

ONE PENNY.

Kobbies

FOR AMATEURS
OF BOTH SEXES

VOL. XXIV.

MAY 4, 1907.

No. 603.



THIS SOLDIER SPEAKS TO-DAY.

HE SAYS—

"I have marched long distances (recently sixteen miles in four hours) on nothing save one pint of Dr. Tibbles' Vi-Cocoa without any apparent fatigue. Not only that, but it has been the principal means of making me a teetotaler."

WE SAY—

"This is in strict accord with scientific fact and daily experience."

Has made happy many a home which otherwise to-day would have been wretched, and the ultimate effects of which it is impossible to foresee. For breakfast, dinner, supper—indeed, at any hour of the twenty-four—Dr. Tibbles' Vi-Cocoa will be found light and refreshing; it leads the way among all beverages, and nothing can equal it."

Everybody knows about Vi-Cocoa, but if you do not use it you are losing something. Surely the evidence we have put before you is sufficient to persuade you to buy a packet from your grocer to-day, when you will reap the benefit of better health, greater energy, and more endurance. Buy a packet to-day.

DR
TIBBLES' Vi-Cocoa

HOBBIES.

The Full-sized Design for making this Fretwork Model of a Motor Omnibus is presented free to every purchaser of the New Edition of Hobbies Sixpenny Catalogue for 1907.

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Size of Model, 20½ ins. by 12 ins.

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VOL. XXIV. No. 603.

MAY 4, 1907.

Weekly Presentation Design.

TWO FLOWER RACKS.

THESSE two Flower Racks are similar in design, but the second one is reversed so as to permit of their being made up in pairs. The ornamental scrollwork is free and flowing, and although the sweeping lines intersect at several points, there are no exceptional difficulties in cutting to face. The style of ornament is a favourite one amongst fretworkers, and cut in any wood the Racks look well.

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FRETWOOD.—Parcels of selected Sycamore, for making the Two Flower Racks, may be had for 1/1, or post free for 1/5 per Parcel.

FLOWER GLASSES (6016).—Very handsome Bohemian Glass Flower Vases, in dark transparent green or blue, beautifully decorated with gold, size 3½ in. by 2¼ in., may be had for 1/- per pair, or post free for 1/4.

All orders by post should be addressed:—HOBBIES LIMITED, 12, Paternoster Square, London, E.C.



No. 603.—PAIR OF FLOWER RACKS.—Size, each 18½ ins. by 6 ins.

The arrangement for holding the flower vases is simple yet strong. The circular rims are not only tenoned to the bracket supports, but also to the back of the Rack itself. This makes it perfectly secure. Then the forked vase holder removes the strain from the rim, and at the same time provides a satisfactory rest for the glass.

Two pairs of these Flower Racks may easily be made from the one design, and the finished articles should be readily saleable.

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- Birmingham:—2, Old Square.
- Leeds:—21 and 22, Vicar Lane.

And at Hobbies Authorised Agents, Prices, etc., are subject to alteration in next Season's Catalogue.



POPULAR MECHANICS



HOW TO MAKE RECORDS FOR THE PHONOGRAPH.

ALL who are the happy possessors of a good phonograph must, at one time or another, have felt desirous of making their own records, not only for the sake of reproducing at will the speech and intonation of their dear ones, but also with the view of studying the marvellously delicate transcripts of the sound waves which go to form a really good record. The operator will have noticed, on examining any purchased record, that the surface of the same is indented with a number of spiral lines from end to end of the cylinder; and that the distance existing between these spiral lines of dots is about 1-100th of an inch. It must, therefore, be evident that the instrument for recording should be one in which the cylinder on which the record is produced is capable, not only of rotating on its axis, but at the same time travelling forwards at such a rate that the spiral lines produced on its surface shall be due to its having moved forward 1-100th of an inch in each complete revolution.

In order to effect this, it is only necessary that the travelling arm, which carries the trumpet and its appendage, the recorder, should rest by means of a "split" nut on a guide bar lying parallel to the surface of the cylinder bearing the blank on which it is desired to record the song, air, or speech; and that this guide bar, the surface of which must have on it an equal number of threads to the inch to that with which the surface of the record will have to be inscribed, should rotate at exactly the same rate as that with which the mandrel, or cylinder, bearing the record itself rotates. Not all phonographs, especially those of the cheaper description, are made with this necessary reproducing attachment; but the majority of instruments costing over 15s. are provided with this or a similar guide bar appliance. We shall, therefore, in the following remarks, pre-suppose that the operator has access to such an instrument. He will require some blanks, these consisting of hollow cylinders cast in a waxen composition, the size being 4in. long by 2½in. diameter. If bought, it should be seen that these blanks be perfectly smooth, cylindrical, and polished on their outside surface; while their interior should have four or five rings or ridges from end to end, so as to ensure a fair amount of adherence to the mandrel when placed thereon. Such blanks can now be purchased very cheaply, so that it is hardly worth while for the operator to make them; but, in case he care to try his hand, he may mix in a pipkin or similar vessel half-a-pound of clear resin and half-a-pound of paraffin wax, melting first the resin and adding thereto the paraffin wax, stirring carefully until the whole is well mixed, and then pouring the

mixture in a suitable metal mould of the size desired, which has a central core of the same diameter as the mandrel. We next direct our attention to the recorder. This takes the place of the reproducer in the ordinary instrument, and is placed at the smaller extremity of the horn or trumpet in such a manner that it is carried along by the half-nut and the guide bar at the same rate that the mandrel rotates. In order that the recorder may come into action or may be stopped at any desired moment it is customary to mount the recorder by a little hinge to the end of the horn, so that it can be allowed to fall and come in contact with the surface of the blank at the required instant. The recorder, in its essential details, is very similar to the reproducer; the chief difference being that instead of a rounded glass or sapphire bead projecting from the centre of the vibrating diaphragm, we have a chisel shaped projection, made (in the cheaper instruments) of hardened steel, and in the better instruments, of a similar cutting device made of a piece of polished sapphire. We give a section of such a recorder in our Fig. 1, in which B is the box, D the diaphragm, T the tube connecting to the horn or trumpet, S the stylet or chisel which indents the blank under the influence of the vibrations imparted to the diaphragm by the song, speech, or music produced near the bell of the horn or trumpet. Before attempting to produce a record, the operator will do well to try a blank or two on his machine while running, in order to ascertain the best conditions for work. To this end, having started the phonograph in motion, with the blank on the mandrel, he will let the recorder fall gently on the surface of the blank, and will notice what kind of a track the stylet makes. If he sees that it cuts the surface up in the form of a fine curl like shaving, without making any disagreeable noise of whistling, jarring, or jumping, he may take it that the recorder is working well, and that the surface of the blank is in good condition, and not too hard. If, on the other hand, he finds that the surface chips up powdery, and especially if this is accompanied by any marked hissing, whistling, or jarring sounds, it is a sign that the surface of the blank is too hard or that the recorder itself is not set at a correct angle to cut its track in the blank. In cold weather it is always desirable to work in a warm room, so warm, in fact, that the surface of the blank should easily take the indentation of the stylet. When a satisfactory position of the stylet has been obtained, a test should be made as to whether any improvement in the cut or track can be got by increasing or by lightening the pressure with which the recorder presses on the surface of the blank.

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In all good instruments, a counterpoise is attached by a lever arm to the back of the recorder box, by means of which the pressure can be graduated to a nicety. If too light, the track produced will be too shallow and the resulting record very faint; if too heavy, not only will the recorder itself screech while cutting its track, but the record will be of a screechy and unpleasant character. Presuming, however, that the operator has got the recorder in good working order, he next turns his attention to making or procuring a good, large horn, to the smaller end of which, as before said, the recorder is affixed.

The best results are obtained with horns made of *papier mache*, which can be extemporised by making conical tubes from stout brown paper pasted and rolled together. Each horn should be at least two feet in length; at the nozzle end being of such a size as to enter freely into the tube of the recorder, while the larger end or "bell" may be from ten to twelve inches in diameter. In order that the weight of the said horn should not interfere with the free play of the recorder, the horn should be suspended freely from an overhead stand, by a silken girth round its middle; and connected to the tube of the recorder by means of a piece of soft india-rubber tubing. The reason why we recommend a *papier mache* horn in preference to one made of any other material is because such horns do not emit "harmonics" of their own, and, consequently, do not falsify the records by the introduction of any such harmonies which would produce disagreeable Punchy or twangy noises.

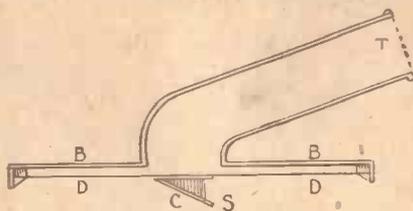
When it is desired to reproduce at one and the same time two rather delicate sounds, say, for example, a lady's song and a light pianoforte accompaniment, it is advisable to use a recorder having a two-branched tube, to each branch of which is attached a corresponding horn or trumpet, the bells of which must be directed towards, and placed as near as possible to, the instruments or individuals whose music we wish to reproduce. The mandrel of the phonograph should be arranged to run at about 160 revolutions per minute. The singer then stands in front of the horn, with his mouth facing it, at a distance of two or three inches only, and he will sing loudly and clearly into it, taking care to pronounce his words as clearly as possible, and with distinct articulation. In attempting to take high notes, he must be careful not to *force* them, and this is specially the case with lady singers, as the result of a forced note is very peculiar, giving rise to a screech which is technically known as a "blast." The voice should be produced with the mouth well open; the fashionable vibrato style (which we are pleased to say is gradually becoming beautifully less) is particularly objectionable in the phonograph, as the resulting records remind one forcibly of the bleat of sheep.

In recording speeches, the speaker should stand with his mouth close to the trumpet, and

should speak with the same strength of voice that he would employ in addressing an audience some fifty feet away. Piano records require the horn to be placed as near to the *back* of the piano as possible without actually touching it, the back frame of the piano having previously been removed. The touch of the player should be *firm*, and all expression should be got by hand, since the use of loud pedal, by jumbling a succession of sounds together, produces an amount of buzzing which is not conducive to distinctness, or to satisfaction to the hearers. The cornet and the clarionette are instruments which give excellent results; the former at about 4ft. from the bell of the trumpet, the latter at about nine inches. Smaller instruments, such as the mandoline and the piccolo, the whistle, and the xylophone, give charming results, the distances required being from nine inches to one foot between the instrument and the bell of the phonograph.

Cannas.

The Canna is now becoming well known by its oriental appearance. It is perhaps the most oriental half-hardy subject that we possess. During recent years the greatest work of the



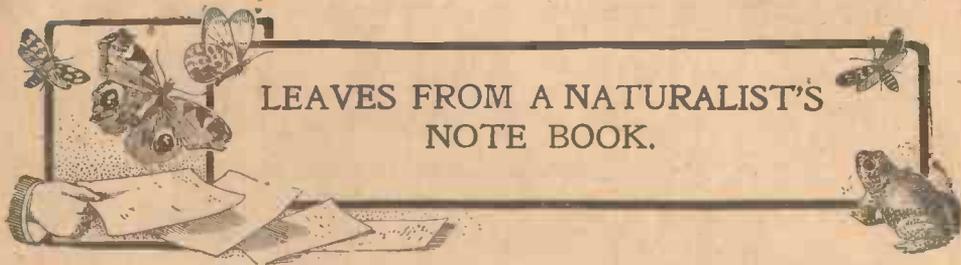
SECTION OF RECORDER.

- T, Tube Connection to Nozzle of Horn.
- B, Shallow Metal Box.
- C, The Recorder Proper.
- S, The Steel or Sapphire Stylet of Recorder.
- D, The Vibrating Diaphragm.

hybridiser has been to produce flowers as near to a pure yellow as one can wish for. Only about five or six years ago yellows or anything approaching the shade of yellow was hardly thought to be obtainable in the Canna. By working persistently by continued selection, and crossing the bronzy coloured kinds, varieties like Oscar Dannecker have resulted. Another recent attainment in the Canna is the variety

Mont Blanc, producing, as its name denotes, pure white flowers or as much as is possible consistent with the development of the essential parts of the flower. When hybridisers can eliminate the yellow stamens which undoubtedly they will do by persistent attention in this direction, then a white flower which can be used for florists' purposes will result. Every season in the HOBBIES Nurseries a large breadth of Cannas are planted out for mass effect. It is only by massing the bronze foliage, green foliage and intermediate shades of foliage together that the most pleasing results are obtained. Another feature in favour of the Canna is its delight in dry or wet summers. If a wet summer results the blooms are so stout in consistency that they easily resist a continual drought, and if the summer has been wet it does not interfere with their successful culture. Of course, our readers are aware that the Canna is equally adaptable for pot culture, for the greenhouse or window garden, as it is amenable to summer bedding.

WHEN a recruit joins the British Army his name has to be entered sixty-two times in the various documents required at the War Office.



BY THE REV. THEODORE WOOD, F.E.S.

NOTWITHSTANDING his popular reputation for gentleness, and meekness, and general sweetness of character, most residents in the country know that the robin is just about the most savage of all our British birds. Only by the great tit, indeed, is he rivalled in ferocity of disposition. Jealous to the last degree, he is ever ready to avenge the smallest infringement of his imaginary rights and no landed proprietor holds stronger views as to the enormity of the crime of trespass. Let a robin take up his abode in a greenhouse, or a shed, and he will attack, and kill if he can, any other robin which may dare to invade the premises, which he regards as his own private property. Two or three years ago, too, a robin established himself in Hereford Cathedral, and seemed to consider that it was not big enough for two : for on a second robin making his appearance one morning he proceeded to chase the intruder all over the building, and was at last found sitting triumphantly on his dead body. And I have lately come across an instance which is even more curious still, inasmuch as while a robin was the aggressor, his victim was not another robin as usual, but a sparrow. What the sparrow had done to annoy him history does not relate. But the two birds were found furiously fighting, and the sparrow was getting by far the worst of the battle. Not only this, the robin, after the two had been separated by a compassionate spectator, actually attacked the sparrow again as it lay exhausted in the hand of its deliverer, beating it savagely with his wings, and doing his very utmost to administer the *coup-de-grace* with its beak ! Robins are notoriously trustful and confiding where human beings are concerned. They will venture into inhabited rooms, and even take crumbs off the breakfast table. I have had a robin, too, sitting calmly on my knee for over a minute, as he looked about him for worms in a plot of ground which I had just been digging. But one would scarcely have thought that a bird could be so maddened with rage, so blinded by passion to all sense of personal danger, as actually to continue his onslaught upon an enemy as it lay in the very hand of a human being.

A fact that always strikes one with amazement is the manner in which a robin will gulp down quite a big worm, and then instantly proceed to look for another. A bird's gastric juices must be exceedingly powerful. For a large earthworm weighs just about one fifteenth as much as the robin itself. Yet it is swallowed whole, and only seems to stay the bird's voracious appetite for a very short time. Just

imagine a man of average stature swallowing a ten-pound leg of mutton, or say sixty pork sausages, without any sort of preliminary mastication, and then at once looking about for the wherewithal to continue his meal ! Yet, weight for weight, this would form the exact counterpart of the gastronomic feat performed by the robin. How many worms a robin will swallow in a day I do not know. A French naturalist declared that, if the worms which form the bird's daily diet were placed in a straight line end to end together, they would measure fourteen feet in total length. But even if that statement has to be largely discounted, there can be no doubt whatever that, bulk for bulk, birds eat immeasurably more food than man does. It argues a strange lack of the sense of proportion, or a total ignorance of natural history, to describe an invalid as having "only the appetite of a bird."

The wood ants are very busy just now, enlarging and repairing their dwellings after the winter rains. These great mound-like nests are really very wonderful, even in point of mere size. For you may find them a good three feet in height and six or seven feet in diameter ; while there is quite as much of the nest below the surface of the ground as there is above it. And the mound is by no means a mere accumulation of the dead leaves of the pine trees, piled loosely together without any sort of order or arrangement. The whole of the interior consists of a most wonderful system of galleries and passages, with chambers opening out on either side—so flimsy that it breaks down at the slightest touch, yet so strong that it resists the constant trampling of thousands of tiny feet. And a few hours sometimes suffice for the building. A couple of years ago, in a pine forest in northern Scotland, I found the largest wood ant's nest that I have ever seen. In order to ascertain whether any grubs of the Rose Chafer—the "King of the Ants," as it has been called—were living inside it, I broke a branch of a tree close by and levelled the whole nest with the ground. The scene, apparently, was one of the wildest confusion. Scores of thousands of ants were rushing to and fro without, as it seemed, any sort of purpose or plan. The ground for a radius of eight or ten feet was just one seething sheet of the great reddish-brown insects. Yet every one of those ants knew exactly what it had to do and how it was to do it. And by the same hour next day, when I passed by the spot again, the mound was entirely rebuilt, and all the ants were peaceably following their usual occupations.

We have wondered, lately, at the energy and

enterprise which have already caused the city of San Francisco to rise from its ruins, after the appalling earthquake which devastated it but a few months since. But if you contrast human builders with these insect architects, making all due allowance for respective sizes, the comparison is hardly in the favour of the former.

One cannot help wondering why the ants permit the presence of the great fat, helpless grub of the chafer in the very heart of their dwelling. They could easily kill and devour it if they chose; and one cannot imagine any respect in which it can be of use or benefit to them. Yet they never seem to interfere with it in any way whatever. The smaller beetles which one finds in the nests of nearly all ants—some eighty or ninety species in all—are undoubtedly regarded as pets. The ants fondle them and caress them, and amuse themselves with them generally, very much as we ourselves treat our favourite dogs and cats. And if the nest is open they snatch up their coleopterous darlings and carry them off to some subterranean hiding-place, even before they think of the safety of their own grubs and pupæ. You may see them hurrying off, each with a beetle nearly as big as itself held in its jaws, as a cat carries a kitten. But it seems very doubtful indeed why the little white *Platyarthus* woodlice should bear these beetles company. You can scarcely open an ant's nest without seeing them. They are often present in scores, and the ants evidently do not regard them as intruders. Yet the part that they play in the economy of the nest still remains a total mystery. One can only suppose that to some extent they act as scavengers.

Photography.

SUBJECT FOR MAY:—Portraiture, Groups and Figure Studies.

CLASS I.—Open to holders of **HOBBIES** Certificates of Merit of the **SECOND** Grade.

CLASS II.—Open to all who have not received **HOBBIES** Certificates;

Past Prize Winners and Holders of HOBBIES First Grade Certificates are not eligible.

Three Prizes will be awarded in each Class:—**FIRST**, 10s. 6d.; **SECOND**, 7s. 6d.; **THIRD**, Five Shillings. Certificates may also be awarded.

Three Prints are to be sent in. These must be mounted on card mounts, and the title of the photograph and name and address of sender must be legibly written on the back. In **CLASS I.** the number of **HOBBIES** in which the award was published must also be given. (This appears at the foot of the Certificate). No print will be eligible that has been entered in other **HOBBIES** competitions. Photographs cannot be returned, and the Editor reserves the right to reproduce any of those received in **HOBBIES**.

Photographs must be received not later than **May 31st**, addressed:—Photographic Competition: Editor **HOBBIES**, 12, Paternoster Square, London, E.C.

Words of Wisdom.

What is defeat? Nothing but education. Nothing but the first step to something better.—*Wendell Phillips*.

Never bear more than one trouble at a time; some people bear three kinds—all they have ever had, all they have now, and all they expect to have.—*Lord Avebury*.

There is an essential solitude in the nature of most women, and their protection against it is that they are hardly ever alone.—*S. Macnaughton*.

Camera Notes.

HOW TO GAUGE EXPOSURE.

THE factors on which exposure depends are various. The nature of the light, the lens stop, the speed of the plates used, and so on, all have to be considered. When guesswork is allowed to decide the matter, one cannot always be sure of a good result, hence many ways of arriving at the necessary exposure have been devised. There are many kinds of exposure meter, for example, by means of which the length of time necessary can be calculated even when only a small fraction of a second. But much valuable information can be gained from simple experiments made with strips of P.O.P., in the way described below.

Let us suppose that on a certain occasion a photograph be taken of a landscape, and four plates are exposed on it, giving, let us say, one, two, three and four seconds' exposure, and that on development it is found that the plate which had two seconds' gives the best result. At the time of taking the photograph a small strip of P.O.P. is also exposed fully to the light for a given time, perhaps thirty seconds; this piece of P.O.P. is kept in the dark afterwards, and the depth to which it has printed is fixed as firmly as possible on the memory. Then, on any subsequent occasion, by counting how many seconds it takes for a piece of the same make of P.O.P. to darken an equal amount, we shall know how long exposure to give the plate. Thus suppose on this occasion it takes sixty seconds to darken to the same degree. The light will therefore only be half as powerful. Double the exposure must therefore be given, if plates and lens stop, &c., be the same. This is the simplest form of actinometer possible, and a very fairly reliable one.

A little instrument about the size of a watch, to calculate exposure accurately can be purchased for very little, and will soon pay for itself by the plates it saves from being wrongly exposed. The usual form of meter contains a disc of special sensitive paper, a tiny strip of which is exposed to the light at one time. The number of seconds it takes to darken to the same tint as a piece of grey paper, which is stuck at the side of the opening through which the sensitive paper is exposed, is noted, and this enables one to calculate the exposure necessary for a plate, by means of various movements dependent on the stop and the plate speed.

THE RIGHT WAY TO USE A METER.

It is most necessary in using an exposure meter to let the light fall upon the dial in a proper manner. It should be held in front of the lens, *towards* the object to be photographed. The light coming from the object is then responsible for the darkening of the sensitive paper, and the calculated exposure may be relied upon as being quite correct. The mistake is too often made of pointing the meter towards the sky and sun, and in this way the exposure usually calculated is *too short*.

Many amateurs possess a Wynne exposure meter, and perhaps use a plate whose speed is marked in Watkins numbers, and *vice versa*. This is often perplexing, but any such difficulty is solved by knowing how to change one into the other. To convert Wynne speed numbers into Watkins, square the number and divide the result by 45: to convert Watkins numbers into Wynne, multiply by 45 and take the square root.

POKER WORK



V.—COLOURED POKER WORK.

PYROGRAPHERS, as a whole, do not view what is commonly called coloured poker-work with the favour it undoubtedly merits, claiming that the use of water-stains in connection with the work eliminates the leading characteristics produced by the plain and severer tones of the scorched wood. Notwithstanding the expert's dislike of "combined arts," which, in this case, is similar to the objection of the professional relief wood-carver to the use of glass-paper, coloured poker work is one of the prettiest and most effective arts which are open to the ordinary amateur worker, possessed of a small amount of the artistic sense of colouring. The main point to remember in introducing colours is to see that they are in harmony with the soft tones of the scorched wood; and in the case of floral designs and designs from nature, the colours in nature should, in the main, be adhered to. Blue chrysanthemums and yellow geraniums are not natural, and though many readers may think such an obvious remark unnecessary, the writer's experience has absolutely included the witnessing of these two very colourings.

A word must be said about woods. It is useless attempting to procure good results on articles composed of either loose grained wood or insufficiently seasoned timber. The most suitable woods are bass, lime, chestnut, and holly in the lighter woods, and American walnut, old mahogany and satinwood in the darker woods. The best stains for coloured poker work are those now on the market, which require no "mixing fluid." These stains are all ready prepared and can be used direct from the bottles, which should, however, first be well-shaken. Without wishing to detract from the merits of the majority of the products of one of the best-known firms of artists' colourmen, it is necessary to give one word of warning regarding the purchase of "marqueterie" stains for poker-work, many of which are very inferior. Even if the best outfit be procured, "marqueterie" stains have the disadvantage of "running," to avoid which an "out-lining-black" has to be used. This set-

outline of black would, in the majority of cases, completely spoil the soft effect desired in coloured poker-work and convey instead the hard-edged appearance of inlay-work. The most suitable set of stains for coloured poker-work are those primarily sold for "inlay staining." These stains, carefully applied, do not run and therefore require no "outlining-fluid." (In "inlay staining" proper, the articles to be treated are provided by the makers with the pattern stamped in outline upon them which conveys the inlay effect.) A good staining outfit of "inlay" stains may be obtained for about 5s. or 5s. 6d., which includes eight bottles of stains and three serviceable brushes. Separate bottles of stains are sold at 6d. each. The sets generally include all useful colours; but the coloured poker-work artist will find the following colours the most useful and practicable, all that are necessary. Grey, yellow, olive green, blue, heliotrope and rose-wood. For lightwood pokerwork articles, satin wood, mahogany, walnut, pink, moss green and dark green may be added: but if expense has to be considered the same effects as some of these given may be obtained by mixing two or more of those in the first list; as, for instance, olive-green and blue together will give



FIG. 1.—LETTER-WAITER FOR HALL.

dark green.

It must be remembered that deeply-burned poker-work articles will require vivid stains to produce any apparent coloured effect, the dark tones of the scorching counteracting the effect of the colouring. Then account must be taken of the effect of burned tones of the wood on certain colours. In the case of olive green, for instance, this stain applied to the dark-burned background of an article will produce little more than a yellow-brown effect.

The preparation of the article for the stain is a matter of some importance. The wood must be thoroughly sandpapered, commencing with No. 1 or 1½ paper, finishing off with No. "0.0.," and adding a smooth satin-like surface with a rubbing of fine tissue paper rolled into a small smooth pad. The design having been poker-worked in with the hot platinum-point,

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the background must first be filled in as evenly as possible, starting always from the outlines and using the colour in great moderation. The background once dry, the design can be filled in in colour and burning according to the individual taste, care being taken (as before stated) to keep to natural effects. And whatever strange fancies the worker may indulge in, let him keep from the use of bronze and gold paints. In America where pyrography has made great advances, there has lately been an unfortunate and inartistic tendency to the introduction of bronze and gilt paints by doubling all the outlines with platinum point and then filling up the space between the two lines with metallic paints. The effect is simply tawdry and trashy like the theatrical decorations of a Continental church. In relief burning the mode of decoration with coloured stains is reviewed, the design first being treated in colour and the background being left till the last. Let us take as an example the Hall-Letter Wailer in Fig. 1, which may be either relief-burned or flat-outlined. The one executed by the writer was in relief, executed as described in a previous article. The colourings are indicated by the numbers on the illustration which shows the article in process of execution.

Leaves number 1 were stained a pale light green; 2, darker green shaded or toned with mahogany in two operations; 3, russet effect (obtained with pure yellow stain with a touch of rosewood) and shaded olive-green.

Those numbered 4 represent rich autumn leaves and were treated with rosewood and pink shaded together. The berried-shoots (5) were coloured deep red and shaded to purple with a touch of blue, while the stalks were variously toned in with russet red and deep-green. The background, burned out deeply, was treated to a wash of dark-red giving it a richer brown effect, while the border left in high relief as an edging was made a rich green with brown patternings. The veining of the leaves obtained their natural effect as the result of fairly deep-burning.

handsome. The half-open flower should be a deeper pink artistically shaded. The background naturally dark from the burning might be washed over with blue to impart a greenish hue and the border and scroll could be tinted yellow. It is a handsome design entailing little difficulty, though nice care is required in burning in the centres of the flowers. The two ornamental vases shown in Figs. 3 and 4, also lend themselves to peculiarly effective colour decoration. Fig. 3, executed on a green background, with red and russet leaves and purple berries, would be most natural; while Fig. 4 might have a shaded background, brownish towards the bottom merging into greenish hues in the centre and pale blue at the top. Their iris in pale heliotrope and deep purple alternately and the leaves their natural green would complete a most effective colour scheme. More will be said regarding colour combinations in connection with "Sil-vel" work, which will form the subject of the next and last article on "Poker-work."



FIG. 2.—TRAY.

LOOK well after plants in window-boxes. When a large number are crowded into a small space they soon exhaust the soil, and are also very liable to feel the effects of draught unless looked at twice a day.

TURN window plants half round each day in order to keep them well balanced. If they are always allowed to keep one way they will quickly become one-sided.

NEVER rely on rain for watering pots and boxes, for often the heaviest showers do little more than damp the surface of the soil, owing to the arrangement of the leaves. In every plant the leaves are so disposed as to carry the rain to the feeding roots. If the plants are allowed to ramble as they like, the water would find its way to the roots, but when the roots are forced to curl up in a restricted space the water is carried beyond them, and so misses the pot entirely.

WHICH kind of wood is the most durable? To answer this question some interesting experiments have been made, and the following results obtained. Birch and poplar decayed in three years, willow and horse-chestnut in four years, maple and beech in five years, elm and ash in seven years; oak and Scottish fir decayed to the depth of half an inch in seven years; and juniper was uninjured at the expiration of the seven years.

FOR common brass for castings use 20 parts copper, 2½ tin, 1¼ zinc.

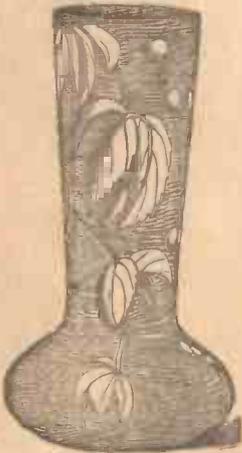


FIG. 3.—ORNAMENTAL VASE.



FIG. 4.—ORNAMENTAL VASE.

Fig. 2 shows a handsome tray with an anemone design which lends itself to bright and effective colour treatment as a flat poker-work article. The leaves in deep and pale greens, the stalks toned russet brown, the full blown flowers filled in pinky-white with yellow centres and the undersides of the petals shaded deeper pink with green tones at the stalks would be very natural and



Notes of the Week.

THE removal from Earl's Court of the Great Wheel, which for many years was one of the holiday sights of London, has caused a revival of interest in the design for a fretwork model of this gigantic structure which we published shortly after its erection. The pattern, illustrated on page 183. of our 1907 Fretwork Catalogue, is a capital one to select when an important exhibit is required. It is not unduly elaborate, and stands only twenty inches in height: but its ingenious construction, and the fact that it can be used as a working model, make it an attraction for bazaars. Considering its comparatively small size, and also bearing in mind the limitations and requirements of fretwork, it forms a wonderfully accurate model. The large parallel wheels, of a simple yet elegant pattern, are constructed to revolve, while all the small cars, being hung on spindles, retain their vertical position while the article is in motion. The method of construction, particularly in the arrangement of the cross-stays which join the wheels together, is very ingenious, and if the worker is able to fit a clockwork movement to the main axle, and thus make the article a mechanical model, his Great Wheel should certainly prove a centre of interest wherever it is exhibited.



Within the last few weeks many readers have sent us photographs of motor omnibus models which they have made up. A particularly good one comes from G. F. Shephard, of Cobham, and two excellent prints are sent by A. M. Gray, of Oxford. We notice with pleasure, too, that *The Captain*, in its April number, reproduces one of Mr. Gray's photographs of the model. Referring to it, *The Captain* remarks that "the car, which appears to be an example of careful workmanship, is made from several kinds of wood; the glass forming the windows is kept in place by a beading-stick attached to the roof and inside seats. The wheels, fitted with pneumatic tyres, steering-handle, spring, &c., are strongly made, and the car is further embellished with two nickel-plated miniature lamps." The view is a rear one, showing the back staircase to full advantage, and the model itself was exhibited some months ago at the Oxford Trades Exhibition. We believe it was cut *left-handed* with a fourteen-inch frame.

Possibly many readers are under the impression that fretcutters, whose names are frequently seen in connection with exhibitions and competitions, are men of leisure, whose time is their own and who have nothing to do but make up fretwork articles for the purpose of securing prizes. The truth is that the great majority of fretwork exhibitors and prize-winners are working-men who have only a few spare evening hours to devote to their hobby. We know of one expert cutter, whose name has often appeared in these columns, whose daily task is stone-breaking, and who never has an opportunity of touching a fretsaw until a long and hard day's work is over. Yet, during the last six months, this worker has been successful in securing for his fretwork exhibits three silver medals, a bronze medal, five diplomas, besides awards of honourable mention. He has exhibited at Edinburgh, Plymouth, Coventry, Oxford and Grantham, and wherever his work appears it finds a foremost place in the prize list. The name of another reader, who was high up in our recent fretwork corner bracket competition, we also frequently see in exhibition prize lists. He is also a working-man, but by a careful and practical use of his spare time he has been enabled to gain many awards in competitions all over the country.



In reply to some correspondents we may here mention that particulars of Inlay Staining—a new form of marqueterie work—are given on pages 18 and 19 of our recently published catalogue of Poker Work materials, which we shall be pleased to send to any reader on receipt of a penny stamp for postage. The special feature and advantage of this new style of imitation inlay is that articles supplied for the work are provided with finished outlines, and that thus the most difficult part of the task is avoided. Illustrations of some of these are given in the catalogue. For ordinary marqueterie staining the ordinary whitewood articles provided for poker work may be used. Of these there is a great variety, and almost any class of article, from little stamp boxes to large screens and other pieces of furniture, is now obtainable.



Photographic readers may also be reminded that our Supplementary List is now ready.

Cycling Notes.

WE do not think it would be a rash statement to make when we say that of the total number of cyclists one meets on the road, quite seventy-five per cent. do not carry a properly equipped tool-bag. By this it is not inferred that tourists should carry a small armoury of repairing implements, but that only too frequently the most essential articles are wanting. In these days of dust-proof and oil-retaining hubs, oil-cans are superfluous; they can be left at home and used sparingly at fairly rare intervals. The best of oilers leak at times, and the result of a defective article of this kind when in company with patching rubber and india-rubber solution can better be imagined than described.

Undoubtedly the place of honour in one's tool bag must be given to the tyre-repair outfit, for this indispensable article is required far more frequently than any other accessory, save the inflator.

On this account care must be taken to see that the repair outfit is properly maintained. The solution should be of the best make obtainable, viscous and quick-drying. A watery-looking solution is a delusion and a snare, and in use is responsible for those annoying instances that occur with the greatest regularity during the hot weather—the "lifting" of old patches. A patch solutioned on with material of the best quality becomes part and parcel of the inner tube, and to attempt to remove it frequently means rending the tube itself; but when inferior solution is used the patch can readily be taken off.

For home use many cyclists make their own solution by dissolving old inner tubes in naphtha. Kept in an air-tight tin this concoction will last indefinitely, and serve the rider better than having to recourse to the collapsible tubes that are best reserved for the tool-bag for use in roadside repairs.

Besides the solution a good stock of india-rubber patching material should be carried. This usually takes the form of a section of old inner tube, and provided it be not too old or perished, this makes one of the best forms of patching material obtainable.

We would, however, strongly advise one not to cut the patches or sandpaper the rubber until actually required, as a freshly cut piece of rubber sticks better at the edges than if cut to shape some time previously and allowed to get dry and possibly greasy.

Sandpaper is also required, but its absence can be overcome by using a match-head, sulphur for preference, which is slightly moistened and rubbed on the inner tube around the puncture and also on the patching-rubber.

Tyre levers require careful choice and still more careful manipulation. In spite of makers' assertions that wired-on tyres can be removed by means of the hands only, few, if any, are capable of being thus manipulated, while beaded-edged tyres also require mechanical appliances at times.

Such implements as broken tooth-brushes, etc., have been advocated as ideal tyre levers, but the danger of puncturing the tyre on nipping the tube against the wired edge of the cover cannot be too lightly estimated. Tyre levers to be effective should be flat, strongly made and free from sharp or jagged edges.

French chalk should be carried in a small tin with a close-fitting lid. The wooden cylinders usually supplied with outfits do not contain a sufficient quantity, and are also apt to spill their contents. Two or three short lengths of valve-tubing can be placed with the chalk, as the latter renders them easier to slip on the valve stem when required.

Prepared canvas, to be of any practical use, should be cut in squares of not less than five inches, while one or two repair bands or "cross-patches" should complete the tyre repairing kit, though, as we have previously advocated, these articles should be used only for temporary repairs. When a tyre has gone so far as to require the use of repair bands it is better, for touring purposes, to discard it entirely and buy another.

An adjustable spanner or wrench is often missing when required. A man may ride thousands of miles without requiring to use one, but sooner or later something requires to be tightened or adjusted—as often as not when miles from anywhere. Then the want of a spanner is evident.

A small screwdriver is also a useful accessory, though seldom required, while the contents of a tool-bag are completed with the presence of a piece of oily rag. This serves two purposes. It keeps the metal articles from making a nerve-jarring rattle, and it is also useful in wiping down the plated parts of one's cycle after a shower of rain.

TOE-CLIPS.—We have frequently been asked whether the use of toe-clips is advisable for touring purposes. There are now several varieties of toe clips on the market, some fitting over the front of the toe-cap, others coming over the sides of one's shoes like a light-fitting stirrup. Steel toe-caps have now almost entirely given place to flexible or leather-lined steel ones.

Their advantage is evident when riding with a slippery pedal, *i.e.*, when the spikes of the "rat-trap" have been worn down, or the corrugations of the rubber pedal have disappeared through constant use. For hill-climbing toe-clips are a valuable assistance when one has acquired a scientific method of pedalling as opposed to the "piston-rod" methods of the novice.

On the other hand the constant use of toe-clips causes cramp, and on a long day's ride the effects are only too evident. One can, of course, use the pedals with the toe-clips on the underside, but here the danger is, especially with long cranks, that the clips are apt to catch in any object lying in the road, and thus cause the rider to be thrown. Again, in the event of a side slip one is frequently unable to disengage the foot, and the chances of a serious accident are increased. Another serious objection to the use of toe-clips is that one's foot gear soon begins to show unsightly marks, particularly if the clips are not covered with leather. Taking one thing with another we are bound to come to the conclusion that toe-clips are not to be recommended for touring purposes; but, perhaps, some of our readers have other views on this subject.

LANCASTER was the capital of the United States from September 27th, 1777, to September 30th, 1777. The capital has also been located for a time at Baltimore, York, Princeton, Annapolis, and New York. In 1800 the seat of Government was transferred permanently from Philadelphia to Washington.



TOOLS AND HOW TO USE THEM.



IX.—TOOL RACKS AND CASES.

ONE of the secrets of good woodwork is to always have the tools one uses in good condition. In order to keep their edges sharp, it is necessary to have some place to keep them, where they will not get damaged.

The most simple and probably the handiest method of storing tools is a wall rack close to the bench, so that as each tool is required it may be easily reached and replaced when finished with. Fig. 65 illustrates a simple form of wall rack which could easily be attached with nails or screws. The rack shows accommodation for eleven chisels and gouges, a screw driver, gauge, tenon saw and square, bradawls and gimlets.

In making a rack of this kind, the number

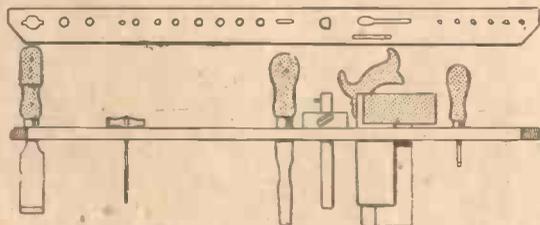


FIG. 65.

of tools will limit the length; to hold the above tools a length of wood about 3ft. long, 2ins. to 3ins. wide, and about $\frac{1}{2}$ in. thick would be required.

To make the chisel and gouge holes, the size of the ferrules should be measured and a hole bored the same size. If the chisel will not go through the hole, a slot should be cut each side, as shown in the first hole in the illustration. The screwdriver should fit in a slot, made by mortising a narrow hole with a $\frac{1}{2}$ in. chisel. The gouge, as will be seen, fits in a half-round hole, having one-half of a circular hole, $\frac{1}{2}$ in. diameter, cut square with a $\frac{1}{2}$ in. chisel. The tenon saw fit in a slot, widened out at one end to take the back, and in front of the saw another slot is made for a try square. The remaining space may be left for bradawls, the gimlets fitting in front of the chisels as shown.

This rack makes no provision for a brace and bits, so that another rack should be made to take these tools. To economise space, a rack of sufficient length to take spokeshaves as well should be made, and a very suitable design is shown in Fig. 66. The back should be about 1ft. 6in. long, 8in. or 9in. wide, and $\frac{1}{2}$ in. thick and may be of deal. The racks on which the spokeshaves are placed should be of some hard

wood, beech for choice, for this wood would not break off as a soft timber is liable to.

To make the racks, first determine the number of slots required and space out the lengths to correspond, next bore out suitable holes $\frac{1}{2}$ in., if wood about $1\frac{1}{2}$ in. or so in width is used. The slots should be marked off with a bevel and sawn down with a tenon saw. The board for the bits should fit across the base of the back, and $\frac{1}{2}$ in. holes bored to take the bits, the tops of the holes squared to take the bit, as shown in Fig. 66A.

A TOOL CUPBOARD.—(Fig. 67). The only disadvantage of the wall tool racks is the liability to get rusty if exposed continually to the air, and to avoid this and keep the tools away from dust, a cupboard is of

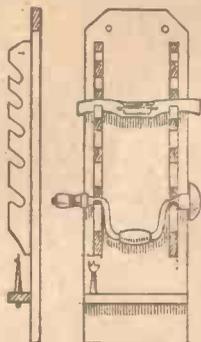


FIG. 66



FIG. 66A.

great use. The doors should be utilised to hold the saws and chisels and inside could be placed all the other tools, including planes. The dimensions of the cupboard will mainly depend on the number of tools it is necessary to store, but taking as an average size a height of 2ft. 6in., width 3ft. and depth 9in., will hold all the tools generally required

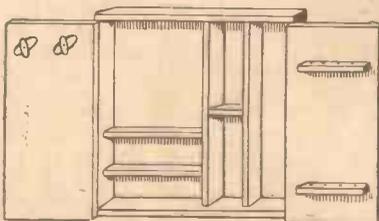


FIG. 67.

by the amateur. The best way to make the cupboard is to make a dovetailed frame 2ft. 6in. by 3ft. and 9in. deep of $\frac{1}{2}$ in. wood and then nail or screw on a back to it. Next take the planes and arrange them and mark out suitable partitions to hold them, as shown. The divisions

may be of $\frac{1}{2}$ in. wood. Next place a few horizontal divisions, and if desired, make a drawer or two to hold nails and screws. The saws should be fitted on to the inside of the doors, the divisions being set back sufficiently to allow of this if they are not wider than the planes. The doors may be fitted inside the framing or on the face of it, the latter method leaving more room. In fitting up racks in the other door for the chisels, &c., make the holes as shown in the wall racks.

A TOOL CHEST.—For those wood workers who may not have the convenience of a workshop, it may be necessary to have a tool chest. They are not so convenient as a cupboard, but considerably more tools may be stored away. The usual form of box is shown in Fig. 68, the small box inside holding chisels, &c.

The box should be strongly made, the corners

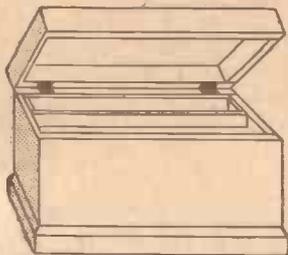


FIG. 68.

being dovetailed and the plinth and top moulding nailed or screwed on. The lid, being fairly deep, will take the saws, brace and hold saw. Supposing an ordinary stock of tools is to be placed on a chest, the size of it should be 2ft. 6in. long, 1ft. 6in. wide, and deep, and made of $\frac{3}{4}$ in. stuff, the depth of the lid inside being about 2in. or so. The bottom may be nailed or screwed on to the sides, the plinth being strong and helping to keep the sides and base together. Two narrow and shallow trays should

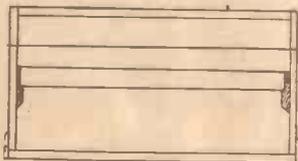


FIG. 68A.

be fitted on runners as shown in the section, Fig. 68A, the width of the trays should not be more than half the inside dimensions. In fitting the saws in the lid, the end of the saws should fit in a notched button (Fig. 68B), which may be turned round to release the blade and the handle should fit on a block, cut to the shape of the inside and having a piece of hard wood, the same shape and $\frac{1}{4}$ in. thick screwed on the top; this should be turned to button on the handle when in position, this is shown in the illustration of the tool cupboard (Fig. 67). The brace should be placed in a rack similar to the one shown in Fig. 66, but provided with a bottom, the middle being secured with a notched button as shown in Fig. 68B. The chisels, gouges, bits

and other small tools should be placed in the trays, these being partitioned off with suitable divisions of thin wood.



FIG. 68B.

HOW TO CLEAN

TOOLS.—If possible, tools should be kept in a perfectly dry place, otherwise they will soon get rusty. To remove rust, use F emery cloth and paraffin, taking care not to touch the cutting edge. When the blades are quite clean, wipe them over with a vaseline rag, this being better than oil for preventing rust. Planes and other wooden tools should occasionally be rubbed over with a rag dipped in linseed oil.

Correspondence.

ACCUMULATOR PASTE.

G. BEVENOT.—If you fail in getting the finely divided lead precipitate to adhere, try one made up of oil of vitriol, 1 part by measure, to which add 2 parts of water, and sufficient good litharge (to be got from the oilman's) to make a stiff paste. Apply to the a plates precisely as you did for the b plates, before folding. Allow to dry and harden thoroughly, when they will be ready for bending and immersing in the cells.

ENGRAVINGS.

H. W. WITTON.—The engraving, though interesting, is of no particular value. The amount you mention would, we think, be the highest which you could expect to obtain.

COINS.

E. J. FIELD.—There is practically no value beyond current value for the last issue of silver coins current in the reign of George III., and those dated 1816 and onwards come within that category, when they are at all rubbed and have been taken out of circulation. It is only when in mint preservation that fancy prices are realised.

E. GABB.—You are quite right, your coin is a "small brass" of the Roman Emperor, Constantine the Great. Very many of these pieces have been found in Britain, and even in fine preservation you can buy them from dealers at 6d. each.

CHAS. LANE.—We are sorry that your farthing of George III., dated 1775, is of no special value. The copper coins of current issues of that reign are procurable in large quantities. The high prices realised for copper coins of George III. are for specimens in very fine preservation and for pattern pieces.

B. HARDY.—A spade ace guinea of George III., in fine preservation, is worth about 45s.

J. W. BAILES.—The copper 18th century tokens mentioned in your letter are frequently met with. You do not say anything about their condition. If fine as proof they would be worth from 1s. 6d. to 2s. 6d. each, but if at all rubbed only a few pence for the lot. There are several Birmingham copper tokens, the largest is a threepenny token on the reverse side of which is the Birmingham Workhouse.

S. VARDAGH.—Your little parcels of coins are interesting to anyone in Ichester, as having been found locally. To a collector, however, they are of no value, all being so much worn and almost too much so to be decipherable. However, we may safely say that they are all of the period when the Roman Emperor, Constantine the Great, reigned, two having been struck by his sons, Constantine II. and Constans.

CURIOS.

HAMILTON (Bermuda).—The leather black jack with silver band engraved with the name of an old tavern in Fleet Street is undoubtedly of great interest and would fetch a considerable sum if offered in a London auction room, but the sum you name seems altogether out of proportion to its value and we should certainly advise you to accept a much smaller sum if offered. If, however, as you state you prefer to keep it as a family relic, it is a curio to be proud of.

MISCELLANEOUS.

M. F. S. (New Cross).—We do not undertake to place readers in correspondence with French persons, but if you write to Mr. W. T. Stead, "Review of Reviews" Office, Norfolk Street, Strand, W.C., he will, we believe, assist you in the way you require.



V.—EXPOSING THE PLATE.—PRACTICAL USE OF THE CAMERA.

THE interesting moment has now arrived when a plate can be exposed in the camera, and an actual picture produced.

Before doing this, however, it is necessary to consider the structure of the dark-slides, and the method in which it exposes the plate. Looking at Fig. 1 it will be seen that the slide consists of two halves joined together by a hinge, each half forming a kind of shallow tray, in which the plate is placed. The slide illustrated is one belonging to Hobbies' "Royal" camera (half-plate stand camera). It is much better for the beginner to start with a stand camera, which can be firmly fixed to a substantial tripod, so it is proposed to use this as an illustration. Now to insert the plate. Of course, it is necessary that this should be done in the dark-room, lighted only by ruby light. Take the slide into the dark-room and lay it flat on the table before you, in front of the lamp, which is at the back of the table. Now open the box of plates and place it on one side of the slide. The plates are done up in three packets of four each, film to film. The top packet is unfastened, and the top plate taken out. Before bringing the slide into the ruby light it should have been thoroughly freed from dust by vigorous brushing inside the "trays." Take the plate between the outspread fingers of the right hand, holding it at the edges (the greatest care must be always taken not to touch the film), and give it three or four sharp raps against the top of the table. The object of this is to dislodge any minute particles of dust that may have settled on the film. Of all the evils which the photographer has to face dust and minute particles of grit, hairs, &c., are incomparably the worst. The result of anything of the kind settling on the plate while developing or before exposure is to cause white spots at those points, and as these always print black on the resulting picture it will be perceived how fatal they are to the appearance of the print, especially if this happens to be a portrait, and the spots come across the face. The photographer has therefore to fight his hardest against dust. If tapping the plate is not sufficient to get rid of it the plate can be brushed with a very soft camel hair brush, but only lightly, or marks will be made on the film.

The plate is now laid film side downwards on one side of the slide in the "tray" formed by the rebate of the frame. The method of doing this is shown in Fig. 2. The hinged division is shut down upon it, and another plate placed in exactly the same way in the other side of the slide. The slide is then shut and fastened by means of the metal clasps at the sides. No matter how safe the slide may be it is a wise precaution not to

expose it when loaded to any very strong light, as for example out of doors on a sunshiny day. It should be kept in the camera case till wanted.

The camera is carried to the spot where the photograph is to be taken, and the tripod attached to the turn-table by inserting the projecting pins at the top of the legs in the holes. When this is done the camera is opened, and the lens attached to the front by screwing it into the flange, which is fixed permanently to the front of the shutter.

The focussing cloth having been thrown over the back of the camera, the operator examines the focussing screen underneath it, and adjusts the camera until the object to be taken comes into its proper position. It has been already mentioned in article No. 1 that all objects will be seen inverted on the ground-glass screen. The front of the camera is moved backwards and forwards by means of the focussing screw until the image of the desired object is quite sharp on the screen. If the background is not sufficiently sharp a smaller stop is inserted by revolving the ring of the iris diaphragm of the lens until everything is as sharp as the operator wishes it to be. It is of course understood that to view the picture on the screen at all it is necessary to fix the shutter open; this is done by pulling up the blind half-way, when it gives one "click," and letting go the cord. The shutter will then remain open. When the picture has been focussed correctly the cord is again pulled until another "click" is heard, when the blind is set for the exposure.

The shutter should be set for a "time" exposure, and the dark-slide is now inserted by sliding it along the grooves, from which the ground-glass screen is removed, at the back of the camera. The shutter of the slide is now pulled out to its fullest extent and bent back over the back of the slide. Care must be taken not to pull the slide out a little way when doing this, or the plate will be hopelessly fogged in an almost inconceivably minute fraction of a second. Some cameras have a special catch which holds the slide firmly in its place while withdrawing the shutter. The shutter withdrawn, the exposure of the plate takes place.

This exposure is a matter of the very greatest importance, it is not too much to say that success or failure hang absolutely upon this one thing; a properly exposed plate will give complete success with any development, but one that has received incorrect exposure can never be a perfectly satisfactory one, though by dodging in development and subsequently, much may be done to remedy its defects.

It is somewhat difficult to give definite direc-

HOBBIES.

tions to a beginner as to what constitutes correct exposure. For an experiment the following course is recommended.

Supposing the day is fairly bright, May or June, about 11 to 12 o'clock in the morning. Then focus some object fairly close at hand, put in stop $f/22$ (this ought to make everything fairly sharp), and give three plates of "ordinary" rapidity the following exposures:—1, $\frac{1}{2}$ second; 2, 2 seconds; 3, 10 seconds. In all probability the first will be under-exposed, the third over-exposed, and the second about right. The learner will have wasted two plates, but those two plates will teach him more than pages of written description would have done. The exposure is of course made by squeezing the rubber bulb of the pneumatic shutter until a "click" is heard, then wait till the required time has elapsed, and let go of the bulb, when the shutter closes. A fairly correct method of estimating the number of seconds is to count five rapidly, each five is approximately one second. When the exposure is over the shutter of the dark-slide is pushed back again until quite closed, and the slide removed from the camera.

The development of the plate will be described in the next article; at the end of this one it seems desirable to point out one or two manipulations sometimes necessary when taking a photograph.

When taking architectural photographs it is essential that the camera should be kept level. If this is not done great distortion will occur in the picture. A small spirit level affixed to the upper surface of the camera back is a most necessary adjunct. The camera is moved until the bubble is exactly in the centre of the level, from which place it is not allowed to move. But this having been done the worker may find that the building is not all on the focussing screen, perhaps there is abundance of foreground, but the top of the building is cut off. What is he to do? Well there are two alternatives, either he can move further back till all the building comes in, or he can use the rising front of the camera. This latter is preferable, because under any circumstances he will probably get too much foreground if the building is a high one. The rising front is simply raised until (with the bubble of the level central) all the building is on the screen without too much foreground beneath it. It is clamped in this position by means of the screws at the sides.

of the level by swinging the back of the camera, and clamping it at the required angle by the screws at the sides which fix it to the side struts. On looking at the focussing screen it will now be perceived that the whole picture is more or less out of focus. It is put in focus again, not



FIG. 2.—METHOD OF INSERTING A DRY PLATE IN THE DARK-SLIDE OF CAMERA.

P, Dry-Plate. D, Dusting Brush. B, Box of Unexposed Plates.

by means of the focussing screw, but by inserting smaller and smaller stops until it is once more sharp. The operation is one which should be avoided whenever possible, and the result desired obtained by the use of the rising front (or taking up a position further off) alone. The use of the swing back under such circumstances rarely gives really satisfactory results.

It has been already said (Article No. 2) that each stop requires twice the exposure of the next largest one above it. As a rule, too small a stop should not be used, as the effect of distance in the picture is thereby lost. Bright diffused daylight requires less exposure than bright sunlight and deep shadows, because the strong contrasts in the latter case have to be overcome, which can only be done by prolonged exposure, while in the former case the whole scene is evenly lighted. Yet there are many people who habitually take "snap-shots" in blazing sunlight. This is, however, a source of great revenue to the plate-makers, so that it is not without its favourable aspect.

In using lenses of short focus the back of the camera has to be moved up towards the front and clamped there before focussing.

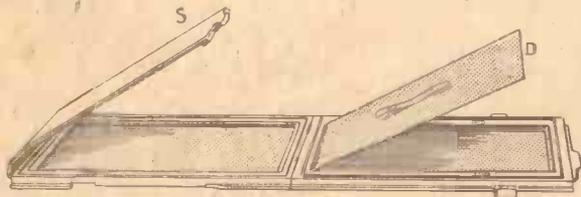


FIG. 1.—DOUBLE DARK-SLIDE OF CAMERA.

S, Folding Shutter of Slide. D, Hinged Division between Plates (this has a spring, which keeps the plates accurately in register). The Shutter on the opposite side is seen closed.

Under certain circumstances it is impossible to get the whole of the building in, even when the rising front is up as high as it will go. There is then nothing to be done but to tilt the camera backwards till it all comes in. The bubble of the level is then brought back into the centre

Those things that a man cannot amend to himself or in others he ought to suffer patiently until God orders things otherwise.—*Thomas à Kempia.*

FRETWORK

V.—MORE HINTS ON CUTTING.

WHEN a worker knows how to hold a hand frame or run a treadle saw, when he can cut a straight line and a curve, and can safely turn a corner, when—in short—he has learned what to do, he must study to do it well. The first aim in fretwork must be to cut accurately, and to succeed in this it is necessary to saw slowly and carefully from the outset. Whether the hobby is to be taken up for pleasure or profit, it should be taken seriously. A bad piece of work can afford no pleasure, even to its maker, and no carelessly put together article can ever be offered for sale. It is not suggested that a few trifling slips spoil an entire piece of work; but there is all the difference in the world between consistently good and habitually bad work, and if the best work is aimed at from the beginning skill and accuracy are very easily acquired.

SMOOTHNESS AND ACCURACY.

In the last article the importance of a vertical stroke was emphasised. A steady and a smooth stroke is no less essential. In treadle cutting, where the up-and-down motion is mechanical, the worker has little excuse for unsteady cutting, and in hand sawing he should try to imitate the regularity of the treadle movement. Force is not required, and he must avoid ploughing into the wood as if it were a heavy plank he was sawing. If force is used, and if the strokes are too long, the saw will leave ugly little ridges on the edge of the wood. The hand motion should be short, quick, steady and regular, so that the edges are left smooth and clean. The difference between treadle cut and hand cut work can usually be seen from an examination of the edges; but expert hand frame cutters are able, by adopting a steady and regular stroke, to hide all traces of the saw-blade's work, and to produce a smoothness which is, equal to the best cutting the treadle machine can turn out.

With regard to accuracy, the obvious advice is to follow the pattern line. Some designs may of course be faulty, and later on the skilled worker will know how to remedy them; but the beginner should always lay himself out to copy exactly what is before him. What he should bear in mind, too, is that the part of the wood which is to be left unsawn is more important than the portions which are being cut away. Thus, the attention should not be wholly riveted on the part which is being cut out, but the eye must also watch what is being left in. For example, in Fig. 1, the interior parts A and B, which have to be cut out, take the forms as shown in Fig. 2. In sawing them, however, the eye should not regard these particular forms as the actual pattern, but

should rather follow the ornamental work around. The natural tendency to look merely at what is being cut away is the root of all faulty cutting, and accuracy can only be attained by remembering that what is left constitutes the finished fret.

GRAIN.

Taste and experience must be left to guide the worker in his choice of woods, but certain elementary matters relating to grain may as well be mentioned here. One of the first discoveries in cutting is that the saw runs much more quickly across the grain than with it. The reason is that, in a cross cut, the fibres of the grain stand up against the teeth of the saw; whereas, in cutting along with the grain, the fibres cling round the blade and impede its progress. In the first case

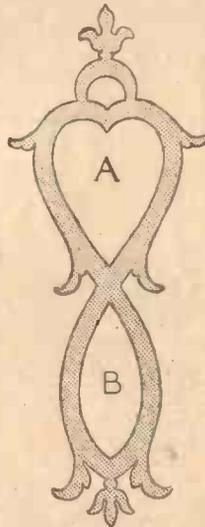


FIG. 1.

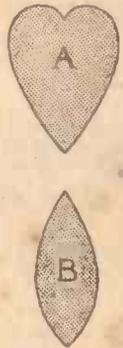


FIG. 2.

the finished edge is left clean and sharp, in the second it is woolly and rough. When sawing thin woods of an open grain, care must be observed not to take the cross-cutting too rapidly, as speed sometimes produces faulty work.

Different woods need not be discussed just now, but it may be remarked that while some are soft and easily cut, others are either hard, close-grained, or gummy. With the latter, work must be slower, but is not necessarily less pleasant. Gummy woods are objectionable, as the saw is apt to get locked; but as a rule close-grained

woods are more pleasant to work with than open and coarse-grained ones, as progress is more regular.

SHARPNESS IN ANGLES.

In the last chapter the matter of cutting angles was touched upon, and some suggestions as to sawing these so that a perfectly sharp corner or point is sawn may now be given.

In Fig. 3, for instance, the obvious starting point in cutting out the interior portion is A. The saw begins at the sharp point, and works its way (say by the *right*) to B. Now, if the blade is turned here in the ordinary course, it may leave a slightly rounded corner at B. If, however, it is drawn back over the cut line to A, and then sent round to B by the *left*, a clean and sharply-cut corner may be obtained. It is not necessary that this plan should be followed in every case, but when special accuracy is required the method should certainly be adopted.

Again, in Fig. 4 will be seen several sharp projecting points. If the saw merely turns round those it may blunt them. There is, however, an alternative plan. When, for example, the saw reaches A, it may be run right into the waste wood, turned in a sweeping curve as indicated by the dotted lines, and then brought to the point A from the opposite side. The same method may be tried with the other points, B, C, D. and E.

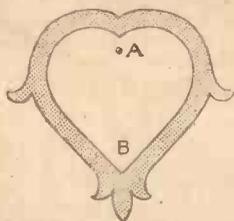


FIG. 3.

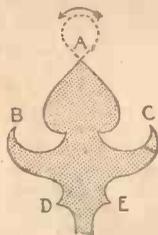


FIG. 4.

These suggestions, if adopted, will enable the worker to cut sharp angles. The principle is that the corner or point is cut clean by approaching it from different directions, thus avoiding the necessity of turning it with the saw.

CUTTING FRAGILE PARTS.

Many frets are fragile, but some of these run more risk of meeting with accidents during cutting and sandpapering than when they are completed. It frequently happens that a fair proportion of waste wood is attached to a fragile stem, and although the stem when finished may be secure from harm the friction of cutting it may endanger it before it is freed from its waste surroundings. The danger is lessened by first cutting the parts of the stem which have to be cut, and then proceeding with the rest of the outline. If matters are reversed, and if the lines of the stem are left till the last, it means that a heavy piece of loose waste wood is hanging to the delicate stem, and the mere motion of the saw may produce disaster. In carefully designed patterns one does not often come across cases where this special precaution has to be taken; still, instances do occur, and it is wise to be prepared for them.

(To be continued.)

In the Bank of England 60 folio volumes or ledgers are filled daily with writing in keeping the accounts.

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The Ionian Republic's Three Stamps.

THE recent discovery of important documents and data bearing on the issue of postage stamps for the Ionian Islands during the years 1859-1864 provides us with, practically, the full history of this curious little section of philately. We say "practically" because there still remains an element of obscurity as to minor details.

The stamps of the Ionian Islands are but three in number, namely:—

- ½d. (1 obolo) orange, unwatermarked.
- 1d. (2 oboli) blue, watermarked "2."
- 2d. (4 oboli) red, watermarked "1."

It is the invariable custom to class these stamps as belonging to the British Empire, since they bear the head of the late Queen Victoria, and were issued with the approval of the Lord High Commissioner; but the fact remains that the Ionian Islands were at that time a republican federation governed by a President, a Senate, and a Legislative Assembly, and only suffering (or shall we say enjoying?) the protection of Great Britain from motives of policy and security. They were never a British Colony in the ordinary sense of that term, and we do not think that any similar instance exists of the stamps of a quasi-independent Republic, bearing the effigy of a reigning monarch.

Nor is this the only remarkable feature of the stamps of the Ionian Islands; in several other respects they are of special interest to philatelists. In the first place they are far commoner in the unused than in the used condition, with the natural result that specimens with forged postmarks are constantly being offered; secondly, they bear no facial indication of value except so far as different colours may be accepted as denoting different denominations, and, lastly, there is their odd confusion of watermarks, the penny stamp being watermarked "2" and the twopenny value watermarked "1."

To deal with the last point first, it appears now to be an established fact that the muddling of the watermarks was due to some official error after the stamps were delivered at Corfu. A letter from Sir G. F. Bowen, secretary to the Lord High Commissioner, written in 1858 to a Government agent in London, expressly states that "the penny stamps are to be red, and the twopenny stamps blue." The denominations, adds this communication, "are not to be placed on the stamps, as the colour will be a sufficient distinction." Mr. E. D. Bacon, to whom stamp collectors are indebted for many interesting

discoveries anent the Ionian issue, writes: "It is quite evident from Sir G. F. Bowen's letter, and from the watermarked numerals on the stamps, that the red stamp was intended to be issued as One Penny value and the blue stamp as Two Pence, no doubt in order to correspond with the colours of the Great Britain stamps of the same values then in use. From some inadvertence or other unknown reason the values of the two stamps were reversed when they were issued for postal use in the islands, and the red stamp did duty for twopenny, while the blue was sold at one penny." Thus is explained, or to some extent explained, the contradictory watermarking of the 1d. and 2d. stamps.

The ½d. stamp, as is well-known, has no watermark at all, although it was intended to manufacture it on paper watermarked "½" should a further supply of the low value be required. Under date February, 1859, Messrs. Perkins, Bacon and Co., London, the printers entrusted with the production of the Ionian stamps, wrote pointing out that they had no watermarked paper suitable for a halfpenny value, and suggesting that, as the yellow colour chosen for this value would sufficiently indicate its denomination, the stamps might just as well be printed on plain paper. The reply to that letter is missing from the documents discovered by Mr. E. D. Bacon, but there seems no reason to doubt that an answer was sent, agreeing to the firm's suggestion, for in March of the same year 50,000 of the ½d. stamps were despatched to the Ionian Government. Shortly afterwards moulds for the manufacture of paper watermarked "½" were prepared in case there should be a second requisition for halfpenny stamps, and Mr. Bacon tells us that he has seen a sample sheet of this paper. As it happened, however, the first supplies of fifty thousand each of the ½d., 1d., and 2d. stamps for the Ionian Islands were more than sufficient.

There is yet another matter of perplexity connected with these stamps. Why was a halfpenny value needed at all? This denomination formed no part of the original programme as authorised by "His Highness the President of the Ionian Republic, and the Most Illustrious the Senate, with the concurrence and consent of the Most Noble the Legislative Assembly"; nor in the postal tariff, as published in 1857, is there any mention of a halfpenny postal rate for any purpose whatever. Therefore, at some time between June, 1858, when the 1d. and 2d. stamps were ordered, and January, 1859, when a request was made for a halfpenny value, there

was either some general reduction in the postal tariff or a halfpenny rate created for either local letters or the postage of printed matter. Just what did occur, however, is not definitely known.

Certain it is that the three stamps comprising the issue made their appearance fairly early in 1859, and, although there is no proof of the exact date of issue, there is a general agreement in fixing it as the 1st of May of that year. A good general description of them is given in Sir George Bowen's letter of June, 1858, already referred to above; and perhaps we cannot do better than quote the principal paragraphs in full:—

I am directed to order the postage stamps required by the Ionian Government in accordance with Messrs. Perkins' estimate.

1. The paper to be adopted is that with the figures "1" and "2" as a watermark as proposed by Messrs. Perkins and Co. in their estimate.

2. The penny stamps are to be red, and the twopenny stamps blue. The denominations (1d. and 2d.) are not to be placed upon them, as the colour will be a sufficient distinction.

3. The device is to be simply a Queen's head with the Greek words IONIKON KPATOE on a garter (if that be the proper term) round it, as, for example, in the New South Wales stamp herewith returned. No other words or devices whatsoever are to be employed.

4. The Lord High Commissioner hopes that great care will be taken to make the Queen's head as perfect as possible as a work of art, in short, as like as possible to the Queen's heads on the English postage stamps.

5. It is desirable that fifty thousand stamps of each colour shall be sent out as soon as ready. Experience will soon show in what numbers and proportion they will be required afterwards.

Previous to this a formal estimate for the die-engraving and stamp-printing had been submitted by Messrs. Perkins, Bacon and Co., and this is worth a moment's attention as having some bearing upon the Ionian Government's decision to have the stamps printed from a common die, relying upon the different colours as a means of distinguishing different values. The estimate quoted £85 as the price of engraving a steel die, and from that constructing a steel plate to print sheets of 120 postage stamps. For printing off the stamps the price paid was to be 9d. per thousand specimens. Now, allowing for a supply of 50,000 stamps of each of the three values, the total cost to the Ionian Government would be in round figures, £90; but if it had been stipulated that each value should bear a facial indication of value, there would have been three dies to prepare instead of one, and the total cost would have been over £250. So it seems fair to assume that motives of economy had something to do with the Government's decision. There is no clear indication of such an attitude in any of the documents recently brought to light, but it is significant that Messrs. Perkins, Bacon and Co., in framing their estimate, said that if paper watermarked with the numerals "1" and "2" were used, there would be no special charge for the manufacture of paper moulds, and that Sir George Bowen, in accepting the estimate, writes, "the paper to be adopted is that proposed in the estimate."

The stamps of 1d. and 2d. values were forwarded to Corfu in November, 1858, and were followed by the ½d. value in March, 1859. In each case there were 50,000 stamps made up as follows:—

416 sheets of 120 stamps	..	49,920
1 part sheet of 80 stamps	..	80
		50,000

A point of special philatelic interest is that the paper used for the 1d. and 2d. stamps was of exactly the same make as that supplied for the New South Wales stamps of 1856. Presumably the fact that they had a quantity of this paper left on hand, or at any rate possessed the moulds requisite for its manufacture, induced Messrs. Perkins, Bacon and Co. to offer it to the Ionian Government free of any extra charge for watermarking. The numeral of the watermark is in each case an outline, or, to use the accepted description a "double lined" numeral. As to variations of the paper itself Mr. E. D. Bacon tells us in his latest contribution to the "London Philatelist," the official journal of the Royal Philatelic Society, that "like all hand-made paper, it varies a good deal in substance, and the same remark applies to the unwatermarked paper used for the yellow halfpenny stamp."

When, in 1864, the Ionian Islands became part of the kingdom of Greece, a large parcel of remainders of the stamps was sold to a stamp dealer—a fact which accounts for the moderate price at which unused specimens may still be obtained. In the current edition of the leading stamp catalogue the ½d., 1d., and 2d. values are quoted unused at 10s., 6s., and 2s. respectively, there being no prices given for used copies. How many stamps were postally used in the islands during the five years of their currency, and how many of these survive in stamp collections at the present time, are questions to which many of us would like to have even approximate replies. We could then arrive at some definite opinion as to the true values of genuinely-used copies, and maybe the verdict would be a far higher degree of rarity than we have been accustomed to assign to postmarked specimens of the Ionians. Unused copies, as we have said, have frequently been supplied with forged postmarks, so that the utmost caution is necessary in purchasing. In this connection it is important to remember the names of the seven principal islands of the Ionian group—namely, Corfu, Cerigo, Cephalonia, Ithaca, Leucadia, Paxo, and Zante; and of these the most important is, of course, Corfu, formerly the seat of government of the "United States of the Ionian Islands."

ANOTHER ART FIND.—At Mr. J. S. Henry's rooms, St James's Street, a painting, supposed to have been executed by Sir Thomas Lawrence, is now being exhibited. This is the portrait of Canova, the famous Italian sculptor. The existence of the portrait has been known for years, but its location until a few weeks ago remained a mystery. It is in a beautiful state of preservation, and measures exactly 4ft. 6in. by 3ft. 6in. Mr. Henry, the present owner of the work, discovered it in the house of a countess near Bologna, where it had lain apparently ever since it was executed, about a century ago.

TREASURE TROVE.—Thirty-one gold coins—eight Portuguese and the remainder English—of the days of James I. and Charles I., or thereabouts, were found in a farmyard at Liskeard recently by James Croker Govett. During the Coroner's inquiry Govett produced a document, dated 1745, relating to the finding of 55½ guineas in a barn in that year. The jury found that the coins were treasure trove, and handed them to the finder, but they were afterwards claimed by Mr. Webster, steward to the Duchy of Cornwall.



The Pompon Dahlia.

THE great quantity of work that has been carried on of late years, with a view to the improvement of Cactus Dahlias, is causing raisers of this showy and decorative type to realise the fact that the Pompon section is one deserving a more prominent position than it has secured in the past. In consequence of the National Dahlia Society's and the London Dahlia Union's increased classes for Pompons, growers are waking up to the fact that quite as much pleasure may be found in them as in the Cactus. Like the Cactus again they improve in form and colour, for annually one or two new varieties come before public notice, a number, 'tis true, far behind the Cactus. Looking back on the past when Pompons could scarcely be distinguished from the show varieties, it is astonishing how different the blooms now appear. Formerly, only two or three sorts were to be found in the garden, one a dull red, another a maroon, while the third was a rusty yellow of no uniform shape. Even nine or ten years ago Pompons held a fair amount of reputation with a few growers, but owing to the great advance of the Cactus they were practically put aside till the present revival of the last few years. With such variations it reminds one of the fluctuations of the market, but with all the "ups" and "downs" of their existence, it is gratifying to the enthusiast to know there are something like one hundred and fifty varieties of distinct form and colour at the present time in cultivation.

Every section of Dahlia requires a special treatment of its own, and naturally it is so with the Pompons. Many are given to understand that the one system of planting suffices for all sections, but how quickly one is deceived when a comparison is made of the different growths, not to mention the object of obtaining better blooms by the method of adopting these different practices. It is the same with Roses, Chrysanthemums, and Pelargoniums, each section requires a system of treatment of its own, and not until these systems are thoroughly tried can any return be expected. With a view to growing Pompons successfully they must be grown in a good light position, but in a place where shelter may be had from cutting winds. Being sturdy "doers" they are not possessed of the amount of luxurious growth that the Cactus and Show are; therefore, light is an essential point in securing an average plant, and a fair proportion of really good blooms. Most gardeners are known to utilise Pompons as subjects in the mixed and Herbaceous borders, and most ornamental and useful plants they

make, but even then light must be allowed all around them to gain satisfactory plants. When grown in these borders they are sometimes allowed to be smothered, with tall over-hanging plants, such as Helianthus, Delphiniums, and Phlox, which, in the end, entirely rob them of their beauty. To grow Pompons on a commercial scale is very different to growing them for exhibition purposes, and either system of culture must be commenced at the outset when the plants are small and easy to manage. To grow Pompons for profit, four or five stems must be kept pinched away, in order to give all the support possible to the blooms. Those plants grown for exhibition purposes are treated quite differently, as only one or two stems are allowed for the plants to support, so that an average and well-balanced bloom may be secured. Apart from this, soils must be duly taken into consideration, for without the aid of good material at the basis of the plant, nothing of any particular merit will result. All Dahlias delight in a good loamy soil, but not over-enriched with manure, or the results are of a different character, for instead of blossom, foliage is more likely to appear. Pompons thrive well in a soil of a light medium, which has been manured and trenched in the autumn previous to planting. It is a wrong policy to manure and trench the same time as planting, as the soil is then made looser, and instead of sturdy and well-balanced plants being obtained, the stems are long and slender caused by the free ramification of the roots into a loose soil. By such practice, good blooms cannot be expected, for like most other florists' flowers, the plants thrive best when planted in a firm soil.

Artificial manures have a marked effect upon the plants if given at the proper time. July and August are the right months to apply them, a time when the plants are well-established in the soil and are making substantial headway in their growth. With eager growers this may be easily overdone, for instead of benefiting the plants, they are killed with kindness. In dry seasons applications twice weekly are quite sufficient, while in damp seasons once a week is ample. Dahlias are well known to be moisture-loving plants, and in such summers as that of 1906, daily watering with the water pot or hose could hardly suffice for them. For the main object of procuring good blooms, artificial manures are best applied in liquid form, as the ingredients are at once carried to the roots and their power immediately acts upon the plants.

From a decorative point of view, Pompons may be utilised for almost every purpose of the

HOBBIES.

florists' art. In vases they can be arranged very artistically, and while standing about the house they last for a considerable time. It is astonishing what a length of time they last when cut if the stems are kept daily trimmed. Charming designs may be seen in many of the London florists' shops, and although some may be of the opinion they make up heavily, when relieved with ornamental grasses and rare ferns, this quite disappears.

Broccoli.

So long as they are treated properly, Broccoli never cause any trouble, but if they are not given exactly the proper conditions they are a very awkward crop to deal with, especially if the soil is very light and friable, as it is one of those crops that like a fairly firm rooting medium. For the seed bed a piece of ground should be selected on a warm border, well worked, and manured with very old hotbed material, and should have either a good dressing of lime or wood ashes just before the seed is sown, as this will prevent that destructive disease known as clubbing. Make the beds moderately firm by treading or beating and then scratch the surface with a rake. The bed is then ready for sowing, and the seed should be scattered on thinly, and covered by a thin layer of sifted soil. After the seed is covered, give the soil a gentle watering and keep it shaded until germination takes place. Whether the seed is sown broadcast or in drills take particular care to sow it thinly, as if the plants are allowed to crowd in the seed bed they will get such a check as they can never thoroughly get over. As soon as the plants begin to crowd in the seed bed, lift them carefully and transplant them into nursery beds, allowing about six inches from plant to plant. When they are lifted from the nursery beds to go into their permanent quarters, take care to give them a thorough soaking the day before they are lifted, in order to make it easy to lift them with a good ball of soil. Carry as much soil as possible round the roots, but never resort to the very common practice of pressing into a ball round the roots. Allow them quite two-and-a-half feet each way in their permanent quarters, and take precautions to prevent them feeling the effects of drought, especially just after they have been transplanted.

By carefully selecting the varieties, a crop may be had in season during many months of the year. For producing a crop from early autumn onwards, there is nothing to surpass Veitch's Self-Protecting. The seed for the earliest crop should be sown in frames with a gentle heat about the first week in March. For making a good supply in mid-winter a bed of HOBBIES Winter Mammoth should be sown on a warm border in April, and should be got into their permanent positions as early in the season as possible. The sowing for Spring crops should be made on an open border towards the end of April. The best varieties for this season are Purple Sprouting and Dilcock's Bride. By sowing the following varieties the first week in June the crop may be continued well on into the summer: Yull's Best of All, Green's Improved, Late White, and Cattell's Eclipse.

Seasonable Hints.

BULBS that have been forced on and have been turned out from the flower beds should be

thoroughly ripened off by now and in good condition for planting in the grass. If planted under these conditions and the ground is soaked every spring with liquid manure, they will increase rapidly, and will give a much more pleasing effect than when grown in lines like regiments of soldiers. This method of planting is being adopted in most of the London parks and also in other parts of the country.

This is a suitable time for sowing many annuals, &c., for next year's display. A few of the chief things to be sown now are Clarkias, Convolvulus, Erysimums, Eschscholtzias, Godetias, Larkspurs, Lupines, Poppies, Violas, and Wallflowers. Sow the seed thinly, and see that the plants do not suffer from drought or any other cause. It is a good plan to cover the beds with mats until the seeds germinate, but they must be removed as soon as germination takes place.

Those three handsome plants, Centaurea gymnocarpa, C. rapusina, and C. maritima, are best raised from seed sown now in boxes and wintered on a greenhouse shelf. They make excellent plants for sub-tropical bedding.

Never rely on storm water for watering hard-wooded greenhouse plants that are standing outside to ripen their wood. It takes a tremendous amount of rain to thoroughly soak a pot full of roots, especially when the foliage of the plant acts as a watershed and carries most of the water beyond the rim of the pot.

Azaleas are very subject to thrip at this season, and unless thoroughly syringed every day it soon gets a hold on them and does irreparable damage. If both sides of the foliage are thoroughly wetted once a week with a solution of soft soap and water no insect pest will care to live on it.

Attend carefully to the wants of the Chrysanthemums, especially those being grown for exhibition, as a day's, or even an hour's neglect may cause the loss of all the lower leaves.

Our Weekly Special Bargain.

Our Horticultural Department will offer each week in this space an exceptional bargain to the Gardening readers of HOBBIES. The object of the bargain is to convince Amateur Gardeners of the high quality of the goods supplied from our Nurseries and Seed Establishment.

Special Offer for This Week.

6 named Ivy-leaf Geraniums. All the best and newest varieties, including "Mlle Jeanne Winters" and "Minerva." Strong sturdy plants ready for 5 inch pots. Our Catalogue price for these is 2/6, but for just one week only we are offering them for 1/8 post free.

This Offer will close May 11th.

HOBBIES HORTICULTURAL DEPT., DEREHAM.
(Horticultural London Depot:—17, Broad Street Place, F.C.).

NOTES ON SPECIAL OFFER.—Ivy-leaf Geraniums are always a special feature in the garden no matter how small it may be, and most gardeners are on the look out for new sorts. This week we are offering a special bargain, as all the varieties we are sending out are new and good kinds. Pot them up into suitable pots upon arrival. They will be most useful for window boxes or even as a nice edging to a small border.



LADIES' WORK ROOM

Embroidered Ties.

AMONG the many smart little additions to a costume that a girl with but a small allowance can make for herself ties and neck-scarves must not be forgotten. They cost a good deal of money when they have to be bought and if they are cheap they become readily soiled and are not worth the trouble of washing. If they can be daintily made at home they may be washed again and again and will look fresh and pretty to the last. Those made by the wearer herself, or by one of her friends, are also uncommon-looking and to many people it is a great advantage to have something that is not to be found in the shops.

There are several materials that may be used for ties. Some workers will like to purchase some very fine lawn and make it up into a number of ties all of a different style of ornamentation. This answers especially well when the amateur is hoping to add a little to her income by this style of work, or is wishing to get together a tempting collection of small gifts for her friends. The difficulty arises when only two or three ties are to be made, for each has to be one yard and a quarter in length; then, as this length must run down the selvedge of the material, it involves the purchase of one yard and a quarter of the lawn. From three and a half to five inches must be allowed in width, depending upon the style of finish that is needed for the sides. If they are merely completed with buttonholing the narrower width will be quite sufficient. Sometimes the ties may be hemmed rather widely all round, and ornamented with a line of openwork, another time we can have a simple buttonholing for the centre of the tie and a frill of narrow lace for each end.

Another material that is largely used for these smart little cravats is China silk, and the rather firmer taffetas is also greatly approved. Neither of these fabrics is so wide as the lawn, consequently

the length of a yard and a quarter will not make so many. The style of embroidery for these should be rather more elaborate and dressy than that on the cotton ones.

Chiffon, muslin, net, and gauze are all suitable materials for the purpose, but they are somewhat ephemeral and therefore workers do not always care to take much trouble over their decoration. Ribbon is always admirable for the purpose, especially in its softer makes, and there is with this no lack of charming colours by way of effective backgrounds.

For many a style of tie there is an excellent opportunity for the turning to account of odds and ends of

lace braid, embroidery silks, threads and narrow ribbons so that there are in all probability very few amateurs who will be under the necessity of purchasing these materials for their work.

In Fig. 1 our readers will notice an excellent example of what we may call a lingerie tie arranged on purpose to look well with morning shirts and plain, turnover collars. It is a well-known fact that there are few more attractive and yet simple effects than those produced by spots and dots in embroidery. The tie here is as little elaborate in make as it will can be, for it is merely finished all round with padded scallops having little picots at regular intervals upon them. Certain it is that these scallops would look bare in the extreme without the charming dots of satin stitch, one of which is placed in the centre of each. A tie of this kind may be left entirely white, or, if preferred, the scallops can be of mixed colours, or shaded, the gradations of tint being arranged at regular intervals all along the edges. We have often given our readers instructions for working the picots, so these should offer them no difficulty. Another way of making the loops is by carrying a fine thread of some other colour along the edges of the buttonholing, and drawing it down every here and there to form a loop which is secured by a buttonhole knot carried over it. Many a variety may be made, according to the colour and make of this extra thread, and according to the size of the picots and whether they are



FIG. 2.—OPENWORK TIE.

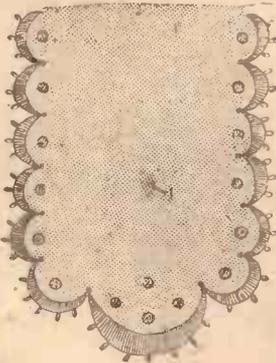


FIG. 1.—SCALLOPED LINGERIE TIE.

placed near together or further apart. An exceedingly pretty style of tie is that shown in Fig. 2. It is easy enough to find among Briggs's transfers a small spray suitable for the purpose, or possibly the embroideress has one among her own stores that once formed part of some larger design. It is better to have a spray that is a little uneven in pattern than one which is extremely formal and geometrical. The embroidery is intended to be executed in the usual way. The outlines are run round with darning stitches, the centres of the ovals and rounds are cut away and the cambric turned in under the darning to the wrong side. Then they are ready to be followed with button-hole or with overcast stitch just as the worker herself prefers.

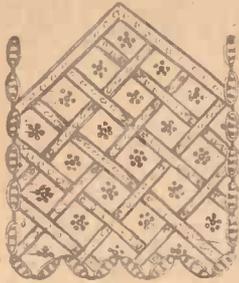


FIG. 3.—TIE-END LACE BRAIDS.

A specially pretty feature of this tie end is the finish for the edges consisting as it does of a number of small ring devices. They are worked in exactly the same way as are the eyelet holes and ovals in the other parts of the work, but they must have a little extra care bestowed upon them so that the linen may be cut away beyond the edges without fear of its ravelling. If liked, the embroidery may be carried out with coloured threads instead of with white so that it will match any shirt with which it is to be used. The work is not by any means so heavy a task as might be imagined for there is no reason why the eyelet hole edge need be carried all the way round the cravat. Provided that the ends are prettily finished, the remainder need be but simply buttonholed, as it becomes crumpled up in the tying and hence much of its beauty is lost.

The sketch in Fig. 3 shows an excellent way of turning to good account a number of scraps of straight-edged lace braid, as well as some longer pieces of the Honiton or medallion braid. This style is well suited for execution upon muslin, if a lighter effect is desired than can be produced upon ribbon or silk. The straight-edged braid, to give the best possible result, should be one of those makes that are woven in a lacy pattern with a series of holes at intervals which gives them a less heavy appearance than have the more solid kinds of braid. The braid must be neatly, but yet strongly, sewn down upon the muslin in lattice fashion, as shown in the sketch. At the top a line of the same, or of a different braid, if

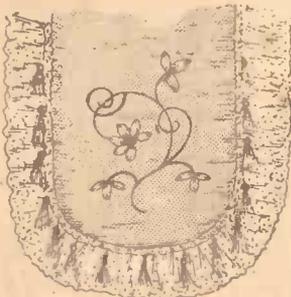


FIG. 4.—RIBBON WORK AND LACE EDGE.

more convenient, is carried along to form an up-standing point, or vandyke. The edges of the tie are completed by a row of medallion braid which should either be very firmly sewn, or else buttonholed, down to the muslin, this being cut away beyond it. The material is left in its place under the lattices of the muslin, but the squares are filled in with groups of French knots arranged to look like tiny flowers. If they are blue and have yellow centres, they will recall forget-me-nots, but they may be pink or heliotrope, or any other colour that is preferred. If further colour is desired darning stitches of silk to match the flowers may be run in and out the meshes of the braid following the pattern, if this is decided enough to admit of such treatment.

A similar design may be carried out very successfully with narrow lines of baby ribbon, this being run along the foundation material like a wee frill gathered along the edge. Many of the new ribbons have a thread in the margin by which they can be drawn up without any trouble, so the fidgety task of over-whipping the edge of such a miniature frill has no longer to be considered.

With the help of ribbons all sorts of dainty ties and cravats may be arranged. The one shown in Fig. 4 has an extremely easy little conventional design traced upon it, such as could be carried out with the merest scraps of ribbon that would otherwise be looked upon as nothing but rubbish. The stems are outlined in the usual way, but a touch of novelty is imparted to this tie end by the introduction of a number of wee tassels among the fullness of the lace frill. These tassels can be made simply of odds and ends, and the more varied the colours of the silks the better. They are fashioned in the ordinary way of a number of strands of silk that are tied firmly in the middle, folded in half, and all tied round again about a quarter of an inch further down. At the top, two ends of silk should be left long enough to sew the tassel to its place on the lace frill. Such small tassels are largely used upon minor items of dress just now, and scraps of silk may be employed for them that are far too inconsiderable to be worthy of hoarding for any other purpose.

These workers who do not care for ribbon embroidery have it also in their power to carry out pretty sprays of flowers, or geometrical designs in various shades of silk upon the ends of their ties. The more elaborate the embroidery, the more need is there for special care in keeping the wrong side of the scarf as neat as possible. For this reason satin stitch is as suitable as any stitch for the purpose, because with care it may be made as neat on the wrong side as upon the face of the material.

Motor Omnibus Models.

As many fretworkers are, during the season, exhibiting Fretwork models of the HOBBIES Motor Omnibus, we offer:—

A special award of ONE YEAR'S FREE SUBSCRIPTION TO "HOBBIES" to all fretworkers who, before October 5th, 1907, obtain a prize at any Industrial Exhibition with a Fretwork Model of the Motor Omnibus, cut from the design presented with HOBBIES 1907 Catalogue.

The only conditions we impose are (1) that the Model is made according to the published Design, (2) that the value of the prize gained shall be not less than Five Shillings, and (3) that in the Fretwork section, in which the prize has been awarded, there shall have been not less than Five entries.

HOBBIES.

Chess.

MAY 4, 1907.

SOLUTIONS.

No. 258.—By R. THOMPSON.

1 P—K3.

If 1 R×P 2 P—K4 ch etc.
If 1 R—B4 2 Q—Kt5 ch etc.
If 1 K—K5 2 Kt—Q6 ch etc.

1 B—R7 or Kt6 and P—K4 ch also solve the problem.

Three points.

Solvers' list:—H. Ayre 8, G. C. Baxter 54, C. Blackwell 42, L. C. Brown 55, A. Bernstein 69, H. W. Bick 65, Horace Brown 4, G. W. Chandler 67, H. G. Driver 57, W. H. Dawson 57, E. Eginton 63, H. S. Elvin 2, S. D. Fresco 63, J. Goode 39*, H. Goodwin 57, Fred. Holmes 24, A. J. Head 33, W. Heath 42, J. Howell 36, H. Horsley 24, R. Hurst 17, Fred. Ibbs 15, "K" 33, H. Lawton 64, G. E. Moore 26, E. Perrin 58, G. Pinder 3, J. Pettit 1, E. Roome 53, J. Rust 57, A. Spalding 21, A. Sanders 67, R. Thompson 67, J. D. Tucker 51, E. G. Taylor 38, E. Wasserman 22, C. J. Williams 27, S. Wiseman 3, H. Zaak 64.

TOURNEY SCORES.

Appended are the full scores and prize winners in Division II. and Division III. of HOBBIES Correspondence Tourney:—

DIVISION II.

1. 2. 3. 4. 5. 6. 7. Total.

1 F. Holmes ..	×	1	1	1	1	1	0	4½	3rd prize.
2 O. Simmons..		Resigned.						0	
3 E. Hatfield ..	0	1	×	0	1	0	0	2	
4 L. Brown ..	0	1	1	×	1	0	0	3	
5 J. Bland ..		Resigned.						0	
6 A. Head ..	½	1	1	1	1	×	1	6½	1st prize.
7 P. McMahon	1	1	1	1	1	0	×	5	2nd prize.

DIVISION III.

1. 2. 3. 4. 5. 6. 7. Total.

1 J. Bung ..	×	1	½	0	0	1	1	3½	Tie 3rd prize.
2 W. Newham		Resigned.						0	
3 J. Layng ..	½	1	×	0	0	1	1	3½	Tie 3rd prize.
4 H. Mahon ..	1	1	1	×	0	1	1	6	2nd prize.
5 W. Hunt ..	1	1	1	×	×	1	1	6	1st prize.
6 H. Hoogood	0	1	0	0	0	×	1	2	
7 T. Heath ..	0	0	0	0	0	0	×	0	

FRENCH DEFENCE.

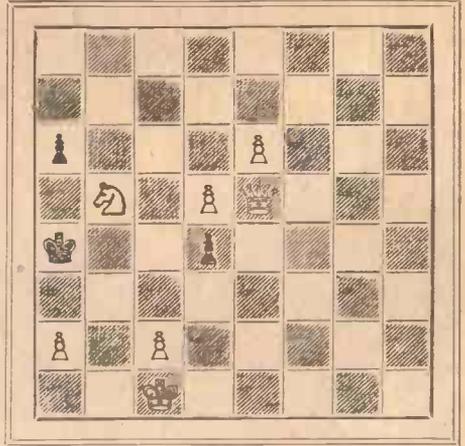
Sixth game, Lasker v. Marshall:—

White.	Black.	White.	Black.
Lasker.	Marshall.	Lasker.	Marshall.
1 P—K4	P—K3	12 B—Kt5	K—B1
2 P—Q4	P—Q4	13 B×Kt	P×B
3 Kt—QB3	Kt—KB3	14 Q×KBP	Q—R3 ch
4 B—Kkt5	B—Kt5	15 K—Q2	Q—R4 ch
5 P×P	Q×P	16 P—B3	R—Kt1
6 B×Kt	P×B	17 Kt—Kt5	R×P ch
7 Q—Q2	B×Kt	18 K—K1	R×Kt
8 Q×B	Kt—B3	19 Q—Q3 ch	K—Kt2
9 Kt—B3	R—Kkt1	20 Q×R ch	K—B1
10 Castles QR	Q×RP	21 Q—Q3 ch	K—Kt2
11 P—Q6	P×P		Drawn.

PROBLEMS.

No. 263.—By S. D. FRESKO, Hoxton.

Black.—Three pieces.

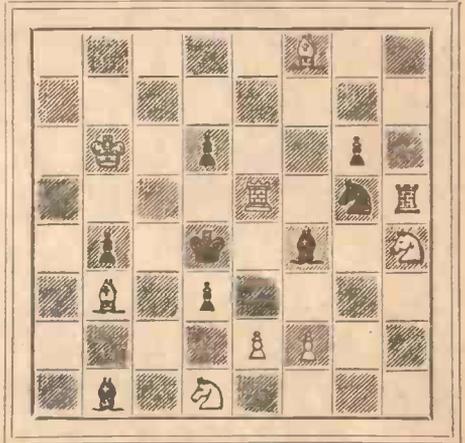


White.—Seven pieces.

White mates in three moves.

No. 264.—By W. GEARY, Peckham.

Black.—Nine pieces.



White.—Eight pieces.

White mates in two moves.

Solutions should be received by Wednesday following issue.

TO CORRESPONDENTS.

** All communications will be answered in HOBBIES. Readers desiring replies through the post should enclose stamped envelopes.

E. EGINTON. — Thanks for letter and enclosure. We heartily congratulate you with regard to the auspicious occasion you mention, and hope to receive many more specimens of your skill.

J. H. LAYNG.—Scores received; the game is adjudicated as drawn. Black, by playing 1 K—B4, takes the opposition, and the RP cannot be queened.

CEYLON is the hottest and North-West Canada the coldest possession that the British flag floats over.

HOBBIES.

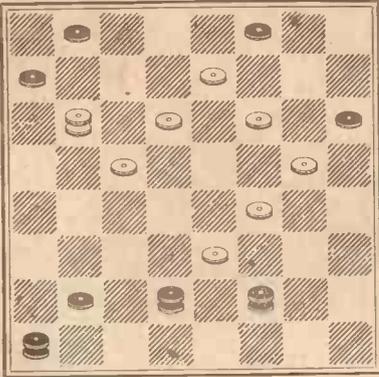
Draughts.

Communications for this department must be addressed to:—"Draughts Editor, HOBBIES, 12, Paternoster Square, London, E.C." Replies cannot appear under three weeks.—May 4th, 1907.

PROBLEMS.

No. 912.—By J. GEORGE, Bute Docks, Cardiff.

BLACK.

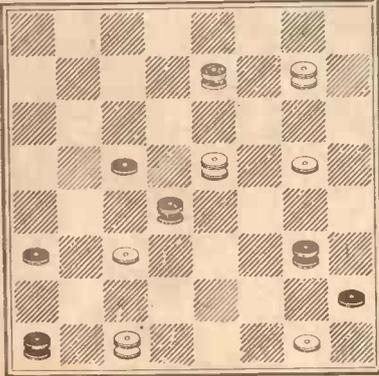


WHITE.

White to play and win.

No. 913.—By F. HIGGINSON, Goldenhill, Stoke-on-Trent.

BLACK.



WHITE.

White to play and win.

SOLUTIONS.

No. 910.—By T. LAVIN.

Black : 11, 12. Kings : 3, 19, 31.
White : 20, 26, 30. Kings : 2, 9.

2 7 9 14 26 22 30 7 3 7
3-10 10-17 17-26 31-27 W.wins

No. 911.—By D. LIVINGSTONE.

Black : 2, 10, 12, 26, 28. King : 14.
White : 19, 23, 24, 25, 27. King : 30.

19 16 24 6 23 18 30 23 25 22
12-19 2-9 14-32 9-14 W.wins

OUR PROBLEM COMPETITION.

Two Prizes, value 2s. 6d. each, are presented every month for the best "stroke" and the best "end-game" published in HOBBIES. Problems contributed in competition must be original, and hitherto unpublished. "Strokes" must have the terms "White to play and win." The prizes for March are awarded as follows:—"Stroke" (No. 896), W. Bleasdale, Lancaster; "End-game" (No. 897), J. Mackenzie, Edinburgh. Highly commended:—"Strokes," Nos. 895 (W. E. V. Petit), 898 (J. George), and 902 (C. Abbott). "End-games," Nos. 899 (G. W. Allen) and 903 (J. K. Bondier).

GAMES.

Following is a further selection of games played in the American national tourney at Boston, Mass. For the score and notes we are indebted to Dr. A. Schaefer, of New York:—

OPENING.—"KELSO" (10-15, 24-20).

Black : H. ZINK.

White : G. F. BARKER.

10-15	10-14	A-4-8	14-18	23-27
24 20	29 25	17 13	22 17	26 22
15-19	14-23	9-14	B-18-23	11-16
23 16	27 13	25 21	17 14	20 11
12-19	11-15	8-11	10-17	27-32
22 18	18 11	32 27	21 14	22 18
6-10	8-15	7-10	2-6	15-22
25 22	21 17	27 24	14 10	24 15

and Black, minus both man and position, resigned.

A.—Up to here the contestants have been following an R. Jordan v. Barker game; the former played 9-13.

B.—This too is bad; Black should have formed up with 1-6, which allows 17-14, 10-17, 21-14 only, then 3-7, 31-27, 6-10 C, 26-23, 19-26, 30-23, 10-17, 23-14, 11-16, and the difficulties are over.

C.—18-22, 26-17, 19-23, 27-18, 15-22, 24-19, 22-26, 30-23, 6-9, 13-6, 2-27, 19-16, 11-15, 16-12, 7-10, 12-8, 15-18, 8-3, 18-23, 3-7, 10-15, also draws, but narrowly.

OPENING.—"EDINBURGH" (9-13, 24-19).

Black : C. F. BARKER.

White : G. W. ANDREWS.

9-13	25 18	11-15	16 11	8-15
24 19	8-11	19 16	7-16	26 23
11-15	29 25	12-19	20 11	2-7
28 24	9-14	23 16	3-8	30 26
8-9	18 9	15-19	23 16	4-8
22 18	5-14	27 23	15-18	
15-22	24 20	10-15	32 27	

At this point it was apparent to all that Barker was beaten.

TO CORRESPONDENTS.

F. HIGGINSON.—Your problem, the "Sanctuary," is similar to Dr. T. J. Brown's celebrated problem, "La Pucelle," and has no claim to originality, as the solution depends upon forming the doctor's "fortress" with White.

H. ALTER.—We have published one or two of your problems lately. The Solving Tourney will be duly announced. (Mr. Alter wishes to play a few games by correspondence. Will any of our readers oblige? Address the Draughts Editor.)

J. GEORGE.—In the position you quote (Black : 4, 16, 21, 28. White : 12, 29, 32. King : 31) the win is doubtful. As you say, the task of proving it would be a "tremendous" one.

Problems in competition received from F. Higginson (Goldenhill) and J. George (Cardiff).

An important new series of Cricket articles is now in preparation for HOBBIES.

Puzzles.

170.—CHARADE.

My first means where one is at rest.
My second means a generation.
My whole means respect paid by external action.
What am I?

171.—LITERARY PUZZLE.

Re-arrange the letters which go to form the following words, in such a manner that the name of a well-known novelist, together with that of one of his best-known works, come to light.

SHAKE. MOON. ADMIRES. LONG.
GRID. RING.

172.—DATE PUZZLE.

There is a date within the last thousand years, of which the third figure is equal to half of the fourth, and is also equal to twice the second; the second figure is equal to twice the first, and the second and third, added together, are equal to three-quarters of the fourth. The first, second and third figures are together less than the fourth; and the first and fourth are half as much again as the second and third. What is that date?

173.—WORD SQUARE.

- One who is deceived.
- Resting on the surface.
- A small body of water.
- Finishes.

Answers to Last Week's Puzzles.

168.—DOUBLE ACROSTIC.

B	RAS	S
E	GERA	N
N	OTALGI	A
N	AIV	E
E	NFEOP	F
V	ALIS	E
I	DO	L
S	TITCHE	L

BEN NEVIS. SNAEFELL.

169.—SUBSTITUTION PUZZLE.

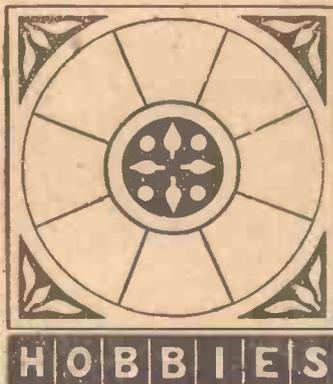
- | | | |
|----------|----------|---|
| 1. Ship. | 1. Shin. | P |
| 2. Done. | 2. Dine. | O |
| 3. Moke. | 3. More. | K |
| 4. Lead. | 4. Load. | E |
| 5. Mart. | 5. Mast. | R |
| 6. Wire. | 6. Tire. | W |
| 7. Down. | 7. Dawn. | O |
| 8. Mire. | 8. Mine. | R |
| 9. Dark. | 9. Dare. | K |

POKERWORK.

WHEN the stupendous phenomenon of death or some extreme disaster, whether earned or undeserved, comes upon the heart, all life is cut in two, and across the chasm so made memory only mirrors in the years that are gone the grotesque idiosyncrasies of the life of a different creature, yet the old self remains, eternally young, desperately sensible to all things ineffaceable, ineradicable.—*Mrs. Stepney Rawson.*

The "Hobbies" Puzzle.

STARTING from any one of the eight spaces shown in the diagram, count to the fourth space from it (either to right or left), and place a pea head, button, or other small article upon it; then, starting from another of the spaces, count to the fourth, and place another pea (or small article) upon that, and continue the process until in that manner you have occupied seven of the spaces. You may not start counting from an occupied space, but an occupied space may be counted in the four.



Try by the above rules to place the letters in the word HOBBIES so that the word reads correctly from left to right, commencing at the top left-hand corner space, and ending at the top right-hand corner space.

Home Pets Monthly Competition.

WE offer a monthly prize of 5s. to the reader of HOBBIES who sends us the most interesting and practical paragraph during May upon his favourite domestic animals or birds.

The paragraph sent in each month which, in the opinion of the Editor, is most useful to the majority of his readers, will be awarded the prize. Address all communications to the Secretary, Home Pets Monthly Competition, c/o The Editor of HOBBIES, 12, Paternoster Square, London, E.C.

The prize offered during April is awarded to Miss B. Ferguson, Dunsford Rectory, Ardglass, Co. Down, Ireland.

Notices.

Addresses.—All communications should be addressed—Hobbies Limited, 12, Paternoster Square, London, E.C. The Hobbies Presentation Designs are not given away with back numbers. Additional copies may be had from the Publishers, price THREEPENCE each.

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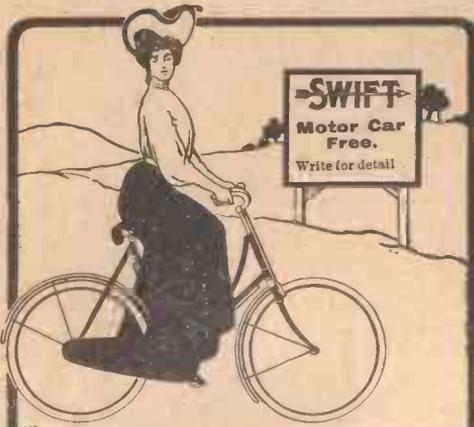
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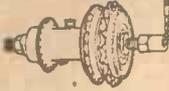
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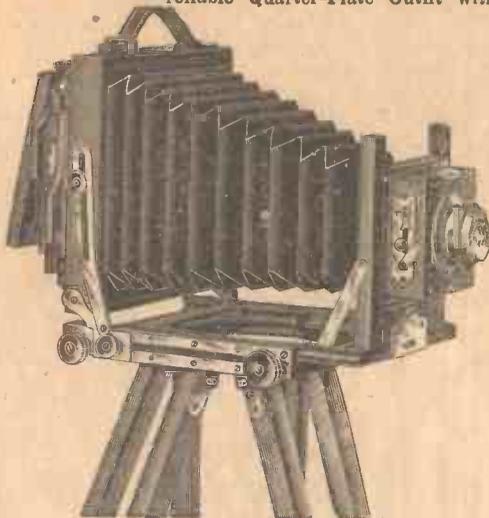
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Hobbies A1 Treadle, emery, many accessories, 10s., or exchange.—Williamson, 20, Elmersend Road, Anerley.

Printing Press, Type, and all Accessories (a bargain), 12s. 6d. cash.—F. H., 19, Highbury Street, Peterborough.

Sale, or Exchange for Gent's Bicycle, the Model Yacht, "Emily," 4 ft. 6 in. long, very fast, cutter-rigged.—J. Rawlinson, Lune Street, Fleetwood, Lancs.

Sale, Lathe and Fretsaw, turning tools, 30s. Bass of Joiner's Tools, 20s. Particulars stamp.—Coxall, 62, Station Street, Castle Gresley, Burton-on-Trent.

Sale or exchange, Lion Zither, cost 42s.; Hand Camera, cost 21s.; Banjo and 200 Hobbies, for 1-plate Camera Outfit.—John Soutter, 21, Overton Road, Kirkcaldy, Fife.

Sale, 1-plate Kodak, Films, or Plates, with case, splendid condition, cost 50s. new. Sacrifice for 21s.—Kernaghan, The Avenue, Colchester.

Small Typewriter, 2s. 6d.; Harp, 2s.; exchange prize Belgians.—E. Downs, Begbroke, near Oxford.

Splendid Belgian Hare Buck; good strain; 12 months; sell 6s., or exchange anything useful; approval.—Frank Pedley, Reeth, Richmond, Yorkshire.

"Work," Vols. 7 to 23, clean, 10s.; collection 453 Stamps in old book, 2s.—Farrow, Marine Cottage, Seaford.

Zither Banjo wanted. Exchange new Sandow Developer and cash.—Barnard, Ropley, Hampshire.

1-Plate Coronet No. 3 Stand Camera, R.R. Lens, Iris diaphragm, wide angle attachment, Roller blind pneumatic release shutter, Time Indicator; Slide, Tripod, 5 Frames, 5 Dishes, squeegee, measure, chemicals; 35s., or nearest offer.—Chandler, Haxey, Doncaster.

480 "Hobbies," Nos. 120 to 600, 4 or 5 missing. Sell cheap. What offers?—Taylor, 6, Elliot Street, Skelton, Cleveland.

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