightly in their position, and thus form a mould which will yield a perfect and faithful cast of the face, in which even the most minute line will appear with the strictest accuracy.

The apparatus is useful to the magician to have duplicate faces to mount on heads of his figures and assistant, by which many illusions can be heightened in effect and attraction.

THE INCOMPREHENSIBLE INDIAN TRICK OF ANIMATED DOLLS.

There is hardly any feat of mechanical magic or legerdemain which the accomplished conjurer, beholding, cannot perceive the secret of, or, if the description is sufficiently lucid, penetrate almost as readily.

In these pages there are unravelled some of the unrevealed mysteries of the Black Art which the originators have kept to themselves, but which a too-well-told account has betrayed.

Nevertheless, we confess ourselves baffled, after years of pondering, by the impenetrability of the following interesting trick. The authority is of weight, and that the things and their actions were witnessed, we do not doubt. Several of the leading mechanics in Berlin and Paris, who are powers in the world of magic paraphernalia, have equally plainly confessed their inability

to see how the pigmies were made to move. We, in a visit recently made to the United States, conversed with some gentlemen once hunters in the West, Canada, and the South-west; but though they told of somewhat similar experiments among the Sioux, Apaches, Comanches, and Arapahoes, they could furnish no solution of their *modus operandi*, still less of the present puzzle.

“In travelling up the Missouri River, during the the summer of 1831,” says the traveller Donald D. Mitchell, “I met with some experiences worthy attention. But I have felt some reluctance in narrating the following singular feats—I had almost said miracles—which I saw performed among the Arickara Indians; not because I consider them unworthy of the attention of the curious, but lest I should be accused of sporting with the reader’s credulity, or of availing myself too largely of what is supposed by some to be the *traveller’s privilege*. I acknowledge that the performance was altogether above my comprehension, and greatly excited my astonishment.

“In civilized life, we know the many expedients to which men resort in order to acquire a subsistence, and are not, therefore, surprised that, by perseverance and long practice, stimulated by the necessity, they should obtain great dexterity in the art of deception. To find it, however, carried to such great perfection by wild and untutored savages, who are neither urged by necessity, nor, indeed, received the slightest reward for their skill, is certainly very surprising.

“In travelling up the Missouri, during the summer of 1831, we lost our horses near the Arickara village, which caused our detention for several days. As this nation has committed more outrages upon the whites than any other on the Missouri, and seem to possess all the vices of the savage without a redeeming virtue, we

found ourselves very unpleasantly situated near the principal village, without sufficient force to repel an attack, if one should be made.

“After some deliberation, we adopted the advice of an old Canadian hunter, and determined to move our chattels directly to the village, and, while we remained, to take up our lodgings with the tribe. We were emboldened to this step by the assurance of the Canadian hunter that the Arickarees had never been known to kill but one man who had taken refuge within the limits of their town, and that their forbearance originated in the superstitious belief that the ghost of the murderer had haunted their encampment, and had frightened away the buffalo by his nightly screams.

“We were received in the village with much more politeness than we expected; a lodge was appropriated to our use, and provisions were brought to us in abundance. After we were completely refreshed, a young man came to our lodge and informed us that a band of bears (as he expressed it), or medicine-men, were making preparations to exhibit their skill, and that if we felt disposed we could witness the ceremony.

“We were much gratified at the invitation, as we had all heard marvellous stories of the wonderful feats performed by the Indian medicine-men, or jugglers. We accordingly followed our guide to the medicine-lodge, where we found six men dressed in bear-skins, and seated in the circle in the middle of the apartment. The spectators were standing around, and so arranged as to give each individual a view of the performers. They civilly made way for our party, and placed us so near the circle, that we had ample opportunity of detecting the imposture, if any imposition should be practised. The actors, if I may so call them, were painted in the most grotesque manner, blending so completely the

ludicrous with the frightful in their appearance, that the spectator might be said to be somewhat undecided whether to laugh or to shudder.

“After sitting for some time in a kind of mournful silence, one of the jugglers desired a youth who was near him to bring him some stiff clay from a certain place, which he named, on the river bank. This we understood through an old Canadian named Garrow, who was present and acted as an interpreter. The young man soon returned with the clay, and each of these human bears immediately commenced moulding a number of little images exactly resembling buffaloes, men and horses, bows, arrows, &c. When they had completed nine of each variety, the miniature buffaloes were all placed together in a line, and the little clay hunters, mounted on their horses, and holding their bows and arrows in their hands, were stationed about three feet from them in a parallel line. I must confess that at this part of the ceremony I felt very much inclined to be merry, especially when I observed what appeared to me the ludicrous solemnity with which it was performed. But my ridicule was changed into astonishment, and even into *awe*, by what speedily followed.

“When the buffaloes and horsemen were properly arranged, one of the jugglers thus addressed the little clay men or hunters :

“My children, I know you are hungry : it has been a long time since you have been out hunting. Exert yourselves to-day. Try and kill as many as you can. Here are white people present, who will laugh at you, if you don't kill. Go ! don't you see that the buffaloes have already got the scent of you, and have started ?”

“Conceive, if possible, our amazement, when the speaker's last words escaped his lips, at seeing the little images start off at full speed, followed by the lili-

putian horsemen, who, with their bows of clay and arrows of straw, actually pierced the sides of the flying buffaloes at the distance of three feet! Several of the little animals soon fell, apparently dead; but two of them ran round the circumference of the circle, a distance of fifteen or twenty feet, and before they finally fell, one had three, and the other five, arrows transfixed in his side.

“When the buffaloes were all dead, the man who first addressed the hunters spoke to them again, and ordered them to ride into the fire—a small one having been previously kindled in the centre of the apartment—and on receiving this cruel order, the gallant horsemen, without exhibiting the least symptoms of fear or reluctance, rode forward at a brisk trot, until they had reached the fire. The horses here stopped and drew back, when the Indians cried in an angry tone, ‘Why don’t you ride in?’

“The riders now commenced beating their horses with their bows, and soon succeeded in urging them into the flames, where horses and riders both tumbled down, and for a time lay baking on the coals. The medicine-men gathered up the dead buffaloes, and laid them also on the fire, and when all were completely dried, they were taken out and pounded into dust.

“After a long speech from one of the party, of which our interpreter could make nothing, the dust was carried to the top of the lodge, and scattered in the winds. I paid the strictest attention during the ceremony, in order to discover the mode by which this extraordinary deception was practised; but it was of no avail.”

ANIMAL MESMERISM.

Everybody is aware of the singular rigidity of the muscles and spell-bound state into which one can place himself by giving entire attention to one thought or occupation. Painters intent upon their work will suffer a mild attack of lockjaw, a writer will let his limbs be quite paralyzed though his right hand is swiftly wielding the pen, and sculptors have walked off scaffolds high in air whilst having their eyes rivetted on their work to the exclusion of other objects.

The old trick of sending a fowl to sleep by holding its beak to a chalk line points out how early the entrancing of animals was no mystery.

If a thread be suspended over the comb of a chicken so that the ends hang down over the eyes, the fowl will remain in a perfectly cataleptic condition, and finally pass into somnolence, so deep, indeed, that it will permit all possible movements without giving any signs of life. Or, if a pigeon be pressed gently upon a table, so that it cannot use its wings, and a finger be placed before its eyes, and moved back and forth, following the motion of the head, so that the eyes must continually notice it, the bird will soon become quiet, and will not fly away when the hand is removed. Again, if a crab be held by the tail with one hand, and the other hand, the fingers curved slightly downward, be passed over it from the tail toward the head with a stroking motion, a certain distance from it, but not touching it, the animal will, in a short time, fall into the so-called magnetic or mesmeric sleep, and can then be set up vertically on its head and claws; furthermore, if the movement of the head be now made in the opposite direction, the magnetism will pass off, and the animal will return to its normal condition.

But, in fact, Professor Czermak, of Leipsic, shows that the so-called magnetizing operation has nothing whatever to do with the condition of the animal—a similar state being induced by hanging it up by a cord tied around its tail. He remarked that the animal is most prone to pass into this somnolence in the autumn and winter, and suggested, as an explanation of the phenomenon, that excitability of the nervous system of the crab is impaired, and the organs of motion are consequently disturbed in their functions, when the animal is placed in such an involuntary and unusual position. In reference to the well-known fact, that if a chicken in a sitting position on a table be gently pressed by one hand upon the supporting surface, the head and bill pressed down with the other hand, and a chalk line drawn from the tip of the bill, the fowl will remain perfectly powerless in the position given to it for some time after the removal of the hands—the professor found that the chalk line was not essential to the success of the experiment. He also ascertained that subjects least accustomed to association with man, and that seemed most unruly before the experiment, pass most rapidly into the somnolent condition. This phenomenon was explained by Father Kircher, in 1645, on the hypothesis that the chicken imagined the chalk line to be a cord holding its bill down after the finger had been removed. As a physiological explanation, a mechanical irritation of the brain and nerves by pulling might at once suggest itself. It is known that certain excitements of exterior nervous apparatus will often exert a decided effect on the nervous centres—the brain and the spinal cord. This is very evident in the case of a frog having its fore-legs tied together and exciting a portion of the nerves of the skin. It will then, when placed on its back, remain perfectly quiet, and only regain its activity when

the cord is removed, while a frog that is free cannot be made to remain upon its back. There can be no doubt that this is a reflex phenomenon; but the case of the chicken may not be equally so. The peculiar, unusual position of the animal may doubtless co-operate, and although the chalk line can be clearly demonstrated to be unnecessary, yet there are facts that indicate that it may not be without its influence in attracting and fixing the attention of the fowl.



AQUATIC AMUSEMENT.

MAGICAL TRICK WITH A GASLIGHT.

Lay a piece of wire gauze upon the glass chimney of a common argand gas-burner, when the flame will be

enlarged to twice its former dimensions, and its light fully doubled. If the experiment be made with a common argand oil-lamp, the flame will be often enlarged, but so discoloured as to yield less light.

THE MAGIC DOUBLE GLOBE.

The old trick of "the Invisible Girl," described in an early volume of this series, has been improved upon so as to become almost a new invention. It consists of an outer and inner globe, five feet in diameter, the inner sphere arranged so as to revolve within the larger shell. On one side of this outer shell there is a circular orifice, two feet in diameter, and this corresponds to a similar one in the globe within, so that a revolution of the globe will open or close it at will. A violin placed inside on a glass disc is heard to give forth music, and a bag filled with hats is made to disappear and reappear by the revolving of the globe.

A WONDERFUL SLEIGHT-OF-HAND FEAT.

(As described by an eye-witness.)

The Indian conjurer spread a piece of matting in the verandah, and squatted, producing from his shawls a bag, which he emptied on the stone in front of him. The contents were a quantity of little bits of wood, some forked, like branches of a tree, some straight, each a few inches long; besides these, there were some fifteen or twenty little painted wooden birds, about half an

inch long. The old man chose one of the straightest and thickest of the bits of wood, and turning his face up in the air, poised it on the tip of his nose. The little boys who sat by him henceforth handed him whatever he called for. First, two or three more pieces of wood, which he poised on the piece already there; then a forked piece, to which he gradually made additions, until he had built upon his nose a tree with two branches. He always kept its balance by adding simultaneously on each side, holding a piece in each hand, and never once taking his eyes off the fabric. Soon the two branches became four, the four eight, and so on, until the skeleton of a tree was formed, about two feet high, and branching off so as to overshadow his whole face; he could just reach with his hands to put the topmost branches on. It was a wonderful structure, and we all held our breath as he added the last bits. But it was not done yet. The boys now handed him the little birds, and still two at a time, one in each hand, he stuck them all over the tree. The complete immobility of his head and neck while he was balancing this structure on the tip of his nose was something wonderful, and I think he must have breathed through his ears, for there was not the slightest perceptible motion about nose or mouth. After putting all the birds on he paused, and we, thinking the trick was finished, began to applaud; but he held up his finger for silence. There was more to come. The boys put into one of his hands a short hollow reed, and into the other some dried peas. He then put a pea into his mouth, and using the reed as a pea-shooter, took aim, and shot one of the birds off the branch. The breath he gave was so gentle and well calculated that it gave no perceptible movement to his face; it just sent the pea far enough to hit a particular bird with perfect aim,

and knock it over. Not another thing on the tree moved. Another pea was fired in the same way, and another bird was brought down, and so on until all the birds were bagged. The fire was then directed at the branches and limbs of the tree, and beginning from the topmost, the whole of this astonishing structure was demolished piecemeal, even more wonderfully than its manner of erection.

NOTE.—Our old English long-pipe trick is no less marvellous, where churchwardens are balanced, the stem of each successive pipe being inserted in the bowl of a preceding one, till the performer balances a whole tree, so to say, on the point of one tobacco pipe, on his nose or chin.

THE FAMOUS OLIVIER'S COIN TRICK.

The following trick, simple as it is, earned the conjurer Olivier the title of "Famous," and the honour of a commanded performance before the Emperor Napoleon I.

There is required an ordinary table, and a chair behind it, or, if you have the magician's table, with a cushioned ledge on the side opposed to the audience, all the better with that. A sure eye and a light hand are the other concomitants.

Performance.—Borrow a half-crown piece, and have it marked. In the performer's left hand is another half-crown hidden. When you are handed back the coin given to be marked, you substitute the unmarked one; this done, pretend to put the marked coin in the left hand, but retain it in the right, throwing the one ready beforehand in the left upon the table. It will be supposed the borrowed one.

Ask of the audience another coin, but a smaller one, such as a shilling or florin. When such a loan is desired by a conjurer, nearly everybody dives into his pockets. But pay no heed to the first row of the audience, and, eluding them adroitly, you will be obliged to bend gracefully over them to reach the coin tendered by somebody in the second row. As, again, in thus describing a crescent, you are curved over someone in the first row, insert the marked coin from your right hand into some aperture of his or her apparel, which you have previously remarked with that view.

If it is a man, let his coat or vest pocket, or even the interstice between his coat and waistcoat at the back of the neck, be the receptacle, or, in the case of a lady, her pocket, usually agape with scent-bottle, fan, handkerchief, or what-not: for, poor creatures, they have but the one pouch in which to bestow their portable treasures as compared with man's half-dozen or so. Should the touch be felt, the pressure will not be noticed, as being merely a necessity of your constrained position.

In the days of the inventor of this trick, men's attire was very well adapted for its success, the sleeves being turned up "deep," and in this sort of pouch he usually secreted the coin.

The coin being thus lodged, the conjurer returns to his stage and table with the smaller coin borrowed. You execute with your half-crown and this second one some such trick of disappearances as are described in our foregoing volumes, concluding by showing the half-crown, and asking if it is not the borrowed one. The owner will probably say he believes so, but that he cannot see the marks at that distance. Upon which, while you are seated at your table, as you must be if it is an ordinary one, on account of its want of height, you pretend to throw it into your left hand, really keeping

it in the right, and then, rising, you leave it on the chair (on the ledge, if your table is the proper one); everybody being of the impression that you have it in your left hand, you advance towards the audience, and whilst seeming to pass the coin from one hand to the other, conclude by saying :

“I shall send this coin into the pocket of the gentleman yonder. It is marked, you remember, so we shall know it. One, two, and a fly !”

You snap your fingers, and open your hands, to prove they are empty. The marked coin is found in the designated place, and recognised. The surprise is great, because there are no doubts about your having performed the trick with that identical piece of money.

Olivier, to repeat the reminiscence furnished us of his performances, sat during the trick, and left the coin on his chair. When he bade the coin appear in the spectator's sleeve, he would remark, with a pleasant smile :

“The coin, sir, is in the cuff of your coat. If the cuff is sewn up, you will have to have it ripped open, to return it to its owner; but, sewn or unsewn, there you will find it !” But never was the coin found in a sewn-up sleeve.

MAGICAL WAY TO TELL THE DISTANCE OF THUNDER.

Count, by means of a watch, the number of seconds that elapse between seeing the flash of lightning and hearing the report of the thunder; allow a little over five seconds for a mile, and the distance may be ascertained. Thus, say the number of seconds is twenty; then,

5)20

4 miles distant;

so the distance may be estimated by remarking the number of beats of the pulse in the above interval; provided, of course, that we know the rate at which the pulse beats in a certain time. In a French work it is stated that if the pulse beat six times, the distance of the thunder would be about 30,000 feet, or five miles and a half; thus reckoning 5000 feet for each pulsation.

In a violent thunder-storm, when the sound instantly succeeds the flash, the persons who witness the circumstance are in some danger; when the interval is a quarter of a minute, they are secure.

THE MYSTERIOUS DANCERS.

Make a hollow box, one inch and a half deep and a foot square; line the bottom with ordinary window glass, or, better still, plate looking-glass; have a sheet of common or plate glass to form the cover. Now cut out of paper a variety of little figures, and put them into the box, together with a few small feathers, and any other light substances; then rub the surface of the glass cover with a warm dry silk handkerchief. In a minute the figures and feathers will become electrified and assume an erect position, dancing about at a rapid rate to every motion of the rubber, causing much amusement.

BULLOCK'S AUTOMATON SOOTHSAYER.

Among the admirable automata which were once exhibited at Bullock's Museum, and many years after-

wards at Leicester Square, was one which possessed more than ordinary attraction, and was thought to have been one of the most complex of those wonderful machines, though none could be more simple in its moving powers. The automaton alluded to was called the conjurer. The machine represented a tall cabinet, having at the bottom a drawer into which a card could be placed. In the upper part of the cabinet was a pair of folding doors; and before it, at some distance, stood the figure of the conjurer, with a long white wand in his hand, and dressed in appropriate costume. The spectator had presented to him eight very thick cards, each with a particular question upon it; he was directed to choose one of the questions for solution, to put it into the drawer below, and then to close it.

A single piston works up the shaft of the cabinet (or column) and causes it to turn an octagonal box, on the face of which are the cards called for by the audience, or the answers to their questions. Each time a card is inserted, we repeat, the box makes one turn, and presents a fresh face to the front of the case. These two folding doors open to discover the reply, seeming to do so upon the tap of a wand held by a doll dressed like a magician, which is also worked by the same piston. Robert Houdin the younger, who was lately exhibiting some excellent mechanical puzzles and automata in his hall at Paris, and who showed us them in detail on the occasion of a recent visit, has greatly improved upon this idea.

He mounts four tableaux of mechanical figures on a platform, each having its walls and background parting it off from the others. The platform revolves. The whole is comprised in a case of a shape to mislead the spectator from suspecting the means of attaining the results. The piece being set in motion, the doors

in front open and show a tableau of figures which go through their performance. The doors close, and reopening at once, disclose a second and quite different scene and miniature actors. As the audience naturally imagine there has been a change of the figures and scene, and not the actual substitution, the effect is capital.

TO SPIN INDIA-RUBBER.

Dissolve a small piece of india-rubber in a little caoutchoucine, and put a drop or two of the solution upon a looking-glass or window-pane; touch it lightly with a dry piece of india-rubber, quickly draw out a fine thread, which attach to a card, and wind off as silk.

ROBERT HOUDIN'S AUTOMATA.

The late Robert Houdin, who was the most prominent conjurer to apply electricity to the working out of modern magical illusions, was in early life a watch-maker. This training made him an ingenious mechanic, so that his automata were recognised as as valuable as those of Vaucanson in a previous era. The son of this eminent magician, of whom the father speaks so highly in his Memoirs, carries on with perfect credit the fame of the family. He was lately giving in Paris an exhibition of automata and other mechanical marvels, which will no doubt be one day seen in London, for which reason we give a sketch of the more important.

The usual stock-pieces of such theatres are shown—

the rope-dancers, jugglers, velocipede-riders, singing birds, and so on.

"The Grand Egyptian Conjurer" performs nearly every sleight-of-hand trick known, seated the while before a magician's table in miniature, but containing all the traps known to the art, working with a celerity, noiselessness, and precision, which many a human being may well envy.

The grave, interested air of the magician as he follows the movement of his cups or waves his hand to direct the spectator's attention to the wrong quarter, like a true member of the magi; his roll of the eyes in triumph when he has successfully proved to you that the solid black ball put under a cup can turn into a canary bird at a moment's notice, are full of a humour more often found in English and German toys than in French ones.

"The Evening Prayer" represents a woebegone saint, in a cave of his hermitage, with his emaciated hands reverently clasped in prayer, and holding his beads. As the far-off tinkling of a bell is heard, the hermit bows his head, his lips move, minute though they are—for the figure erect would not overtop six inches—and he crosses himself, without omitting even one of the prescribed gestures. If the Orientals, who invented the prayer-mill, by which one's devotions could be turned out by a crank, had this Jerome in life-size, they would make a high priest of him instanter.

"The Chinese Knife-throwers" is a tableau wherein two figures, no taller than your finger is long, go through all the performance of the celebrated dagger-impalement exercise introduced to the outer barbarians within our lifetime. One unhappy John Chinaman stands against a broad board with extended limbs, and another, with the proverbial smile so "childlike and bland,"

flings a sheaf of knives at him, one by one. An ingenious device gives an air of reality to the cast of the knife, which enhances the illusion to the highest point. An accompaniment of genuine Chinese music, that is, about as genuine as M. Offenbach's in "Ching-chow-Hi," issues from the pedestal of this noteworthy trick-piece.

"Indians crossing the Niagara River by the Falls" is a moving picture of much merit. On a raft, which is tossed about by a tumultuous stream, several Indians are striving to keep their footing whilst paddling for life or death. The faces are nicely modelled, though about the size of hazel-nuts, and the movements of the limbs have none of that jerky action which blemished the old-time puppets and marionettes.

"St. Anthony's Temptation" is amusing. The Job-like martyr kneels praying, as a long procession of temptations, after Callot, Rosa, Breughel, and other painters, defiles through his gloomy cell. His face changes expression in harmony with his attitudes, as the objects vary from merely sensual delights to more elevated ones.

In the "Attack on the Travellers," a condensation of the old school of the Coburg melo-drama in one scene, there is first shown a country road, with a ruined castle to the left; a bridge over the way at the back, and a hedge to the right, ending in a stone cross in the fore-ground, where sits a beggar. Music is heard throughout the action. A traveller in cloak and broad-brimmed hat, with a long sword banging against the calves of his legs, makes his appearance at the corner, and advances under the bridge. The beggar takes off his hat to him, and holds it out for his charity. The traveller, however, threatens to pass on without being generous, when the beggar waves his hat by way of signal. The wayfarer pauses and draws back suspiciously.

The distant music of a robbers' drinking-song is heard. A small window in the ruined wall flies open, and three or four murderous hands and arms are thrust forth; two hold pistols, which actually fire, and the traveller falls, with his hand upon his sword, a dying man at the feet of the mendicant; the beholder, perhaps, in accordance with his remembrance of the pistol-bowl-and-buff-boot drama, expects the latter to spring to his feet, throw off his tattered cloak, and display his commanding person encased in a brigand leader's splendid costume, not to say, shout, "Ha, ha! 'tis I, Rinaldo Rinaldini, *alias* Massaroni, of the Cutthroat Pass!" But peradventure this were too much to expect from even the mechanical talents of a Robert Houdin. As it is, this is the nosegay of the collection.

TRICKS WITH WORDS.

No one knows who first mangled a name so as to make an anagram, and probably nobody wishes to know. Like most other things on earth, either very good ones or atrociously bad ones are amusing and delightful.

Simply defined, the art of anagram-making lies in using the letters of one word to make, by altered placing, such another word as will have increased force by relation to the former. When we find in "Horatio Nelson" the motto "Honor est a Nilo!" we have something excellently apt, and a credit to the maker. For greater facility, the letters i and j are interchangeable, and, in humorous trials or on great pressure, liberties in the way of phonetic or other misspelling and leaving out of letters may be perpetrated.

We subjoin some which will serve as models for those caring to seek out the innuendoes concealed in the name of a friend or foe.

Waller the poet : Lawrel. Yes, Milton : Solemnity. Notes and Queries : O ! send in a request. John Bunyan : Nu hony in a B, is much in the Josh Billings (shilling jobs) vein. Florence Nightingale : Flit on, cheering angel. Oliver Cromwell : O welcom reliver. Galenus : Angelus.

Maria Stenarda Scotorum regina ; Trusa ir regnis, morte amara cado (her story in one line).

John Abernethy : Johnny the Bear ! Bryan Waller Proctor : Barry Cornwall, poet.

TAUTOLOGICAL TRIBUTE.

TO A YOUNG LADY NAMED CARELESS.

Careless by name, and Careless by nature,
 Careless of shape, and Careless of feature.
 Careless in dress, and Careless in air,
 Careless of riding in coach or in chair.
 Careless of love, and Careless of hate,
 Careless if crooked, and Careless if straight.
 Careless at table, and Careless in bed,
 Careless if maiden, not Careless if wed.
 Careless at church, and Careless at play,
 Careless if company go, or they stay.
 E'en Careless at tea, not minding chit-chat ;
 So Careless ! she's Careless for this or for that.
 Careless of all love or wit can propose ;
 She's Careless—so Careless, there's nobody knows.
 Oh ! how I could love thee, thou dear Careless thing !
 (Oh, happy, thrice happy ! I'd envy no king.)
 Were you Careful for once to return me my love,
 I'd care not how Careless to others you'd prove.

I then should be Careless how Careless you were ;
And the more Careless you, still the less I should care.

NUMERAL EPITAPH.

To give some idea of what passed for a rare good thing in earlier days, we give the numeral epitaph on the friend of Madame de Staël, Benjamin Constant :—

Here lies a wrestler for his hand al—1,
Who beat the Empire and the Bourbons—2.
With wit in plenty, more than others—3,
He feared not all a host to stand be—4.
He was the enemy of Henry—5.
Amongst the ministers he should make the—6,
For with the highest he most sure stands—7.
But death removed him December—8,
And he has gone to take repose be—9.
May we have such a man more of—10.

BARNUM THE SHOWMAN'S TRICK.

P. T. Barnum's band in its palmy days was celebrated for doing the worst playing heard. Some one asked Barnum why he did not get a better. He said the idea was to have them play so badly that everybody would pay a quarter to get inside his museum, where they could not hear the music (?). It was also profitable, as the following anecdote goes to show.

One morning, the papers contained an advertisement :
"Wanted, a trombone player for Barnum's Balcony Band. Apply between ten and two, at the office of the Museum." So about eleven o'clock the door opened, a trombone entered, and a man behind it.

"You want a trombone player?" said the new-comer.

"Yes," said Mr. Barnum.

"What is the place worth?" said the applicant.

"Oh, about twenty-five dollars a week, I suppose," said Barnum.

"Very well; I should like it."

"All right," said Barnum.

So all the week through the trombone was at its post. Then came Saturday, and Mr. Green, the trombone player, presented himself for his salary. Mr. Barnum handed him a paper on which was written:

| | |
|---|----------------------|
| "Mr. P. Green | To P. T. Barnum, Dr. |
| "To playing trombone on his balcony one week....\$25. | |
| "Aug. 11, 1852. | Rec'd paym't." |

Mr. Green read the bill, smiled, and then looked at Barnum.

"Well," said Mr. Barnum, "it's all right, isn't it?"

"Why," said Green, "the amount is right, but you have made such a funny mistake. You make me the debtor instead of you.

"I see no mistake in that," said Barnum. "You are the one that has made a mistake. You see, the case is this. There are a good many gentlemen in this city who are fond of practising on brass instruments, but they cannot do so at home, on account of the neighbours' objections. So I furnish them room on my balcony a number of hours per day, where it does no harm, the street being so very noisy, and they pay me a sum per week for my trouble in keeping the organization full. You must have thought me green to hire and pay such an infernal poor lot of players. However, as you appear to have been honestly mistaken, you can pay me ten dollars this week; but hereafter I can make no reduction."

Mr. Green did not play the second week.

PECULIARITIES OF THE ENGLISH LANGUAGE

A pretty deer is dear to me,
 A hare with downy hair,
 A hart with all my heart I love,
 But barely bear a bear.
 'Tis plain that no one takes a plane
 To shave a pair of pears ;
 A rake, though, often takes a rake,
 And tears away all tares.
 All rays raise thyme, time raises all ;
 And through the whole, hole wears,
 And Wright in writing "right" may write
 It "wright," and still be wrong.
 For "write" and "rite" are neither "right,"
 And don't to wright belong.
 Beer often brings a bier to man,
 Coughing a coffin brings,
 And too much ale will make us ail,
 As well as some other things.
 The person lies who says he lies
 When he is not reclining ;
 And when consumptive folks decline,
 They all decline declining.
 A quail don't quail before a storm ;
 A bough will bow before it ;
 We cannot rein the rain at all,
 No earthly power reigns o'er it.
 The dyer dyes awhile, then dies ;
 To dye he's always trying,
 Until upon his dying bed
 He thinks no more of dyeing.
 A son of Mars mars many a son ;
 All deys must have their days :

And every knight should pay each night
To Him who weighs his ways.
'Tis meet that man should mete out meat
To feed misfortune's son ;
The fair should fare on love alone,
Else one cannot be won.
A lass, alas ! is something false ;
Of faults a maid is made ;
Her waist is but a barren waste ;
Though stay'd, she is not staid.
The springs spring forth in spring, and shoots
Shoot forward one and all.
Though summer kills the flowers, it leaves
Their leaves to fall in fall.
I would a story here commence,
But you might find it stale,
So let's suppose that we have reached
The tail end of our tale.

THE UNDECIDED QUESTION.

A just but severe man built a gallows on a bridge, and asked every passenger whither he was going. If he answered truly, he passed unharmed ; if falsely, he was hanged on the gallows. One day a passenger, being asked the usual question, answered :

“I am going to be hanged on the gallows.”

“Now,” said the gallows builder, “if I hang this man, he will have answered truly, and ought not to have been hanged ; if I do not hang him, he will have answered falsely, and ought to have been hanged.”

It is not recorded what decision he came to.

HOW TO RAISE A LAUGH.

Get your company all attention, and then ask your victim the following question, the same reply answering for both decisions: "Which would you rather be, a greater fool than you look, or look a greater fool than you are?" Whichever he chooses, you have only to add, "That is impossible," to produce laughter.

TRIUMPH OF ALLITERATION.

The following line was composed by a young lady in the year 1860, on the occasion of a gentleman by the name of Lee planting a lane with lilacs:—

Let lovely lilacs line Lee's lonely lane ;
in which not only every word, but every syllable, begins with the same letter.

ABBREVIATED BUSINESS LETTER.

The following purports to be the reply of a New Yorker to the preceptor of his son, who wrote to ask his preference on the prescribed course of studies:—

"Wall Street, New York, Dec. 1, 1872.

"SIR,—Your's to h'd and cont's noted. Don't want son to study str'n'my. 'Twon't pay. No ships run'g to stars and no prospect of it. All bosh, if 'twont h'lp trade. Also stop Latin & Greek. Boy'll pick up such Lt'n words as petit larceny and delirium tremens, &c., soon 'nough here in Gold b'd. I'm bullish on 'rithm't'k & sp'g and T'k some stock in Gr'm'r too, but I can make money 'nough without L'tn and G'k, etc. No use. I'm memb' St'k Exc'g, Chamb' Com', &c. Daboll's Arithmetic is short of stock terms. Put boy thr'gh on margins, corn'rs, Dr., Cr., A. pr. ct. cl'r house, Rail'rd's and Go'v'ts yourself, & go short on y'r G'r and Lt', &c. &c. They'r best m'dize for the street—always in dem'd here. I mean Dr & Cr etc. When term ends, please

ship boy & bks by N. Y. C. or H. R. R., with B. L'dg in hat, cons'gn to —B'd st. Draw sight d'ft for bill. Money easy—stk's stiff and short int'r'st cov'rd. Shall I get you long on 100 L. S. at 67? Boy's tuition do for margin. Exc'nge e'sy. Yours, etc."

WEATHER WISDOM.

The ingenious individual who never carried an umbrella uselessly, and yet never was caught in a shower, attributed his fortune to his always acting contrarily to what the barometer predicted. He went by the mercury, whereas he would have found the animal whence Dr. Sangrado was probably evolved a more reliable index. A leech kept in a phial or bottle, partly filled with water, will indicate approaching change in the weather. Place on a window-ledge an eight-ounce phial containing a leech and about six ounces of water, and watch it daily. When the weather continues serene and beautiful, the leech will lie motionless at the bottom of the phial, rolled in a spiral form. When it begins to rain at noon, or a little before or after, the leech will be found at the top of its lodging, where it remains until the weather becomes settled. When wind approaches, the leech gallops about its limpid habitation with great liveliness, seldom resting until the wind becomes violent. When a thunder-storm is about to appear, the animal seeks a lodgment above the level of the water, displays great uneasiness, and moves about in convulsive-like threads. In clear frost, as in fine summer weather, it will lie constantly at the bottom; whereas in snowy weather, as in rain, it dwells at the very mouth of the phial. The observer should cover the mouth of the phial with a piece of linen, and change the water every week or two.

CATCHING THE CONJURER.

A magician must never be trapped by even the cleverest fellow in the crowd. It is true that he is rarely exposed to any tricks in cultivated assemblages; but one is not always playing with sovereigns before all the crowned heads of Europe. We were once at a country fair, where we saw a humble brother in the art dumfounded when he offered to change a borrowed penny into a crown piece, by a rustic calling out that the gentleman had only to hand him four-and-elevenpence, which would come to the same thing!

A SPIRITUALISTIC CONCERT.

The scene is laid in Chicago, the queen city of America, land of innovations.

Walk into the drawing-room of a fashionable medium, where is assembled a number of eminent guests. There are several musical instruments about the room, such as an organ, piano, bass viol, and violin.

"This evening," remarks the host, "you see only the instruments, but they will be fingered by unseen hands. What think you of having the piano played by Mozart, the violin by Paganini, the organ by Bach, and the others of the band by the great musicians of the past?"

He touched a hand-bell on the table, and while the gas was lowered so that one could easily fancy spirit forms were flitting about, there was heard the opening bars of a concerto, at first soft as a seraph's whisper, but presently penetrative with force. The instruments remained where they had been placed, yet their chords certainly vibrated.

The lights were turned on anew, and the final strains

were still sounding without any human being appearing in their proximity.

“You are free to examine the adjoining apartments,” said the medium, “and all the house to boot. There will be found no one, high or low.”

A few of the incredulous began the search, to the music of the mysterious instrumentalists.

Explanation.—It was a trick executed by means of electricity, so generally employed in the deceptions of spiritualism as to almost deserve the title of its hand-*maiden*.

You will remember that any piece of soft iron wound round spirally with metallic wire will become a magnet whenever an electric current is passed through the wire. When the current is cut off, the magnetism ceases. Hence, if you place a small iron lever before the iron thus prepared, you can make it rise and fall, or otherwise play obediently to the flow or cessation of the current. This gives the simplest form of the spirit-rapping apparatus, used by Professor Anderson and others to answer questions of the audience or their own as to the age of a given person, the date on a coin, or the time told by a watch. If the lever in its movement governs a cogwheel, which turns a needle upon a dial-face, you have the telegraph.

Now for another and most curious principle. Take a long iron rod, and wind it spirally with iron wire. Start and cut off rapidly the passage of an electric current through this, and these successive changes will so vibrate the rod that it will finally sing, and with a sustained sound, depending for power on the swiftness of the electrical communications. The rod has become like a fiddle-string, with the advantageous difference that it can alone produce all sounds from high to low—

a sort of one-string Chinese fiddle effect, or Paganini's *tours de force* on the single string. In short, it alone replaces all the chords of an instrument.

Suppose now that you wish to have a piece of piano-music heard in Liverpool, really played in London. You must have the piano, to begin with, expressly arranged with a transmitter. Every time a note is played, an electric current is sent into an iron exciter which acts on a metallic arm. The vibration is repeated by a sonorous iron rod at the other extremity of a telegraphic wire. The iron rod reproduces the sound of the note like a faithful echo of the piano.

To obtain deeper sound, the metallic rod is placed on a sounding board, a violin, or bass viol. Thus may an unhandled violoncello stuck up in a corner discourse most eloquent music in your back parlour while Miss Shakes is strumming away a mile off.

The voice also can be transmitted. The singer should stand near a specially constructed drum. The membrane is affected by every note, and the quivering is faithfully transmitted to the speaking-rod.

A telephone, to transmit sound telegraphically, was made by Professor Reisch, of Friedrichsdorf, about 1863. A vocalist sang a few hundred yards away from the Frankfort hall of science, but his voice was clearly heard by the audience seated before the delivering-end of the wire of the apparatus.

But, as in any experiment which depends upon confederates, keep on good terms with them. You may remember some imitations of the Invisible Girl, which came to grief by neglect of this keystone. The Anthropoglossos was a failure, mainly because the owner of the voice, heard apparently from the head, spoke unmitigated cockney language. There was a talented German once upon a time who advertised that he had

an organ that would play any tune out of an enumerated set, at the command of any one of the audience. This made a great noise at the time, and puzzled all the conjurers. The organ was placed on the table, with its back against the wall; the company was invited to examine it, then ask for a tune, which was immediately played; and if anyone desired it to stop, it was instantly silent. This went on for a long time; and the ingenious inventor was making a rapid fortune, and the secret would have been buried with him, had he not behaved most unharmoniously towards his loving wife one day, just before the performance was about to commence. The room was crowded as usual, and a tune was called for, but not a note was heard; the owner beame uneasy, and said, in a soothing, coaxing manner, "Do play, my coot organs;" still not a sound was heard. He got out of patience, and threatened to smash the instrument to pieces, when a hoarse female voice was heard to growl out, "Ay, do, you tyvil; preak the organts as you proke my head this morning!" This was too much for the choleric German; he took a chair and gave the instrument such a thwack that it drove it through the paper partition of the wall, carrying with it another organ which had been placed close at the back of the sham one, at which sat the obstinate grinder—*his wife!*

SPORT WITH COLOURED WAFERS.

The following anecdote is suggestive. Thomson, on one occasion, in writing to Chantrey, headed his address by sticking a large red wafer on the paper, and drawing thereon eyes, nose, mouth, and ears, which, however ridiculous, from the just arrangement of the

features and the proportions, gave a lively caricature of the rubicund face of the sculptor. Chantrey used to show this with great delight, and often, instead of signing a jocose and merry letter, would stick a wafer with the features delineated by his own hand. By using coloured wafers, a gallery of friends in caricature, correct in complexion at least, may be formed. Chantrey seems to have been fond of such jokes; as witness a call of his on a female friend lately arrived in London, and improved in health and *embonpoint*; on seeing her, Chantrey exclaimed, "Dear lady, why, you are now all circles," and he sat down, and with a pen drew out a complication of circles, indicative of feminine beauty with *embonpoint*.

HOW THE AMATEUR CONJURER JUGGLED AWAY A MAN.

To kill time at Aldershot, as at other such camps, the soldiers are encouraged to make merry by acting plays, concerts, and other such diversions. There was one soldier, a smart fellow, who had been a bit about the world, who offered himself as a prestidigitateur, and Captain K—— added him to the performers on a special occasion. He not only did the ordinary tricks neatly enough, but made a dog disappear without anybody seeing whither it went.

About a week after, the captain called the promising young soldier to his hut.

"I am going to give an entertainment at the end of the month," said he, "and I would like your services, Bradley. But don't you know some trick even superior to that disappearance of the dog?"

"Oh, that's nothing. But I am rather out of

practice. If I had leave, and a few pounds, so that I could run up to London to get the apparatus, I could astonish the regiment. The last time I made a dog vanish; now this time I will juggle away a man from before you."

"By Jove! juggle a man away! You shall have your furlough—and here's a fiver. You are a very deserving fellow, Bradley—always have your things in fine order—I must speak to the major about you," &c.

Away went the fellow, and no news came from him till two months afterwards, when the captain received a letter from "out West," saying, "Here I am, many thanks, sir! Haven't I prettily juggled away a man?"

THE CONJURER'S LAST JOKE.

Comus, the sleight-of-hand performer, who for a long time was the grand-master of his art in France, where every juggler at a country fair gave himself out as his pupil, was one of the last to wear the painted hat and starred robe. He used also to wear gold bracelets on his arm and wrist, to show that he had no inner sleeves, the outer ones being rolled up to the armpits; the formula, "You see there is nothing in my hands and nothing in my pockets!" being of later invention. This Comus was grandfather of Ledru-Rollin, and as rabid a royalist as his descendant was red as a republican. In 1793, the revolutionary committee condemned him to death. A friend was a bit surprised to see him take things so coolly under sentence. "Yes, I know death menaces me," answered the magician, "and this is the first time that I cannot execute a disappearance."

R

CAN YOU GUESS.

What have eyes and see not? Needles.

Ears and hear not? Old book leaves.

Tongues and speak not? Buckles.

Hearts and pity not? Cabbages.

Arms and toil not? Chairs.

Hands and feel not? Clocks.

Legs and walk not? Tables.

Teeth and chew not? Combs.

Lips and kiss not? Pitchers.

Nose and smell not? Gooseberries.

TO JUDGE OF WEIGHTS.

Persons accustomed to estimate weights by poising them in their hands, will distinguish perfectly between two, only differing by a thirtieth part. In comparing two weights, poise one and then instantly the other, *in the same hand*; the few seconds of time that pass between the poising of the two weights will not prevent their accurate comparison. The interval may amount to twenty seconds, yet a just estimate may still be made; but when it amounts to forty seconds, all accuracy will be lost.

HORTICULTURAL TRICK.

Take a plant of the hortensia species, rearing rose flowers, and set it in a soil full of iron; in a few days the colour will be changed to blue. Those not in the secret who have been made to remark the hue at the time just after the transplanting, will be much surprised.

TURTLE CLOVES.

This is a trick to amuse children at the table at festival times. Take a large flat raisin and half a dozen cloves, push one of the latter into the plum lengthwise, leaving the knobby end out for the head of the animal; the sharp end forms the tail, chewed a little to make it brushlike and stick up, bent with a comic curl. Two cloves on each side make the feet.



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PART VI.

THE MYSTERY OF MAGIC WRITING.

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PART VI.

THE MYSTERY OF MAGIC WRITING

THE MYSTERY OF SECRET WRITING.

A name derived from the Greek cryptography or steganography, is given to the art of writing a communication which will be understood solely by the correspondent and writer. To make pothooks and hangers, as did Napoleon the Great, Rufus Choate, the American lawyer, and Macready, on whose order to admit two to the stalls an ingenious chemist found an elaborate prescription for a cough remedy, is not in question.

To still further conceal the words, invisible inks are used, a list of which is given at the end of this article, or the following means are brought into play :

1. Abridge the words by some system agreed upon, which is stenography or brachygraphy.

2. Employ understood signs such as letters of a foreign alphabet, figures, mathematical and chemical signs, punctuation and other marks, drawings of coins, punning or other ambiguous words, colours, flowers and plants, etc. Words and phrases can be employed with an arbitrary meaning added to their ordinary one.

Like all the arts, the early essays have been crude and incomplete.

Secret writing among the ancients is often mentioned in their records.

One of the stories told by Herodotus furnishes an example of the concealed despatch. Histiaeus, of Miletus, desiring to inform Aristagoras of his intention to revolt

from the Persians, took a slave suffering from a disease of the eyes, shaved his head, under the pretext of curing him, wrote the message on the bald scalp, kept him till the hair had grown again, and then despatched him to Aristagoras, with a request to complete the cure, by shaving his head. The *ruse* succeeded. Everything came to pass as had been designed—this being a matter of course in the tales of Herodotus, as in more modern fiction. A wig would have saved the interposition of the barber.

Another means is to take a small stick and wind around it bark or papyrus, upon which to write. The bark is then unrolled and sent to the correspondent, furnished with a stick of the same size. He winds the bark again round this, and thus is enabled to read what had been written. Of this method De Quincy goes on to say: "To read across the several spires of the ribbon, it is clear that these spires must be brought into contact at the proper points of junction, which can be effected only by a staff or cylinder whose diameter has previously been adjusted to the particular spiral sweep assumed by the writer. This was the first rude artifice invented towards a cipher. It is true that, by trying the ribbon upon a series of cylinders, gradually increasing in diameter, the solution of the difficulty would at length be attained. But it is equally true that no cipher, the most exquisite, is impregnable to the deciphering skill of the mathematician, as was demonstrated in 1645 by Wallis when applying his science to the cabinet of letters captured in the king's coach at Naseby," and, had he lived to our times, he might have added the successes of Bergenroth at Simancas, and Friedemann with the Venetian ambassador's cipher despatches from England.

Herodotus tells another tale, a tale of a hare which

Harpagus used to form the envelope of a letter which set Cyrus on his guard. A transmitter of intelligence to his countrymen of Lacedæmonia upon Xerxes' warlike movements, engraved the wooden body of his tablets with the news, which he coated over with wax. The messenger reached the proper hands, but, for the moment, the blankness of the tablets puzzled the receivers. A woman, the wife of Leonidas—in fact, there is always a woman a divineress in ancient legends—guessed that the wax should be melted off, and the tidings were revealed. The lady's reward was the ultimate destruction of her husband in the Thermopylæan pass.

Theophrastus, the philosopher, suggested the insertion of a note within the cleft made in a growing willow-bough, the closing over of which, with perhaps no great evidence of the cut, would effectually conceal the communication. A rod or cane was to be made of the part of the bough comprising the lover's letter-box, and carried by the messenger. A better way was that employed by Brutus on the road to Delphos, as stated by Livy—some of the pith of a piece of wood being forced out and the writing inserted, and a plug of the pith closing up the orifice afterwards. The same author mentions pies and artificial stones as being useful to the same end.

The Romans improved upon the Greeks in the art. A Grecian sign-language was augmented by Tullius Tiron, a freedman of Cicero, and given his name. Seneca and others improved upon these Tironese Notes' and they became popular; and lasted to the close of the tenth century in Germany for public documents, France having just previously given up the use. Hence the name of *notary*.

But the other day someone advertised as a novel discovery his shorthand simplified, identical with a

cipher of which the key is furnished by the Benedictines in their voluminous "Treatise on Diplomacy." Vowels are suppressed, and signs more or less substituted.

The Middle Ages present few fresh examples of secret writing, but strong demands for it sprang up under the Renaissance in the thick of political intrigues. A great proportion of real history lies buried in record offices, mouldy and half destroyed, to prevent the full knowledge of what eminent personages were to their valets. In our own days we cannot have our immediate predecessors shown to light, as witness the bar upon the memoirs of Talleyrand, Metternich and others, even more scandalously suppressed by interested personages. Pepys' Diary is but imperfectly unfolded, and one hardly knows how much of such journals as Saint Simon's, Madame de Crequi's, and so on, have been kept sealed. The publisher of King Henry the Fourth's correspondence with the Landgrave Maurice of Hesse gives the cipher letters without an interpretation, which is perhaps the true course. There was seized under this king the cipher despatches of the Spanish, which the mathematician Viète unravelled in all its involutions. France profited by the revelation some two years. The Spanish court vowed that there must be some sorcery at the bottom of it all, claimed the trial of Viète as a necromancer, and called on the Pope to interfere. Luckily, they laughed pretty loudly at Rome in 1600, and the geometrician, backed by a powerful king, came to no harm. It is true the Italians had a higher opinion of the Holy Father than the Béarnais, for when the plenipotentiaries at the Westphalia Congress demanded the propositions of the German Emperor to be unfolded, and his ambassador asked three weeks to obtain the key to their cipher, the Savoyard envoy cried :

“A fico! here is the papal nuncio, and none doubt that the son of Saint Peter holds the keys that bind and unbind! Let us apply to him for the key you want.”

What lover but has worried himself more acutely than a calculating boy over an interminable problem, when a “3 o'clock” in his sweetheart’s billet has looked like an 8 and he fears to miss the assignation. Such a blunder was once, in a higher field, attended with happy results, as witness the following:—

The Elector Frederick III. of Brandenburg was thinking to make a kingdom of his duchy. The negotiations with the Emperor of Germany dragged during entire years. His correspondence with his agent Baron Barthololi at Vienna was in a cipher wherein a figure represented each letter, and other numerals the names of persons and places. One of the former was the Jesuit Father Wolf, chaplain of the Austrian ambassador at Berlin. Number 24 signified the elector, 110 the emperor, and 116 the priest.

One day the baron wrote that 24 (the elector) should imperatively write an autograph letter to 110 (the emperor). The 0 of this latter number was so badly written that it was taken for a 6, and the receiver judged that his letter ought to be written to Father Wolf. Much averse to so humiliating a step, the elector had too much faith in his agent to hesitate, and he wrote with his own hand to Master Rodin. He was so flattered by the long and complimentary missive that he resolved on the instant to further the prince’s views. He communicated all as in duty bound by his secret order to the General of the Jesuits at Rome, and presto! as in a fine piece of conjuring, all difficulties vanished, and the elector obtained from the court at Vienna what might have been persistently denied him otherwise. Not the

first time that a cipher has worked wonders in diplomacy.

VERGENNES' WONDERFUL CARDS.

J. F. Opitz, a German, is credited with the invention of the wonderful cipher system used by Count Vergennes, the Foreign Minister of Louis XVI., in his relations with confidential agents. It was required to find a means of sending in the letters of introduction or in the passports of foreigners coming to France, the full report upon their nationality, age, religion, antecedents, opinions, virtues and vices, without their suspecting the self-betrayal in the slightest.

In brief, colours of the cards revealed the country; as—

Yellow, England.

Red, Spain.

Green, Holland.

And so forth. The shape of the card denoted the age; as—

Circular, under twenty-five.

Oval, under thirty.

Octagonal, under forty-five.

Two lines under the name of the bearer showed his stature: as for tall and slender, parallel and wavy lines; large and stout, convergent; short and thin, straight or curved lines set apart as agreed upon.

Flowers in the fancy border of the card indicated expression, as a rose for an amiable and open countenance. Dots in the border pointed out the man's state in money matters. The punctuation marks after the names told of its owner's creed: for instance, a period for a Catholic, a comma for a Lutheran, a hyphen for a Jew, and nothing at all for an atheist. Small marks, such as are now

used by gamblers in "doctored cards," in the corners or on the edge, gave clues to the bearer's business intentions, habits, and to the course deemed necessary for the police to take as regarded him. Yet, while the minister was at once set at rest upon all matters even to the minutest detail by a single glance, the guileless carrier reckoned as most inoffensive and advantageous a card possibly thus worded:—

ALFONSO D'ANGHEHA

Recommended to the good offices of His Lordship the Count of Vergennes by the Marquis of Puysegur, Ambassador of France at the Court of Lisbon.

THE TRITHEMEAN SYSTEMS.

The first professor of the art was the abbot Trithemius, of Saint James, in Wirtzburg. In the first book of his Steganography are given 376 repetitions of the alphabet of twenty-four letters; each letter corresponds with a word of the Universal Cabalistic Language, so that there are 9,024 words in all. To present a notion of his plan we append a fragment of four of the alphabets.

- A. Jesus—Love—Fragile—Europe.
- B. God—Dilection—Miserable—Candia.
- C. Saviour—Charity—Ungrateful—Hungary.
- D. Moderator—Reverence—Ignorant—Panama.

Method: Write on paper to be afterwards destroyed, your real message, and translate it thus. Instead of your first letter, write down the word corresponding to it in the first alphabet; for the second letter, the corresponding word in the second alphabet, and soon the result is a mass of nonsensical words; but your corre-

spondent, of course referring to his similar set of alphabets, discovers the meaning at only the expense of time.

Example: Cab would appear as Saviour, Dilection, Fragile.

Any language in which the Roman letters are used can serve as the mode of communication. The rules are never to repeat or double any word, to leave nothing out, to take only one word from each alphabet and not to skip an alphabet, and to write all the words at full length and well apart. A change or transposition in the order of the alphabets from time to time would prevent the secret being employed for any lengthened period by a chance discoverer, since every method of secret writing yet invented can be rifled of its secrets by the skilled cryptographer. Some words being used more frequently than others, and particular letters recurring in regular order, tables have been compiled, by the aid of which the curious may decipher a piece of writing, which, to all appearance, is a meaningless jumble of letters or figures. Whether the thing be a hieroglyph from Egypt or an arrow-headed inscription from Assyria, an advertisement in a newspaper, or the intercepted despatch of an ambassador, the process of decipherment is the same, and only differs in degree.

Still further to tangle the skein, the obscure priest invents a cabalistic jargon of which the words exist in no language whatever.

In the third book of his Polygraphy, he refines upon this cabalistic tongue, by ordering the second letter of each word to be written next to the former, which charmingly complicates the look of the writing.

In the fourth book, he suggests the well-known mode of transposition of the ordinary alphabet, by which as many new A B Cs can be made as there are stars in the

skies. A square forms a table, in which the letters of the alphabet, or any other signs agreed upon, are arranged as follow :

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| z | a | b | c | d | e | f | g | h | i | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y | z |
| a | b | c | d | e | f | g | h | i | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y | z | a |
| b | c | d | e | f | g | h | i | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y | z | a | b |
| c | d | e | f | g | h | i | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y | z | a | b | c |
| d | e | f | g | h | i | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y | z | a | b | c | d |
| e | f | g | h | i | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y | z | a | b | c | d | e |
| f | g | h | i | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y | z | a | b | c | d | e | f |
| g | h | i | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y | z | a | b | c | d | e | f | g |
| h | i | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y | z | a | b | c | d | e | f | g | h |
| i | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y | z | a | b | c | d | e | f | g | h | i |
| k | l | m | n | o | p | q | r | s | t | u | v | w | x | y | z | a | b | c | d | e | f | g | h | i | k |
| l | m | n | o | p | q | r | s | t | u | v | w | x | y | z | a | b | c | d | e | f | g | h | i | k | l |
| m | n | o | p | q | r | s | t | u | v | w | x | y | z | a | b | c | d | e | f | g | h | i | k | l | m |
| n | o | p | q | r | s | t | u | v | w | x | y | z | a | b | c | d | e | f | g | h | i | k | l | m | n |
| o | p | q | r | s | t | u | v | w | x | y | z | a | b | c | d | e | f | g | h | i | k | l | m | n | o |
| p | q | r | s | t | u | v | w | x | y | z | a | b | c | d | e | f | g | h | i | k | l | m | n | o | p |
| q | r | s | t | u | v | w | x | y | z | a | b | c | d | e | f | g | h | i | k | l | m | n | o | p | q |
| r | s | t | u | v | w | x | y | z | a | b | c | d | e | f | g | h | i | k | l | m | n | o | p | q | r |
| s | t | u | v | w | x | y | z | a | b | c | d | e | f | g | h | i | k | l | m | n | o | p | q | r | s |
| t | u | v | w | x | y | z | a | b | c | d | e | f | g | h | i | k | l | m | n | o | p | q | r | s | t |
| u | v | w | x | y | z | a | b | c | d | e | f | g | h | i | k | l | m | n | o | p | q | r | s | t | u |
| v | w | x | y | z | a | b | c | d | e | f | g | h | i | k | l | m | n | o | p | q | r | s | t | u | v |
| w | x | y | z | a | b | c | d | e | f | g | h | i | k | l | m | n | o | p | q | r | s | t | u | v | w |
| x | y | z | a | b | c | d | e | f | g | h | i | k | l | m | n | o | p | q | r | s | t | u | v | w | x |
| y | z | a | b | c | d | e | f | g | h | i | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y |
| z | a | b | c | d | e | f | g | h | i | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y | z |

Any word will serve for a key. The word Torbay, for instance. Suppose we wish to write in this cipher, with this key, the phrase, "Next week home," we must write Torbay over the phrase, repeating it as often as is necessary, thus :

| | | |
|------|-------|-------|
| Torb | ayto\ | rbay\ |
| Next | week | home. |

To put this into cipher, we take our sign for N, the letter found in the square opposite n from the left first column and from the top row, which is g, and thus you proceed, taking each result at the angle of junction of the two imaginary lines in each case until the message is finished. See "the slow but sure cipher" in the following pages, where the same process will be at more length detailed. By using a small cutting of cardboard like a carpenter's square, the result is infallibly attained with extreme quickness. The correspondent reverses the process.

After this, Trithemius goes on to fancy a numeral alphabet "as new as it is modern." He remarks that this bristles with difficulties to the outsider, because he is almost sure to believe that there was a transposition of letters, and so labour in his researches to no purpose.

He does not forget an alphabet formed of the ordinary letters arranged arbitrarily. Cæsar's correspondence with Cicero and others were by this process.

PORTA AND CYPHER WRITING.

In the 16th century, the terrible underhand practices of the Borgias, Farneses, Visconti, Councils of Ten and other plotters forced them to mask from the common eye their mandates and advices. John Baptist Porta, a Neapolitan, whose work on the Human Physiognomy furnished many ideas to Lavater, and whose observations are important upon optics, statistics, the magic lantern, and other matters of science, discussed the various cryptographic methods in use at Milan, Venice, and Rome.

He treats of the rapping systems practised to this day by the criminal classes, by which two men in their cells or their boxes in the chapel can converse by a telegraphic code of taps on the walls, woodwork, water-pipe, etc. Dumb show, the employment of emblems, and that of torches in anticipation of the flash-system recently suggested for military night signalling, are all treated of. His last chapter gives attention to the Venerable Bede's writing upon the ancient method of talking on the fingers, such as the low Italian is still perfect in, by showing fingers in number to correspond with the numerical rank of the letter in the alphabet, or by pointing to the part of the body whose name commences with the letter also commencing the word to be divined.

He proposes for the Lacedæmonian scytale, not a band, but a thread which, after receiving the marks, should be rolled on a bobbin or sewn as edging to a garment. He adds that one may write on the edge of a book inclined obliquely, on the edge of a pack of cards sloped off in a given direction, or on the open wings of a white bird.

Of secret writing properly so called, he states the manners as three: literal transposition, which comprises the reversal of words, the substitution of figures for letters and the alteration of the value of letters.

When he comes to speak of the deciphering, he does for Latin what, as regards English, Poe has done in his "Gold Bug" (for which see in our later pages the article on Deciphering English Secret Writing); furnishing the scale of frequency of recurrence of vowels and consonants.

CIRCULAR CYPHERS.

Porta expatiates in his fourth book upon the mutation of value in letters so that one may represent the same character by different letters at various times.

Exclude *k*, *x*, *j* and *v* from the alphabet and let agreed-upon characters stand for the remaining twenty letters. Form a triple dial-plate, with movable central disc, dividing all three into twenty, twenty-four or twenty-eight parts, so that each space will correspond most exactly. The outer ring should have the regular line of numbers from 1 to 20, 24 or 28, as the case may be. The next inner, the series of the twenty letters of the alphabet and four or eight blank compartments, while the innermost carries the twenty signs representing the letters, immediately beneath them.

Process :—Write out in the usual way the message; next, put it into the representative characters, and, to render the discovery more difficult, the movable disc is set forward one space each time of selecting a letter, so that the character really represented by a *d* will be written with an *e*, and so on. Thus, the same character having a different face upon it, quite enough obscurity will be cast upon the communication. Of course, the recipient has a similar instrument, and the mode of employment has been concerted upon.

 MUSICAL CIRCULAR CIPHER.

On the intermediate circle a line of music may be written from some agreed-upon air, which will furnish a perplexing letter for the curious.

PORTA'S INDECIPHERABLE ALPHABET.

The author substitutes for the above plans a table of permutation which he regards as undiscoverable. He arranges the letters in three groups of six and one of two, thus :

| | | |
|-------|-------|-------|
| a l u | b m x | c n z |
| d o | e p | f q |
| g r | h s | i t |

For each group he invents an arbitrary sign, and within each sign he puts a dot or two to express the place that the letter used there occupies. For instance, *u* would have the sign for the first compartment, enclosing three dots to show that the third letter there was intended ; or, better, supposing the first letter in all cases to be indicated by the sign, only the second and third need be pointed out, which would be additional embarrassment to the inquisitive.

CIPHERS OF BLAISE DE VIGENÈRE.

A French writer of the 16th century of the above name dealt largely with secret knowledge. After re-writing much that Porta had said, he speaks of later inventions.

THE BEAD TELEGRAPH

Is of his devising. He supposes a string of beads like a rosary, composed, say of gold, silver, ivory, ebony and

other materials, with a letter to be understood in the place of each bead. He speaks of writing aslant, so that unless the paper is held at the proper angle, the true shape of the writing will not be manifest: it is the principle of the distorting mirror reversed, and the base of an optical toy of modern times.

LORD BACON'S CIPHERS.

Chancellor Bacon discourses upon a cipher of his own invention. It is founded on the permutations of two letters only, a and b, combined in groups of five. Ninety-two combinations are thus possible, more than requisite to express our alphabet. His plan begins thus:

A, aaaaa

B, aaaab

C, aaaba

Naturally, any other letters or signs may be taken. The inconvenience is the enormous length to which even an ordinary word, much more a sentence, would extend, not to speak of possible accidents in such a waste of clerical power.

To increase the difficulty of his *alphabetum biliterarium*, Bacon offers the *alphabetum biforma*. Should one decipher the message written according to the foregoing process, the real meaning is not obtained; that is wrapped up in letters put in capitals in the biformal alphabet, known by the holders of the key to that plan.

All this is complicated, but the notion of employing combinations of letters is worthy of serious attention, as a germ of a cipher system without limitation. The letters of the alphabet are capable of so many different arrangements, that it has been demonstrated that the

penman who put the Lord's prayer on a sixpence, might get its quadrillions upon a sheet of paper some four hundred thousand times the extent of the earth's surface. The question of using Mount Vesuvius for an inkdish, and the North Pole properly nibbed for a pen, would arise when the paper was manufactured.

THE CIPHER OF LUNEBURG SELENUS.

Augustus the younger, Duke of Brunswick-Luneburg, in the 16th century, dabbled in occult science under the cognomen of Selenus, a sort of pun on his name. He lays down as a good cipher, a project which is at least simple, the formation of a table by writing in three columns, beside the five vowels, repeated three times, all the consonants, as—

| | | | | | |
|---|---|---|---|---|---|
| a | b | a | h | a | p |
| e | c | e | k | e | q |
| i | d | i | l | i | r |
| o | f | o | m | o | s |
| u | g | u | n | u | t |

Process.—Instead of putting down the letters of the words which you wish to cipher, you write the corresponding ones, so that *i* would appear in lieu of *r*, and, *vice versa*, an *o* for *f*, and so on.

By a substitution agreed upon, the troubles of the decipherer would be augmented.

CARDAN'S CRYPTOGRAPH.

The voluminous Cardan, in his tract on Subtily, suggests a mode identical with that lately proposed for adoption in government offices by Mr. Flamm, and

called by him the "kryptograph." It is simply a card with holes punched in it at irregular intervals. The writer lays it on his paper and writes a letter of his message in each hole. He then fills up the interstices with arbitrary letters, and the person to whom the missive is sent has to apply his own "kryptograph" to the apparently chaotic communication, and so spell out the result. It is claimed for this method that "it embodies all that cipher-writing can require, namely, simplicity and rapidity of manipulation, combined with thorough secrecy and absolute certainty of correct translation." The process may perhaps prove useful for long despatches, says the *Telegraph*, "although it must be cumbrous, while the 'kryptograph' itself, upon which everything depends, would be certain, sooner or later, to fall into improper hands; but that is the fate of all things not wholly kept in the memory."

This is also called the cipher of perforated spaces. The readers of Balzac's "Story of the Thirteen" may remember the incident where a money-broker brings a nonsensical letter addressed to his wife into the study of a friend, attached to the Foreign Office. The friend at once recognizes the secret, and also the very grille, or grating-board, as one used by the Portuguese ambassador under the Duke of Choiseul. He places the perforated board upon the letter, which hides all of the writing but where the openings fall, and the uncovered words were readable.

THE MNEMONIC CIPHER.

John Henry Dobel, a German, published a work on the art of thought, at Hamburg, in 1707. He wished to apply to cryptography the mnemonic signs. He numbered

all the alphabetical letters, and thus wrote out in figures the despatch. Now, taking these figures, he put them into the words given by his mnemonic, written out at full length. The result was a string of meaningless Latin words. In his system, figures were represented by consonants, as 6 p u for l e k; q x for 2, &c.

The plan presents great hindrances to interpretation; but, on the other hand, it is too lengthy, a whole page being taken for a few lines of the original.

THE CIPHER OF MIRABEAU.

In a leisure moment the great orator of the Revolution invented a cipher-system with some merit. He divided the alphabet (*w* is excluded) into five equal parts, each of which is named by a number. Then each letter, grouped thus arbitrarily, bears a number to show its position. The digits 6 to 9 and the cipher are not counted.

On two lines are arranged the ciphers in which one's letter would be expressed: the first line designates the group, and the second the place in the group of the letter in question. A sprinkling of the unreckoned digits leads the investigator astray. The plan is susceptible of innumerable changes.

CIPHER IN PUNCTUATION-MARKS.

In the *Steganologia* is given a clever usage of letters and points. The former are joined two by two, and under each pair is placed a variable system of points, thus:—

AE IO UB, &c.
 . . .

Instead of the letter *a* in the original writing, you place an *e*, with one period before it; instead of *i*, an *o* with two before it; instead of *u*, a *b*, with three dots before it, and so with the rest. *Vice versa*, instead of an *e* in the original, you would write an *a* with the dot after it, and so forth.

In the posthumous works of Sterne is found another means of employing punctuation-marks, or rather, the full stop alone.

Process.—You write the first letter of every word of your message, and append as many dots as there are following letters in each word, less one, which is supposed. Capital letters and quotation and punctuation marks are all used as in the original, but the period is replaced by a dash or hyphen

“B... f... t. h...!’ t. h... w. b.....,

is a line from Byron’s “Mazeppa,” which will no doubt be at once read. But, use an altered alphabet or cipher for the true letters thus too clearly exposed, and the concealment will be passably bristling with annoyance to the student.

VIGENERE’S METHOD.

There is a less cumbrous means thus carried out. The correspondents have copies of the same book. They agree upon one or two lines on a certain page, and name the different letters of the alphabet there to be found by figures in the order of the letters. Take, for example, Burns’ “John Barleycorn,” and its first verse, we obtain from the lines :

“There was three kings into the east,
Three kings both great and high,” &c.,

the following table :—

T h e r e w a s t h r e e k i n g s
 1 2 3 4 5 6 7 8 9 10 11 12

Repeated letters are not noticed, and so one continues till the whole alphabet has been gathered. In this way, the three words, *the kings were* would be written thus in cipher :

1.2.3. 4.9.10.11.12. 5.3.4.3.

The inventor characterises this plan as faultless, unless the key is revealed, for it is impossible to divine the clue.

CIPHER DICTIONARY.

Instead of writing a sign of some sort for each word of a message, ordinary letters can be used in ordinary words, if a conventional dictionary is formed. In this, words are replaced by others, as—

| | |
|---------------|-------------------|
| Alma, he. | Corporal, father. |
| Balloon, she. | Deluge, constant. |

Use at random from your duplicate list a number of valueless words, so as to increase the puzzle ; and, bar its length, a message thus conceived will be sufficiently impenetrable.

THE CIPHERED CIPHER.

One of the most general methods used in state documents is to represent every letter and a certain number of words, syllables, and proper names by ciphers. In order to baffle investigation, the same letter or object is expressed by various ciphers. The numeral names

themselves are again put into cipher. We give a table as a model.

| | | | | |
|---|---|----|-----|----|
| A | 6 | 19 | 500 | 46 |
| B | 8 | 50 | 250 | 20 |
| C | 4 | 2 | 125 | 18 |

WORDS AND SYLLABLES.

| | | | | |
|----------------|----|----|------|------|
| to the | 72 | 99 | 1150 | 40 |
| of the | 45 | 77 | 66 | 1777 |
| against | 1 | 51 | 12 | 1401 |
| He will return | 60 | 44 | 776 | 670 |

PUNCTUATION MARKS.

| | | | | |
|---|----|-----|-----|-----|
| , | 2b | 96b | 86c | 8 |
| . | 9b | 90b | 92c | 98d |

NUMERALS.

| | | | | |
|---|----|-----|-----|----|
| 1 | 14 | 26 | 20b | 24 |
| 2 | 16 | 73 | 18 | 22 |
| 3 | 9 | 188 | 37 | 38 |

Unreckoned, 3000 to 4500. Read in reverse meaning the sentence after x and x—x.

Operation.—Precede the cipher communication with a few lines of ordinary writing which would lead one to suppose the contents related to some commercial or amatory transaction or other matter not in your views, and put in your cipher news. Add at end a line or two supporting the pretended preface in the same tenor. As you use the various ciphers, meaning the same thing, at random, there is presented a very sweet nut to crack.

THE ANNULING CIPHER.

When it is feared or suspected that the cipher has been discovered, and yet no time is given for a proper warning to this effect, or a change of the codes, one

must write his message in a contrary sense to the real intention, the correspondent being warned of this reversal by a token previously agreed upon against this misadventure.

THE SLOW BUT SURE CIPHER.

Dlandol, in his "Counter-Spy," recommends a cipher which, he asserts, has the greatest advantages, in fact, comprises every good quality, and no defect but the time it takes in writing it. But it is next to totally impossible to unfold it without the key being in hand.

The two correspondents, as in Father Kircher's *Abacus Numeralis* (cipher table), a square of 576 compartments of a cipher to each, and Neyron's process, must have each a square which does for letters what the arithmetical square does for figures. Namely, as it multiplies letters just as the other does figures, in all cases the result corresponds to the two terms which are reciprocally multiplier and multiplicand.

The same as you will find six times four to be twenty-four, you will find in the literal square that F times M is S, in the compartment which answers to F in the first line and M of the first column. S will again be in the space corresponding with M in the first line and F in the first column.

This understood, remember that the correspondents have settled on a key-word. Suppose it to be *plumjam*—for it is best to choose an unsuitable word for a serious communication, the better to send the inquisitive astray—you must constantly multiply by the letters of the chosen word all the letters in your message, in order to obtain the cipher. This done, you place each letter of *plumjam* under each of the real letters to be written

continually repeating the conventional word, and recommencing it as soon as it is once transcribed. Suppose that you want to inform your friend of an event: "I shall be in Scarborough next week;" you write it out with your key-word as under :

I shall be in Scarborough next week.

P lumja mp lu mjamplumjam plum jamp.

In this arrangement you regard each of the real letters of the missive as the figures of a multiplicand, and each of the key-word letters as a multiplier.

Process.—On multiplying I, the first real letter of the despatch, by P, the first letter of the key-word, you find in your square the letter in the compartment answering on one side to I, and on the other to P. You therefore set down that result for the first letter of the ciphered message. You will obtain a line without break or marks of letters arranged so higgledy-piggledy that the sight is enough to make a clever man renounce the idea of puzzling it out; indeed, it is impossible to get at the meaning. Of course your correspondent, with his key, easily translates it all by working inversely to your process. Above the cipher note, he puts down all the letters of the key-word. In the first column of the square, he looks out each letter of the key-word, and at each letter picks out the corresponding letter on the same line belonging to the cipher message; as each letter in the real despatch produces a different result in the cipher counterpart, any investigation must remain sterile without the clue.

CIPHER BY BOOKS.

Select a book, not well known or very rare, of ancient date, of which the two correspondents have each a copy. Form a key of three ciphers. The first denotes the page of the chosen volume, the second the line of the page, the last the selected word. Before unravelling such a message, the book must first be discovered by the would-be interpreter; the obstacles are added to by the fact that the same word, coming up on different pages of the book, is seldom designated by the same cipher, indeed, rarely twice is the same thing pointed out by the same figure.

TENNYSONIAN AND SHAKESPEARIAN CIPHERS.

There are concordances to both these poets' works, consequently persons supplied with them being enabled to find in designated lines of certain pages the words of their messages as above, can correspond "furtively," as the old writers would say. A contemporary journal, indeed, for brief communications, confesses to know of nothing much better than the so-called "Shakespeare" cipher. "The two correspondents have each a copy of the same edition of 'Shakespeare,' in which, with the aid of a 'Cowden Clarke Concordance,' they can of course find any word they are at all likely to want. Three numbers give the page on which the word stands, the line in which it occurs, and its position in the line, and thus each word is represented by three numbers, and three only. Thus, 'unchanged' would be, let us say, 123 14 8, and 'Daisy,' opening her 'Shakespeare' at the 123rd page, and turning to the 14th line, would find the eighth word the one she wanted. 'In Memo-

riam,' now that some zealous admirer of Mr. Tennyson's genius has compiled a concordance for it, is admirably suited for this purpose, and young ladies who wish to follow 'Daisy's' example without fear of detection, will find the 'In Memoriam' cipher, if we may use the phrase, the safest of any; while the trouble of working it will be amply compensated by consequent familiarity with the Poet Laureate's acknowledged masterpiece."

CIPHER BY A PACK OF CARDS.

Settle on an order of arrangement for all the cards of a pack, and on the order of shuffling them.

Having your message before you, and your cards arranged as agreed upon, you shuffle them, and trace upon each of them, beginning with the first that comes uppermost in the pack, successively all the letters written on your original. When each card has been lettered, you again shuffle them, always in the same order and without changing it at all, and you continue to write on them all the following letters, repeating the process until you have transcribed the entire communication. Remember to put a dot after the final letter of each word, in order to denote the separations of words.

Supposing you employ a piquet or écarté pack, all the cards below seven of each suit being excluded, you arrange them in the following order. You shuffle, and after each shuffle you put alternately three cards above the three first and three below. The pack, coming back to its original state, will have all the letters in the message upon the several cards. When they are thus all transcribed, you shuffle the pack indiscriminately, and send it to your correspondent.

Manner of Reading.—The receiver of the pack arranges the cards in the order agreed upon. Then he shuffles, and writes out successively all the letters which first come at the head of the thirty-two cards, bearing in mind not to alter their order. Then he shuffles anew, and repeats the writing out and the shuffling until the letters are copied off. They naturally form the matter contained in the despatch.

Additional caution can be exercised by using sympathetic ink for the writing on the cards. We shall give receipts for these in greater variety than has ever before been done.

DECREMPS' RIBBON WRITING.

The two correspondents are provided each with a flat board about a foot long and two inches wide. At one end, calling it the top, put a peg in the centre A, and at the other, in the centre also, a peg Z. Divide the board horizontally into half-inch spaces.

Process.—The would-be writer makes use of a tape or thread which he stretches from peg to peg; from A down on this tape he marks with a knot, N, with ink, at which space falls the letter which he wishes to indicate. Then, carrying the tape upwards, he sets the marked part at the peg A, and repeats the operation with the marking of the second letter and the following ones, until the whole message has been designated. The partitions necessarily contain not only the letters of the alphabet, figures and words frequently employed, but some letters or words which mean nothing, and are inserted merely to deceive an interferer.

The correspondent having his duplicate table, applies

the tape to it, and writes out successively such letters as the marks fall against.

Note.—The tables may be dispensed with, and in their stead an ordinary foot-rule employed, different lengths of the rule being taken to mean different letters. For instance, if *a* is represented by half an inch, an inch may stand for *b*, and so on, or less regularly.

INTERMIXED CIPHER AND NULL WORDS.

One may write the words of the real message out in full in the ordinary hand, and mingle with them other words or syllables, which shall either form an apparently intended sense with them, or else quite incomprehensible jargon. The real words of several syllables can be again broken up and interspersed with meaningless additions; and even simple syllables can be made absurdly perplexing by the intervention of *null* letters. The choice of the letters and words of no account is naturally indifferent.

As it would waste too much time to write a quantity of meaningless words at the head and end of every line, the system is simplified. The added letters are to be mingled, for example, so that each true letter shall be preceded by two useless ones. To write Cousin Clara, you would put

excptorkubds vnicnmmjc lblkuaphrcua.

We italicise the true letters to point them out, but nothing of this clue would appear in your cipher despatch, it is needless to say.

Modification.—Reserve the words of the original, that is to say, write them from right to left, putting at the beginning and the end of each two letters not to be

reckoned. The same example as last given would thus be written :

nbnisuocxd veartalciq.

HERMANN'S IMPENETRABLE CIPHER.

A German named Hermann challenged the whole world to read a cipher of his contrivance, of which he published a test message in 1782. In a week, a French refugee named Begulin, at Berlin, was skilful or lucky enough to penetrate to the pith of it, and he gave the details of his discovery to the world in the "Memoirs of the Berlin Academy."

Hermann's cipher alphabet contained twenty-five different signs and the nine digits. Each sign answered to a letter of the alphabet, and each word was parted from the next by a full stop. Above several of the signs were others, which were partly the same as the undermost. A few others, merely points or dashes, appear to be consigned to the upper row, and were not to be met with in the lower range.

Begulin finally perceived that the cipher was bound by three peculiar laws, and we follow out his reasoning, that they may be compared with Edgar Allan Poe's upon the Gold Bug cipher, elsewhere in these pages.

1. All inferior initial signs less in value than nine, retain a constant value.
2. All inferior initial signs over ten in value, take, in case of change, double their ordinary value.
3. All inferior initial signs with a negative value under ten, take, in case of change, double their ordinary value and one in addition.

Then follow other laws, all ingenious enough, but

T

forming an accumulation which would render the use of such a cipher too laborious. The valuation of the signs is too irregular for ready recollection, and the multiplicity of the rules, joined to the varied use of the same signs, would certainly lead to errors in practice.

As there is no cipher beyond revelation when once its language and its words can be distinguished, Hermann was wrong to have announced his invention so emphatically. He was further wrong in using Arabic numerals, especially with no change in their accepted value. A good cipher is, however, furnished by his system, if properly edited and those errors excised which led to its speedy unravelling.

PASIGRAPHY.

This word is composed of two in Greek meaning "I write to all." To write to persons ignorant of the language by means of the signs for the thoughts rendered by different sounds by every nation, is the art coming under this head. Adapting this method to many tongues, the same writing or print would be read universally, as are in a measure arithmetical figures, chemical tokens, and musical notes.

Maimiens is an author who has much studied the art, and in his process he uses but twelve signs. These signs—and that is all that interests us here—can be used in cipher writing. Becker (*Notitiæ linguæ universalis*), and others to the same end, requires a multitude of signs, as numerous as the Chinese or the Tironian notes.

HIEROGLYPHICAL CIPHERS.

Among the systems of antiquity by which precepts, lessons, and records were kept from the profane, and even from the learned of modern times until the seals were removed, must be mentioned the famous hieroglyphics of Greece and the Assyrian arrow-headed language, unfolded by Champollion, Rawlinson, and Smith.

The ancient Egyptians knew three sorts of writing : hieroglyphics, which depict faithfully natural objects and the products of art, being in fact symbolical ; the sacerdotal signs, being the same in shorthand or abbreviations ; and the domestic, or common signs, which are the second sort again, condensed.

The inscription of Thebes, describing a child, an old man, a vulture, a fish, and a hippopotamus, really states, under these emblems, "You who are born and die, know that the Eternal abominates impurity."

The eight hundred signs in the hieroglyphics are contained in abridgment in the hieratics. Where the original had a recumbent lion in outline, the latter gives a sketch of merely a portion of the figure, although all the meaning of old is continually implied.

The Mexicans used a picture language of a somewhat similar construction. But the elaborate sell practised on the Abbé Domenech, quite a clever piece of conjuring, must not mislead the student into giving the Aztecs too much credit for pictorial ingenuity.

The picture language of the North American Indians may also be glanced at by anyone desirous of inventing an out-of-the-way cipher, at least capable of leading astray inquisitive lodging-house landladies, prying maids and valets, and even private detectives.

A CURIOSITY IN CIPHER.

The poetical works of Lord Lacharnais, a Nivernois noble, include some hundred enigmas, with their keys. This table is engraved reversed, so that its reflection in a mirror is alone easily readable. As the preface gives the direction to do this, the reader is luckily not left to his own devices in so singular a trick.

VARIATION.

Of this class is the letter divided at pleasure, so that while all the lines taken in regular order and to their full extent convey a meaning, the reverse intention, or some other intelligence, is visible in the part meant solely for the persons in the secret.

THE FRENCH WAR CIPHER.

A letter from the Paris correspondent of the *Daily News* gives the cipher used by the French military authorities during the war. He says—*Jemiiicbde&ymem!* What language is this? somebody will ask. Is it Russian?—No. Polish, Magyar, Kamskatchskadalian?—No. Is it Chinese or Japanese transmogrified?—Not a bit of it. Is it a term in any language, civilised or uncivilised?—Most assuredly. Then it is Welsh. No; it belongs to the most polished people under the sun, and the most recently polished off. It is the one affected by diplomatists, whose special mission it is to be obscure. It is, in fact, Parisian French. Yes, reader, Parisian French; but it is the language of the siege. It was spoken from Paris to Bordeaux, and from Bordeaux to Paris.

General Trochu—a man of letters and figures as well as a General—is the inventor of the system of telegraphy about to be described; and it is especially ingenious, because, even should the enemy have discovered one of the keys, he would have gained very little by the discovery, the secret being locked up in a double combination of letters and figures. An illustration will render this plain. It must be understood that both the parties interested in the correspondence are agreed as to a particular numerical sign; say the number 3,207,498. Trochu, or Favre, or any other member of the Government about to construct a message in cipher to the Delegation, writes down, as many times as may be necessary, the number previously agreed upon, having before him the alphabet. The communication, let it be supposed, is “Gambetta a arrivé.” This would necessitate the employment, in the cipher, of the first fourteen letters of the alphabet, and the numeral must be repeated, as fourteen figures would be required. The writer employs—according to previous agreement—as the first letter of his telegram, the third coming after the one with which the real message commences, because the first numeral is a 3. He writes down his numeral twice, because the communication consists of fourteen letters.

3 2 0 7 4 9 8 3 2 0 7 4 9 8

Now, three letters after G—the real first letter of the telegram—is J. The second corresponding with the second numeral—after A—the next letter in the real message is C. The third numeral, the nought, happens to coincide in this instance with the third letter of the message, M, and with the third of the cipher; the numeral 7, coming next, corresponding with I of the cipher, and so on, through the chapter. This gives us the following combination :—

| | |
|---------------|--------------------------|
| 3 2 0 7 4 9 8 | 3 2 0 7 4 9 8 |
| J C M I I C B | D E Z Y M E N |
| G A M B E T T | A A R R I V E |

To decipher the message, the receiver, of course, reverses the operation of the sender. Taking the J, and reading three letters backward—in accordance with the first figure of the numeral—he bumps against G, and proceeds in this wise till the entire message is knocked out. It is self-evident that this system is fruitful in combinations, according to agreement, and presents every available guarantee for securing secrecy.

If any of these despatches in cipher should have fallen under the eye of the Prussians, how awfully puzzled they must have been to stumble over such a word as Bpdrsfizjzuphyjxsl, even with the number 18357 as a key!

CIPHER IN FRENCH.

The most frequent sign, especially as a final to words, is the vowel *e*. It is the only one which is double at the end of words as in *fusée*, &c. When, therefore, the same sign appears twice at the end of a word, there is every probability of its being an *e*. The vowel *e*, again, in a word of two letters, is always preceded by the consonants *c d j l m m n s t*, or followed by those of *nl*.

Independently of the interjection *o*, not of frequent use in secret despatches, there are only two letters in French which form words by themselves—*a* and *y*. An isolated sign should therefore be one or the other of such letters.

In words of two letters, where is the vowel *a*, it usually precedes the letters *h, i, u*, as in *ah, ai, au*, or else follows the letters *l, m, n, s, t*, as in *la, ma, sa, ta*.

Of the diphthongs, ai, au, eu, oi, ou, the last is the most common, especially in words of four syllables. When *e* comes last but one in a word, that word usually ends with one of the two consonants, *r* or *s*. When two vowels come together, the second is almost surely an *e*. Rarely does any word finish with the consonants *b*, *f*, *g*, *h*, *p*, *q*.

Words of three letters give most pains to the puzzler when the same letter occurs twice, as in *ici*, *non*, *ses*.

CIPHERS IN ENGLISH.

The poet Poe, "whose works are so many enigmas under various forms and divers costumes," gives us an example of a cipher missive in English, and its elucidation so ample as to relieve us of the task. We quote from his "Choice Works," published by Chatto and Windus. The hero of "The Gold Bug"—which tale a sensitive English publisher hastened to entitle "The Gold Beetle," for fear of offending his keepsake readers, without his delicacy going so far as the author with that payment in hand which might have saved him from a wretched and premature death—the hero of the story, one Legrand, we repeat, has learnt of the existence of a considerable treasure near his residence. The exact place is indicated by a scrap of parchment, adorned with a drawing of a skull and a goat, and ciphers are written in sympathetic ink. The secret is thus expressed:—

53‡‡†305)6*;4826)4‡.)4‡);806*;48†8¶60))85;1‡(:‡*8
 †83(88)5*‡;46(;88*96*?;8)*‡(;485);5*‡2:*‡(;4956*2(5*
 —4)8¶8*:4069285);6†8)4‡‡;1(†9:48081;8:8‡1;48†85;4)4
 84†528806*81(†9;48;(88;4(‡?34;48)4‡;161;:188;‡?;

We let the characters proceed :

"But," said I (the hero's friend), returning him the

slip, "I am as much in the dark as ever. Were all the jewels of Golconda awaiting me upon my solution of this enigma, I am quite sure that I should be unable to earn them."

"And yet," said Legrand, "the solution is by no means so difficult as you might be led to imagine from the first hasty inspection of the characters. These characters, as any one might readily guess, form a cipher—that is to say, they convey a meaning; but then, from what is known of Captain Kidd, the pirate, I could not suppose him capable of constructing any of the more abstruse cryptographs. I made up my mind, at once, that this was of a simple species—such, however, as would appear, to the crude intellect of the sailor, absolutely insoluble without the key."

"And you really solved it?"

"Readily. I have solved others of an abstruseness ten thousand times greater. Circumstances, and a certain bias of mind, have led me to take interest in such riddles; and it may well be doubted whether human ingenuity can construct an enigma of the kind which human ingenuity may not, by proper application, resolve. In fact, having once established connected and legible characters, I scarcely gave a thought to the mere difficulty of developing their import.

'In the present case—indeed, in all cases of secret writing—the first question regards the *language* of the cipher; for the principles of solution, so far, especially as the more simple ciphers are concerned, depend upon, and are varied by, the genius of the particular idiom. In general, there is no alternative but experiment (directed by probabilities) of every tongue known to him who attempts the solution, until the true one be attained. But, with the cipher now before us, all difficulty was removed by the signature. The pun upon

the word 'Kidd' is appreciable in no other language than the English. But for this consideration I should have begun my attempts with the Spanish and French, as the tongues in which a secret of this kind would most naturally have been written by a pirate of the Spanish Main. As it was, I assumed the cryptograph to be English.

"You observe there are no divisions between the words. Had there been divisions, the task would have been comparatively easy. In such case I should have commenced with a collation and analysis of the shorter words, and had a word of a single letter occurred, as is most likely (*a* or *l* for example), I should have considered the solution as assured. But there being no division, my first step was to ascertain the predominant letters, as well as the least frequent. Counting all, I constructed a table, thus :

"Of the character 8 there are 33.

| | | |
|-----|---|-----|
| ; | „ | 26. |
| 4 | „ | 19. |
| ‡) | „ | 16. |
| * | „ | 13. |
| 5 | „ | 12. |
| 6 | „ | 11. |
| † 1 | „ | 8. |
| 0 | „ | 6. |
| 9 2 | „ | 5. |
| : 3 | „ | 4. |
| ? | „ | 3. |
| ¶ | „ | 2. |
| — . | „ | 1. |

"Now, in English, the letter which most frequently occurs is *e*. Afterwards, the succession runs thus *a o i d*

h n r s t u y c f g l m w b k p q x z. *E* predominates so remarkably that an individual sentence of any length is rarely seen in which it is not the prevailing character." [Paul Lacroix, to whom we are indebted for much material in this chapter, adds what follows:—*E* is often followed by an *a*, as in early, great, reason. *O* is common in words of two letters; and is frequently accompanied by *w* as in grow, know, narrow *Y* is rarely met in the middle of words, though often at the end. *The* is of common occurrence. The double consonants at the ends of words are *ll* and *ss*.—Note by the Author of "Magic no Mystery."]

"Here, then, we have, in the very beginning, the groundwork for something more than a mere guess. The general use which may be made of the table is obvious—but in this particular cipher we shall only very partially require its aid. As our predominant character is 8, we will commence by assuming it as the *e* of the natural alphabet. To verify the supposition, let us observe if the 8 be seen often in couples—for *e* is doubled with great frequency in English—in such words, for example, as 'meet,' 'fleet,' 'speed,' 'seen,' 'been,' 'agree,' &c. In the present instance we see it doubled no less than five times, although the cryptograph is brief.

"Let us assume 8, then, as *e*. Now, of all *words* in the language 'the' is the most usual; let us see, therefore, whether there are not repetitions of any three characters in the same order of collocation, the last of them being 8. If we discover repetitions of such letters, so arranged, they will most probably represent the word 'the.' Upon inspection, we find no less than seven such arrangements, the characters being ;48. We may, therefore, assume that ; represents *t*, 4 represents *h*, and 8 represents *e*—the last being now well confirmed. Thus a great step has been taken.

“But, having established a single word, we are enabled to establish a vastly important point; that is to say, several commencements and terminations of other words. Let us refer, for example, to the last instance but one, in which the combination ;48 occurs—not far from the end of the cipher. We know that the ; immediately ensuing is the commencement of a word, and, of the six characters succeeding this ‘the,’ we are cognizant of no less than five. Let us set these characters down, thus, by the letters we know them to represent, leaving a space for the unknown:—

t eeth.

“Here we are enabled, at once, to discard the ‘th,’ as forming no portion of the word commencing with the first *t*; since, by experiment of the entire alphabet for a letter adapted to the vacancy, we perceive that no word can be formed of which this *th* can be a part. We are thus narrowed into

t ee,

and, going through the alphabet, if necessary, as before, we arrive at the word ‘tree,’ as the sole possible reading. We thus gain another letter, *r*, represented by (, with the words ‘the tree’ in juxtaposition.

“Looking beyond these words for a short distance, we again see the combination ;48, and employ it by way of *termination* to what immediately precedes. We have thus this arrangement:—

the tree ;4(†?34 the,

or, substituting the natural letters, where known, it reads thus:—

the tree thr†?3h the.

“Now, if in place of the unknown characters we leave blank spaces, or substitute dots, we read thus:—

the tree thr...h the,
when the word 'through' makes itself evident at once. But this discovery gives us three new letters, *o*, *u*, and *g*, represented by † ? and 3.

"Looking now narrowly through the cipher for combinations of known characters, we find, not very far from the beginning, this arrangement:—

83(88, or egree,

which, plainly, is the conclusion of the word 'degree,' and gives us another letter, *d*, represented by †.

"Four letters beyond the word 'degree,' we perceive the combination

; (48;88.

"Translating the known characters, and representing the unknown by dots, as before, we read thus:—

th rtee,

an arrangement immediately suggestive of the word 'thirteen,' and again furnishing us with two new characters, *i* and *n*, represented by 6 and *.

"Referring, now, to the beginning of the cryptograph, we find the combination—

53†††.

"Translating, as before, we obtain—

. good,

which assures us that the first letter is *A*, and that the first two words are 'A good.'

"It is now time that we arrange our key, as far as discovered, in a tabular form, to avoid confusion. It will stand thus:—

| | | |
|---|------------|---|
| 5 | represents | a |
| † | „ | d |
| 8 | „ | e |
| 3 | „ | g |

| | | |
|---|------------|---|
| 4 | represents | h |
| 6 | „ | i |
| * | „ | n |
| ‡ | „ | o |
| (| „ | r |
| ; | „ | t |

“ We have, therefore, no less than ten of the most important letters represented, and it will be unnecessary to proceed with the details of the solution. I have said enough to convince you that ciphers of this nature are readily soluble, and to give you some insight into the *rationale* of their development. But be assured that the specimen before us appertains to the very simplest species of cryptograph. It now only remains to give you the full translation of the characters upon the parchment, as unriddled. Here it is:—

“ ‘ *A good glass in the bishop’s hostel in the devil’s seat forty-one degrees and thirteen minutes north-east and by north main branch seventh limb east side shoot from the left eye of the death’s-head a bee line from the tree through the shot fifty feet out.* ’ ”

The reader will of course refer to the story for the use made of this discovery.

CIPHERS IN ITALIAN.

Words in this language generally terminate by one of the four vowels *a, e, i, o*; *u* being of rarity in the like case. *Che* is the most frequent of three letter words, and none, except *gli*, have *l* for a central letter.

CIPHERS IN SPANISH.

There are many sesquipedalian words in this tongue, such as *verdaderamente*, which perhaps will suffice as a

specimen. The vowel *o* is most habitually encountered; as a terminal, *s* will be found beside it, as in *nosotros*. In the middle of words, *u* and *e* come together, as in *vuestra*.

CIPHERS IN GERMAN.

Here we have *e* again of the most common occurrence, frequently ending words of several syllables before *r*, *s*, *n*, or *t*. The *n* is most often used; *a* comes never at the end of a word of three letters; *c* is always joined to another *c*, or to a *k*. *O* is the only word of one letter. There are but two words of four letters ending in *enn*, being *wenn* and *denn*. Almost all four-letter words commence by a consonant, followed by a vowel, as in *bald*.

As from the above we see that the rules for deciphering are based on the more or less abundance of certain letters in words and their relations, a good cipher should have no division of its words, and the language should be mixed. After curtailing words, the addition of meaningless letters, to make up in a measure for the brevity, helps to complete the bewilderment of the student.

THE UNRAVELMENT OF CIPHERS.

It would be a poor conjuror who would do nothing but set tangled skeins for his audience, and not fully reveal the means by which they were deluded, in a book offering to lay bare the art.

We cannot give the reader the patience often necessary to puzzle out a cipher letter, but we hope he will have the requisite sagacity; and, besides the secrets already illumined, we add the general rules for the interpretation of an intercepted message in secret writing.

The difficulties are greatest when one is unaware of the language in which the despatch is couched: or if it may not be worded in various tongues: or by words formed from several alphabets; or when the superfluous words are numerous and artfully interspersed; when the same letters, words, and syllables are expressed by dissimilar signs; when the words are written without breaks, or when they are arbitrarily separated.

The first step is to make out a list of the signs of the cipher, and note the frequency of their repetition severally. Then their combinations are observed, and they are turned and twisted in every way, until conjectures centre on some certain attribute of this or that character.

To this end, the majority of the tokens must appear more than once in the cipher; if the piece is short, and the same letter is represented variously, the problem becomes most serious. Words composed of a few syllables, or, better, a few letters, ought to be the first to be taken in hand. They let the vowels be divined, and once they are picked out, the discovery of the consonants is facilitated. The mainstay is the exact knowledge of general orthographic principles.

Gravesand gives an example of unfolding the mystery of a cipher in Latin.

EXAMPLE.

| | | | |
|-------------------------|-------------------------------|-------------------|---------------------|
| A | B | C | |
| a b c d e f g h i k f | l m k g n e k d g e i h e k f | | |
| | D | E | F |
| b c e e f i c l a h | f c g f g i n e b h | f b h i c e i k f | |
| G | H | I | K |
| f m f p i m f h i a b c | q i l c b e i e a c | g b f b c b g | |
| | L | M | |
| p i g | b g r b k d | g h i k f | : s m k h i t e f m |

The *bar.* punctuation marks, and capital letters are not in the original, but placed by us to assist in our elucidation. This cipher gives 14 *f*, 14 *i*, 12 *b*, 11 *e*, 10 *g*, 9 *c*, 8 *h*, 8 *k*, 5 *m*, 4 *a*, 3 *d*, 2 *b*, 2 *n*, 2 *p*, 1 each *o*, *q*, *r*, *s*, *t*; in all, nineteen characters, of which only five are repeated. I see at first glance that *hikf* is repeated at M after appearance at B; that *ikf* is apparent but once at F. Lastly, that *hekf*, at C, and *hikf*, at B and M, have some connection between them. It may, therefore, be concluded that they are possibly the end of words, which I indicate by the colons. In Latin, it is usual to find the ante-penultimates alone different in words, or at the four last letters, habitually vowels, as in *amant*, *legunt*, *docent*, &c., therefore *i* and *e* are presumably vowels.

Since *fmf* (see G) is the commencement of a word, it is not unreasonable to take *m* or *f* for a vowel, since there are never three vowels consecutive with two of them alike; and it is more likely the *f*, forasmuch as that sign appears fourteen times against the five times of *m*, which latter may be pronounced a consonant.

Thence going to K, we attack *gbfbcbg*, using the same reasoning to call *c* a consonant, (*f* being a vowel) in the *bfb*; it follows that *c* must be a vowel, on account of its position in *bch*.

In L, *b* is a consonant in *gbgrb*; and *r* much more likely so, from there being but one in all the writing. G is also a vowel.

In D, it is impossible to decide on *fcqfg* being a word or portion of a word in five vowels. There is no Latin word presenting such a peculiarity, so that we have been in error in taking *fcg* for vowels; *f* must have been wrong, but *m* is a vowel, and so is *b* (see K): *f* is a consonant. In the place K, the vowel *b* appears three times separated by only one letter. In Latin, there are several words thus formed; for instance, *edere*,

legere, munere, si tibi, &c. Now, as the vowel *e* is the oftenest in use, let us conclude that *b* is written for *e*, and *r* for *i*.

Thus working the whole problem out, we translate the entire cipher into—

“*Perdita sunt bona; Mindarus interiit: urbs strata humi est,*” &c.

INVISIBLE OR SYMPATHETIC INKS.

We have recommended, for the greater security of a message, for sympathetic ink to be used, leaving no traces on the paper unless treated by certain developers to be hereafter mentioned.

The paper must not be altered in appearance or otherwise betray the secret communication; much less must anything in the pretended message, written on it, in ordinary ink, give a hint as to the unapparent lines. Between these lines, around the margin, or on the blank side or fly-leaf, is where the hidden intelligence should rest. Some settled token indicates the existence of all this, but of course this sign should not be manifest to any stranger.

Ovid and Ausonius speak of the employment of new milk as the writing fluid. On colours in dust being sifted over the paper, it will adhere to the marks, and render them legible. Pliny and others suggest any sticky substances, such as the sap of plants when they are colourless. Beer, juice of fruits, fatty or watery liquids are equally applicable. The writing is allowed to dry.

One way of making this writing is to use a bone point and tissue paper, saturated with lard and turpentine,

or benzine and oil, like transfer paper. On laying this tissue on your note-paper, and writing through it with your point, the marks are left on the undermost sheet. The receiver treats them with the colour in dust, as aforesaid.

INK TO BE WETTED WITH WATER.

To prepare Ink which will appear upon being wetted with water.—Having mixed alum with a sufficient quantity of lemon-juice, letters or characters written with the mixture will remain invisible until wetted with water, which renders them of a greyish colour, and quite transparent. Or a writing with a strong solution of rock alum alone, being dried, and having a small quantity of water poured over it, will appear of a white colour, like that of paper before it is wetted. In like manner, all saline liquors, such as vitriolic, nitrous, or marine acids, diluted with water, and the liquor of fixed vegetable alkalies, and even vinegar, will produce the same effect. If a little aquafortis be mixed with the water, the writing will dry well, and not run out of its form when the paper is wetted.

INVISIBLE INKS.

Black.—1. Oil of vitriol, diluted considerably with water, will turn black on the appliance of heat. 2. Wash over the writing with a solution made of sugar of lead with a sponge or rag dipped in water, through which sulphuretted hydrogen gas has been passed. This solution, made with weak acetic acid, will blacken by sulphuretted hydrogen gas even at a distance, or on the other side of a thin partition, which property renders it

suitable for a conjuror's tricks. 3. Sulphate of iron, or green vitriol solution, brushed with an infusion of nut-galls. 4. Solution of salts of bismuth and the common gas. You may remember the shade falling on a beautiful ball-room partner's complexion, thanks to the effect of the sulphuretted hydrogen on her blooming cheek. 5. Perchloride of mercury, treated with hydrochlorate of tin. 6. Lemon or onion juice, or sulphuric acid, treated by heat, black or brown.

Blue.—1. Prussiate of potash dissolved in water. Brush it over with the result of a nail or other piece of iron dissolved in aqua fortis, or with green vitriol weakened. 2. Nitrate of cobalt, treated with oxalic acid. 3. Sulphate of copper, with ammonia.

Yellow.—1. Subacetate of lead, treated with hydriodic acid. 2. Muriate of ammonia and sulphate of copper, in equal quantities, dissolved in water; treat with heat. 3. Muriate of antimony, with tincture of galls.

Green.—1. Arseniate of potash, with nitrate of copper. 2. A solution of the nitrate or chloride of cobalt, with heat.

Rose.—Oxide of cobalt dissolved in acetic acid. Heat.

Purple.—1. A solution of gold, treated with one of muriate of tin. 2. Starch dissolved in soft water provides an ink which will dry invisible. On applying a weak solution of iodine in alcohol, the result is an ineffaceable purple, unless after a long exposure to the air. India-rubber will not remove it.

White.—The salts of Saturn will make a pencil, the writing with which when dry is invisible. On soaking the paper in melon or verjuice, a dead or milky white is the result, which will appear on the white of the paper. Or, sal ammoniac and lime or soap. Use new quills, and for this purpose alone, and experiment be-

fore writing the real letter, for paper is manufactured of so many ingredients unknown to the old-time chemists, whose recipes we have given, that sometimes the result might not be satisfactory.

INGENIOUS CONCEALMENT OF WRITING.

A contrivance reminding one of the palimpsests or of the dodges of the Roman picture-dealers who have a water-colour painting put over an old master, against the exportation of which there is (or was) a prohibition—rests in the following plan to mask the true message. Over the real writing, trace the characters with an ink made of burnt straw for the black, held in solution in water. When a sponge is passed over this letter, it is removed.

FLORAL CIPHERS.

We have wished to present the complete code of telegraphing or otherwise sending a message in flowers, but there is so much variation in the meanings attached, not only by the French, the Americans and ourselves, to the beauties of the vegetable kingdom, but by different classes throughout England, that we renounce the attempt. The Orientals carry the language of flowers to an extreme. The Chinese are understood to have an alphabet composed of plants and roots. On the rocks of Egypt are the records of foreign conquests in remote vegetable forms.

In general ideas, a rose implies love and beauty, but in answer to a queen of the harem it would mean that the lover feared reason opposed their amour. A

rose also stands for a maiden; a white one indicates constancy; a yellow one, infidelity. A daisy means a man, and his moral and physical gifts are supposed to be seen in its varieties. An aster expresses the idea of parents: if red, they are kind and indulgent; if violet, they are stern and harsh. The hyacinth represents a friend.

In the Middle Ages, the days of the "Romance of the Rose," that flower had varied interpretations. A white rosebud confessed, then, "I love you," while now it stands for the heart ignorant of the master passion. A lily was faith; now it is purity. Thyme was perseverance; now it is activity.

Nevertheless, it is easy for two persons, remembering the means of spelling words by precious stones of which the initial letters of their names are used, to form an alphabet with the names of plants. With a regulation about *null* letters, and by keeping the messages short, important warnings might be surreptitiously conveyed.



PART VII.
THE MYSTERY OF TRAINING ANIMALS.

PART VII:

THE MYSTERY OF TRAINING ANIMALS.



I've seen a monkey do his drill
With soldierly precision ;
A dog use figures with the skill
Of an arithmetician ;
An elephant who danced a reel
With wondrous animation ;
And with the clever talking seal
Have held a conversation.
Iv'e seen a donkey walk upstairs
As gravely as a Quaker ;

Have heard a parrot say his prayers,
 Revolving like a Fakir ;
 I've witnessed the industrious fleas ;
 The oyster who could whistle ;
 The bullfinch water draw with ease,
 And then fire off a pistol ;
 Mice dance the tight-rope gracefully ;
 Poodles turn acrobatic ;
 And every creature odd and strange,
 And playfully erratic.

However much more we know, or pretend to know, of the natures of the members of the animal kingdom, than was common to more ancient intelligence, we have not improved in the art of training animals. The matters chronicled by the earliest historians remain in some points unmatched. Pliny and others tell of feats by beasts, from elephants to minor cattle, of which we cannot see the like in our circuses and menageries. The Androcles affair was just as likely a bit of clever training as the accidental gratitude and remembrance of the king of brutes.

Through all ages we have rather separate manifestations of originators who had no previous experiences to profit by than continued progress. In the Dark Ages, the familiars of the wizards only led them into horseponds or bonfires. When a strong dash of comicality lessened the wonder of observers, the trainer of animals became a little safer. We have the pious Louis XI., who would have strung up a hundred Pierre Gringoures for sacrilege, laughing on his deathbed at the gambols of trained pigs ; Charles II., the saturnine, sallies out to see the skilled horse, and so on.

When "the managed steeds trod with comely gait" from the ring into the patent theatre, the classical of

taste simply went demented. That Davis's horses should have led the receipts for a season at Covent Garden to top a hundred thousand pounds was a bitter pill to them.

Ducrow and Astley kept up the reputation of horsemanship to witch, where Shakespeare and more or less of the musical glasses had ceased to charm. It was a pupil of Astley—Franconi—who, with his family, lifted the French spectacular circus to a height scarcely since attained. His "Field of the Cloth of Gold" was an unrivalled pageant. He had a horse trained even beyond the point attained by Boucher with his steeds. He stood fire like Mr. Crummles' pony itself, would go down on his hind legs, or his fore pair, leap through the balloon, or over three other horses, or play the dead. Scientific men, who ought to have known better, talked of the mysterious link of intelligence by which the man and the steed entered into communication, when the groundwork of all was the brute's keen remembrance of a thrashing for blunders, and pieces of carrot, or other dainties, for prompt compliance with chosen signals, from whip, head, or hand.

THE TRICK OF TELLING THE AGE, THE HOUR, &c

It seems rather astounding to the uninitiated, when the horse trotting round the arena selects the prettiest lady, the biggest fool, or the best behaved child. Or tells by a pawing of his hoof the age of a given individual, the hours of the day, or other numbers.

In fact, the horse only knows that, at a given signal, imperceptible to the outsider, he is to scratch or beat the ground until another signal bids him to stop. All depends upon the man as to the repetition of the movements.

Mazeppa has pretty well familiarised the part of the playgoing public not satiated with the performance of Turpin's Bonny Black Bess, with the passably trained horse of the drama. In 1838, Alexandre Dumas' "Caligula" owed in a measure its failure to the mishaps attending the equine representative of the famous charger who was made a consul and fed out of the civil list manger. The stairs to be ascended were so badly constructed that the consul would not mount them and so "had no run!" There is a case, more recently, of a horse, by an impromptu act, obtaining applause. It was when W. Cooke produced "Rob Roy" at Astley's as a horse-piece with that strict regard for appropriateness which leads to "the Shipwrecked Mariner" being performed on horseback. Mr. Eburne was the Francis, provided with a magnificent white horse for which, to conciliate on all occasions, he kept his pockets well supplied with carrots cut into slices. On alighting to sing, "My love is like the red, red rose," Madame Blanche spied the tempting food peeping from her master's pocket, and just as the tenor was raising his arm to the line, "My love is like the red, red rose," the animal drew out a long piece of carrot, bringing the elaborately laced handkerchief with it, and waved them in triumph over the singer's head. Of course, an English audience forgets everything in a momentary joke, no matter how inopportune, and a universal burst of laughter and applause followed. The tenor mistaking the uproar for approbation, sang the verse through with increased energy. During the symphony, however, he happened to turn, and at once detected the delinquency, and to the universal demand of the house for repetition, Eburne sang the song through, bringing Blanche to the footlights, and feeding her with carrots during the entire ballad.

TOBY AND OTHER LEARNED PIGS.

I've heard about the learned pig
 That took a hand at cribbage;
 And Ettrick had a Hogg was big
 At books (this is no fibbage);

When we saw in a Parisian spectacle, "Paris Revue," a lovable little pig trot on, a rosy pig with sable muzzle, his tail in a screw and his ear pricked up like a philosopher, and his little eyes reckoning up the sincerity of the spectators, who roared at his appearance, we thought that the porcine race had surpassed its days of glorification. Only a few years before, in show and booth, a learned pig was almost an inevitable adjunct. How truly had Hood hit it in giving the Lament of the great original, the Toby whose namesake among trained dogs is Punch's famous companion. It runs thus:

O! why are pigs made scholars of?
 It baffles my discerning,
 What griskins, fry, and chitterlings
 Can have to do with learning.

Alas, my learning once drew cash,
 But public fame's unstable;
 So I must turn a pig again,
 And fatten for the table.

To leave my literary line
 My eyes get red and leaky;
 But Giblett doesn't want me *blue*,
 But red and white, and streaky.

He does not care about my brain
 The value of two coppers;
 All that he thinks about my head
 Is how I'm off for choppers.

Of all my literary kin
 A farewell must be taken ;
 Good-bye to the Poetic Hogg :
 The philosophic Bacon !

Another little month, and then
 My progress ends, like Bunyan's ;
 The seven sages that I lov'd
 Will be chopp'd up with onions !

Then over head and ears in brine
 They'll souse me like a salmon ;
 My mathematics turned to brawn,
 My logic into gammon.

My Hebrew will all retrograde,
 Now I'm put up to fatten ;
 My Greek it will go all to grease,
 The dogs will have my Latin.

For sorrow I could stick myself—
 But conscience is a clasher ;
 A thing that would be rash in man,
 In me would be a rasher !

One thing I ask,—when I am dead,
 And past the Stygian ditches—
 And that is,—Let my schoolmaster
 Have one of my two flitches.

'Twas he who taught my letters so
 I ne'er mistook or miss'd 'em ;
 Simply by *ringing* at the nose,
 According to *Bell's* system.

The dress of the original astonisher of the audiences
 of Richardson and Purvis was principally composed of

a copious lace frill about his neck, which set off to great advantage his snow-white skin, fair as bolted flour.

We continue to quote from "The Champion Pig," in order to present succinctly the performance of this animal.

"An alphabet was arranged in a circle on the floor, and, walking inside the circumference, Dr. Toby would unerringly spell out, by gently touching with his nose the appropriate letters in due order, the hour of the day, the day of the week, and the month of the year, with many similar problems. After which, on receiving the order from his (I fear he must be termed) accomplice, the showman, the Doctor would, on being challenged, decisively select the handsomest lady in the party, and the ugliest man, and then he would bring a blush into the cheek of some rustic by indicating *him* as 'the young man whom *nobody* would marry.' At all which successful judgments there was some laughter and much wonder. Then would come the great joke of the exhibition. Dr. Toby was ordered in a stern voice by the showman to state, 'on his honour, was there a rogue in the company?' and if so, to name him. Hereon the learned Toby would, with apparent reluctance, walk up to the showman himself, and, looking up at him, quite clearly enough impart his private opinion upon that functionary."

The author is right: the showman was more than the confederate; he was the pivot on which all the supposed intelligence of the learned quadruped turned. The latter obeyed a signal, and knew only that his supper depended upon his promptness and fidelity in obedience to it.

DOGS OF MONTARGIS AND OTHER CANINES.

It would have been strange if man had been content with dogs as fighting aids, and as companions in the chase and in solitude, without seeking to make more of him. Man never will let well alone. It seems as if dogs surpass all other domesticated creatures in perpetuating something of what they have learnt; but the data remains insufficient to pronounce satisfactorily upon that point.

At all events, if you wish to train a dog, you will find none with more natural aptitude than a poodle. Their sight and hearing are sharp, and few pointers can excel them in the scent. That is, they have all the desirable qualities. A retriever, with a strong strain of the water spaniel, perhaps comes next. Scotch terriers are sometimes grateful pupils. A stunted bull-terrier is often capable of worthy things up to a certain point. The shaggy terrier, so frequently seen in the drawings of Raffet, Vernet, or Charlet, in company with a Napoleonic veteran, seems limited in acquisitiveness: he can be readily taught to balance a bit of eatable on the tip of his snout, and not snap it before the word of command, to hold a pipe, to salute or shoulder a gun, and to dance; but high art bewilders him. We do not know the breed of a bright little dog which a Mr. Will Parker, of the principal music halls, has for performance with him; he marches in with gun on shoulder, follows his master imitatively without falling on all fours, drops dead on being shot at, and lies perfectly still until the call makes him start bolt upright with comical abruptness. He is a miniature artist who would shame animals who outweigh him by many pounds. Esquimaux dogs

are gifted, but are apt to forget their cues, and overdo what is set down for them.

We have the statement of a professional trainer that if he takes a puppy in hand who hails from an intellectual stock, he can teach him much more rapidly than a novice without ancestry to supplement his ignorance—which would please Mr. Galton in regard to his theory on the propagation of genius.

Apart from several troupes of trained dogs, which are to be seen here and there during the summer and in the London pantomimes, the latest great appearance of trained dogs were the packs of hunting hounds introduced in Dumas' "Youth of Louis XIV.," at the Odeon, and the "Youth of Henry IV.," at the Chatelet. They behaved very well indeed. Recently, a stag-hunt at the Agricultural Hall, and still further back at the Alhambra, when it was a circus, we believe, had something of the same sort.

It was over thirty years ago when not only Coney and Blanchard created a furore with their dogs in especial dramas, but rivals on the foreign boards successfully proved that, of all the expedients to save the declining drama, a dog was pre-eminent over the ghost, broken bridge and baby beloved of Sheridan, Elliston and the rest.

"THE DOG OF MONTARGIS"

Was naturally suggested by the historical incident. In 1838, all Paris packed to the Ambigu Comique to see "The Dogs of Saint Bernard" (the same piece produced last summer at the Mirror Theatre) execute their gymnastics over the rocks of blotting paper. Then

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there was the drover's dog, but he did not begin to compare in cunning with the real collie, of which it is related that he would steal in the night the cattle pointed out to him by his dishonest master during the day. What is more, he was fully aware when he was perpetrating a dishonest act, for, when engaged on such errands, he would not recognise even his own master. After death placed him under a new owner, his talent ceased to be developed. In 1856, a *real* cat for Dick Whittington was contrived by the property maker for a London pantomime by training up a terrier in a cat-skin. All went well until a real rat being among the shams, puss forgot herself in her hot pursuit and *barked!*

There is but rude training for the dogs employed by the smugglers of tobacco and other light goods on the French and German or Belgian frontiers.

The master of a green dog conducts him by round-about paths over the French boundary to the first Belgian village; after having him held or tied up, he leaves him with half-an-hour's start. At the moment agreed upon the animal is released, and naturally follows up his master's trail. This operation is repeated until the dog learns what is expected of him. As man alone cannot capture the canine contrabandists, he trains other dogs to be his assistants, and waylays the fraudulent carriers. Thereupon the smugglers' dogs learn that union is force, and, as their burden renders them apt to be overhauled in the pursuit, they stand at bay, and resist the preventive's dogs two or three to one. They have their collars garnished with spikes and knife-blades, as well to resist in these struggles as to cut through nets which are put in the gaps in the hedges. One of these dogs has been known to share the concealment of his master in a hayrick, and suffer himself

to be pierced mortally by bayonets without emitting a groan that would lead to the discovery.

Dogs have been trained to put out fires; even to roll over and over on a flame, though it burnt them.

There used to be one great defect about performing dogs, which is referred to in the following remarks of a professional trainer:—

“One thing,” he says, “in regard to dogs, is that, do what you may, good or bad treatment, they never will perform their tricks and carry a good tail. Now, do you see that yellow spotted dog? That dog knows we are talking about him, and he’s pondering or us. Dogs does a deal of pondering. That dog’s an inventive dog, sir, and is capable of striking off for himself a perfectly original line of characters; only, sir, when up to the beauties of his part—hinspired, I may say, regularly hinspired—he will drop his tail. Some dogs drops their tails more than others; some carries them right between their legs, which takes ever so much away from the ’traction of the piece. Maybe, sir, you don’t know much about plays where the dog is the actor. The female lady character says, Oh! my dog! my faithful dog! how joyously he bounds this way! We are saved! we are saved! He comes! he comes! Now, to see a dog come in with his tail down like a whipped cur takes all the life out of the piece. Dog human nature, notwithstanding any of the arts of man, will show itself there. Once I got acquainted with an Italian. He knowed most as much as any man I ever saw on dogs. He had a big spaniel dog, as was a most natural dog. I seed that dog perform a dozen times; and that dog had no drop in his tail, tho’ his play was cowed like, and not free. Of course his master wouldn’t let me handle him. But I paid a friend of mine to have that dog sent me once, just for ten minutes, and I found it out. That dog

was nicked, sir; the muscles at the joint of his tail had been clean cut, so that he couldn't drop it or wag it, if he tried. That ain't true art, and I'm above it. It's the ambition of my life, however, to succeed on that one point. I suppose if I had a very young puppy, and trained him up alone, apart from any other dog, and we neither of us ever lost our tempers, we might succeed. In the meantime, as you see, I satisfies my craving for perfection with short-tailed dogs. Nature and her defects ain't as perceptible in a bob-tailed dog."

Professor Tanner and one or two others have tried to solve the puzzle by going to the other extreme. They cause their pupils to keep up an excessively violent wagging of the tail, which, when the body and limbs are particularly rigid during some trick, presents a contrast at which an atrabilious god would indulge in Homeric laughter.

Dogs are trained by steady and patient attention. Instead of imagining a feat, and trying to break the disciple into it, a simple act is begun with, and as the dog appreciates the situation, and when he fully understands that failure means punishment, and success reward, half the battle is gained.

As a climax in honour, let it be perpetuated that when the Shah of Persia went to Covent Garden Opera to be entertained, Patti, Albani, Faure, and the other stars paled before the little dogs who went through their tricks in the Kermesse scene of "Faust"! Fact! Indeed, he would have applauded, them if her Highness of Wales had not warned him that they were only econd-rate *artistes*.

TRAINING OF WILD ANIMALS.

There is but one secret in the management of wild animals. They possess a peculiar instinct, by which they doubtlessly can perceive the amount of fearlessness in their opponent and master. Given great strength and activity, and any amount of intelligence, all goes for nothing if there is the smallest tip of white feather, the least misgiving at the heart. Then the trainer should love his profession, so as to drink from that the patience and perseverance required.

As a rule, most wild beasts will take a liking to those who feed them and care for them, especially in their few ailments. Lions are rarely assaultive (if we may coin a word) unless in a bad season, or when excessively hungry. If enraged, their madness gives plenty of premonition, and the lesson must be given over for the day, though the trainer must not abruptly end his interview, which sudden retirement would be infallibly set down by the beast as fear of him. Tigers and leopards, on the contrary, are treacherous brutes, springing from perfect and guileless seeming quiescence into baleful activity. The readers of "The Wandering Jew" may recall how the author has pictured the performance of Morok and his fiendish companions, really suggested by Martin and his lions. These, in turn, were followed by Van Amburgh and his cage of captives, which Queen Victoria often inspected, and Landseer painted. The lioness was named by the Yankee "Vic," in honour of the royal patroness.

In the *Gentleman's Magazine* a few years since, an article affected to reveal a secret process to which Van Amburgh owed much of his immunity during his daring performances in the cage with his wild beasts.

It was asserted that the talons had been extracted from the creatures so as to render them beyond comparison the very handsomest and noblest collection of wild beasts ever seen together, tame, submissive, and tractable as domestic-bred animals, in most superb coat, fat as moles, and apparently as affectionate and grateful for kindness as would be the most faithful and intelligent of man's companions: the one great and accountable reason for this being that in themselves—their courage, ferocity, and their savage natures—they are vanquished, annihilated, utterly undone, and demoralised. Plundered of their weapons, offensive and defensive, their very heartstrings torn asunder, their quick, sensitive natures crushed out—cast off the rack, cowed, bleeding, benumbed, and incapable, to obey the will of their torturer.

Perhaps the unthinking believes this bold, preposterous statement. But one has only to use the eyes when a wild beast tamer enters the cage to see that he would run no risk of losing valuable beasts by lockjaw, if such a wholesale extraction were possible with no greater risk, when the dullest booby in the audience would recognize the deception. Besides, you have only to remember the medical evidence as to the wounds of those unfortunate lion-tamers, who have fallen prey to their pupils' anger, to laugh at this "sell."

The chetah, or hunting-leopard, however, readily trained for hunting purposes in the East, has never been made much of in our own country.

The fable that the marabouts, or medicine-men, of the Arabs have supernatural power, extending especially over ferocious animals, compels them now and again to bring up lions from youth as a companion much like that which Kean is related to have kept. When full grown it is held in a leash of camel's hair rope, but

usually behaves itself well, though in the throng pressing round it to buy blessed charms from the priests.

It is asserted by the latter that they send the lion packing back to his lair when they return to their hermitage with their gains, so that each visit they have a new one, but that seems little likely among conjurors who resented Robert Houdin's rival feats of prestidigitation so bitterly.



AS not Lord Byron kept a bear, as he pleasantly says, to sit for a fellowship at Cambridge? and that brutish Diogenes, more or less under the threat of the ragged staff, appears frequently as an amusing companion at many periods of history. His gambols lacked variety, and since California

Adams and his Grizzlies, which we saw put through their facings, no one has a reputation as a bear-leader.

TRAINED MONKEYS.

The monkey is a much injured distant cousin *à la mode de Darwin*. When any other beast is aped by man, as in pantomimes, the foot of Hercules will stick out, and by the extremities we recognise Bottom under the borrowed hide, when his roaring does not betray him. But the poor monkey has been more than parodied, even eclipsed. There was Monsieur Gouffe, pre-

ceded by an unknown, of whom Garrick cried, "You will not do as you are, but if you had a tail, no money should part us!" Lord Monboddoo should have experimented on this lost link. Then came the famous Hervio Nono, or Harvey Leach, believed to be in after years the great "What is It?" of Barnum the Showman—an unhappy human deformity even more dreadful than the Aztec Children, of whom we have Nestor Roqueplan, the manager, saying, "Behold a bias taken by nature to apologize to the baboons!" On the stage, "Jocko the Brazilian Ape" and "the Dumb Savoyard's Monkey" have kept alive the fame of Wieland and Mazillier.

In 1839, there travelled through Europe and appeared at the St. James's Theatre, London, a very good company of monkeys trained by one Herr Schreyer. They acted little pantomimes with much ease and histrionic capacity. In one scene Lord Gogo was attended at his supper by the principal low comedy monkey as the waiter, the two carrying out all the laughable pranks which never are worn out on the stage by man or monkey. There was a weaving scene by Mdlle. Batavia and her sister chimpanzees, which might have suggested that of the ladies in "Généviève de Brabant."

The next marvels of training are those due to Monsieur Olivier's tuition, within the last ten years. He made as much of them as the actor Brioche made of the ape Fagottin, killed in error by Cyrano de Bergerac in 1680, and sung by Molière and Lafontaine!

Monsieur Olivier found one monkey without the usual and vexatious defect of his brethren: he had memory. That in absentia is what renders the tribe so troublesome, although they seem so provokingly capable of great things. Unless, always be it understood, their contrariness is due to their superior artfulness, as was premised by the old darkey who, failing to draw a lucid

response from a baboon, nodded approvingly and said, "Dat's right, uncle! dat's right! don't you say nuffin, or de white man put you to work straight!"

"You think," says a trainer, "after ever so much pains, you have got one that is well up in his part, regularly posted, and likely to do you credit; but one fine morning you find he has bolted his work, clean forgotten it, and you have to begin over again. The public is entirely mistaken about him. Generally the rule with monkey-training is to give him a good licking at the start, and then to keep up a lively hiding all the time. Most especially this will hold good with the small kind, though I have heard tell that the bigger the monkey the more like a man he is, and the more sensible."

One animal was broken into riding round the ring of a circus by a most simple expedient. In the rehearsals, the stablemen were placed in the front row of the seats, armed with fans, parasols, and rolls of paper. As the horse to which Jocko stuck in fear of falling dashed madly on with the serene gait of the old circus nag, every man within whose reach the cavalier was carried struck at him, and roared "Bravo!" At night, the monkey, taking it for granted that the audience were his enemies of the day in still greater force, ran het gauntlet with all those gambols to dodge possible strokes and grimaces at the thundering cheers, which increased the illusion as to his cleverness.

TRAINED DEER.

When you are chatting with elderly Parisians—and memory seems to be very clear among the aged of France—theatrical matters can hardly be turned upon without the memory of the Cerf Coco and the Dear Dear Azor gaily revealing itself.

It was during the Restoration, 1816, the Bourbons had revived stag-hunting among other habits of royalty. The Franconi's got up a stag-hunt for the delectation of the plebes. To train the timid fawn took two years and a half, but then the reward was so great! It was a *Coco furore*, like a Jenny Lind mania.

A GIFTED QUADRUPED.—For the commencement, he would go round the ring like a horse, keeping time with his head and his hoofs, and stopping and turning to the ring-master's signal, leaping ribbons and banners and barriers, kneeling, or lying down as if dead. While thus recumbent, old Franconi would sit on him, and snap off pistols by his ears, without a tremour showing that he was even heard. Then eight men would come in to music, and form a solid square, over which the deer would bound, no less nimbly and cleanly than over four horses.

There would be brought into the circle a framework, garnished with squibs and crackers, on the platform of which the deer would place himself as patiently as Melancholy on a monument, and quite indifferent to the flare and clatter of the pyrotechnics. After this triumph in the sawdust, he was elevated to the stage. He played in pantomimes and in melodramas. His masterpiece was Gerard de Nevers, where a stag-hunt was represented. Hunted by horsemen and a full pack, he mounted among pasteboard rocks, and finally leaped an

awful chasm, leaving the disappointed hounds yelping their dismay on the other bank.

The Tivoli Gardens sought a slice in this success. Its deer, Azor, made an ascension on the tight-rope. In point of strict truth, however, the rope was double, and on it was bound a plank, with cleets, up which the deer walked. A pretended ornament, which travelled on a parallel cord above him, served in reality to guide him, and prevent him stumbling over the edge. On reaching a tower, he turned and came down again. It was either he or Coco who displayed excellent nerve in going up in a platform attached to a balloon.

And this conquest over the nature of a timid animal was purely the result of the application of patience and tender intelligence. The animal only knew that on each accomplishment of an undeviating task, a certain reward never failed it.

THE TRAINING OF BIRDS TO SING.

In the little town of Fulda, in Germany, there are schools for teaching birds to sing. When a bullfinch has learned to sing two or three tunes, he is worth from five to ten pounds; for he will bring that price in France or England. Great skill and patience are needed to teach these birds. Few teachers can have the time to give to the children under their charge so much care as these bird-teachers give to their bird-pupils. The birds are put into classes of about six each, and kept for a time in a dark room. Here, when their food is given to them, they are made to hear music; so that when they have eaten their food, or when they want more food, they will sing, and try to imitate the tune they have just heard. This tune they probably connect with

the act of feeding. As soon as they begin to imitate a few notes, the light is let into the room, and this cheers them still more, and makes them feel as if they would like to sing. In some of these schools the birds are not allowed either light or food till they begin to sing. These are the schools where the teachers are most strict.

To descend to details, a bird is chosen some ten or twelve days after birth to be reared by hand. As soon as it eats alone and chirps, its musical education begins. During a week it is kept in a cage covered with clean linen, in a lonely and quiet room, where the tune to be learned is played upon a bird-organ. In a fortnight the linen is done away with, in favour of thick red or green serge, which remains until the pupil shall have learnt his lessons. For six times a-day the same air is played ten or a dozen times without break, which generally impresses it upon the creature's memory. More would fatigue it; and besides, cramming only leads to speedy forgetfulness. The quickest will be perfect in two months, while others may take as long as six. Lessons are best given in the morning and at night.

When the birds—bullfinches, for instance—are taught in classes as much as is proper, each is put under the care of a boy, who plays his organ from morning to night, while the master or mistress of the bird-school goes round to see how the pupils are getting on. The bullfinches know at once when they are scolded and when they are praised by their master or mistress; and they like to be petted when they have done well. The training goes on for nine months; and then the birds have got their education, and are sent away to be sold.

TEACHING BIRDS TO TALK.

Jackdaws, magpies, starlings, parrots, and other speaking birds, are taught by patience and perseverance. By keeping a bird secluded from noise, and speaking distinctly and at odd intervals, so as to startle and impress the word or phrase desired, and always promptly rewarding the slightest symptom of an attempt to gratify one's wishes, the result is sure to be attained. Kindness and attention always pays; indeed, once given, they must be continued, otherwise the bird, especially a parrot, will pine. The best of this latter sort is the plain green or grey, perhaps the former having the preference for tractability and quickness of apprehension.

TAMING AND TRICK TEACHING.

Before trying to teach birds any tricks, they must be perfectly tamed. This is done by petting them, and feeding them from the hand in the apparent freedom of a room. To teach a goldfinch to draw his water and seed, act upon the following relation:

Make a hole at the bottom of the cage large enough to let the bucket pass through, and remove the water-vessel, placing in its stead and over the hole a small tumbler of water for the supply. Then, filling the bucket with water, it is to be placed in the hole, a little above the level of the bottom of the cage, lowering it daily by degrees. Look to be sure that they really find the water at each stage before proceeding to the next. Let the bucket be very light, and the rope or chain thin, to save unnecessary labour. Place a perch near the bucket hole, for the bird to stand upon while at

work, less than an inch from the bottom. The hole in the false bottom must not be so deep as to let the bucket pass all the way through, lest it be caught between, and the birds be unable to extract it.

On the same principle of gradual stages, the bird is taught to pull the little car of seed up a railway.

In these cases the bird obtains his own reward, and needs no other encouragement.

In the high art of ornithological tricks and diversions, the bird's fondness for sugar, or whatever other delicacy may be more to its taste, is the guiding impulse. All the magic in the accomplishment of the following feats which have been performed, is due to the skill with which the teacher shows a tiny bit of sugar between his lips at the moment when the momentarily bewildered executant glances at him for approval, or in dread of censure.

In 1860, there was at the fair of St. Germain, Paris, a canary which could not only (to all appearance) tell colours, but distinguish shades of colour in pieces of cloth; spell words by the selection of separate letters, and tell the hours and minutes by figures from a watch, as well as do sums in the four rules of arithmetic, that is to say, the bird stopped at the proper letter or figure, &c., upon an unseen signal that it was right.

About twenty years ago there travelled through Europe and the United States "a numerous and talented troupe" of canaries, or perhaps there were a few finches among them, of which the spectator must retain a vivid recollection.

One swang on a slack rope, and went to sleep while pendent. One let himself be stood upon his head, either alone or back to back with another, with folded wings and rigid legs. One took a back summersault off the edge of a table. Another carried and balanced, like an

Oriental water-carrier, two buckets at the ends of a pole on one shoulder. Another still sat on the edge of a drum while it was being beat, perfectly unmoved by the vibration. Two sitting together obeyed the professor in flying together or separately at his word of command to their cage at a distance, &c. &c. But the culminating tableaux were the scenes of "the deserter bird tried and executed."

The teacher takes up a bird and stuffs him into a soldier's coat, and puts on a soldier's shako. The bird marches about, and goes through a few musket drill evolutions. The professor's eyes being averted, the bird lays down his gun and dashes into his cage, whence he emerged without the military habiliments. He crowds in among the others, but they repulse him, and he is soon discerned from them as the deserter. Half a dozen form a line, and caricature the proceedings of a court-martial, by bowing assent to the judgment of the professor that the offender deserves death. He is placed at the end of a plank, and an enormous (relative to his dimensions) piece of ordnance is trained to annihilate him. A lighted linstock is put into the claw of another bird, who applies it to the priming; the gun goes off, and the victim falls stiff on his back, with his little claws closed in appeal to the especial saint of his dreams. He is put into a cart, which is drawn by another bird or two to the cages, but upon reaching it, he leaps up and flies in, none the worse for the experiment. These were certainly the best we ever saw.



THE INDUSTRIOUS FLEAS.

LOWER depth beneath the lower still! man has stooped to the infinitesimal, in order to win applause and money. Once in about every twenty years a devotee arises with a learned flea to amaze the public. Of old some cruel things were done not to quell the irrepresible, but to sever the Gordian knot; to make a flea subside into docility his hind legs were amputated! But, given the apparatus, a miniature Rarey strap, and this antiquated barbarity is needless.

In 1869 was the last London exhibition of the Industrious Fleas. The *Orchestra* gives us a long description of the fleas of all sizes, ages, and complexions drawing all manner of miniature vehicles: fleas running four-in-hand, fleas running tandem, fleas doing mail-cart service, fleas driving locomotives; one flea doing steam-tug work, and pulling a line-of-battle ship some thousand times larger and heavier than himself; and several fleas told off for artillery practice, dragging big guns to repel undefined invaders—probably the lady-birds. One flea (in the Army) fired from behind a bastion a cannon of such destructive proportions that it had killed several of his predecessors (and thus led to his own promotion), besides knocking silly other civilian fleas in the neighbourhood. Another flea (in the Navy) had so undying an enthusiasm to serve his country, that he kept towing the vessel under his command to the edge of the table, and had to be brought back to safer equatorial latitudes about its centre. Another flea (with a passion for hydraulic appliances to agriculture) was indefatigable in drawing

nothing out of an imaginary well in a bucket attached to a pulley. There was also an acrobatic flea who swung backwards and forwards on a trapeze until he was stopped by main force; showing a tremendous amount of interest in his work which would have done credit to a Newton, a Franklin, or a Hamilton among fleas. There was a vaticinatory flea, whose hops were reduced to a system which gave wonderful results concerning the hair, eyes, complexion, and temper of your future spouse, be you wife or husband, bachelor or widow. There was also a tight-rope flea who walked along a stretched cord upside down, and drew a car after him; and there were two fleas who were so industrious in performing a see-saw at each end of a plank, as to prove that Margery Daw, the patron saint of this amusement, is not an ideal confined to the knowledge of the *genus homo*.

All these *pulices* have been trained by the dexterous fingers of Mr. Kitchingman, a professor of the craft. He feeds his pupils from his own left hand, on the back of which thirty-two hungry *industriels* sup every night. He knows each individual *pulex* by the peculiarity of his bite; and he affirms that each *pulex* knows him—to the extent of the pasture ground, but no further. The fleas are unharnessed at meal-time, because with the imbibing of blood the flea's body swells, and the confining hair would squeeze it inconveniently. This fixing of the hair harness is a most difficult process, especially when the young colt is restive; and considering that the hair is almost invisible to the naked eye, one may easily imagine what dexterous fingering is required. A flea's life numbers eleven months; but some die earlier, through overwork or through a proud spirit which will not brook captivity. Not a little creditable to the dexterity of Mr. Kitchingman is the neatness of

the ivory vehicles, vessels, locomotives, and gymnastic apparatus which he has constructed with his own hand. Among these is a treadmill reserved for the punishment of the flea that lays his proboscis on a woman, save in the way of kindness. No conjuring is required to instruct an academy of fleas: only unwearying patience and a delicacy of digits given perhaps to one man in fifty thousand.

When Mr. Kitchingman receives a flea (he does not catch them like common people; they are consigned to him through the post, and he often pays as much as sixpence for one), he shuts the captive in a little ivory box like the revolving cage in which white mice gyrate; and starves him. At first the flea is naturally wild; hops about; and bangs his head against the top of the box, which also turns with his efforts, and knocks him so about, that the spirit is taken out of him in a day or two. His trainer then feeds him on raw beef, attaches the finest possible hair to his body—much as you would place a girth round a horse—and chains him with a thin gold chain to a central point on a card. The spirited young colt can now hop to and fro, as far as the extremity of his chain; but the desire to hop soon goes, and then he is taken from the chain, tame and submissive, and harnessed to a cart, a carriage, or a field-piece.

TRAINED ELEPHANTS AND OTHER WILD FOWL.

In a fairy piece played at Bordeaux upon the theme of Red Riding Hood, a real wolf was introduced to better the illusion, and do credit to his instructor. Bullocks are trained in India as decoys to lead tigers near to the hunters. The comic mules of the circus are a standing

facetiae, or rather a bolting and plunging attraction. They are taught to give free scope to their wildest caprices, save when a certain signal, conveyed by the handling of the *chambriere*, or ring-master's long whip, or the encirclement of their neck by a handkerchief, checks their impulses.

But the greatest conquest of mankind, in point of bulk, is the elephant. Barring out the ponderous feats recorded by the ancients of these living mountains, we find in modern times that their capabilities for the stage were amply tested. The first marked hit was made in the celebrated elephant of the King of Siam, in Paris, and afterwards in London, where Mrs. Siddons being invited to see the beast which appeared on her off-nights, excused herself with the remark that she had heard his own trumpeting quite sufficiently. The play was ingenuously constructed. The quadrupedal actor releases the hero (or heroine, there is a change in the English version, because of the fear of the actress who should have appeared to trust herself to the trunked one) from bondage to a tree or from a box. He lays the tree over a ravine to form a bridge, fires a pistol at robbers, and snatches the crown from the pretender to put it on his master's head. In the arena he had played the organ, hammered a nail into a plank, stood on his four feet on a small tub, and otherwise repeated his predecessor's pranks in the Roman amphitheatre. When Mdlle. Mars went to see Chune (Kiouny, in French, by-the-bye), the intelligent (!) brute took a bunch of flowers from her corsage, in which was a costly pearl, by way of mock dewdrop, and swallowed it in revenge for her poking him with her parasol, a playful little freak common to her sex. "That's sixty thousand francs gulped down by my Antony!" cried she.

Charles Reade, in his "Jack of all Trades," gives the

life behind the scenes of this elephant, and shows how it was the ruin of its keeper's hopes in business and love while it existed. We can controvert that position by relating how an elephant married a loving couple.

A man of good family adored the daughter of a menagerie-keeper and circus proprietor. The family had never heard of the Empress of Austria taking lessons of a well-conducted circus-rider, and thinking such contract no loss of dignity. The baron was afraid, in consequence, to broach the subject. Not so the girl's father. One day he presented himself at the widow mamma's, a fine-looking man in stylish habiliments, only marred with perhaps too massive a watchchain, and too large a diamond in scarfpin and on finger.

"Madame," said he. "I am director and proprietor of an equestrian troupe and unrivalled collection of wild and domesticated wonders of the animal kingdom. Your son loves my daughter, and I like him. Before I have anything more to say to him, I have come to have a talk with your ladyship."

The old dowager was furious. Her noble boy to wed a girl who had no prospects, but her wages for leaping through hoops and over banners!

"You mistake, ma'am," returned the other; "my child has property. On the day of her wedding, I will hand over to my son-in-law the documents for property worth some sixty thousand francs!"

All was arranged. On the signing of the contract in the old lady's drawing-room, an unusual tumult filled the quiet street. All the idlers of the town seemed to have been summoned there. The guests looked at one another in amazement.

"Don't be alarmed," explained the papa; "it is only Miss Elise's dowry arriving."

All rushed to the windows, and beheld in the midst

of a swarm of boys and men, the marriage portion of Mdle. Elise surging forward with the airy footstep of several tons! It was an elephant.

And how is so sagacious but ponderous a beast made to obey a mere atom of a man? By kindness, by way of reward for accomplished tasks, and by the prompt and merciless infliction of punishment even before more than the intention of breaking out in temper is revealed. Once fill the creature with an unshaken belief that against its keeper rebellion is impossible, and to him, at all events, complete submission will be shown.

All the tricks which look so complicated upon the stage as to suggest apparently intelligence uncommon, are in reality executed as simple matters at the sign of the master who is always in the animal's view. It little knows or cares about the purport of its acts as long as it incurs no pain through bungling, and possibly the food that it likes, by exact compliance.



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