

ONE PENNY.

Hobbies

FOR AMATEURS
OF BOTH SEXES

VOL. XXIV.

JUNE 1, 1907.

No. 607.

To Prevent Exhaustion—Mental or Bodily—Drink

Fry's PURE
CONCENTRATED

A Stimulant—and not for
the moment merely—but a
permanent and agreeable
form of nourishment.

Cocoa

TRY ALSO

**Fry's Malted
Cocoa,**

A combination of Fry's Pure Cocoa and
Allen & Hanburys' Extract of Malt.

Specially introduced at the request of the Medical Profession, and strongly recommended
by the "LANCET" and the "BRITISH MEDICAL JOURNAL."



NOW OR NEVER.



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.

Nearly 57,000 Catalogues have already been sold.
Only a Few Thousand Copies are left.

CATALOGUE ORDER FORM.

Dear Sirs—

Before it is too late, I send herewith a Sixpenny Postal Order for a copy of your New Catalogue for 1907, with Presentation Design for a Fretwork Model of a Motor Omnibus.

Name.....

Address

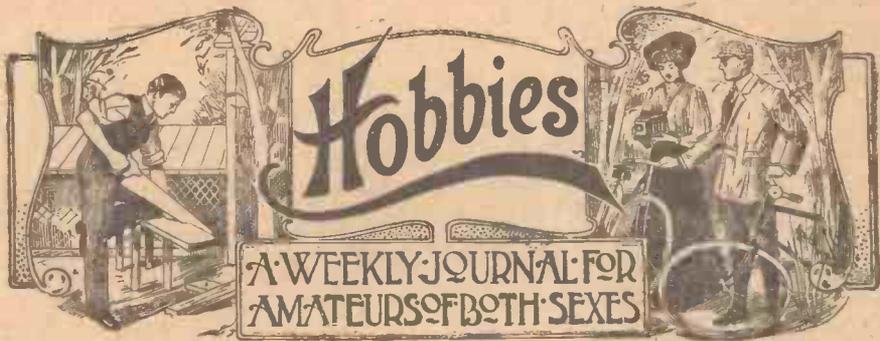
.....

.....

To

(Please write name and FULL address clearly.)

Hobbies Limited, 12, Paternoster Sq., London, E.C.



VOL. XXIV. No. 607.

JUNE 1, 1907

Weekly Presentation Design.

CABINET.

With Doors Arranged as Postcard Frames.

As promised last week the Presentation Supplement for this issue is for the design of a novel fretwork cabinet, the doors being arranged as pictorial postcard frames. The Cabinet itself is suitable for any room. On a parlour wall it may be used for stationery, cards, &c. In a bedroom it will be useful as a small medicine cupboard; while in a smoking-room it will serve for holding pipes and tobacco. The interior measures

All necessary directions are given on the full-sized design.

NOTE.—The HOBBIES Presentation Designs are not given away with back numbers. Additional copies may be had from the publishers, price threepence each.

FRETWOOD.—Parcels of selected Dark Walnut, with Maple for the Overlays, of the thickness recommended for making this article, may be had for 1s. 6d., or post free for 1s. 10d. per parcel.

FRAMING GLASSES.—Clear Glasses (No. 5802), for framing the Post-Cards, may be had for 2d. per pair, or post free for 4d. per pair.



No. 607.—CABINET, WITH POSTCARD FRAME-DOORS—Size, 12½ ins. by 11 ins.

about 9½ inches by 6½ inches, and the upper shelf may be used for ornaments.

Although all the pieces shown on the diagram sheet have to be cut in duplicate, no difficulties encounter the worker who knows what he is about. With two designs, neither plural cutting nor tracing is necessary, but the average worker can easily manage with the one pattern. The upper and lower halves of the back are the same, and the two sections, although cut separately, are held securely together by the sides.

BRASS CABINET DOOR CATCH (5309), 2d., or post free 3d.
HINGES, 2d. for two pairs.

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

Goods may also be had at the Hobbies Supply Stores:—

London:—160, Aldersgate St., E.C.

" 153, Bishopsgate Street Without, E.C.

" 79, Waiworth Road, S.E.

Glasgow:—326 and 328, Argyle Street.

Manchester:—198, Deansgate.

Birmingham:—2, Old Square.

Leeds:—21 and 22, Vicar Lane.

And at Hobbies Authorised Agents.



OUR PHOTOGRAPHIC COMPETITION

THE initial competition of the new series has proved the wisdom of a change in the conditions. Both classes have secured a large number of entrants and, on the whole, very excellent photographs have been sent in by readers of HOBBIES, to the exclusion of the ever active pot-hunter, who looks upon all and sundry competitions as a means of increasing his or her income.

In Class I.—“Open to holders of HOBBIES Certificate of Merit of the Second Grade,” we recognise many persistent competitors who have never been able to reach the standard of prize winner, although their work has been

G. Hails, S. Shields; B. Hawley, Liverpool; Charles H. Joy, Hexham; T. Kearns, London; Dr. P. G. Lee, Cork; A. L. Pentelow, Boston; J. B. Tolley, Warrington; and Henry Warner, London. All these entrants will be eligible to compete in Class I. again.

Special interest centres round the competitors in Class II., open to all who have not received HOBBIES Certificates. The prizes are awarded to the following:—

FIRST PRIZE.—10s. 6d. F. Meldrum, Altrincham.

SECOND PRIZE.—7s. 6d. Chas. Thomson, Limerick.



A COUNTRY LANE.

J. Meldrum.

of good average merit; in this class the prizes are awarded as follows:—

FIRST PRIZE.—10s. 6d. A. S. Pye, Rotherham.

SECOND PRIZE.—7s. 6d. A. H. Baker, Birmingham.

THIRD PRIZE.—5s. Miss Edith Bell, Newcastle.

These prize winners are also awarded HOBBIES Certificate of Merit of the First Grade, but are now debarred from entering any competition except HOBBIES prize winners competition, particulars of which will be shortly announced.

The award of HONOURABLE MENTION has been accorded to the following:—Ernest George Barnett, Fratton; Alfred J. Budd, Wexford; Howard J. Cornford, Crowborough; Ernest

THIRD PRIZE.—5s. Miss Maud C. Macpherson, Monymusk, N.B.

These competitors will, in addition, be given HOBBIES Certificate of Merit of the Second Grade, and may compete in Class I.

The award of HONOURABLE MENTION is accorded to:—Rolf. G. Bertram, Cheltenham; Ernest J. Canty, Cambridge Heath; A. J. Collings, Torpoint; J. Hawkins, Exeter; F. W. Holmden, Canvey-on-Sea; W. E. Hutson, Warrington; W. Kirkness, Kirkwall; Miss Eleanor E. Till, Ryde; Clifford T. Turtle, Croydon; and J. Williamson, Welling.

We shall hope that all these ladies and gentlemen will enter Class II. in future competitions

HOBBIES.

Class I.

The prints by Mr. Pye show much care in composition; we reproduce "A Country Churchyard Sundial" which is in every way unique; the magpie perch gives contrast to the scene and the girl standing by prompts a title "Youth and Age." The two other photographs are excellent—"Silver Birches" and "Dorchester Village."

Mr. Baker works with much care, his prints are on "Aristo Platino," and are rich in detail and light and shade. Miss Bell improves considerably and will, we are sure, soon take a higher award; the "Ford at Yetholm" is a well conceived subject and the printing perfect.

Mr. Barnett is at his best in "The Old Mill," though a little more foreground would have helped the picture; on the other hand in "The Village Smithy" a little less foreground would have been an advantage. Mr. Budd's print "By the side of the Stream" is a delightful scene; the two figures introduced are in perfect accord with the composition and tell the story of a peaceful stroll on the banks of the sunlit stream. Mr. Cornford, who works with a half-plate Royal camera, tells the story of a celebrated Water Wheel at Cranboro', which "drove the mill, that ground the flour, that made the wedding cake for the late Queen Victoria." The pictures were taken under considerable difficulty but are of such a character that they deserve to be preserved in the photographic records of the County of Sussex.

Mr. Hails sends several clever enlargements from quarter-plate negatives on Hobbies orthochromatic plates; it is also of interest to note that the prints are on Hobbies smooth bromide paper, toned with sulphide and Schlippe's salts. The tone is a soft sepia; both photographs are scenes on the Tyne. Mr. Hawley works with a No. 4 Hand Camera, and sends some clever little photographs printed from negatives on Hobbies red label plates. The views are all taken in the Valley of the Dee; those of Llangollen are especially interesting.

Mr. Joy has been photographing in the Lake District; his view of "Esthwaite Lake" is carefully composed and the foreground well broken with sedge and reedy grasses. Dr. Philip G. Lee sends several quarter-plate prints. We consider "The Old Head of Kinsale," with the lighthouse and light-keeper's quarters on it, the best. Mr. Pentelow's tree studies are too cut-up; but "Leafy Spring" is far from common-place, and the delightful sunlight in the middle distance breaking through the trunks of the trees gives contrast and beauty to a scene which would not attract many knights of the camera. Mr. Tolley, in his photograph "Summer," has either been working with his lens out

of focus, or he is following in the footsteps of the school of photographers who desire to forget that photography is an exact science. In the print before us there is no part of it which is in true focus. Mr. Warner is best in his "Kentish Lane," but this picture would have been the better for at least an inch less foreground; in another print of the "Mare and Foal," some strange signs in the skies show that the author has been busy trying to improve nature; the light falling on the foal is effective, but "The Mother" is too close to the camera, with the result that the head and shoulders are out of focus, and in deep shadow.

(To be continued).



A COUNTRY CHURCHYARD SUNDIAL.

A. S. Pye.

ONE of the recent inventions for millers is an ingenious machine which takes an empty sack, fills it with flour to exactly the desired weight, and then sews up the bag more neatly than can possibly be done by hand. Nine hundred bags per hour is the maximum capacity of the machine.

HIDING FINE CRACKS IN A WALL.—To hide fine cracks in a wall use plaster and whiting, mixed with glue size. Brush the mixture well into the wall so that the cracks are filled full, and when dry, smooth off lightly with sandpaper.



REGULATION OF PRACTICE.

BY ALBERT TROTT.

HERE is no matter of more importance in club cricket than the proper supervision of practice. It is the fashion for many clubs to set aside three evenings a week for practice; to others it is often an ill-regulated affair. My plea is that, whenever you play, it should be on a system and that nothing in the way of scratch business should be allowed by the captain. May, June and July furnish evenings light enough for some kind of practice and, if the first eleven practise on three nights a week, the other evenings might be left for the second eleven and others. In school cricket, the time of practice should be about 20 minutes a day for each player and it should be undertaken in the same spirit as though a match were going on. Count the chances of getting out that occur.

Mr. A. C. McLaren, when at Harrow, always used to adopt this practice, and he says, "if more beginners would do this, I think they would find it relieve the monotony of everyday practice, which helps to ruin so many promising cricketers." How I know that blind slog, and how one regrets having given way to it!

THE HABIT OF SLOGGING.

The sight that you may often see is a batsman in the nets play really very carefully until he has only a minute left and then he opens his shoulders, lets fly at the ball with all his force and, if he is able to hit it a long way, he smiles contentedly and makes way for the next player. It is a pity because the habit grows on you very quickly indeed and, instead of playing yourselves very quietly in during a match, you impatiently strike out and probably get caught. It is no good trying to keep the ball down if, for the sake of effect, you slog at the ball. If the captain knows his work, he will put up a list of the order in which men are to go in and the time that they are to have. It is a rule in many clubs for the bowling to be undertaken by the retiring batsmen, but this is only correct if the man happens to be able to bowl, and there are certainly many who cannot even send down a slow ball straight. There is an impression abroad that anyone can bowl lobs, but as a matter of fact there are not half-a-dozen good lob bowlers to-day. Since D. L. A. Jepson, of Surrey, retired, it is difficult to recall the name of a single first-rate performer now among the first-class counties. Indeed, there is almost an open field for a slow bowler of this description. Great care should be exercised in putting on your bowlers, but in each eleven there will be half-a-dozen who will be fairly capable performers and, if they divide the work, they are not likely to overbowl at practice.

The batsman must play every delivery as if he was playing in a match and the bowler must send down each ball with the object of securing a wicket. Alfred Shaw only attained his splendid position after years of painstaking work. The "Emperor of Bowlers," as he has not inaptly been termed, says that along with others he played in a yard about six yards wide and thirty long with a house on one side and small gardens on the other. To keep a ball out of these, it was a rule that anyone who hit into them was out; the wicket was of bare soil, firmer and truer than any turf to be found in the district. Then the only club in the neighbourhood that had a decent ground invited Shaw to play with them. Listen to his own testimony! "I did so for two or three years. This necessitated a walk of ten miles for each practice usually without a penny in my pocket. But a youth who is keen on cricket will regard a ten-mile walk for a good practice as a trifle. An empty pocket will spare him the trouble of thinking about luxuries." Under such rough and ready circumstances, the greatest English bowler toiled slowly and unweariedly to the pinnacle of fame. The greatest of Australian captains, George Giffin, learned to bat and bowl in a corner of open land with which the City of Adelaide is surrounded. "A nail can, or an oil tin, or if, as often happened, older boys had monopolised all the said "tins," the trunk of a eucalyptus for a wicket, a piece of stick round or square, what mattered it, for a bat, and a small india-rubber ball comprised our cricket tools. How happy we were as boys, and how rapidly the hours flew by and many were the scrapes that we got into when driven home by darkness, we found all the tea things cleared away." The English captain, the Hon. F. S. Jackson, tells us that there and at Eton the regulations required attendance at cricket and football and that the management of the former is in the hands of the captain. A very good idea, too, and it was owing to its excellent working that he laid the foundation of a remarkable career which is far from over yet. The leader should see that any young fellow is properly clad, especially if they have to stand up to fast bowling, while no one under 17 should be allowed to use a full-sized bat. If there is no professional coach, the captain should undertake the work with players who need teaching; only last year in London cricket a journalist of 40 began to take to the game and so thorough was he and so cleverly coached that, as a matter of fact, he was after the first three months going in first wicket for the club and making runs in good style. Young players do not have it all their own way. Willis Cuttall, who is now the coach at Rugby School,

HOBBIES.

did not enter upon county cricket till after he was thirty years of age, but he then played for more than a decade and at the close of his career he had bowled last season as well as ever. That a player should never be disappointed is shown by the fact that one or two years ago he seemed to have come to the end of his career but then re-asserted himself more prominently than ever.

ADVICE TO CLUB CAPTAINS.

If any of my readers occupy the captain's position in a club, they should see that at practice the young player stands as upright as possible just before he receives the ball, in the position that comes most natural to him, for by standing upright you are far more likely to get on to the top of the ball than by stooping and crouching as some players do. Do not attempt at any time to let the batsman copy the position of a first-class player at the wicket if he has found what his own natural method is. If the young fellow is keen, he will try to do as he is instructed and never allow himself to think that he has learned enough, for there is always something to learn in cricket every day for even the oldest cricketer. See to it that your men at practice are not like a good many, do not care whether they are bowled or caught, and insist that play must be always as in a match. While pressing for regular practice, never let anyone go on playing if they feel tired, and the opinion of many players is that 20 minutes a day is sufficient. Certainly, when starting, the leader should see that the new men for the first month play on fast wickets as the ball comes along straight and simple; next learn to play on a wicket that is crumbled or become worn, because the ball will get up quickly and sometimes shoot, and the necessary quickness will come as a result of a rude awakening. All the eleven, when they have mastered the former strokes, may play on soft or wet ground and here again there is a good deal to learn, but it will not come all at once.

BOWLING TO EXCESS.

Do not let boys bowl with either a full-sized ball, or the whole distance, and never sanction any loose work. When we come to consider bowling, there will be much to say, but at present the captain's duty is to prevent a kindly fellow, who may be a very capable man, from bowling to excess for reasons of good nature, as this will spoil his ability. You may see such an one bowl for hours. Only a medium pace bowler like Walter Mead, of Essex, who takes hardly any run, could do it, and then only after years of practice. As to fielding, let the side turn out at least three times a week. How to do it? Well, take the system pursued at Tonbridge and the words of Captain W. McCanis, who says, "I arrive on the ground at 10.30 a.m., when all is ready to begin at once. One, or two nets, according to our numbers, the off-wing of one being down to give facilities for fielding. All who are not batting or bowling have to field. Each takes his turn of batting and bowling for spells of about fifteen minutes. Long turns of batting practice are, I think, conducive to carelessness. My endeavour is to induce the batsman to try his very best while playing and to concentrate his thoughts on correcting one fault. In time many faults will be thrown aside. Should a student try to

correct all his faults at the same time his progress is likely to be very slow, and confusion and discouragement loom up large. In bowling, I attach the first importance to "length." To attain a command of length requires much strength and perseverance. It is by no means an easy art to acquire. To aid the bowlers in finding the length ball I use a white-wash line drawn across the pitch to aim at. This line is not very frequently hit, but when it is, the batsman always find the delivery a difficult one to deal with, even without any break; when the ball "does a bit" the batsman is thankful when he finds his wicket intact at the end of the transaction; often it is disturbed, or a catch is given.

NO OVER-BOWLING AT TONBRIDGE.

"The practice continues until one o'clock—with some special bouts of catching and throwing. All are well tired by this time. In the very early part of the season, when we have the ground to ourselves, I have them out again in the afternoon; but when the members begin to practise, the youngsters have to be ready to bowl at three o'clock, and consequently I do not call them out for practice again. We are careful to avoid over bowling the young fellows at the nets. Only two are out at a time, and not then for long spells. All have an interval of an hour for tea. In addition to this practice the local clubs are encouraged to apply for the services of the youngsters to assist in their matches and by this means the lads get a good deal of valuable match playing. A record of their performances in these matches is carefully kept for reference." These are the words of the old Kentish player, and they cannot be beaten.

Universal Soldering Fluid.

A SOLDERING fluid which will not rust or corrode the soldered parts is made by dissolving as much zinc in muriatic acid as the acid will take up and then adding water, glycerine and alcohol. To one part glycerine add one part alcohol and one part water: then add two parts of acid with the zinc dissolved. This fluid has been used for all kinds of soldering, says the "Street Railway Journal," and has been found especially desirable with greasy or dirty connections as well as for soldering to iron. It is claimed that the glycerine prevents all rust, which plays havoc with many soldering fluids which contain muriatic acid.

THE following sensitizer will give sepia prints on printing out and toning with a combined bath:—

Tartaric acid	1/2 ounce.
Silver nitrate	1/2 ounce
Distilled water	8 ounces.

Filter after solution, and apply two coatings. The paper must be dried in a dark place and should be deeply printed. The use of a combined bath is essential, and thorough washing will be required.

WHEN hanging pressed paper over varnished paper, first cut the varnish with strong sal soda water, which will remove the glaze so that the new paper will adhere firmly.

POPULAR MECHANICS.



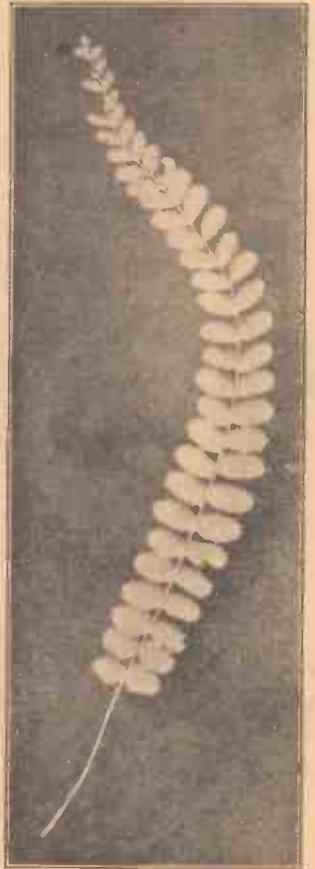
INCANDESCENT GAS MANTLES AND SOME OF THEIR PECULIAR PROPERTIES.

MANY of our readers must have been struck from time to time, by the glowing accounts recently published on the properties of that newly-discovered body "Radium," and will doubtless have desired to verify by actual experiment some of the results obtained by other experimenters. But the high price and extreme rarity of the material will have rendered the performance of any such almost impossible to the average amateur. Fortunately, some of its properties are manifested in a fairly high degree by the material of which the well-known incandescent lamp mantles are constructed. These mantles are built up on a kind of gauzy material, which is impregnated with some salt containing, principally, a metal known as *thorium*, and the vegetable matter which serves as a basis or support for the material itself is then burnt out by exposure to a great heat, thus leaving the *oxide* of the metal thorium in the shape of the original structure. Thorium, the metal itself, is of little or no practical use in the arts, but its oxide, in conjunction with oxides of similar metals, such as cerium and zirconium, is the body principally employed for the production of such mantles. The metal itself is not unlike aluminium, except that it is much heavier, and it has the property of burning in oxygen with a very intense white light; and, like lime and many other oxides of the alkaline earth metal class, this oxide is gifted with the power of glowing with intense brilliancy when exposed to the flame of ignited gas.

Another peculiar property which it shares in lesser degree with radium is that of constantly emitting *emanations*, which emanations have the power of acting on a photographic plate, even though the said plate be shielded from them by the interposition of an opaque substance. No doubt these emanations are accompanied by heat rays, or other manifestation of radio-activity; but here we shall not dilate upon these properties, but only take up the consideration of their photographic effects. The operator in order to be able to demonstrate the radio-active peculiarities of "thorina" will procure some of the old mantles (which need not be new, but may be broken), and having rejected any portions which are not pure white in colour, will reduce the remainder to a fine powder. Going into his photographic dark room, he will place an ordinary photographic plate in one of Tyler's black bags, or similar light proof envelope. Over this, he will place a fern leaf, or other object, of which he desires to obtain a radiograph. This he will place in a shallow box of sufficient size to contain the black

bag and a super-imposed fern frond; and then he will sprinkle liberally and equally over the surface, both of the bag and frond, the powdered gas mantle (*thorina*) to which we have previously made reference. This being done, he will place the whole in any dark cupboard or drawer where it can remain undisturbed for about ninety-six hours. At the end of this period, he will remove the thorina and the fern frond, and again proceeding to his dark room, he will develop the plate in the same manner, and with the usual precautions adopted in photography.

If these operations have been carefully conducted, he will find that he has a negative—(see *Illustration*)—from which a positive can readily be printed on P.O.P. It is advisable, so as not to mask the true photographic effect due to the thorina that the fern frond used should be perfectly dry, *id est*, should be one that has been previously pressed and dried between blotting-paper. Not only does the thorina share, in common with radium, the power of emitting photographically active radiations, but it has also the property of awakening phosphorescent



RADIOGRAPH OF FERN LEAF.

activity in some bodies; so it is possible to construct a cheap spinthariscopes in which thorina is the active agent instead of employing the much more expensive radium compounds. To this end, the operator will procure a piece of brass tubing, about 1 in. or $1\frac{1}{2}$ in. in length. To one end of this he will adapt a well-fitting, but removable brass lid or cap. He will procure another piece of thin brass tube that shall slide easily into the former, and this he will fit with a little cap having an aperture about $\frac{1}{4}$ in. in diameter, to which is adjusted a lens of about $1\frac{1}{4}$ in. focal length. The role of this inner tube is to serve to adjust the focal length of the said lens to suit the eye of the observer. Things being thus arranged, the operator proceeds to paste neatly in the *inside* of the cap fitted on the end of the larger tube a circle of rather stout white paper, the surface of which must have previously been moistened with a little gum water over which will be sifted, so as to spread equally, a sufficient quantity (a few grains only) of that peculiar form of zinc sulphide known as "Sidot's Hexagonal Zinc Blende." This is a sulphide of zinc, and the particular variety which gives the best results is that known as the green crystalline. When the little disc has been evenly coated with this, and the whole is quite dry, the operator proceeds to insert across the smaller tube a piece of fine wire by making a little slit at diametrically opposite points of the circumference (at opposite end of the lens), and stretching the said wire across the tube between the slits, soldering it thereto, and removing, by gentle filing, any protuberance beyond the outside of the tube. This transverse wire he renders adhesive by moistening it with a little thick gum water, and while it is still moist, he causes it to take up a few grains of the thorina powder by inserting the opening of the tube into a little heap of the powdered mantles, care being taken, while performing this operation, not to soil the lens above.

In point of fact, if our operator has access to a lathe, he will be able to make a much better job of this by letting the lens in a cap, which has a male screw fitted into a female screw at the upper extremity of the smaller tube.

This will enable him, at any time, to remove the lens for the purpose of cleaning. To use this spinthariscopes, the operator, remembering that the radio-active emanations from the thorina are extremely feeble, will shut himself with his spinthariscopes in a well-darkened room, and applying one eye to the lens will close the other. As soon as the eye has become accustomed to the feeble light emanating from the thorina and picked up by the zinc sulphide screen, he will be delighted to perceive numberless star-like flashings displayed by the surface of the screen, simulating when not perfectly in focus, a flowing river of light, or if perfectly in focus, the twinkling of innumerable stars.

KEEP the hoe at work amongst all crops where it can be used, as it will prevent weeds from getting a foothold, and will allow a free circulation of air round the roots of the plants. Loosen the surface soil of pot plants for the same purpose, as when the roots are active they must have plenty of air in order to carry out their functions properly.

DWARF Beans and the main crop of Runners may be put in now in all but the most exposed localities.

How to Paint Lace.

NOTHING must be said against the bad taste that prompts modern *belles* to make use of painted lace as a trimming for their costumes. It is enough that it is fashionable. In olden times coloured lace had its vogue, but the threads themselves were tinted before they were knotted on the pillow. There is very little lace made in this style nowadays and when it is so manufactured it is of the coarse peasant-work order that is better fitted for trimming thick linen articles for the house than for dainty dresses and blouses for ladies' wear. The bulk of the popular coloured lace is dyed after weaving, but many a clever worker has seized upon the idea of tinting the design and leaving the background in its natural cream or *ecru* shade. Some knowledge of the general effect that will be produced by the blending of the colours is required, but no special care is needed in using these, as no shading has to be considered.

One secret in executing painted lace successfully rests in using the colours with as little moisture as possible. If Rainbow Stains are employed, and they answer the purpose admirably, as it is easy enough to mix them in saucer-shaped palettes and to let them dry up considerably before applying them to the lace. If liked, ordinary water-colours may be used with Aquarella medium and oil-colours with Florentine medium. Any of these will dry-clean perfectly, but it is not advisable to let them fall into the hands of the family laundress.

No very decided colours should be used, for one of the chief beauties of painted lace consists in its soft, blurred tones. Delicate blues, greens, pinks, cream and heliotropes can be employed upon the same piece of material and in some places may be allowed to run one into the other with a particularly soft and mysterious effect.

The lace must be pinned out straight and evenly upon a drawing-board, which should be covered first with several folds of soft linen. Before beginning, the artist should have a decided plan of action in her mind, so that she may distribute the colours with fair regularity without allowing any one of them to predominate in one part of the lace over another. A camel hair brush is of no use for work such as this, but a rather firm bristle brush should be chosen that will bear to be used somewhat in the fashion of a scrub. The effect of the lace will not be good unless the colour penetrates the design thoroughly, while, at the same time, it must not be allowed to run beyond the outlines into the ground. The lace pinned out should not be removed from the board before it is quite dry, for if this is done, it is very likely to shrivel and get out of shape. When all the painting is done the worker may possibly like to increase the richness of the lace by sewing a few spangles about it in suitable places. It is not advisable to use too many of these, as a meretricious effect is, above all things, to be avoided. An outlining of fine gold thread can also be made an improvement, especially if the lace is to be worn in the evening. For daylight wear it is better to keep only to the colouring. The Rainbow stains and the medium for other paints are to be had from Miss Eliza Turck, 7, St. George's Square, Primrose Hill, London, N.W.



HOT HANDLE HOLDERS.

THE square of padded material often worked with moral remarks on the making of tea has by this time quite disappeared, unless in the depths of the country, from a well-appointed breakfast or tea-table. The necessity for something to protect the hand from contact with the hot handle of the tea-pot or kettle has, however, not disappeared, and there are some makes of handle that have a peculiar facility for becoming unpleasantly hot. Especially is this the case with a teapot that has for some time been standing under a cosy.

A great deal of ingenuity has been shown of late in the designing of holders for such handles



FIG. 1.—FISH-SHAPED HANDLE-HOLDER.

as these, and that they meet a popular want is proved by the rapidity with which they are sold off at bazaars. There is very little work involved in making them, indeed for the most part, they are sold all ready put together and needing only a little touching up with a few stitches of almost any stray threads that happen to be at hand. The best of the holders are made of a thick felt-like material which, while being substantial enough to keep off all ordinary heat from the hand, is not so clumsy as to prevent it from obtaining a firm hold of the handle.

The various houses that cater for the lover of fancy needlework are just now outvying one another in the production of these hot-handle holders in all sorts of quaint and curious shapes. There is the fish, for instance, in Fig. 1. It is cut out of thick blanketing, and is really very convenient to use. It is sold in sections, or if put together at all is so managed that any amateur can get her fingers inside while she is working the small amount of embroidery required for it. Our sketch shows how the edges are everywhere surrounded by buttonholing or blanket stitch to keep the two layers of material together in some places and to prevent this from ravelling in others. The opening for the handle is along the lower part of the fish between the two stars marked on the sketch. The fins are also worked round with buttonhole stitch, and the markings are easily put in with a few outline stitches. The mouth is executed rather heavily with satin stitch and the eyes require to be raised somewhat over a padding of stitches to give them their due effect.

There is a use for the brightest of brightly coloured threads in the parrot-shaped holder in Fig. 2, but as the blanketing is coarse and fluffy, these must be coarse or they will sink in too far to be effective. Some of the markings on the bird's body may be put in with blue, others with green, gold or blue. The button-holing of the edges may also be executed here with green, there with gold or blue. The two sides of the shape are to be joined in the same way as that which we have already described for the fish, and here again two stars show the portion of the holder that has to be left open for the handle. The beak is over-sewn with gold-coloured or red threads as preferred, and due attention must be paid towards getting a good effect with the eye.



FIG. 2.—PARROT-SHAPED HANDLE HOLDER.

Girls who have to do much ironing, and there are many who cannot afford to send their washing blouses to the laundress or cleaner, greatly admire these holders and the prime favourite is certainly the parrot, perhaps thanks to its brilliancy of colour.

Next to that comes the cock's head in Fig. 3. This may certainly be made very attractive with its comb and wattles of coloured cloth. The principle upon which it is made up is the same as that upon which the other two are put together.

We have recently heard that these holders are much appreciated in schools. Everybody knows with what delight the girls get together during the term a number of little gifts for friends at home. The teacher, too, is pleased when she can find anything upon which to give instruction in buttonholing and similar easy stitches that will readily come in useful. The little pupil takes far greater interest in learning in this way than in working upon a mere sampler or a stray piece of material that is only thrown away when finished with. A good choice of these holders is always to be found at Messrs. Harris's rooms at 25, Old Bond Street, London, and if no oddments are at hand for the embroidery their rope-flax threads, or a finer make, if preferred, add very little to the cost of the materials.

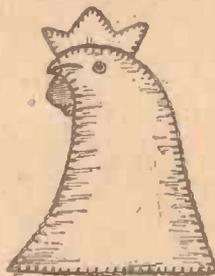


FIG. 3.—THE COCK'S HEAD HOLDER.

ANY toning process applicable to a bromide print is equally suitable for a print made on gaslight paper. Bromide paper is manufactured with silver bromide, "gaslight" paper with silver chloride. But in a finished print on either paper the image consists of pure silver in a black form, and is therefore identical in each case. This is worth remembering.

Cycling Notes.

CHAINS AND THEIR REPAIR.

WE frequently hear of cyclists who wish to know whether there is any remedy for a chain that has stretched to such an extent as to "ride on the cogs." As a matter of fact there is no remedy save to buy a new chain, but the evils of a stretched chain can be mitigated so that it remains serviceable for a considerable period.

In the by-gone days of the fixed wheel a loose chain was a source of danger, as, if jumping the cogs while the cycle was in motion, the chain would coil up round the chain-wheel, bring the cycle to an abrupt halt, and almost inevitably cause the rider to take a header over the handle-bars.

With a free-wheel the conditions are different. The moment one ceases to pedal, the chain and sprocket wheel are stationary (neglecting, of course, the fact that the cycle is travelling). Thus, if the chain jumps, the only thing that can possibly happen is for it to trail harmlessly from the free-wheel, and a gentle application of the brakes can bring the rider to a standstill.

When a chain has stretched, it should be adjusted till there is very little "play." It will then be found that, though the chain cannot jump, it will make a nerve-shaking noise like the sound of a stiff-working ratchet-brace.

Under these circumstances riders frequently have recourse to the oil-can, giving the chain a liberal application of ordinary lubricating oil. This is a mistake, as the oil is too thin and its effects are far from lasting. A mixture of vaseline and black-lead (plumbago) works marvels, but from personal experience we can strongly recommend the use of motor lubricating oil. This can easily be obtained at any cycle and motor dealers; it is not necessary to buy a can of the oil, for the dealer would, for a small charge, invariably supply one with enough to lubricate the chain. Being a very heavy oil it makes a stretched chain run with astonishing smoothness, and could with advantage be used for chains under all conditions. We do not, however, advocate using the oil for the bearings; the ordinary cycle lubricants are quite suitable for the purpose, and do not clog.

When riding a machine fitted with a variable speed gear a certain amount of caution is necessary with regard to the cable that carries the controlling gear from the top tube or handle-bar, as the case may be, to the hub of the chain-wheel. This cable is apt to be caught by the rider's heel, and the slightest knock will frequently disarrange the delicate mechanism of the speed-gear.

Talking of cables reminds one that periodically the cable of one's brake, should the brake be of that variety, must be carefully examined for signs of rust. However well the cable is protected against wet, the atmosphere tells on the stranded wire. Especially so is this in the part nearest to the lever and also where the cable joins the "shoe" of the brake, and often without warning the stranded wire will part. Directly there is any sign of rust cut off about an inch of the cable and join it up to the lever again, provided that there is sufficient length of stranded wire to enable this to be done. Small yet frequent doses of oil or vaseline will help to prolong the life of a brake cable.

LIGHTING UP TABLE.

June 2	..	9.5 p.m.
" 3	...	9.6 "
" 4	...	9.7 "
" 5	...	9.8 "
" 6	...	9.9 "
" 7	...	9.10 "
" 8	..	9.11 "

Correspondence.

COINS.

- C. B. LAMBERT.**—We are sorry that none of your small silver coins are of any value. The half-farthing of Queen Victoria is also a common coin.
- H. WARNER.**—The first coin on your list is of course Spanish. As these coins are not in your possession, only submitted to you for purchase, we do not think it would be fair to the seller to value them except at the request of both parties.
- J. W. C. PERKINS.**—We are always pleased to assist collectors to identify their coins. Your specimens are all Roman, but some are in very poor preservation and we are unable to say from your rubbings what they are. (1) The Empress Faustina, wife of Antoninus Pius, A.D. 138. (2) Emperor Nero, A.D. 55; this is a Roman Colonial coin evidently badly worn. (3) Claudius Caesar, A.D. 42. (4 and 5) Too rubbed for identification. (6) Commodus, A.D. 180. (7) Byzantine of the Roman Emperor Justinus, A.D. 518. (10 and 11). Denarii of base silver of Philippus A.D. 244. (12) Probably Constantius Gallus, A.D. 351. (13) Constantine the Great, A.D. 306. (15) Gallienus, A.D. 260. (19) Claudius Gothicus, A.D. 268. (18) Gallienus, A.D. 260. (19) Constantine the Great, A.D. 306. None of these pieces are of any special rarity, but many are interesting specimens.

CURIOS.

- A. BEIGHTON.**—The old key you have found is very interesting. It is probably made of brass and may have been gilt. It appears to be the key of an old chest, possibly of 17th century workmanship. The small piece has once had a loop in it by which the key was attached to a chatain. The grooves you mention are not unusual. A piped key, with bridge ward, was often rendered more difficult to imitate by the addition of a shaped bit.

CYCLING.

- P. W. WOOD.**—(1) We have already given our views on the question of acetylene v. oil lamps in our issue for August 11th, 1906. Briefly, a good oil lamp gives ample light and does not inconvenience other road-users as does an acetylene lamp. (2) Certainly not less than 5s. if you wish for an absolutely reliable oil lamp; or 7s. 6d. if for an acetylene—but avoid the cheap and nasty foreign-made article which is unfortunately only too common. (3) Paraffin lamps are very efficient if properly looked after. A smoky lamp can be remedied by soaking the wick in vinegar and drying it thoroughly. Vinegar applied to the inside of the front and side glasses, and to the reflector as well, keeps them absolutely free from soot. (4) Write to Lucas, Ltd., Great King Street, Birmingham, or to "Gamage's" for their catalogues.

PAINTINGS.

- CONNOISSEUR.**—We are unable to give you any information about your print from the details you give. We know of no artist or engraver of any note of the name you mention.

- J. WALFORD (Chandles Ford).**—We do not think your picture is of any special value. The artist is not known to us.

MECHANICS.

- B. HOLMES.**—(1) We are preparing an article on this subject. (2) It is possible to charge a 4 volt cycle accumulator by means of 4 Leclanché cells connected in series; but the Leclanché battery loses power so rapidly, and takes so long a time to recuperate, that it would be very slow work. Say for example, that the accumulator to be charged were one of only 12 A M; this would require a charging current of at least 1 ampere for 12 consecutive hours. Now you could not hope to draw from your Leclanchés more than 1 ampere for 15 minutes at a time, and they would not recover strength in less than ½ hour. So that you would require 48 hours to effect the charging. Besides this you would be obliged to keep your eye on the ammeter all the time (one showing direction of current as well as its volume) in order not to run the risk of discharging the accumulator through the weakened cells.



FARMHOUSE CARPENTRY.



HOW TO BUILD AN OPEN SHED.

THE shed which we have chosen as the subject of this article is of a kind suitable for use as a cart-shed to store agricultural implements in, or as a shelter for cattle. It is closed at the back and ends, but entirely open in front, being supported in the middle by a post, which roughly divides the opening into two parts.

The whole construction is of wood, with the exception of the foundation, which may be a single row of bricks laid on the ground (this being levelled correctly to take them) or, what is better, about three or four courses of bricks, all except one being buried below the surface.

Fig. 1 shows the plan of the complete shed, which is supposed to be sixteen feet long by twelve feet wide, the height to the eaves of the roof being eight feet.

The framing consists of the corner and middle posts at the back, A; the middle front post, B; the studs (or quarterings), C; the sills, D; the plates, E; and the braces F.

The sizes of these various parts are as follows:—A four inches square, B six inches square, C and F four inches wide by two inches thick, D and E four inches wide by three inches thick. Of these the sills and front post should be of oak, while if preferred the whole may be of the same material, and on the other hand yellow deal may be used for all, but must be looked after, or the parts mentioned will be liable to decay. On farms where fir, alder, Spanish chestnuts or similar trees are plentiful, it may be convenient to use these; if so, they will answer the purpose well.

The back of the shed and also the ends must be correctly framed together, as shown in Figs. 2 and 3, the plates and sills being first halved at the corners, and screwed firmly, this being better than nailing.

The corner posts and most of the studs are only stub tenoned, that is, the tenons are very short, about an inch being ample; consequently the mortises to receive them need only be made in sills and plate to a corresponding depth. These mortises must be set out along the sills and plates, so that they come about twelve inches between, stretching or condensing as may be required to bring them even of course. A portion of one of the sills mortised is shown in Fig. 4, from which it may be seen that the corner post is not allowed to be tenoned its full width, but is what is termed "haunched," thus requires only a two inch mortise, instead of four inch as might be supposed.

The second mortise from each end in the sills, and also the middle one in the back plate and sills, as well as the one marked (Fig. 3) in the end plates and sills, must be made quite through, so that the

studs, &c., which fit into these mortises, may be fixed firmly with pins, as shown in the drawings. In Fig. 5 we show sectionally one of the ordinary studs, stub tenoned into the sill, in (Fig. 6) is the stud C, tenoned through the sill and pinned, and in Fig. 7 is shown the brace tenoned through the sill and pinned, and the corner post stub tenoned and haunched.

Further details given are Fig. 8, ordinary stud, stub-tenoned; Fig. 9, two braces fixed to stud G at top ends; Fig. 10, stud G with long tenon; Fig. 11, two sills halved together, with mortise for corner post; and Fig. 12, brace-tenoned with long tenon.

The corner posts, the middle back post, and the two studs G (one for each end of shed) must be tenoned to the exact length required, that is seven feet six inches from shoulder to shoulder, the remainder and the braces may be left for the time being, or better still, tenoned at one end only to fit the mortises; this, of course, will not be needed on the braces.

Having prepared all parts so far, the corner and middle post may be inserted in the back plate and sill, the latter being pinned. This must be done with the frame lying flat on the ground. Now after ascertaining that both the plate and sill is straight, lay on the braces and mark the bevel to fit to the middle post as in Fig. 2, and also the shoulders to fit the sill.

The braces must at once be tenoned, and the top bevels cut, when they can be fixed, the bottom ends by pinning, and the top ends by nailing to the post on each side. In nailing the braces, take care to insert the nails so that they will not pull them down the post. Fig. 9 shows the proper inclination at which they should be driven in.

The back of the shed (as far as it is got) may now be stood up in position, and the end plates and sills put in position and fixed, inserting the front corner posts at the same time, and the studs G. The braces will be cut in and fixed in exactly the same way as before, taking care that the frames are perfectly square before fixing them.

The studs may now all be cut in and fixed, the lengths and bevels are easily obtained by standing the length of quartering (already tenoned) in position on the sill, and marking along under the brace. The upper portions will, of course, be reversed. Do not fix all the bottom studs and then all the top, or the braces will be bent: the proper way is to fix the bottom portion and then the top of each stud, thus keeping all even.

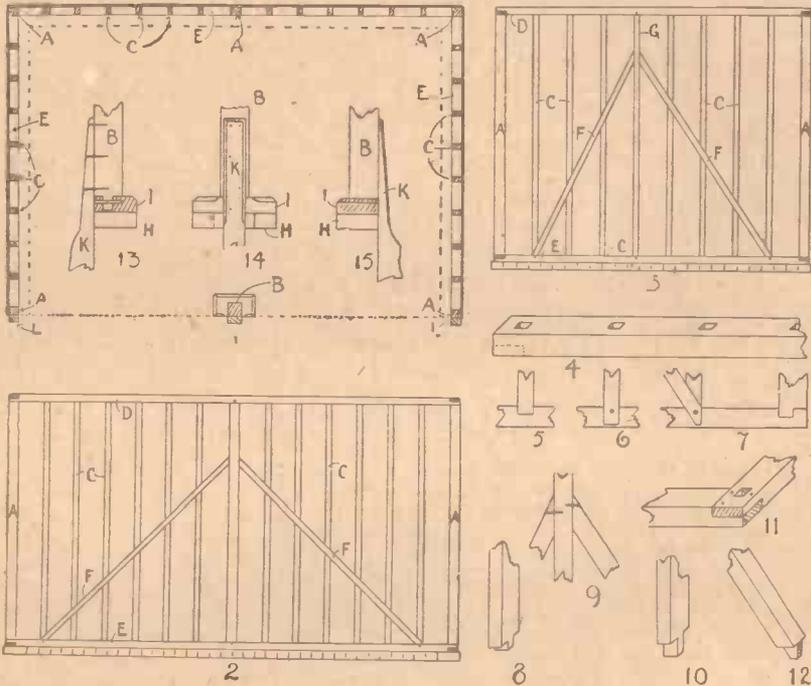
We now come to the middle front post, which supports the plate. This should stand on a foundation about eighteen inches by nine inches, on the top of which is placed a wood sill of the

HOBBIES.

same size, the bottom of the post being tenoned into it, and the top into the plate. An oak spur inserted into the ground, and securely nailed to the sill and the post makes all secure. Details of this are given in Figs. 13, 14 and 16, in which H is the foundation, I the sill, and K the spur. Similar spurs should be fixed at the front corners of the shed, as at L, Fig. 1.

This finishes the bottom portion of the shed, with the exception of the boarding, but before this is done the roof should be put on, and this we will deal with in the next article, in which we will show how to finish the shed.

those varieties that require a peaty soil and plenty of moisture are grown in conjunction with Rhododendrons and other low-growing peat-lovers. The advantage of this association is apparent, for the low-growing Rhododendrons protect the soil from the sun, and the abundance of water that they require during the summer ensures of the bulbs always having a sufficient supply. In the winter the soil is always well drained and protected from frost, and in the spring the tender young growths are protected from frosts. Those who wish to have success with Lilies should follow out this system of



PLAN, ELEVATIONS AND DETAILS OF SHED.

EXPLANATION OF DRAWINGS.

- Fig.
1. Plan of shed.
 2. Elevation of back framing.
 3. Elevation of end framing.
 4. Portion of sill mortised for studs and post.
 5. Section of stud, stub tenoned into sill.
 6. Section of stud G, tenoned through sill and pinned.
 7. Brace pinned into sill and post stub tenoned.
 8. Stud with stub tenon cut.
 9. Braces fixed to stud G.
 10. Stud G tenoned.
 11. Sills halved together at corner of shed.
 12. Brace tenoned.
 13. Sectional detail of front post, sill and spur;
 14. Front elevation of front post, &c.
 15. Side elevation of front post, &c.

Those who require a practical demonstration of up-to-date Lily culture should go to Kew, where thousands of bulbs of every species in cultivation may be seen growing; but not, as in the case of most other plants in that strictly formal establishment, in botanical divisions. Lilies refuse to thrive well even at Kew under such conditions, and therefore they are planted almost indiscriminately all over the grounds. All

planting amongst low shrubs; and if the soil is not suitable, it is not much trouble to take out a barrowful and replace it with a mixture of peat, leaf-soil and loam. Some Lilies do not like a moist and peaty medium, but prefer a limy and somewhat dry compost. It is difficult to accommodate these among shrubs, but the difficulty of shading the roots may be got over in a simple and effective manner, as there are several dwarf plants that may be used for carpeting the surface of the soil. For growing on a limy compost there is nothing to surpass the small Sedums—those so commonly found growing in the crevices of walls, and on dry railway banks. The same rules equally apply to pot plants, for if the sun is allowed to heat the pots, the plants are sure to become unhealthy, and the bulbs will be practically useless the second season. When grown in pots, arrange to have them either plunged or stood where the pots will be shaded, and not the plants. Ferns and similar plants make a very effective groundwork for pot Lilies, and serve the purpose of shading the pots as well as anything.



PICTURE CLEANING AND RESTORING.

SOME USEFUL METHODS DESCRIBED.

CONSIDERING the interest taken by amateurs at the present time in picture framing, the following notes on the treatment of old paintings should prove of service to a wide circle of readers. It is very often the case that a picture has remained on a drawing-room wall for half-a-century or more. On its face, which is almost black, we find layers of dirt formed of the dust and smoke which damp has affixed to and almost incorporated with the varnish. But this varnish will have saved the picture from harm, and if by any process we can remove both the varnish and the dirt, the colours will reappear in all their primitive freshness, as bright and clean as they were upon the first day that they were laid on.

It should be noted that the same means will not answer for cleaning all pictures because, although most are covered with mastic or other varnish, some are covered with oil, some with poor varnish, some with albumen, size, or water varnish, others have never been varnished at all, and are only obscured by smoke and dirt; we must treat each according to its particular requirements, and the nature of the dirt to be removed. We will first deal with the method most commonly employed.

WHEN THE PICTURE IS COVERED WITH MASTIC VARNISH

old and hard varnish can always be reduced to a powder by rubbing with the dry finger. By this means, anyone can safely remove it from their pictures, providing they take care to remove with a dry rag the fine powder that is created by rubbing the varnish. The great aim of the cleaner should be to watch when he has penetrated the varnish, and arrived at the picture itself, and the nearer he approaches it of course the greater ought to be his caution, lest he should apply the friction to the paint, which might be inevitably injured with the pulverised varnish between the fingers. For large work, when this method would be too laborious, and rough canvas, the interstices of which form so many little sunken places between the warp and the woof, to which the fingers are unable to penetrate, it is necessary to employ spirituous liquids. A mixture of spirits of wine and turpentine is used, allowing the latter to predominate if the picture is delicate, and the coat of varnish thin.

To employ this mixture, saturate with it a piece of linen rag or cotton wool, and gently rub the picture with a circular motion. As soon as the varnish is dissolved in one place, wipe it off quickly, with a soft rag, held in readiness. Thus all the parts of the painting are cleaned of their varnish, and at the same time the dirt, one after the other, care being always taken to

allow the liquid to remain on only the exact time necessary for doing this, and not to rub again that part from which the varnish has already been removed.

Should this mixture fail to remove all the dirt with the varnish, it may be necessary to mix with it a small quantity of potash proportioned to the requirements, but this must be very sparingly applied. A careful worker will stop with just discernment at the proper point, preferring to leave a little dirt upon the picture than to mar the colouring and render it weak and cold by too much cleaning.

A picture covered with oil will often, without incorporating itself with it, form on the surface a crust which in time will become as hard as the painting itself and will dim the transparency and crispness, and spoil the effect of the local colours by a monotonous yellow tinge. In order to get rid of it, it will generally be found sufficient to cover the painting during the hottest days of summer with a coat of linseed oil, frequently renewed during several days, in order to soften the crust, afterwards removing both oils with spirits of wine.

WHEN THE PICTURES ARE COVERED WITH BAD VARNISHES,

i.e., with varnishes made principally of spirits of wine; in these cases, spirits of wine rectified and sometimes warm, will generally be effectual.

Many pictures may come under inspection which have never been varnished. If it presents an appearance of dirt, the application of a potato cut in half will remove the exudations of the oils which rise to the surface, as well as the grime, and will be quite sufficient to clean nine out of ten paintings. If this is not successful, alkalies may be employed. It ought to be remarked, however, that the cleaning of a picture which has been varnished and one that has not undergone that process are two different things. Liberties may be taken with the former, which would prove fatal to a picture not thus protected, so it must be most cautiously treated.

WHEN THE PICTURE IS COVERED WITH ALBUMEN,

size, or water varnish, warm water is the true solvent.

Perhaps the old varnish of a picture has not suffered and it is only necessary to clean from its surface that which is termed "bloom," which in many instances entirely obscures the beauty of the work. Several recipes have been given for its removal; but the application of the potato before mentioned should be resorted to, as being the best remedy, if not the entire cure. Apply it as before, by a series of circles all over the surface, then wipe with a silk handkerchief.

Relining and Restoring.

SHOULD a picture have its linen or canvas back perfectly rotten and worm-eaten, and almost too tender to touch, and added to this, the painting itself is covered with cracks, the remedy is to line it with a new canvas. A picture constitutes in itself a connected and solid crust, which is not in the least incorporated with the canvas or panel on which it rests. Given an old picture on a mouldering or torn canvas, or worm-eaten panel, one can separate the painting from the canvas or panel and place it on an entirely new foundation.

More frequently, however, the old canvas is strengthened by a new one, which is done in the following manner:—Firstly, the painted side will be covered for protection with a layer of strong and fluid paste, on which a sheet of paper is laid. Then, when the paste and paper are dry, the canvas is taken from the old stretching frame and laid on a table or level board, face downwards, the edges being held out by cramps or in some way. All the roughness on the back is next effaced with pumice stone, and then covered with strong glue, and a new canvas laid on. Next, a heated iron is passed over the new canvas until it is perfectly flat, with a gliding motion, not by strokes or a succession of blows, care being taken not to stop for an instant, or a mark will be impressed in the painting which cannot be obliterated. The painting is now ready to be tacked to a new canvas frame, and the paper afterwards washed off the front with a sponge and cold water.

Now let us take the case of a picture of which the canvas is entirely destroyed, and must be taken off and transferred to a new one. After having coated the front as before with thin glue, it should be covered by having smooth, clean paper pasted over it. If the canvas is very rotten, two or even three thicknesses should be used, and afterwards over the paper fine muslin. When this is dry the canvas is unnailed from its old mount, and fastened on a board or table, as above mentioned, nailed down with the back of the painting uppermost. A little raised border of wax is made all round its edges, and the board being perfectly level, a mixture of nitric acid and water is poured upon it. If this mixture is too strong it is liable to burn the painting; care must therefore be taken to prevent this, by dipping the finger in the mixture before it is used. If it turns yellowish immediately, it must be weakened. This mixture remains upon the canvas until the threads are quite destroyed, which can be easily ascertained by the touch. The liquor is then dabbed off, and the threads of the canvas removed with a bone or ivory paper knife, or any other instrument, not of metal. The crust of the painting will then be found intact, glued with its face downwards to the paper. The crust is then washed with pure water, and afterwards wiped with a soft sponge, and left until quite dry. Then the back is glued and a fine gauge is applied, then a single or double canvas, an iron passed over it, and finally the picture is nailed to a fresh mount and the paper and muslin which protected the front are taken off.

If it is not considered desirable to employ acid, the old cloth may be rubbed off with a small rasp with fine teeth. When this has gone through as far as considered prudent, the remainder of the cloth may be removed with pumice-stone,

stopping on the first appearance of the ground on which the picture is painted.

The transfer of a picture from a wood panel is not more difficult. After the surface has been protected with paper or cardboard, the wood must be planed very thin, water or weak acid being poured upon what remains, which will render its removal perfectly facile, after which the remainder of the process is to be completed as already named.

The proper tool for stretching canvas has two broad nippers with teeth to hold the canvas, and a fulcrum by which the leverage obtained may be very powerful. It is necessary in stretching old canvas not to strain too much, or cracks may be made. It, however, is in a sufficiently pliable state immediately after the process described to prevent it cracking. Should the canvas "bag" after being nailed to the stretcher, a little paste or size applied to the back will, as it dries, produce the tightness desired.

RESTORING.

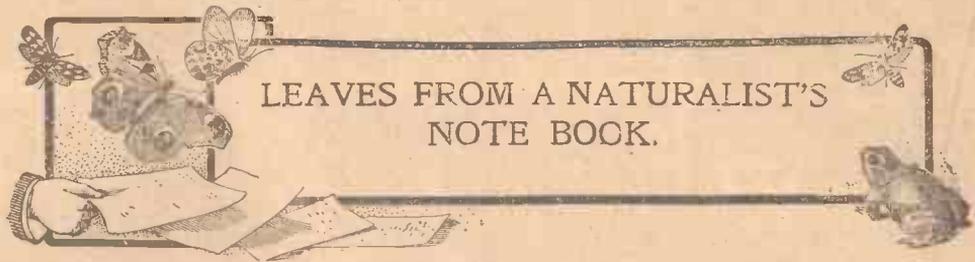
If there are holes or fissures on the surface of the picture, before proceeding to any rectification of colour it will be necessary to fill up such damages. This is usually done by working in, with a palette knife, white lead, made into a thick paste with linseed oil, smoothing down when dry with a piece of soft-grained pumice stone with water. The picture should then be wiped with a rag dampened with turpentine to take off any greasy matter, and afterwards given a thin coat of mastic varnish to enable the painter to view the colours in their proper tone. The pigments used should be pure, and worked as thick and as pasty as possible. The tints should always be a shade brighter than the tones they are matched with, as they acquire a darker tone in drying. When the work is restored it should be laid aside for some considerable time, and not varnished, to allow the renewed paint to harden. The oil will rise to the surface and can be wiped off with a turpentine rag, leaving the body of the colour in the purest state possible.

With reference to retouching old pictures, filling in the portions destroyed, or covering defects, we should like to dissuade amateurs from such an expedient, except in the greatest necessity, as "touching up" a picture is liable to rather lessen than increase its value.

PAT acknowledged himself puzzled. "They call it an indecent electric light," said he, "but it do beat me how they make the hairpin burn in the bottle."

A CORLISS engine can be made to do more work by raising the boiler pressure, increasing the speed, or giving less lap to the steam valves.

CASE AND INDEX FOR VOL. XXIII.—A handsome Red Cloth Binding Case for Vol. XXIII. of HOBBIES, with Index and Title-page, may now be had for 1s. 3d., post free. The Index with Title-page alone may be had for 2d., or post free for 3d. Indices for previous volumes (except for Vols. IV. and V.) may also be had. Bound Volumes of HOBBIES, XIII., XIV., XVIII., XIX., XX., XXI., XXII., and XXIII. may be had, price 3s. 6d. each, post free. (The other volumes are out of print.) HOBBIES LIMITED, 12, Paternoster Square, London, E.C.



LEAVES FROM A NATURALIST'S NOTE BOOK.

REMARKABLE REASONING POWERS OF ANTS.

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

MOST interesting discovery has recently been made with regard to the caterpillars of four of our British "blue" butterflies, i.e., that they secrete a liquid which appears to be fully as attractive to ants as the well-known "honeydew" of the green-fly. The liquid in question is distilled by a transverse gland situated upon the upper surface of the seventh segment of the abdomen; and in connection with this gland, although placed upon the eighth segment, are two tube-like organs which can be protruded and withdrawn at will, and which are thrust out over and over again when an ant commences its solicitations, apparently with a view to driving the insect away. The ant, however, seems to be perfectly aware that perseverance will be ultimately crowned with success, and after a great deal of stroking and patting from its antennæ a small drop of the coveted liquid makes its appearance, and is eagerly licked up by the visitor. The ant then devotes a little time to its toilet, while the caterpillar appears to be suffering from exhaustion. But after a quarter of an hour or so the milling process is resumed, and so on again and again until the entire contents of the gland have been abstracted.

The caterpillar is apparently much more unwilling to part with its store of liquid refreshment than the green-fly. "Only after the most persistent and continuous coaxing," writes Mr. Rayward in the *Entomologist's Record*, was success attained, and I do not think the larva yielded voluntarily to the ant's solicitations.

The most interesting feature of the whole experiment appeared to me to be the patient, persistent manner in which the ant continued its caressings, as if it were perfectly well acquainted with the method to be employed, and absolutely assured of the successful issue of its labours.

It remained for nearly an hour on the posterior half of the larva, and for several minutes after each successful termination to its entreaties devoted itself to combing and stroking its antennæ, as though well aware that the larva required time to recover from the treatment to which it had been subjected."

The more one sees of ants, the more one marvels at the amount of knowledge, and accumulated experience, and real reasoning power which is concentrated in the microscopical speck of nerve-matter that does duty as a brain. A few months ago I found one of the huge mound-like nests of the wood ant, consisting of a good-sized cartload of the dead leaves of pine trees, which the insects had collected together from something

like an acre of ground. Wishing to ascertain whether any of the great, clumsy grubs of the rose beetle were contained in it, I took a good long stick and raked the whole nest level with the ground. To all appearance the scene was one of the wildest and most hopeless confusion. Scores of thousands of the great reddish-brown insects were hurrying to and fro, without, so far as I could detect, any sort of plan or purpose whatever. One would have imagined that they were utterly dazed by the destruction of their nest. Yet when I passed by the spot again, twenty-four hours later, the nest was entirely rebuilt, and its ordinary work was going on just as usual. Such a triumph of architectural skill could only be accomplished by means of the most complex organisation. In what master mind did that organisation first take form? How was each individual insect in that vast multitude informed, when it emerged from its chrysalis shell, of its own individual duties? Does every nest contain a number of permanent officials—ant overseers, ant foremen, and an ant clerk of the works? Are plans and schemes to meet every possible emergency carefully thought out beforehand, so that all that has to be done when the moment for action arrives is to carry them into effect? Is there a works department, so to speak, under the management of a sort of ant County Council? And is there a system of conscription in force, in virtue of which every ant in the entire community can be called upon at any moment to labour for the general good?

To those who know little of ants and their ways, such questions may seem fanciful and extravagant. But those who watch for themselves the doings of these most marvellous insects can scarcely help asking them. The building by fifty or sixty thousand workers of a nest some three feet high and six feet in diameter, which is not a mere mound of dead leaves loosely piled together, but a most intricate network of galleries and passages, with chambers opening out of each at regular intervals on either side—this is a task which could never be performed by a number of energetic labourers acting independently of one another. Every ant in the nest must have its allotted task, and must know exactly what it has to do, and how it is to do it. But how this wonderful organisation is maintained, and how the myriad inmates of the nest are kept under the most absolute discipline, while yet they enjoy most perfect liberty, these are mysteries indeed.

Ants are uncanny creatures. In more respects

than one they are intellectually in advance even of the lower races of mankind. They have a power, which no other animals possess in anything like a similar degree, of transmitting the outcome of their own experience to succeeding generations. An ant appears to come into the world endowed, not merely with instincts, but with a considerable amount of knowledge. Or, if that knowledge is not actually born with it, it is at any rate very speedily acquired by some mysterious process of education. And ants do not merely act under given circumstances as all their ancestors for untold generations have acted under similar circumstances before them. They think; they reason; they originate. When a number of ants, which have been checked in their attempts to climb a plum-tree by a belt of tar applied to the stem, get over the difficulty by fetching small fragments of gravel and laying them down in the form of a narrow pathway across the tar, you cannot deny to them the possession of reasoning faculties. Instinct could never have prompted such a line of action as that. The difficulty arises; they think it over; they discover a way out of it; and they carry the scheme into effect. This implies true intellectual powers of a somewhat high order.

Yet under far simpler circumstances the mental faculties of ants often appear to fail them. Lord Avebury tells us, for instance, that when he placed a quantity of honey on a ledge an inch above the table on which a number of his domesticated ants were running about, the insects never took advantage of the earth with which he supplied them by heaping it up into a mound, and so gaining access to the ledge. Instead of adopting this simple plan, they journeyed laboriously to the ledge and back again by means of a circuitous paper bridge some ten feet in length. Never during three entire months did it occur to them either that they could clamber up to the ledge by just piling a little earth together, or that they could easily leap down from it to the table below. But this, after all, is no disproof of the intellectual powers of ants. It merely shows that, like beings a good deal higher in the natural scale, they have their limitations.

Photography.

SUBJECT FOR JUNE:—Landscape and Seascape, with or without Figures.

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 June 29th, addressed:—Photographic Competition: Editor HOBBIES, 12, Paternoster Square, London, E.C.

Camera Notes.

HOT WEATHER TROUBLES.

WARM weather accounts for a great number of the amateur photographer's troubles, and several points in connection with heat are well worthy of his attention. Heat accelerates all known chemical actions, and it has therefore a marked influence on development. Metol hydroquinone is perhaps more influenced by heat than other developers, and has a distinct tendency to give foggy negatives with some plates in the summer time. It is therefore better to use pyro-soda or some other clean working developer unless one is prepared to take the trouble of cooling the solution down before use. This may be most conveniently done by making up a ten ounce lot of developer, for example, to only seven and a-half ounces; if an ounce of developer then be wanted, three-quarters of an ounce of the too-strong solution is put in a measure, and a small piece of ice added just sufficient in size to bring up the bulk to the ounce, when it has melted and thus cooled the developer. Do not forget that a developing solution always works more quickly in warm weather, and hence a plate will take considerably less time in summer than in winter. A small stuffy dark-room soon gets extremely hot in warm weather, and it is essential to keep the solutions as cold as possible.

The film of a dry plate is prepared with gelatine, and will melt soon after its temperature has reached 100° F. But if touched with the fingers it will melt at a much lower temperature. Great care should be taken never to touch the surface of the film with the fingers, for one is liable to do this when taking the plate out of the dish. The best way to secure the protection of films from abrasions, &c., is to rinse the plates well after development, and then immediately put them into a strong alum hardening bath.

The film of printing-out paper is at all times very susceptible to finger marks and stains of various kinds, and many are the prints which are spoiled during the summer months through faulty handling. Owing to the fact that a combined toning and fixing bath almost invariably contains alum, it is an excellent plan to use one in the hot weather, and much trouble will thereby be saved. The following is a combined bath which contains an extra amount of alum and is specially adapted to the working of gelatino-chloride papers in summer-time:—

Distilled water	..	..	8 ounces.
Kitchen salt	..	..	135 grains.
Hypo	..	..	14 ounce.
Alum	..	..	120 grains.
Ammonium sulphocyanide			30 grains.

Shake this well up every few hours for a day, then allow the sediment to settle during the night, and next day pour off the clear solution. Finally add one grain of gold chloride in about a drachm of distilled water.

A word of caution may well be given in reference to the drying of negatives. These are frequently stood on a window ledge to dry, and although this may be quite a safe practice in ninety-nine cases, in the hundredth it may cause disaster! Take care that the window is not in direct sunlight. In summer-time the heat from a window on which the sun is shining is quite sufficient to melt a film whilst wet, and instead of the negative drying, the film may all run away from the glass.



The Solomon Islands' Issue—and Others.

THE issue of separate postage stamps for the Solomon Islands is the most interesting of recent events in the postal world.

The Solomon group has been wholly British since the time of the international agreement with Germany and the United States relating to Samoa and other South Sea Islands; so we must make room for the Solomon stamps in our British Empire albums. It is no ordinary British Colonial series that now makes its appearance, but an ornate set of pictorial labels, oblong in shape, and bearing a central device, the chief feature of which is a native war canoe. The stamps bear the inscription "British Solomon Islands Protectorate." Seven values (at present) comprise the set:—

- ½d., blue.
- 1d., carmine.
- 2d., light blue.
- 2½d., orange.
- 5d., green.
- 6d., red-brown.
- 1s., violet.

It is more than likely that higher values will be issued. The fact that postage stamps are hardly necessary at all in the Solomon Islands makes it almost certain that very strict attention will be paid to the requirements (?) of stamp collectors. There is even a doubt as to whether this issue for the Solomon Islands is quite "in order." The first curious thing one notices is that the colours selected for the ½d. and 2½d. stamps are not in accordance with Postal Union requirements. In addition to this we have news from Australia to the effect that a firm who recently wished to despatch a registered package to the Solomon Islands were informed that no postal service had yet been arranged! In these days of erratic postal issues by the lesser British Colonies it would not be at all surprising to hear that the officials of the Solomon Islands had brought out their stamps first and organised their postal service afterwards. After all, why trouble to have a postal service at all when the great majority of the stamps are sold to amateur and professional philatelists?

Other novelties in the British Empire section are the new picture stamps for BRUNEL, and the re-named issue of BRITISH NEW GUINEA. This latter territory, once the happy hunting ground of those interesting cannibals, the Papuans, has now been annexed by the Australian Government. The so-called "new name," PAPUA, now overprinted on the stamps, is in reality an old name restored. The ½d., 1d., 2d., 2½d., 4d., 6d., 1s.

and 2s. 6d. values of "British New Guinea," are now to be had with this overprint and in view of a report that an entirely new issue is contemplated it will be well for collectors to secure specimens of the surcharged series at the earliest opportunity.

BRAZIL sends us an addition to her present set of stamps in the shape of a 5,000 reis value, bearing a head of Liberty (*Liberdade*). The value sounds a very high one, but in reality Brazilian reis are very small potatoes indeed, and the issue now under notice is, roughly, the equivalent of our own ten-shilling stamp.



The "De Ruyter Commemorative" and the "Tuberculosis" stamps of HOLLAND may now be illustrated and more fully described. The issue celebrating the tercentenary of the great Dutch naval commander, Admiral de Ruyter, consists of three stamps, all of the design shown here. On the left is seen a portrait of De Ruyter,



THE ADMIRAL DE RUYTER STAMP.

above which appear the dates "1607-1907." The values of the three stamps (½c., blue, 1c. lilac, and 2½c. red) amount to a total of a fraction under a penny, so that Holland, in making her first issue of commemorative stamps, cannot be accused of an attempt to turn a patriotic occasion to very great financial advantage.

The other special Dutch issue—the "Tuberculosis" issue, as philatelists have dubbed it—is of a very different kind. It ranks with the "consumptive" stamps of New South Wales and the charity labels issued under the auspices of the Queen of Roumania. Whether or not it is a fair thing to make stamp collectors the largest contributors to these undertakings by giving such stamps a postal character is a question we need not again discuss. The face values of

the stamps in the present instance are not great:— 1, 3, and 5 Dutch cents, or a little under two-pence in British money. This is the *postal* value only. Purchasers of the issue have been required to pay double face value, the balance so realised being devoted to Queen Wilhelmina's national Tuberculosis Fund. The principal inscription on the stamps reads "Amsterdam Society for the Prevention of Tuberculosis," but the specially



THE DUTCH "TUBERCULOSIS" ISSUE.

appropriate features of the design are to be found in the four corners. In one we see the sun, typifying *light*; in another a fountain, representing *water*; a dove on the wing in another corner suggests *air*, while the fourth angle contains an ear of wheat typifying *nourishment*—these four being the natural needs of those who are afflicted with Nature's direst scourge. Since the stamps became obsolete for postal purposes (they were only available for about five weeks) figures have been published relating to the sales of specimens. It appears that a million of each value were printed, representing a total value (at "double face") of £15,000, but of this total only a little over £4,000 was raised. Half of this would go to the "cause," and it appears that all the unsold stamps have been "postmarked" and handed over to the Amsterdam Society for the Prevention of Tuberculosis—for sale to collectors!



ITALIAN SOMALILAND.



LUXEMBURG,

Showing Head of the new Grand Duke Wilhelm.

The stamps of BENADIR, which were for a long time under suspicion of being a purely speculative, if not an absolutely unauthorised issue, have now been taken over by the Italian authorities; and it will be proper in future to class these as the stamps of ITALIAN SOMALILAND. To replace the "besas" and "annas" which represented the original values the Italian Government have overprinted new denominations in "centesimi" and "lire" as follow:—

2 centesimi	on 1 besa,	light brown.
5 "	" "	2 besas, green.
10 "	" "	1 anna, carmine.
15 "	" "	2 annas, orange brown.
25 "	" "	24 " blue.
50 "	" "	5 " orange.
1 Lira	" 10 "	violet.

In addition, the ordinary-unpaid letter stamps of Italy have been overprinted in black, "Somalia Italiana Meridionale" for use in the same territory. The stamps so treated are the 5, 10, 20, 30, 40, and 50 centesimi, orange and carmine, and the 1 lira, and 2, 5, and 10 lire, blue and brown.

The first of the new stamps of LUXEMBURG, showing the head of the new Grand Duke Wilhelm, made its appearance a while ago, since when three other values have appeared, so that the new series at present stands thus:—

10 centimes,	carmine.
12½ "	olive.
20 "	orange.
25 "	blue.

The statement has been made in one of the philatelic journals that these new Luxemburgs are the first postage stamps to bear the head of a person wearing glasses or spectacles. The fact, even if true, would not be one of very great interest or importance; but it is not strictly accurate. The portrait of General Faidherbe, appearing on many recent French Colonial stamps of Senegal, Ivory Coast, &c., shows that distinguished officer similarly adorned, and this design was some months ahead of the Luxemburg issue.

The mention of FRENCH COLONIAL issues reminds us that we have not yet illustrated or chronicled the new stamps of REUNION. Here are the three designs of the series:—



DESIGN I.



DESIGN II.



DESIGN III.

The first of these designs is allocated to the low values, 1, 2, 4, 5, and 10 centimes; Design II. is for the intermediate denominations, 20, 25, 30, 35, 45, 50, and 75 centimes, while the higher values, 1, 2, and 5 francs, are in the third of the designs illustrated here.

FRETWORK

VIII.—HOW TO USE GLUE, SCREWS AND NAILS.

WHEN the task of fitting a fretwork article together is approached some indifferent cutters seem to excel, while on the other hand many accurate cutters fail. As a general rule, however, the man who cuts well also fits his work well together, while the habitually careless man is careless all round. A beginner, of course, is a beginner at fitting as well as at cutting, and naturally makes the beginner's usual mistakes. But as he gains confidence with his saw he also acquires neatness in fitting. What he must realise from the outset is that when cutting is finished the work is only half done, and that care and patience are afterwards required for sandpapering the different parts and for fitting the whole article together.

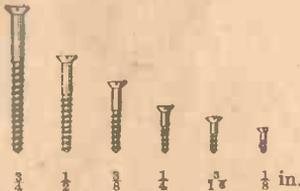


FIG. 1.—FLAT-HEADED SCREWS.

The materials for fitting may be divided into two classes—1, the tenons, slots and half-cut, through joints shown on the full-sized pattern, and 2, glue, screws and nails, which are the usual requisites for woodwork fixtures. In this chapter it is only intended to deal with the latter. The ordinary fretwork fixtures provided for on the design will be dealt with next week.

GLUE.

For small fretwork articles, where only a very slight fixture is required, most workers now use one of the liquid glues supplied in collapsible tubes. These adhesives are exceptionally strong, they are always ready for use, and as only what is actually required need be taken, there is practically no waste. These tubes are sold at from 1½d. or 2d. up to 6d. each, and by using them the worker saves himself a great deal of labour.

The usefulness of these tubes is more marked from the mere fact that, apart from skilled woodworkers, very few people know how to use ordinary cake glue. They have a vague idea that it has in some way to be melted with hot water, but how to use it so as to secure its full strength they are hopelessly ignorant.

If cake glue is used—and practical mechanics will probably continue to use it in spite of all tube adhesives—the best glue should always be bought,

and the worker should take care to provide himself with a proper glue kettle, which he can purchase for a shilling. These are made with an outer kettle for holding the water, and an inner pan for the glue, each having a handle. It is better to break the cake into small pieces, place these in the pan with cold water, and let the whole stand for several hours. The pan is then placed in the kettle, which is about half-filled with cold water, and the latter put on the fire. As the water boils the glue will dissolve. Its consistency should be something like syrup, this being regulated by adding or pouring off water as required. For fretwork purposes thick glue is rarely necessary.

In applying glue, the first thing to learn is that it must be used hot. It is also advisable to heat

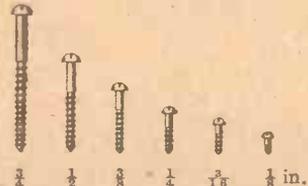


FIG. 2.—ROUND-HEADED SCREWS.

the two joints that are to be fixed, for if the glue hardens too quickly a satisfactory joint cannot be made. No attempt should be made to smother the joint with glue, and when the application has been made both pieces of wood must be put together under the strongest convenient pressure. As the grain of the wood gradually absorbs the glue, the two parts are closely united, and an air-tight and lasting joint is secured. As the surplus glue oozes out from the joint it should be carefully removed. Whether liquid or cake glue has been employed, this is a most important matter to watch, as any traces of glue on the surface of either a dark or light wood are most unsightly.

Fretworkers who prefer to use the cake glue should guard against preparing too much at one time, as repeated meltings are apt to diminish the strength.

SCREWS AND NAILS.

While small fretwork articles can be held together by means of glue alone, many others require the additional help of screws or nails. Screws are now manufactured expressly for fretwork purposes, and may be had in all lengths from one-eighth inch upwards. They are supplied in both brass and iron, with round or flat heads, and are obtainable in varying thicknesses.

For fretwork purposes the finer gauge screws are obviously the most suitable. Fine fretwork wire nails are also made in brass and iron, and in lengths from quarter-inch upwards.

In using these the delicacy of the fretted wood must never be overlooked, and when one has to be driven into a narrow strip with the grain running the wrong way (i.e., the narrow way) the greatest care should be taken. A hole must be drilled for each screw, and it is also well that the top of the hole should be countersunk in order to prevent the screw from splitting the work, when at the last turn the wedge-shaped head goes down flush with the wood. If a round-headed screw is being used, countersinking is unnecessary, as the underside of the screw head is flat. Round headed screws are used when it is impossible to prevent their being seen, and consequently when the use of one with a somewhat ornamental stud head is permissible. A bradawl or a very fine screwdriver may be used for driving in the screw.

Nails are less generally useful than screws, but in any case the worker may as well have a supply of iron-wire ones for plural cutting as described in a previous chapter. A light hammer should be used for sending them in, a series of short taps being given. When two or more nails are being



FIG. 3.—WIRE NAILS.

used for one joint they may be driven home in a slanting direction so as to form a wedge.

PINS.

Instead of wire nails, ordinary household pins are frequently used for fretwork fixtures. The whole pin is not used, but merely the point, which is cut off with a pair of wire-cutting pliers, about a quarter or three-eighths of an inch from the end as desired. These pins are very easily driven in, and as they are headless they are hardly seen.

Pin points may be used for forming invisible joints in the following manner:—Hold the point with a pair of pliers, and press the blunt end into one of the pieces of wood, leaving only about one-eighth inch or three-sixteenths inch projecting; then take the other piece of wood and press it down upon the sharp point of the pin. This method is frequently adopted in the fixing on of overlays, where the worker may feel that glue alone will not have a sufficiently strong hold.

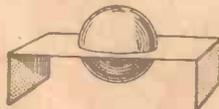
In all this work the reader must aim at extreme neatness. Nails or screws should not be visible if this can be avoided; but whether seen or out of sight they must be put in carefully and evenly. Cutting, as previously said, is not everything in fretwork. It is only the first operation, and unless the same neatness is exercised in finishing the work all one's earlier care will have been in vain.

(To be continued.)

ONE "prayer car" is attached to each passenger train on the "Holy" railway which the Turkish government is building. Pilgrims are carried free, but have been rather slow in patronizing the line.

How to Repaint Croquet Balls.

No lover of croquet cares to start play with a set of balls discoloured by the hard knocks of last summer. The first operation in repainting them is to make a bridge of strong cardboard, with a hole cut in the top just large enough to let a ball rest in it along its equator, so to speak, as in our artist's sketch. They can then be painted all over at one operation, with the exception of a minute line which is gone over afterwards when dry. Oil colours, in tubes, must be used (enamel chips off). If they be mixed with good clear picture varnish nothing further will be needed in the varnish line. The following are the proper colours: For the blue ball, a mixture of cobalt and flake-white; for the red, scarlet lake and vermilion; ivory black for the third; and chrome-yellow (Number 1) for the fourth. Several thin coats, put on with a large camel-hair brush, are necessary. After each application of paint the whole surface should be gone over with a clean soft brush, working the stuff all over in different directions. Messrs. Gamage, Ltd., of Holborn, London, E.C., supply compendiums containing all the requisites for this work at the price of five shillings and sixpence. To keep the balls tolerably fresh throughout the season always wipe them thoroughly with



CONTRIVANCE FOR USE IN REPAINTING BALLS.

soft cloth after play and put them away in their box. The system of running a strip of wire netting a few inches in height all round the ground, so as to stop them, or at least break the force of their impact with the garden wall, will be found to add not only to the duration of the paint but to that of the balls themselves. The above-mentioned firm supply it ready for putting down.

Motor Omnibus Models.

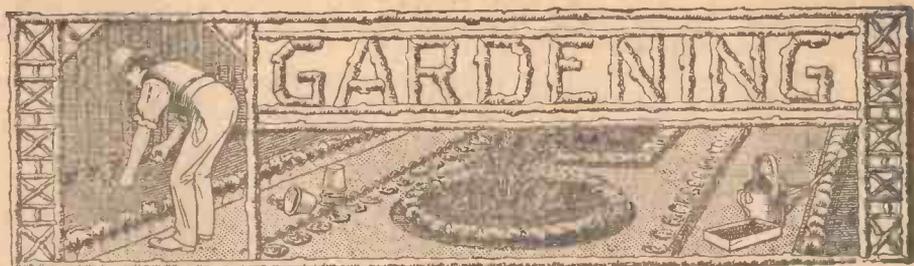
As many fretworkers are, during the season, exhibiting Fretwork models of the HOBBIES Motor Omnibus, we offer:—

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.

The award will, in each case, be made on receipt of a written statement by the Secretary of the Exhibition certifying that the prize-winner is entitled to the Free Subscription to HOBBIES according to the particulars given above.

ELECTRIC power from the Canadian side of Niagara Falls is now propelling the street cars of Toronto.



Varieties of Gladioli.

GANDAVENSIS hybrids are the parent of many of the improved kinds.

Although the flowers are smaller, the colours are nevertheless lacking in intensity. The "spikes" are large, frequently reaching to a height of three feet, and these, when regularly covered with blossoms, give great pleasure to the gardener. At one time, they could only be obtained in salmon shades and pinks, now they are procurable in almost every colour. The petals are much improved, for instead of being ragged and irregular, they are now even, and of a neater outline. In glancing over a list of this particular type, it is surprising to find what a host of improved kinds there are, white, pink, red, yellow, orange, and above all, lilac and violet have found their way into the collection. An entirely new kind, known as "Snow White" has recently come from America. The spikes are of an average length, bearing blossoms of the purest ivory-white, a variety certain of meeting with a large amount of appreciation from every florist. *G. Lemonii*, not so well known by amateurs, is a type known as the "Butterfly Gladioli" because of its deep-coloured blotches on lighter grounds. When seen in the distance they have the striking appearance of the coloured butterflies, a peculiarity not found among hardy flowers. The three lower petals are heavily mottled, while the upper petals are of a soft self colour. The hybridist in this type has made an excellent departure, for not only is diversity of colour maintained, but a true-habited flower has been produced without that branching habit occasionally found in others. It is frequently said that this is the only hardy kind able to withstand winter in the open ground. It may be the hardiest, but some protection must be given the bulbs in severe weather, or many will be found in the spring to have perished. Those taking up the culture of the Gladioli, should certainly give a place to this type, for, where others are appreciated this particular kind is sure to be.

G. Brenchleyensis is a great favourite, and one better known than all the others, and is undoubtedly the easiest to grow. Without any unusual care, it will thrive and produce spikes of flower more freely than any of its companions. It is a common occurrence to find the bulbs producing as many as two spikes at the same time and each of the usual strength, bearing blossoms freely developed. With the smaller types, this is rarely discovered, as not more than one spike of flower is produced from one bulb. The colour

of this variety—a glowing scarlet—is immediately recognised, and this fact accounts for it being so plentifully grown. Judging by the large consignments of flower sent into Covent Garden market, many market growers make a speciality of it, which is sufficient recommendation for its capacity for flowering freely.

G. Childsii is a remarkable strain brought together by continual hybridization of the *Gandavensis* type. The flowers are neater and the habit is more regular, which is the outcome of constant improvement of the older stocks.

At one time red, rose and salmon rose predominated, now in this new strain, we find both white and pink grounds with pretty cherry carmines running into darker and more intense colourings. For pot culture these are a wonderful addition to the cool greenhouse for their vigour and charming appearance are attractions quite new to plant seekers.

G. cardinalis varieties are those of a more decorative kind suitable when cut for small vases.

Delicattissima and *Salmon Green* are well-known, for they are flowers the florists use largely for market purposes. They are grown very largely in pots. The blossoms are individually small as compared with the large types, and white and pink colourings predominate. Here is a suggestion for amateur hybridists, for the introduction of newer shades in this type would make a useful class among the dwarf kinds. "The Bride" is better known than any other of the genus for its attractiveness in floral designs. It is a pure white flower, and one that lasts a considerable time when cut.

Next we come to the *Nanceanus* types, an entirely new race, said to be a "cross" between *G. Gandavensis* and *G. Lemoinei*. In habit, it possesses that of the parent *Gandavensis*, while in refinement and clearness of outline, *G. Lemoinei* is clearly noticeable. The spikes are of an extraordinary length, bearing flowers of a huge size. In colour, their beauty surpasses that of all the others; the upper petals are of a soft silky colour, while two of the lower petals are lightly splashed with deeper colourings. As it becomes wider known, it is a type certain to be introduced into every garden, but being a new comer the general grower is not so well acquainted with its existence as with that of some other kind. We well remember its first season of introduction, for high prices were charged for a single bulb, a price one often reads of being given for a single *Narcissus* bulb, or species of orchid. Recently

owing to the increasing stocks, the price has fallen considerably so that they can now be secured almost at the same price as *G. Brenchleyensis* of *G. Gandavensis*.

Late or Maincrop Peas.

THE remarks which follow relate to the sowing of the maincrop varieties, as it is now full late to sow early kinds. The rows should be three feet apart, and drawn moderately deep with a broad hoc. The seed should be sown evenly, averaging a distance of two inches apart throughout the rows. After the seed is sown, cover and earth up the rows to form a depth of four inches.

Birds and mice often cause destruction to pea crops; birds devouring the young tender seedlings upon their approach to light, and mice penetrating into the soil and consuming the seed immediately upon its germination. Black cotton forms a sound protection against birds, by running three or four lengths along the entire distance of the rows, about four inches above the surface; and cheese-baited wood traps will serve to catch mice.

A few of the leading varieties of Peas in demand amongst amateurs may be mentioned. "Auto-erac" as a maincrop and late variety has proved itself to be a reliable kind after repeated trials at the Royal Horticultural Gardens at Chiswick. It reaches a height of three feet and bears large blue pods of the marrowfat type. It has a robust constitution, and resists mildew better than any other kind. "Duke of Albany," a popular variety, is a fine maincrop wrinkled kind, unrivalled for exhibition and productiveness, bearing well-filled pods of a dark green colour. It attains a height of five feet, and is robust and branching. For ordinary purposes it is a great favourite, producing all the qualities desired of a good pea. "Hobbies Prize Winner" is the result of the very careful selection of seedling, and as a late variety is the best on the market. It reaches a height of five feet, and has a robust constitution, which enables it to withstand both drought and mildew. The pods are produced in pairs, and reach the extraordinary length of seven inches, enclosing on an average twelve marrowfat peas of a mellow flavour. "Ne Plus Ultra" is a very old kind two well-known to need much comment. As a maincrop or late variety it maintains its position. It attains a height of six feet and bears pods filled with delicious marrow fat peas. "Sharpe's Queen" is another well-known amateur's favourite, and a variety by no means to be despised. Its habit is sturdy and branching, and it attains a reasonable height of two and a half feet. "Green's Improved Telephone" is an excellent variety for exhibition. It has been awarded a First-Class Certificate by the Royal Horticultural Society for its prolific bearing. It has long blue pods, of the wrinkled marrowfat type, and the bind reaches a height of five feet.

The best land is a fairly stiff tenacious soil containing a fair percentage of lime, and a fairly good depth. It is advisable to prepare and make ready a month in advance of the sowing of the main crop and late varieties, especially on land which is not in a retentive condition. Manure dugged well in before and afterwards supports the roots till the crop has completed its growth. Peas are well-known to be fibrous and deep-rooting, and therefore moisture is required during hot and dry seasons.

Seasonable Hints.

CANNAS are an interesting plant worthy of a place in every garden. They resemble an Orchid as much as any plant that is suitable for outdoor culture. It is only within the last three or four years that they have gained so much popularity as a bedding plant, and during this time many interesting colours have been introduced. They delight in a moist and not too heavy soil, and in dry seasons demand abundance of water.

Lantanas is another useful plant now ready for planting out. The numerous varieties of colours are of unusual blend. For edging purposes they are very useful, and in a bed occupied entirely with them they are most interesting.

Many Climbers are now requiring attention in the way of thinning and tying. The long leaders of climbing Roses should have some support given them, if only slung up loosely till another suitable time for tying them properly can be given.

Clematis are strong growing climbers, and unless they are required for growing naturally they gain the upper hand. In order to keep them within control it is best to go over them fortnightly and tie into position all those short that are likely soon to cause trouble by breaking away from the main branches.

Roses in the open ground should now be mulched round each stem with about a couple of "forkfulls" of stable manure. Let it be well matured, or the sun will soon dry out its richness and reduce it to straw.

Before laying it on, it is best to loosen the soil lightly in order that the nourishment of the manure may wet freely on the roots.

Keep the Dahlias regularly watered and have a watchful eye for slugs, snails and other vermin that are likely to attack the growth. After a shower of rain a good opportunity occurs of catching pests that have been a source of annoyance. See that the plants are nicely staked, as a means of support from stormy winds.

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 *Fuchsias* in variety. Grand plants that will flower throughout the Autumn. Our usual price for these is 1/9, but for one week only we are offering them for 1/3 postage free.

This Offer will close June 8th.

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

NOTES ON SPECIAL OFFER.—Fuchsias are always regarded by amateur gardeners as the leading feature of the greenhouse or window. This week we are offering a very fine and varied collection of strong, sturdy plants. Pot them into five inch pots in a light mixture of soil, and keep them growing on in a moist and warm situation. For a month, keep all flower buds pinched off, and they will then flower throughout the autumn.

HOBBIES.

Chess.

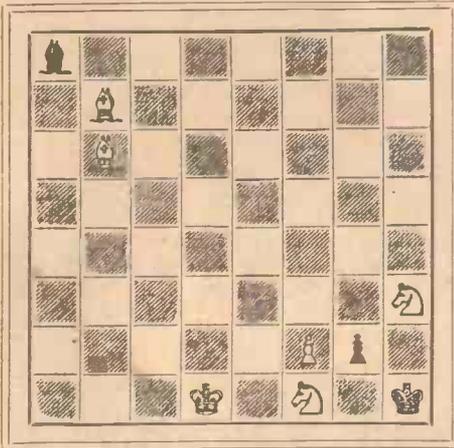
JUNE 1, 1907.

TO CORRESPONDENTS.

E. WASSERMAN.—The first of your problems is cooked by 1 Kt-Q3 ch, KxKt; 2 B mates. Also the initial capture is not good in a two-er.
H. MANN.—We are always pleased to receive problems, end-games, or games from our readers, and any such contributions shall have our best consideration.

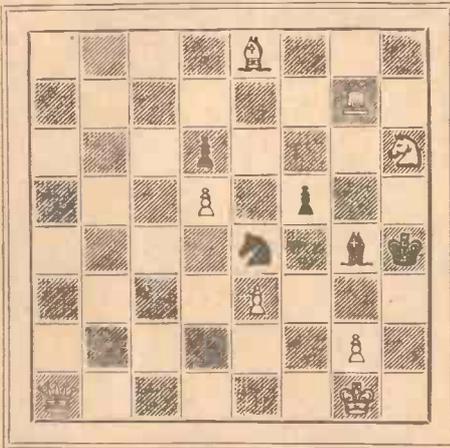
PROBLEMS.

No. 269.—By HOWARD LAWTON, Sheffield.
Black.—Three pieces.



White.—Six pieces.
White mates in four moves.

No. 270.—By S. D. FRESKO, London.
Black.—Five pieces.



White.—Eight pieces.
White mates in two moves.

Solutions should be received by Wednesday following issue.

SOLUTIONS.

No. 263.—By S. D. FRESKO.

1 P-R3.

If 1 KxKt 2 Q-Q6 Any 3 Q mates.
If 1 PxKt 2 Q-Q1 KxP 3 Q-R5 mate.
If 1 P-R4 2 Q-Q6 or
Q-B7 Any 3 Q mates.
If 1 P-Q6 2 Kt-B3ch Any 3 Q mates.
If 1 KxKt 2 Q-Q6 K-R5 3 Q-Kt4
or QxPmate.

Four points.

No. 264.—By W. GEARY.

1 P-B3.

If 1 KxR 2 B-Kt7
If 1 BxR 2 P-K3
If 1 PxR 2 B-B5
If 1 KtxP 2 Kt x Kt
If 1 Kt other 2 R-K4
If 1 Other 2 R-Q5

One point.

Our solvers are unanimous in their praise of both these compositions, which are in every way excellent.

Solvers' list:—H. Ayre 8, G. C. Baxter 63, H. W. Baker 3, A. Bernstein 79, C. Blackwell 42, L. C. Brown 55, H. W. Bick 75, Horace Brown 10, L. Costello 2, G. W. Chandler 78, H. G. Driver 65, W. H. Dawson 68, E. Eginton 78, H. Elvin 7, S. D. Fresco 79, H. Greenwood 2, J. Goode 45*, H. Goodwin 68, H. P. Hosgood 5, Fred. Holmes 25, H. Horsley 26, R. Hurst 24, F. Ibbs 18, F. Knowles 43, H. Lawton 75, G. E. Moore 35, E. Ferrin 68, E. Roome 59, Jos. Rust 67, A. L. Sanders 75, R. G. Thompson 74, J. D. Tucker 60, E. Wasserman 29, H. Zaak 74.

FRENCH DEFENCE.

Played in the Anglo-American Cable Match:—

White.	Black.	White.	Black.
Mr. Atkins.	Mr. Barry.	Mr. Atkins.	Mr. Barry.
1 P-K4	P-K3	33 Kt-K5	R-Kt3
2 P-Q4	P-Q4	34 P-Kt5	B-Kt4
3 Kt-QB3	Kt-KB3	35 B-Kt4	B-R3
4 B-Kt5	B-K2	36 R-B7ch	K-K1
4 P-K5	KKt-Q2	37 B-Q7ch	K-Q1
6 BxB	QxB	38 Kt-B6ch	K-B2
7 Kt-Kt5	Kt-B1	39 BxKtch	KxB
8 P-QB3	P-QR4	40 Kt-K7ch	K-Kt1
9 Kt-QR3	P-QB4	41 R-B6	R-Kt1
10 Kt-B2	Kt-B3	42 Kt x QP	P x P
11 P-hB4	Kt-Q2	43 Kt x P	K-R2
12 Kt-B3	R-QKt1	44 R-B2	R-R2
13 B-h2	P-QKt4	45 R-B4	R-QKt2
14 Castles	P-Kt3	46 Kt-Q1	P-B6
15 Kt-K3	P-QR4	47 Kt x P	R x P
16 P-Kt4	B-R3	48 R-B2	R-Kt5
17 P-B5	P-B5	49 R-Q2	R-B5
11 Q-Q2	Kt-Kt3	50 Kt-K2	R-R5
19 Q x KP	P x P	51 K-B2	B x Kt
20 Kt-Kt2	K-Q2	52 KxB	R-K6
21 Kt-Kt5	QR-KB1	53 K-B2	R-KR6
22 R-B6	Kt-Q1	54 K-Kt2	R-R6
23 QR-KB1	P-R3	55 P-Q5	K-Kt2
24 Kt-B4!	R x R	56 P-Q6	K-B1
25 P-R	Q x P	57 P-Q7ch	K-Q1
26 QKt x KP	Q-K2	58 P-KR4	R-QB6
27 Kt x Kt	Q x Kt	59 K-R2	R-B2
28 Q x Q	P x Q	60 K-Kt3	R x P
29 Kt-B7	R-QKt1	61 R x Rch	K x R
30 B-Q1	P-Kt5	62 P-R4	K-K3
31 Kt x P	Kt-B1	63 K-Kt4	K-B2
32 Kt-B7	K-K2	64 K-B4	Resigns.

PRIMULAS for producing a winter display should be sown now.

HOBBIES.

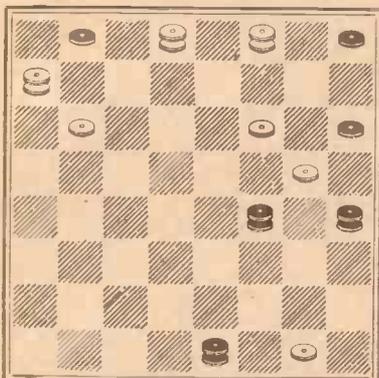
Draughts.

Contributions, &c., must be addressed to:—"Draughts Editor, HOBBIES, 12, Paternoster Square, London, E.C." Replies cannot appear under three weeks.—June 1st, 1907.

PROBLEMS.

No. 919.—By J. H. JONES, Capel.

BLACK.

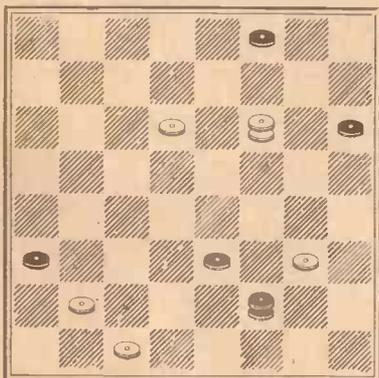


WHITE.

White to play and win.

No. 920.—By T. BOARDMAN, Farnworth, Bolton.

BLACK.



WHITE.

White to play and draw.

SOLUTIONS.

No. 918.—By J. F. ROBERTS.

Black: 7, 13, 15, 16, 18, 24. King: 32.

White: 6, 9, 21, 22, 25, 30. King: 1.

22 17	29—22	6 2	32—23
13—29	21 17	13—6	1 26
30 25	22—13	2 27	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 April are awarded as follows:—"Stroke" (No. 906), S. E. Cousins (Northampton). "End-game" (No. 905), J. London, Bow. Highly commended:—"Stroke" (No. 910) by T. Lavin, and "End-games" (No. 907) by J. George.

GAMES.

The following game is a fine specimen of the late J. H. Strudwick's brilliant style of play, in which he brings up the celebrated "stroke" won by Mar, the Australian champion, from Wylie, but with colours reversed, and from a different opening, thus springing a great surprise upon his opponent, a London amateur:—

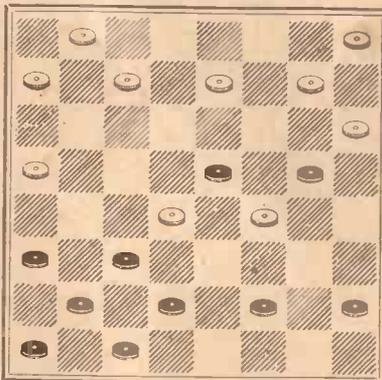
OPENING.—"AYRSHIRE LASSIE."

Black: STRUDWICK.

White: AMATEUR.

11—15	10—14	6—15	15—18	2—7
24 20	27 24	22 17	24 19	81 27
7—11	14—23	9—13	1—6	13—17
23 18	26 10	17 14	19 15	30 26

And the diagram shows the position:—



Black to play and win.

CONTINUATION.

7—10	3—19	18—23	11—16	8—31
14 7	21 14	27 18	20 11	B.wins

TO CORRESPONDENTS.

T. LAVIN.—Your 3 v. 3 ending is neat and instructive, and shall appear shortly. The idea is not new, however.

CORRESPONDENCE PLAY.—Replies to Mr. Alter's request for an opponent have been received, and forwarded, from F. C. Spratt, C. Tully, W. E. V. Petit, D. Robertson, C. E. Bridson, J. Knight, and R. Glasson. Mr. Alter will have his selection, and we will then put the others in communication with each other.

Problems in competition received from A. J. Moore (London), J. Wilson (West Calder), W. Bleasdale (Lancaster), and W. E. V. Petit (Guernsey).

A. GLOVER (Birkenhead).—The problem submitted by you has three "key" moves, viz., 23—19, 14—9, or 18—15. You can improve on this.

MR. CHARLES GOFF, Maidstone, in acknowledging his prize, writes:—"I might say, *en passant*, that I have won the first prize in our Club, although I was handicapped one man in two of the four games played in each round. I attribute my success solely to the Problem Solving Tournaments in HOBBIES, the study necessitated by which has enabled me to see a 'wee' bit further in the games than my opponents."

Puzzles.

183.—CHARADE.

My first means to wager.
My second means in such manner.
My whole is a small Venetian coin.
What am I ?

184.—LITERARY PUZZLE.

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

SPINNY. KEEN. CART.
HEAD.

Answers to Last Week's Puzzles.

179.—WORD SQUARE.

T A L E
A R E A
L E G S
E A S T

180.—DOUBLE DIAGONAL PUZZLE.

S Y N T A X
B U R D E N
P A R S O N
S R
F U N N E L
S Y Z Y G Y
SURREY, SUSSEX

181.—DOUBLE ACROSTIC.

C OSMO S
H AR P
A RQUEBUS E
U NIO N
C ALORI C
E NSU E
R EINDEE R

CHAUCER. SPENCER.

182.—CURTAILMENT.

R O T A L
R O T A
R O T
R O
R

Home Pets Monthly Competition.

We offer a prize of 5s. to the reader of HOBBIES who sends us the most interesting and practical paragraph during June 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 in May is awarded to Miss A. E. Hunt, Danesbury, Warwick Road, New Barnet, Herts.

Why Stone Balls on Monuments Revolve.

WHY stone balls mounted as shown in Fig. 1 should revolve has always been a puzzle to monument builders. The rate of movement is very slow, probably less than one revolution in two or three years, but is always in the same direction—

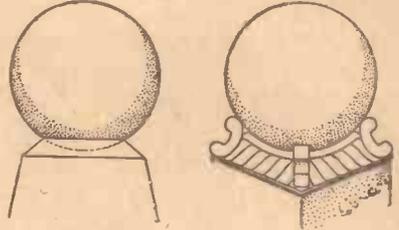


FIG. 1.

FIG. 2.

REVOLVING BALL AND REMEDY.

from northwest to southeast. A very plausible explanation of this phenomenon is given by a correspondent of the "Monumental News," who recommends the construction shown in Fig. 2 as a remedy for this trouble.

The explanation is based on the fact that a small amount of water leaks in between the ball and spherical cavity in which it rests, thus causing expansion and contraction, due to alternate melting and freezing, sufficient to lift the ball. In melting, the south-east side, which receives the morning sun, melts first and drops back on the die, losing a small fraction of an inch every time it freezes. When the side away from the sun melts it drops back, but does not get back as far as it was before freezing. This, it seems, is the best explanation, because a ball mounted as shown in Fig. 2 will not revolve, as it does not come in contact with the water.

Useful Hints.

The more volatile oils usually require a higher ignition temperature than those which do not vaporize so easily.

To make can varnish, dissolve 15 parts shellac, 2 parts Venice turpentine and 8 parts sandarac, all by weight, in 75 parts spirit, by weight.

To make a cheap fireproof wash dissolve 1½ lb. salt in 1 gal. whitewash.

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.

Publishing.—Communications respecting orders for copies, remittances, and all general business letters should be addressed, "HOBBIES, LIMITED, 12, Paternoster Square, London, E.C."

Contributions.—While every effort will be made to return unsuitable contributions if stamps for that purpose are sent with them, the Editor does not accept any responsibility for their loss. MSS. and drawings should be sent FLAT, not rolled.

Subscriptions.—HOBBIES, price One Penny weekly; by post, 2d. Twelve months, 8s. 8d.; Six months, 4s. 4d.; Three months, 2s. 2d. prepaid—to any part of the world. Binding Cases, with indexes, 1s. 3d., post free; separate index, 3d., post free.

THE EADIE TWO-SPEED

If you look up the Dictionary meaning of the word "compromise" you will find it given as:—
 "A settlement of a difference by mutual concessions."
 That is exactly what you, as a CYCLIST, are doing by a retention of that single gear.
 The difference lies between the gear you can push up any hill, and the one which you would like to use on the level and the downhill spin.
 The difference is wide—so you take the middle course—adopt a compromise—but there is really no necessity.
 The Eadie Two-speed gives you both the gears you need—one you can push up any hill, and one 23 % higher for the level and downhill spin.
 It's the "simplest and best of all variable gears," and you should write at once for the "LITTLE RED BOOK" which describes it fully.

Dept. H O,

**EADIE MFG. CO., LTD.,
REDDITCH.**

0460

Best of all. **SINGER CYCLES** Best of all.

In 1907 as in 1872—FIRST.



"SINGER" CYCLES.
NO HARD WORK
NO NOISE.

The Singer Perfect Oil Bath Case has eliminated all that

Write for Lists
Hobbies Dept.,
SINGER & Co., Ltd., Coventry.

"SINGER" CYCLES.
We fit our terms to your income.

No Cycle can be as good as a "Singer" at any lower price. Avoid rubbish.

and E. P. Terms,
LONDON,
17, Holborn Viaduct, E. G.





CYCLES, for nearly 60 years the Nation's choice.
£6 10 0. Pay as you ride.
 "Swift-Crabbe," Variable Gears, Coasters, &c.
 If you want a cycle we will meet you.
 Don't listen to the impossible. Write to day for lists and particulars of the
GREAT MOTOR CAR GIFT.
 DEPT. W45.
Swift Cycle Co., Ltd., Coventry.

TWO OF THE BEST.

Send for Hobbies Supplementary Photographic Catalogue.

HOBBIES No. 2 POST CARD HAND CAMERA.

This was the first Post Card Camera put upon the market, and is 'to-day the Cheapest, Simplest, and the Best



Takes Twelve Postcard Plates (5½ by 3½ inches).

Price 27s. 6d. By Post 28s.

DEFERRED PAYMENTS: Cash with Order, 5s. 6d., and TEN WEEKLY PAYMENTS of 2s. 6d. each. Particulars on Application.

SPECIFICATION:

CAMERA.—Substantially made, covered in Morocco grained Leatherette, with carrying handle.

LENS.—Rapid Double Periscope Lens, with Iris Diaphragm.

SHUTTER.—Time and Instantaneous with Speed Adjuster.

FOCUSSING.—Guide for objects distant 8, 15, 20, 24 feet and Infinity.

VIEW FINDERS.—For Upright and Horizontal Pictures.

PRICES FOR EXTRAS.

Three-fold Cyclists' Tripod	.. 4s. 6d.	By Post 4s. 9d.
Limp Cloth Carrying Case	.. 3s. 6d.	.. " 3s. 9d.
Developing and Printing Outfit for Post Cards	.. 6s. 0d.	.. " 6s. 6d.
Post Card Plates, Box of 12	.. 1s. 6d.	.. " 1s. 10d.

HOBBIES "NEW MODEL No. 4" HAND CAMERA.

The Movements in this New Camera have all been brought up to date, and it is now the most efficient Magazine Camera that can be purchased at the price.

TAKES TWELVE QUARTER PLATE:

Price, 35/- By post 35/6

Deferred Payments:—Cash with Order, 6s. 6d. and Ten Weekly Payments of 3s. 3d. each. Particulars on Application.

Specification.

CAMERA.—Made of well-seasoned Wood, covered in Morocco-grained Leatherette, Handle with Rings for carrying Strap.

LENS.—Rapid Double Periscope Lens, with Iris Diaphragm.

SHUTTER.—Single Auto Valve, giving three speeds.

FOCUSSING.—Helical Focussing Guide, for distances of 8, 10, 15, 24 feet, and infinity. Two View Finders.

FRONT.—Acts as Lens Cover, automatically locking shutter.

Prices for Extras.

Three-fold Cyclist's Tripod	.. 4/6	by post 4/9
Limp Carrying Case	.. 2/6	.. 2/9
Developing and Printing Outfit	.. 6/-	.. 6/6



Write for 1907 Supplementary Catalogue.

HOBBIES LIMITED, 12, Paternoster Square, LONDON, E.C.,

And at HOBBIES SUPPLY STORES.

SALE AND EXCHANGE.

IMPORTANT REDUCTION IN RATES.

NOTICE.—Private Advertisements will in future be inserted in these columns at the reduced rate of 6d. for the first 18 words or less, and 1d. for every 3 words after.

The rate for Trade Advertisements and Advertisements of Foreign Stamps will in future be 1/- for the first twelve words, and 1d. per word after. No Trade Advertisement accepted for less than 2/6.

NOTE—Advertisements offering Fretwork Designs cannot be accepted for this page.

Advertisements should be received not later than Monday morning for insertion in the paper published on the Thursday of the following week (Ten days later).

TRADE.

Are You in the Circle of Successful Business Men? If not, the Science of Salesmanship, as taught by the Dixon Institute, will lift you into it. It opens up new possibilities of success, develops personal talents, and increases earning power. This course furnishes the only thorough system of modern business education, and is equally essential to men of experience in every line of commercial work, and to young men just preparing to enter business. Write to-day for our valuable book, "The Science of Salesmanship," which may be worth hundreds of pounds to you. It is sent free.—Address, Dept. 16, Dixon Institute, 193 and 195, Oxford Street, London, W.

PRIVATE.

Cowboy coloured horse hair bridle with Mexican silver inlaid bit and spurs. Price, £5, or near offer; cost double, never been used.—Geo. F. Pettitt, 143, Wants Road, Maldon, Essex.

Cornet in case, two shanks, two mouthpieces, music holder, 25s., or near offer. Unbound Windsor, 1898-1903. What offers?—Hill, Ashley, Broom Hill Road, Ipswich.

Edison Standard Phonograph, cost £4 4s., with 36 records in record cases, £3 10s. lot, or nearest offer.—N. Scott, The Demeane, Londonderry, Ireland.

Exchange 26 in. Cyclometer-Pocket Pump, 30 foreign postcards, for hand camera, cycle lamp, or offer.—Goodison, 300, Camberwell New Road, London.

Exchange 5 in. by 4 in. Promo Stand Camera, Tripod, Dark Slide, Victor Shutter and Outfit, cost £4, for Edison Standard Phonograph or good violin.—McCormack, 2, Shapter Street, Topeham, Devonshire.

Exchange Red-breasted Cockatoo and cage and air gun for fret machine. What offers for chest developers, full size cricket bat and melodian and case, all nearly new?—Norris, 28, Almeida Street, Islington, London.

Healthy fancy mice, various colours, 6d. a pair. Pair with wheel-cage, 1s. 6d.—H. Gilderson, Bedford Gardens, Ilford.

Special Offer.—Choice early Tomato Plants, 1s. 3d. per doz. post free. Send for sample dozen.—Mrs. Burrows, Strabane, Ireland.

Testimonials copied in good handwriting, 1s. a dozen. Penmanship and Arithmetic taught. Copying sheets and instructions respectively, 1s. weekly each subject.—"Tutor," 90, Radford Road, Leamington Spa.

Well built model Yacht, in perfect condition; length, 39 in., beam, 12 in., cutter rigged, £3, or offer; also 1/2-plate Hand Camera, Case Magnifiers, and complete Outfit, £2.—Morsman, 30, Hewer Street, London, W.

STAMP ADVERTISEMENTS.

"Do you want Newfoundland Stamps? If so write us."—International Correspondence Club, St. John's, Newfoundland.

Free, rare Mint set of German Officials. Approval sheets, 50 per cent. discount. Collections wanted.—London Philatelic Co., 69, Hatton Garden, E.C.

75 different, including Angola, Bulgaria, British Guiana, Bolivia, Cyprus, Cuba, Costa Rica, Ceylon, Deccan, Egypt, Haiti, Jamaica, Malta, Paraguay, Salvador, Tunis, Victoria, price 3d.—Edward Roberts, 82, Bluebell Hill, Nottingham.

T W A N K S ! ! !

A novel competition for stamp collectors. Re-arrange the above letters so that they spell a man's name and send me your solution of the puzzle with a request to see my approval sheets, and I enclose a stamp for postage. If you are correct I will send you a splendid packet of stamps FREE, including Orange River Colony, Transvaal (obsolete), Malta, Paraguay, etc., and a rare (folded per) Japanese postcard over 80 years old.

H. C. WATKINS, "Maitlands," Granville Road, BARNET.

WORK FOR ALL.



We give a Nickel-Silver Time-keeper or useful Umbrella, suitable for Lady or Gent, or a Rolled-Gold Ring, FREE, to any person selling 48 Penny Pictorial Postcards within 21 days. You can sell them in an hour. Send name and address—postcard will do.



BRITISH FINE ART CO. (Dept. 65),

115, Strand, London, W.C.

OAK PICTURE MOULDINGS, &c.

11 in., 8d., 14 in., 10d. per 12 ft. Length. All Kinds Fancy Moulds. Send Two Stamps for Samples. Complete Catalogue of Mouldings, Pictures, &c., Three Stamps

W. WATTS, 159, Eccles-New-Rd., Salford.

5/- Monthly £3 10s. GIGANTIC FACTORY SALE. Offered. 5000 new "Climber Tyred" F.W. Cycles for £3 15s. by instal. mens; or, cash with order, £3 10s. Worth double. Free on rails Norwich; approval. Send no money. Send Post Card for full particulars.—Derehamroad Cycle Co., Norwich.

BICYCLES

Delivered on Firstpayment of

Write for Price List free

5/-



GEO. FRANKLAND
35 RAILWAY ROAD
Blackburn.

LUXITE (Reg.)

MAKES SOLDERING SIMPLE.

IT'S A PASTE with which dirty and even painted metals can be soldered without cleaning. Does not corrode, can't be split, and is economical. The large Engineering Firms use it. It will surprise you. Sold at Hobbies Depots, and by most Ironmongers. In 6d., 1/- and 2/- tins.

Auto Controller & Switch Co., Dept O, Bermondsey, London.

HOBBIES.



I am the only dealer in the world who sells Rovers, Coventry-Challenge, Triumphs, Humber, Progress, Premiers, Centaurs, Swifts & Singers on easy payment terms at Pounds below Makers' and Agents' cash prices. Rudge-Whitworths from £3. No bondsmen or security required. A High-Grade Coventry-made Cycle £3 19s. cash or from 5s. Monthly. Sent on approval on receipt of a small deposit. Twelve Years' Guarantee given. Write for Free Illustrated Lists TO-DAY
EDWARD O'BRIEN, Ltd.
 The World's Largest Cycle Dealer, Dept. H 9 COVENTRY.

O'Brien's

IF YOU WANT A GOOD CYCLE

Write to ME. There is no cheapness (whatever the price) in an inferior cycle. I sell only the best Coventry-made Machines.



FROM MONTHLY. PREMIER, ROVERS, COURT ROYALS, TRIUMPHS, SWIFTS, HUMBERS, CENTAURS, RAGLANS, and Secondhand Machines. SINGER, &c.

A HIGH-GRADE COVENTRY CYCLE. from £4

Approval and 12 Years' Guarantee. Easy payments without publicity. Write to-day for Free Lists and advice to **GEORGE KING**, Coventry's Great Cycle Dealer, COVENTRY.

WHY PAY MORE FOR CYCLES NO BETTER ?

Compare Mead Cycles with any other makes at twice the price. Despatched from the factory on approval to anyone on ten days' free trial. 58 models to select from.

MEAD FLYERS are made of the best British material, by the best British mechanics, in the best factories in Coventry and Birmingham, and are guaranteed five to ten years. Designed to enhance the ease and comfort of the rider. Latest improvements, Coaster Hubs, Variable-speed Gears, Best Makes of Tyres, Grabbe Brakes, &c. Ridden and recommended by members of the R.L.C., H.M. Army, Home and Colonial Services.

From £3. 10. OR FROM 5/- Packed Free, Carriage Paid. MONTHLY. Unsurpassed quality, unapproachable prices.

750 Shop Solled and Second-hand machines From £1. 10. of all makes, good as new, to clear.

DO NOT BUY a cycle until you see our superb art catalogue, the finest ever published. Post Free upon application, and learn our astonishingly low prices, wonderful values, and liberal terms. We will convince you that we can sell you a better cycle for less money than any other firm.

TRADE TERMS to a few riders in each district who apply at once. Large profits easily made in spare time. Write or call to-day. Open evenings till 9. Liverpool: 27, Paradise Street. London: 19, Charing Cross Road. Glasgow: 165, Buchanan Street. Dublin: 167, St. Brunsuick Street. Manchester: 165, Deansgate. Newcastle: 28, New Bridge Street.

MEAD CYCLE CO. Dept. 38D.



ROYAL AJAX

With Clincher Tyres.

From 5/- per Month.

CARRIAGE PAID.

Prices from £2 10s. upwards.

Write to-day for our magnificent, ART CATALOGUE, post free. BEST AND CHEAPEST FIRM.

BRITISH CYCLE MFG. CO. (1901) Ltd., (Dept. G.) 1 & 3, Berry St., Liverpool.



For Advanced Work in the Handicrafts

BUY THIS MAGAZINE,

2d. per month from all Newsagents.

The Best Magazine of Its kind.

Wholesale Publishers: Perovial Marshall & Co., 26-29, Poppins Court, FLEET STREET, E.C.



START WITH A GOOD DEVELOPER AND STICK TO IT.

LOCKYER'S Metol and Hydroquinone

is the best all-round Developer for Plates, Films, and Gaslight Papers

Is simple to use and most economical.

6d., 1/3 and 2/- per bottle.

Insist upon having "LOCKYERS."



Speeder

CYCLOMETERS are INDISPENSABLE to all CYCLISTS.

DID you ever stop and consider what a reliable Cyclometer will do for you? It will inform you of just the amount of work your wheel is doing; how many miles a tyre wears out; what amount of exercise you are getting. It will tell you how far it is from one town to another, or from one place to another. Literature of—
MARK & Co., 6, City Road, London, E.C.

HOBBIES.

Price 1/6 post free.



THE SEVENTH EDITION OF THE UNIVERSAL STANDARD POSTAGE STAMP CATALOGUE FOR 1907.

420 pages, 9000 Illustrations, includes all postage stamps issued to December, 1906, with price of each named and used. This is the latest and most up-to-date catalogue published, and the only one in the simplified form which is suitable for the General Collector.

THE "STANDARD" POSTAGE STAMP ALBUMS

are the latest and most up-to-date published, and are compiled and illustrated on a different system to any other. Spaces are provided for all stamps issued to date of publication, every space being numbered to correspond with the number of the same stamp in the catalogue.

Full details and prices of these, as well as the **PARAGON ALBUMS** with interchangeable leaves, will be found in the advertisement pages at the end of the catalogue, or as a separate booklet, which together with 68-page price list of Packets and Sets of Stamps, may be had free for the asking.

Monthly Novelty List, 6d. per annum, post free.
WHITFIELD, KING & CO., Ipswich.

"H. Elephant"

Packet, 4D.

Post Free
50 different
Stamps.

Including Liberia (Elephant), Perak (Tiger), Uruguay (Bull), Borneo (Lion), Labuan (Stag), Guatemalan (Horse), O.R.C. (Koodoo and Gnu), Ecuador, China (dragon), Guiana (ant-eater), Cape, India, Colombia, unused Tolmie &c., &c., &c. Nothing "given away." Send to us, and get money's worth; do not expect something for nothing.

Send for our 72 page Price List. 150 Illustrations.
Thousands of Bargains.

ERNEST WOOD & CO.,
CHORLTON-CUM-HARDY, MANCHESTER.

DO · HURRY · UP,
WHY · DON'T · YOU · RIDE

A
Raglan
LEAST FRICTION · LONGEST WEAR

2/6

Secures the
RAGLAN UNIVERSAL,
and the Balance is payable
monthly.

We send a useful **POCKET-BOOK**
Catalogue **FREE** to all enquirers.
Write now for particulars.

RAGLAN CYCLE CO.,
LTD.,
Dept. H.,
COVENTRY.



EIFFEL TOWER

Delicious Light Buns and
Cakes are made with certain success
by using Eiffel Tower Bun Flour.

CAKE MAKING MADE EASY

Lemon, Almond and Vanilla, 1d. and 3d.
pkts. of all Grocers. Save Eiffel Tower
Labels for 10s. 6d. picture free.

BUN FLOUR

THE FAMOUS

A Good Cycle
is a
Good Investment
and we should
like to tell you
how to invest
your money to
the best advan-
tage. Send for
descriptive Cata-
logue to Dept. 7.

Our range
of Models offers
the best selection
in the world.

Prices
From **£6 5 0**

to **£16 16 0**

or at your own terms,
from 8/- per month,
guaranteed for Fifo
Years and sent on
free approval.

TRICYCLES
from
£12 12 0



JAMES

THE JAMES CYCLE CO., LD., BIRMINGHAM.
LONDON: 140, Southampton Row, W.C.
LIVERPOOL: 5, Siator St., Bold Street.
BIRMINGHAM: Broad Street Corner

NATURAL HISTORY



We keep in stock
everything required
by collectors of Birds'
Eggs, Insects, Plants,
&c.

CATALOGUE 100 PAGES
POST FREE.

Watkins & Doncaster
36, Strand,
LONDON, W.C.

HOBBIES.

NOW
READY.

CAMERAS
FOR
PLEASURE

Hobbies
LTD

CAMERAS
FOR
PROFIT

NOW
READY.

SUPPLEMENTARY CATALOGUE OF Photographic Apparatus, etc.

The Hobbies range of Stand Cameras, all of which have been re-modelled, includes:—

Royal — Imperial — Triple Extension — Coronation — Studio.

The Hobbies Stand Camera Outfits comprise Camera, Tripod, Double Dark Slide, Rapid Rectilinear Lens, and Roller Blind, Time and Instantaneous Shutter.

Cheap & Reliable Hand Cameras. Camera Outfits from £1 1s to £10. Post Card Cameras.

HOBBIES LIMITED, 12, Paternoster Square, London, E.C.

“Westminster” Hand Camera & Outfit.

The “Westminster” Hand Camera, complete with No. 1 Quarter-Plate Developing and Printing Outfit. Price 10s. By Post, 10s. 6d.



Takes Twelve $\frac{1}{4}$ -Plates.

TESTIMONIAL.

Mr. CHARLES E. COLLIER, OF SHAWLANDS, GLASGOW, writes:—“I am an amateur, and when I bought the ‘Westminster’ Camera knew little or nothing about Photography. I purchased it as an experiment, and was at first somewhat doubtful as to its possibilities. I soon found, however, that it was an instrument which, with the exercise of a little care, was capable of turning out really excellent work. At $\frac{1}{11}$ the lens gives good definition in ordinary lights. In subdued light sharp definition is obtained to the edges of the plate. The shutter and the changing arrangement work perfectly, and I never had the slightest trouble with them. How you can manufacture the Camera for the money and make a profit is more than I can understand. The purchaser of one of your ‘Westminster’ Cameras gets splendid value for his money.”

Specification.

CAMERA.—Well-made, covered in Leatherette.
LENS.—Single Achromatic View Lens.
SHUTTER.—Time and Instantaneous.
FINDERS.—For Upright and Horizontal Pictures.

Prices for Camera and Extras.

CAMERA, with Plates, Paper, and	7s. 6d.	By post	8s. 0d.
Photographic Chemicals	2s. 9d.	No. 1 Developing & Printing Outfit	3s. 0d.
Limp Cloth Carrying Case	2s. 6d.		2s. 9d.

HOBBIES LIMITED, 12, Paternoster Square, LONDON, E.C.

P.O.P. Glossy Postcards.

Mr. James W. Morrison, of Tongue, Sutherlandshire, writes:—“I am very pleased with the excellent quality of your P.O.P. Postcards, and their cost puts it in the power of one, for the first time in my experience, to sell postcards at a profit.”

Packets of 100, Price 2s. 6d., or post free for 2s. 9d.

Packets of 50, Price 1s. 6d., or post free for 1s. 7½d.

HOBBIES LIMITED, 12, Paternoster Square, LONDON, E.C.,

AND AT THE HOBBIES SUPPLY STORES.

GAMAGES

THE WORLD'S LARGEST, BEST,
& CHEAPEST
ATHLETIC OUTFITTERS

Everything for Tennis



RACKETS.

Gamage's "Champion," clear gut, well strung, mahogany handle, 6/9.

Gamage's "Referee," best clear gut, perfect stringing, walnut handle, 9/0.

Gamage's "Special Club," double strung in centre, red and white gut, and improved long head, octagon handle, 10/6.

The "A. W. G.," a splendid racket, with cane and ash frame, giving great strength, suitable for tournaments or presentation, 14/8.

BALLS.

The "Gamage," a ball we are proud of. Best quality Waterproofed Cloth, Undersewn, Guaranteed Regulation Size and Weight, and equal to any Ball on the market. Each stamped with signature and year. 10/6 per dozen. 123/- per gross. Post free.

NETS.

Patent Steam Tarred Waterproof, with linen top band, 42 ft. by 34, 6/9.

Superior ditto ditto, 42 ft. by 34, 8/9.

Ditto, fitted with linen band and galvanized steel head-line, 42 ft. by 34, 10/6.

Ditto, very superior, extra heavy, 42 ft. by 34, 14/6.

Patent Steam Tarred Net, guaranteed faultless, fitted with best quality White Web Band, extra stout Copper Line, with hempen end, and pin, packed in wood box complete. Price, carriage paid, 17/8.

PRESSES.

Improved Racket Press, grips at eight points, hard wood, with nuts and screws, 1/6.

Polished Mahogany or Walnut ditto, with nuts and screws, 2/-.

Triangle Press, to hold 2 Rackets, 2/6.

TENNIS SHOES AND BOOTS.

Shoes, real White 'Duck, Rubber or Hempen Soles, sewn, 5/6.

Boots, Doeskin tops, stout rubber soles, 10/6

Poles, Lawn Markers, Registers, Flannel Trousers, Shirts, Caps, Club Ties, Belts, and everything for the Game and the Player at Gamage Prices.

SPECIAL ESTIMATES FOR CLUBS' OUTFITS.

Our money-saving Sports List sent free anywhere.

A. W. GAMAGE, Ltd. HOLBORN, LONDON E.C.

Rudge-Whitworth Britain's Best Bicycle



10
YEARS
GUARANTEE



Now ready and Post Free,
the splendid 64 page Art Catalogue
of the 81 New Models from £5,
packed free and carriage paid. No
extra charge for Easy Payments.

Rudge-Whitworth, Ltd.,
Dep. 325, Coventry.

KEATING'S

UNRIVALLED
FOR
PREVENTING
MOTH

NO SICKENING SMELL.
ABSOLUTE PRESERVATIVE:
ONLY COSTS A TRIFLE.

Tins 3d., 6d. and 1s.

WEST'S PATENT WEEDER SAVES WEARY WEEDING.



for a lady can uproot hundreds of weeds per hour by simply pressing the tool over the weed, and as one weed forces out another, they are delivered automatically without handling. Crowded beds can be quickly weeded without damage to plants, as with a hoe. Lawns made like velvet, without manure, etc., as the small holes, aerating the soil, are as advantageous to grass as digging is to plants. Made of best steel, altogether 32in. long, so, being no stooping, it is a pleasure to use. Cannot get out of order, and costs but the price of one gallon of weed-killer, yet saves hundreds. 7/6 (postage 4d.) From all Seedsmen and Ironmongers. Also ask for Raffiatape and "Weon" Insecticide.

C. E. WEST, HIGHAM HILL, LONDON, N.E.
LARGE ILLUSTRATED CATALOGUE FREE.

WRITE

at once for a box of that
interesting material,

HARBUTT'S PLASTICINE.

It makes a splendid Hobby.
You are certain to be pleased,
and sure to feel that you have
done

RIGHT.

The Complete Modeller,

Price 2/6, Post Free 2/10,

from HOBBIES DEPOTS, or

W. HARBUTT, A.R.C.A.,

60, Bathampton, BATH.

FRETWORK DESIGNS.

Hobbies New Books of Beautiful Patterns. Twelve Sheets for 1/-
We have just published Two New Books of Fretwork Designs, each containing Twelve Sheets of Patterns not hitherto published in this form. The Books measures 15 ins. by 10 ins. and both Series are entirely different.

SERIES A

Includes C.D.V. Photo Frame, Chippendale Shelf, Toast Rack, Japanese Bracket, Pipe Rack or Bracket, Match-holder, Picture Post Card Frame, Chinese Letter Rack, Wheelbarrow, Inkstand, Two Thermometers, "Home, Sweet Home" Motto, and "East, West, Home's Best" Motto. Price 1/1, Post Free.

SERIES B.

Series B, includes C.D.V. Photo Frame, Watch Stand, Key Rack, Salt Carriage, Bookshelf, Chinese Corner Bracket, Indian Thermometer, Two Christmas Brackets, Scent Basket, Inkstand, Match Holder, Stamp Box, Japanese Pipe Rack, "Watch and Pray" Text, and "Home, Sweet Home" Motto. Price 1/1, Post Free.

HOBBIES LIMITED, 12, Paternoster Square, London, E.C.

Agents for Hobbies Limited.

FOR the convenience of Fretworkers in large towns, we have appointed leading Ironmongers as our Official Agents for the Sale of all the Hobbies Specialities. A list of the Agents already appointed is given below, and we shall from time to time add to their numbers.

HOBBIES AGENTS:—

Aberdeen.—Mr. Jas. Mutch, 21, Broad Street.
Aldershot.—Messrs. Alderton and Sumpster, 8, Union Street.
Barrow-in-Furness.—Mr. J. Underwood, 67, Dalton Road.
Blackburn.—Mr. Robert Howson, 68, Darwen Street.
Blackpool.—Messrs. Cox & Co., 143, Church Street.
Bradford.—Messrs. T. Underwood & Co., 9 and 10, Manchester Road.
Bristol.—Mr. Thos. J. Gardner, 3A, Narrow Wine Street, and 15, Lower Castle Street.
Burnley.—Messrs. D. & J. Dawson, 14, Yorkshire Street.
Cambridge.—Messrs. Crossman's, 26, Mill Road.
Canterbury.—Mr. T. D. Goodman, 33, Burgate Street.
Cardiff.—Mr. John Hall, 31, Morgan Arcade.
Chelmsford.—Messrs. B. H. Harrison & Son, 65, High Street.
Chiswick.—Messrs. Lucas & Co., 390, High Road.
Coatbridge.—Messrs. James Barton & Co., 62, Main Street.
Croydon.—Mr. L. H. Turtle, 6, Crown Hill, and 53, North End.
Doncaster.—Mr. G. P. Preston, 37, Station Road.
Dover.—Mr. E. F. Bockham, 8, Worthington Street.
Folkestone.—Messrs. Jones Bros., 123, Dover Road.
Gloucester.—Messrs. Parsons Bros., 34, Eastgate Street.
Hull.—Mr. E. A. Hirst, 52, New Crown Street.
Hamilton.—Messrs. Robert A. Paton & Son, 36, Cadzow Street.
Hastings.—Messrs. L. W. Lindsley & Co., 35, George St.
Huddersfield.—Mr. John Wainwright, 74, Buxton Road.
Ilkerton.—Messrs. Haynes and Haynes, The Miners Stores, Bath Street.
Inverness.—Mr. J. Chisholm, 14, Falcon Square.
King's Lynn.—Messrs. Foster and Bird, Ltd.
Leicester.—Mr. Frank Berry, 3, Loseby Lane.
Lincoln.—Mr. G. Musgrave, Free School Lane.
Liverpool.—Messrs. J. J. Harley, Ltd., 37, Manchester Street, and 27, Old Haymarket.

Luton.—Mr. W. J. Barrett, 25, Park Square.
Malstone.—Messrs. Denniss, Paine & Co., 61, High Street.
Margate.—Mr. G. E. Houghton, 19, Fort Road.
Merthyr.—Mr. E. M. Thomas, 18, Park Place.
Nelson, Lanes.—Messrs. J. & J. Foulds, 55, Leeds Road.
Newark.—Messrs. Richmond and Son, Boar Lane.
Newport.—Mr. John Hall, 200, Dock Street.
Oxford.—Messrs. Foort and Goundrey, 47, Cornmarket St.
Pontypool (Mon).—Mr. W. A. Pritchard, George Street, Arcade (opposite Castle).
Portsmouth.—Messrs. Osborn Brothers, 4, Edinburgh Road.
Preston.—Mr. J. Southworth, 95, 96 and 97, Moor Lane.
Reading.—Mr. W. J. Sarjent, 44, West Street.
Rochdale.—Mr. Walter Dean, 96, Yorkshire Street.
Sheffield.—Mr. J. B. Hindley, Haymarket and Norfolk Market Hall.
Southampton.—Messrs. H. Osborn & Co., 9, High Street.
South Shields.—Mr. R. Clark, 4, Church Row.
St. Helens.—Mr. W. M. Kerr, 26, Westfield Street.
Sunderland.—The Electric and General Stores Co., 16, Bridge Street.
Swansea.—Mr. John Hall, 24 and 25, High Street, Arcade.
Walsall.—Mr. E. Lloyd, 23, Arcade.
Wigan.—Mr. Thos. J. Clepham, 24, Standishgate.
Woolwich.—Messrs. J. & C. E. Pearson, 7 and 9, New Road.
York.—Mr. J. H. Shouksmith, 59, Mickelgate.

Agents for Cape Town and District :
Messrs. James Wylie and Sons, 62, Strand Street, Cape Town, Cape Colony, South Africa.

HOBBIES FACTORIES, ENGINEERING WORKS, AND SAW MILLS :—Dereham, Norfolk.

CENTRAL LONDON DEPOT :—12, Paternoster Sq., E.C.
LONDON HORTICULTURAL DEPOT :—17, Broad St. Place, E.C.

Hobbies Supply Stores:—

LONDON, 166, Aldersgate Street, E.C.
LONDON, 153, Bishopsgate Street Without, E.C.
LONDON, 79, Walworth Road, S.E.
GLASGOW, 326 and 323, Argyle Street.
MANCHESTER, 193, Deansgate.
BIRMINGHAM, 2, Old Square.
LEEDS, 21 and 22, Vicar Lane.

Actual
Size 
of Tube.



Actual
Size
of Tube.

HOBBIES LIQUID GLUE For FRETWORK and Everything Else.

Collapsible Tubes as above, 1½d. each ; Four Tubes for 6d., or Post Free for 7d.

NOTHING can be simpler and yet more effective than Hobbies Liquid Glue. This is made up in neat Collapsible Tubes. It has been specially manufactured for the use of Fretworkers who rarely need a large quantity, but who are constantly requiring a small touch to complete a simple fixture. The Glue is equally useful as a cement for China, Earthenware, Leather, etc., etc.

Four Tubes (size as illustrated) may be had for 7d., post free. (Single Tubes, 1½d. each; post free for 2½d.)

HOBBIES LIMITED, 12, Paternoster Square, London, E.O.

HOBBIES!

WHITEWOOD PANEL.
No. 614.



Size 8 in. by 6 in.
10d., Post Free 1s.

WHITEWOOD PANEL.
No. 611.



Size 8 in. by 6 in.
10d., Post free 1s.

POKER WORK.

Hobbies New Catalogue of Art Wood Articles for Poker Work, Relief and Wood Carving, Marqueterie Work, Inlay Wood Staining, etc., also of Complete Poker Work Outfits and all Sundries, is now ready.

Post Free for One Penny.

HOBBIES LIMITED, Dereham, Norfolk.

And at all the Hobbies Supply Stores,

A WONDERFUL FRETWORK

Overmantel.

Hobbies Special Fretwork Design
No. 3. Price 7d. post free.

FRETWOOD.—Special Parcel of Satin Walnut, $\frac{1}{4}$ in. thick, with suitable wood for Overlays, price 10/6.

MIRRORS.—Sets of Four Bevelled-edge Mirrors, comprising three for the top portion and one Silver Plate Mirror (size 20 ins. by 15 ins.), framed complete in Reeded Frame of Solid Satin Walnut, may be had for 13/6 per set complete.

STEEL SUPPORTS.—Flat Steel Bars (as recommended in instructions), may be had for 1/- per pair.

As the above goods are too heavy to be sent by post, they will be sent by rail, the carriage being paid on delivery by receiver. In ordering, the name of the nearest Railway Station must be given.

HOBBIES LIMITED,
12, Paternoster Square, London, E.C.,

And at all the Hobbies Supply Stores.



Size, 50in. x 40in. x 6in.

HOBBIES CORONATION FRETWORK OVERMANTEL.

(Special Design No. 11.)

Price of Design, 7d., post free.

Cost of Making.

PARCEL Satin Walnut and Whitewood, with Mouldings, 3/3; post free, 3/10. SET of Six Royal Medallions and Emblems, 2/1, or post free for 2/2 per Set.

This makes an exceedingly cheap as well as a very handsome Overmantel.



Size 33½ ins. by 17 ins.

HOBBIES LIMITED,
12, Paternoster Square, London, E.C.

BICYCLES.

Frames superbly lined
Green and Gold, WEST-
WOOD Wheels, plated
and centres coloured.

£5 : 5 : 0.

HIGH GRADE IN EVERY DETAIL.
FIRST GRADE TYRES.

Two Brakes (Inverted
or Roller Levers), Ball
Free Wheel, Steel Chain
Wheels, 1/8-in. Chain.

HONESTLY BUILT, ACCURATELY DESIGNED, SPLENDIDLY FINISHED.

Complete with Fine
Plated Lamp, Bell,
Spanners, Oil Can, and
Repair Outfit.

PACKED IN CRATE (free).
CARRIAGE PAID.
FOUR YEARS' GUARANTEE.
TEN DAYS FOR APPROVAL.

I HAVE SOLD
THOUSANDS TO THE
COMPLETE SATIS-
FACTION of the BUYERS

Call at any Hobbies depot in London, Glasgow, Leeds, Manchester, or Birmingham, and inspect sample which is exhibited by favour, or write me for Photo, full specifications, and 48 PAGE BOOK OF TESTIMONIALS FROM RIDERS IN EVERY PART OF GREAT BRITAIN.

Every Machine is made in my own factory.

MONTHLY PAYMENTS WHEN DESIRED.

GEORGE BEATSON, Lion Cycle Works, 82, Moseley St., BIRMINGHAM.
NO AGENTS OR MIDDLE PROFITS. DIRECT FROM WORKS ONLY.

"For the Blood is the Life!" ; therefore keep it pure.

CLARKE'S BLOOD MIXTURE

THE WORLD-FAMED BLOOD PURIFIER.

FOR clearing and clearing the blood of all impurities from whatever cause arising, "Clarke's Blood Mixture" cannot be bettered. It has over 40 years' reputation, and is to-day more popular than ever, the reason being undoubtedly because it is recognised throughout the world to be the only safe, thorough and lasting remedy for Eczema, Scrofula, Scurvy, Bad Legs, Ulcers, Abscesses, Bolls, Pimples, Blotches, Spots, Sores, Eruptions of every kind, Blood Poison, Rheumatism, Gout, etc. Clarke's Blood Mixture is pleasant to the taste, and warranted free from anything injurious to the most delicate constitutions of either sex.

CURES PERMANENTLY

THOUSANDS of Testimonials have been received from all parts of the World. Mr. John Taylor, of 24, Riverside, Merthyr Tydfil, writes:—"Gentlemen, it is with great pleasure I add my testimony to the wonderful efficacy of Clarke's Blood Mixture in curing a very bad leg, after several months' hospital treatment; applications of locally-made ointments, and an extended trial of a much-advertised remedy. I have delayed writing this, but as two years have now elapsed, there cannot be any doubt as to the permanency of the cure, and since then I have used it for a poisoned finger with like results."

SKIN AND BLOOD DISEASES

OF EVERY DESCRIPTION.

Of all Chemists and Stores, 2/6 per bottle.

BEWARE OF IMITATIONS.