

Simple techniques for scenery

THIS ARTICLE is the first of a series of three intended to show readers the why and wherefore of scenery construction. They will cover every facet of scenery construction including hillmaking, treemaking, roadmaking, embankment construction, track ballasting, bridge construction, and many other subjects. I will give, wherever possible, a choice of several different techniques, so that you may employ the method that suits your particular needs best.

This instalment deals with typical construction methods involved in making hills, slopes, and other types of rise. Figures 1-7 show the sort of embankment formed by different qualities of ground. Fig 1, for instance, shows the flat embankment found where ground composed of seeded loam is predominant. A shale cutting is illustrated in fig 2; this type of cutting is usually grassless, with the exception of an occasional tuft found near the crest. Rock of this nature tends to jut out in flat, even layers, and may best be modelled by slicing plaster that is almost dry with a sharp knife. The hollowish cliff shown in fig 3 is usually a yellowish colour, with grass growing in occasional tufts on the embankment. This material is stiff clay, and is never used to form steep banks because of its tendency to slip. Fig 4 gives an example of an excavated cutting, which is usually seen as high, sheer cliffs, the cutting having been hewn from the solid rock. Cliffs such as that shown in fig 6 are prone to landslips, due to the nature of the soil, and a result of such a landslide is illustrated in fig 5. The embankment shown in fig 7 is the sort on which trees are likely to grow, and is the type of embankment which may well be seen on many a country line.

Give it depth

A hill placed at the rear of the board, preferably with a smaller hill, or slope, at the front will give depth to a scene, and will make the track in the centre look longer. There are many other situations where there should, or should not be, hills. A trap to avoid is the placing of a high hill at ninety degrees across a baseboard. This will reduce the apparent width of your baseboard and destroy any illusion of spaciousness you may have been trying to create. Hills are permissible at the ends of baseboards under special circumstances. One is that the surrounding scenery is of the same height and character, and the other that a hill in this position must be built to cross the baseboard at an angle.

Let us, think about methods with which to make the type of hill that will relieve the monotony of a bare

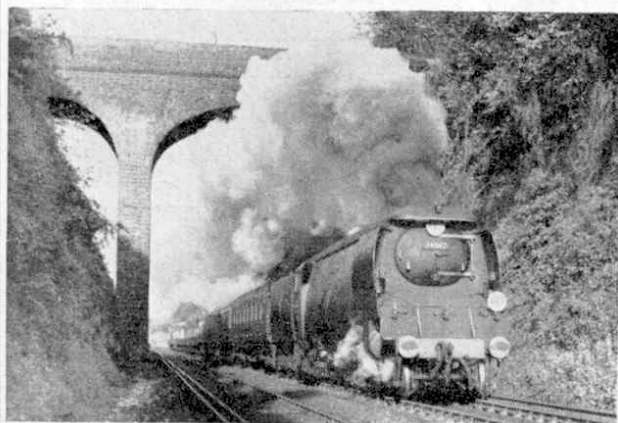
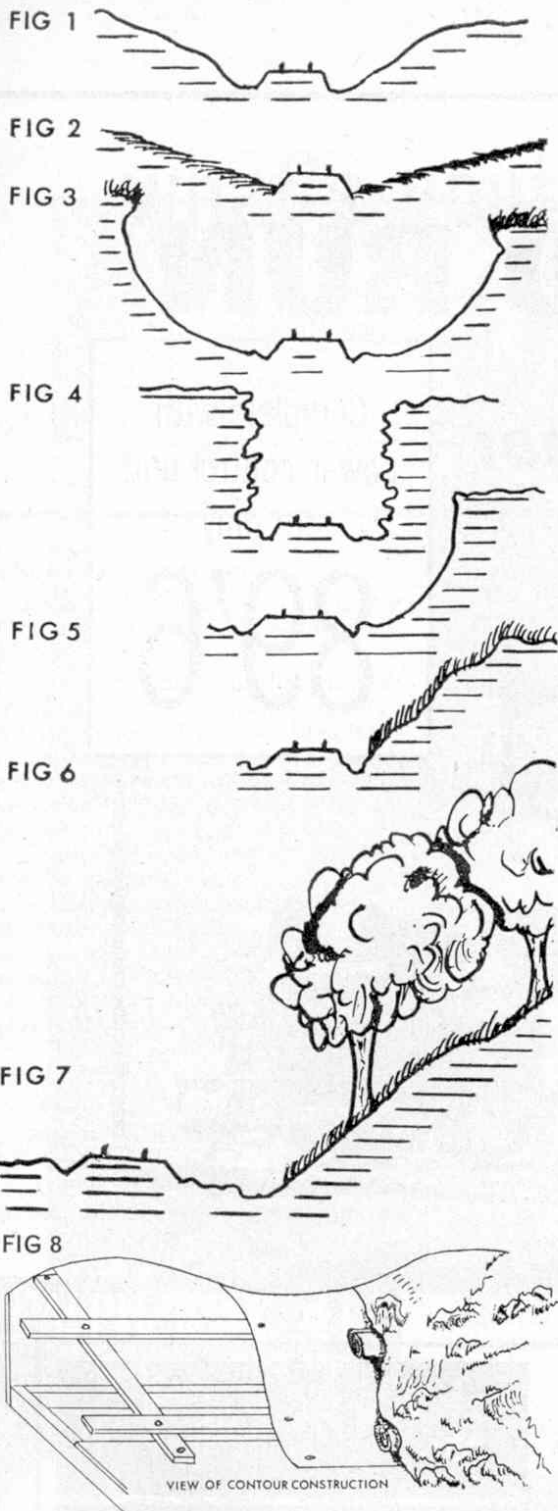
expanse of track and baseboard. The three favourite methods in use vary in strength, effectiveness, and simplicity. The first of these is the oldest known to the model railway world, and employs a backing of hardboard, plywood or any other material that is reasonably stiff. As shown in fig 8, a contour is cut along the top of the backing which is then nailed on to the rear of the baseboard. When this is completed, newspaper is crumpled up and placed ready for use. Brown paper is glued to the top of the contoured backing, and to the baseboard—forming the beginnings of a hill. The newspaper is then pushed under the brown paper as tightly as possible, and the brown paper is sized with a glue solution to stiffen it. When this is dry the brown paper is painted with a flat brown undercoat, preferably a burnt umber or similar colour, and sawdust, which has been previously dyed, is sprinkled on. The sawdust should be dyed in batches of several colours to give variety. I would suggest a light green, a yellow green for ordinary grass, a light green of a slightly bluish shade, a dark green, and browns of about three different shades. It must be remembered that grass is yellow green, not blue green, which is more suitable for tree foliage.

The sawdust is placed in a bag and left in a pan of dye and water for the period recommended by the maker. It is then dried in an oven.

Two variations

This method of scenic construction is a little old fashioned, but many modellers still use it. There are two interesting variations which you may consider a little easier to follow. In one, the brown paper is built up as before, but medical lint is applied instead of sawdust. This is glued into position, and a light green water colour is either sprayed on or, if no spray is available, brushed on lightly. This gives a scale grass effect, and will not result in grains of sawdust leaving the hill and depositing themselves on the floor over a period. The disadvantage of medical lint is that it is by no means cheap, and a certain amount of skill is needed to prevent the fluffy part of the lint from lying flat when painted. Another variation of this method is the application of plaster instead of lint or sawdust, but because the preparation of plaster is a subject by itself, I shall describe it later.

The third recognised way of landscaping hills is to use *papier-maché* on a base of fine chicken wire. As this method is one in which it is all too easy to become covered in plaster, sawdust, glue and other materials,



I would strongly advise you to wear an apron. The basic *papier-maché* is made by simply boiling newspaper, previously torn up, in a panful of water. Plaster and glue size are added from time to time. When this mixture becomes a whitish grey spongy mass, it is ready to be applied roughly. Slice and shape the mixture with a knife where rocks or other formations are required. When the *papier-maché* has dried—a process which should take two days—you can colour it with paint, or you can paint it, or coat it with glue, and then sprinkle either fine sand or sawdust on the surface while it is still wet. (More detailed instructions on the making of *papier-maché* will be given in an article next month.)

The last method I intend explaining this month is my own favourite method, and although it is not the easiest, it is certainly the most effective. It involves the use of wire mesh and *papier-maché* once again, but *papier-maché* of a different type. Instead of the 'saucepan system' described above, this method of producing *papier-maché* does not involve any great upheaval of domestic life. It is, in fact, much easier, quicker and simpler. It involves tearing newspapers into strips and glueing them on to the wire mesh with Polycell or any of the well-known wallpaper pastes. The paper should be built up to about three or four layers, and should be allowed to dry completely before covering with an earth mix.

Earth mixes

Many materials are used for earth mixes, and I could probably devote a complete article to the different mixes that may be used. I shall, however, give a rule of thumb method for those of you who desire a little more than just ordinary plaster as a covering surface. My own preference is Polyfilla, which dries a lot more quickly, and is, indeed, stronger and less prone to cracking than ordinary plaster, which usually leaves an embarrassing white scar across your scenery if any temperature change, or movement, takes place. To give a reasonable earth grass appearance I would mix about the same volume of sand to that of Polyfilla, which should be stirred thoroughly in a vessel before applying on top of the *papier-maché*.

You have before you the most popular methods by which scenery is built. I leave it to you to choose the one to which your modelling skill is most suited. Next month, I hope to show you how to paint scenery, carve rocks, and build up the ground from the baseboard surface.

And don't forget; there will be complete and detailed instructions on the making of that invaluable substance, *papier-maché*, in next month's *Meccano Magazine*.

(Photograph): This real-life cutting will show the modeller the sort of lineside scenery he can hope to emulate. The picture, from the days of steam, shows Battle of Britain class 4-6-2 locomotive No. 34077 '603 Squadron' on its way to London from Ramsgate. Photograph by S. Creer.

Building a paper world

IN MY notes on building scenery, I shall try to give you basic facts of construction so that you will want to take up scenic modelling yourself and find how very enjoyable it is.

As I told you last month, one of the most popular methods of building scenery is to use *papier-maché* and I felt that many of you would like me to describe this method in detail.

The basic principle of making *papier-maché* is that newspaper torn into strips is boiled in water to which glue-size, which has been prepared in advance, and plaster, have been added. The newspaper should be torn into very small strips and placed in a saucepan big enough to hold two pints of water, and that amount of water should then be poured into the pan to cover the surface of the paper. You will find that you can probably get four sheets of torn newspaper into the pan, and that the two pints of water will allow for some to be boiled off during the process. The mixture should be boiled for about a quarter of an hour and then the glue-size added. To make glue-size, simply add one part of water-base glue to eight parts of water. You can buy water-base glue at ironmongers and decorators' shops.

The mixture need only be approximate, as a little more glue will have no effect on the final result. Two cupfuls of this solution should be added to the mixture of torn newspaper and water, and a rule of thumb method for

deciding what quantity of the mixture to add is simply one cupful to every pint of water used.

Now we come to a further important step. After cooking the mixture for another five minutes, a quantity of plaster should be poured in. Considerable latitude is allowable in the quantity of plaster added to the *papier-maché*. This is due to the different qualities of plaster on the market. The simple mixture I made had Polyfilla in it, but Alabastine would be just as suitable. Avoid, at all costs, the quick-setting plaster sold by builders' merchants for coating walls; this is quite unsuitable for our purpose as it has a marked tendency to become lumpy and unworkable. It is also likely to crack when dry. You can, of course, use any other plaster that is slow-setting and durable.

The plaster is added to the mixture neat, not mixed with water. The exact quantity of plaster is not significant provided that a cupful is used for every pint of water which was added to the torn newspaper at the start. The mixture—newspaper, water, size and plaster—should be cooked for another ten minutes or a quarter of an hour and during that time it should be mixed very thoroughly to ensure that all the ingredients are thoroughly intermingled. The newspaper should by this time have long ceased to look like newspaper and should instead resemble a creamy, lumpy substance. When the mixture has been boiled for 30 minutes, the surplus water can be emptied from the saucepan and

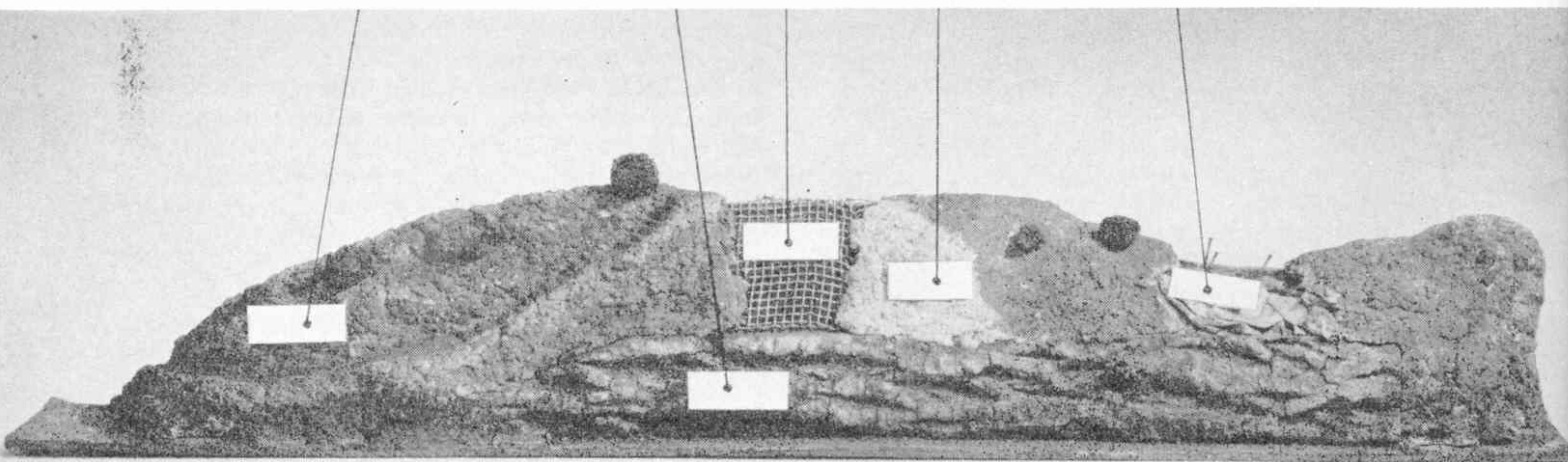
PAPIER-MACHÉ
MOULDED TO SHAPE

TREE BARK

WIRE MESH
BASE

PAPIER-MACHÉ

CRUMPLED
NEWSPAPER



List of materials: 2 pts of water; 4 sheets newspaper; 2 cups of glue-size; 2 cups plaster.

the finished *papier-maché* taken out. Give it a good squeeze to get rid of any surplus water.

One of this month's illustrations shows a section of scenery built with the type of *papier-maché* described here. Parts of the scenery have been cut away to show various stages in the construction of the hill, from the basic wire mesh to the finished job. An alternative to this is shown on the right hand side of the illustration where, instead of wire mesh being used, crumpled paper has been placed between the backing board and the cliff face. The *papier-maché* is then spread over the top of the crumpled newspaper.

The cliff face at the front of the layout is made of cork bark which can be bought from most good model shops. Alternatively, it can be obtained from its source—the tree. If you decide on this method, strip from the tree only the quantity of bark actually required. I would suggest you boil the bark in water for 15 minutes before placing it on a layout. This will kill off any insect life in the bark and ensure that the baseboard does not suffer from woodworm, death watch beetle or other natural catastrophe.

The front of the cork bark can be touched up with a strong mixture of plaster if desired, but I prefer to use it in its natural form and then paint it.

A touch of colour

Many people have the mistaken idea that painting scenery is a form of artwork, and requires a lot of skill; but in fact, it has little to do with art, in its truest sense. In fact there could be a case for saying that the less precision you use, the more realistic the result may be. This point is easily proved; I urge you all while on holiday this summer to look carefully at the colours of earth on hillsides. You will almost certainly find that plain bare earth is not first a monotone, but varies in shade over a number of basic colours.

The ground colours can be represented on your layout

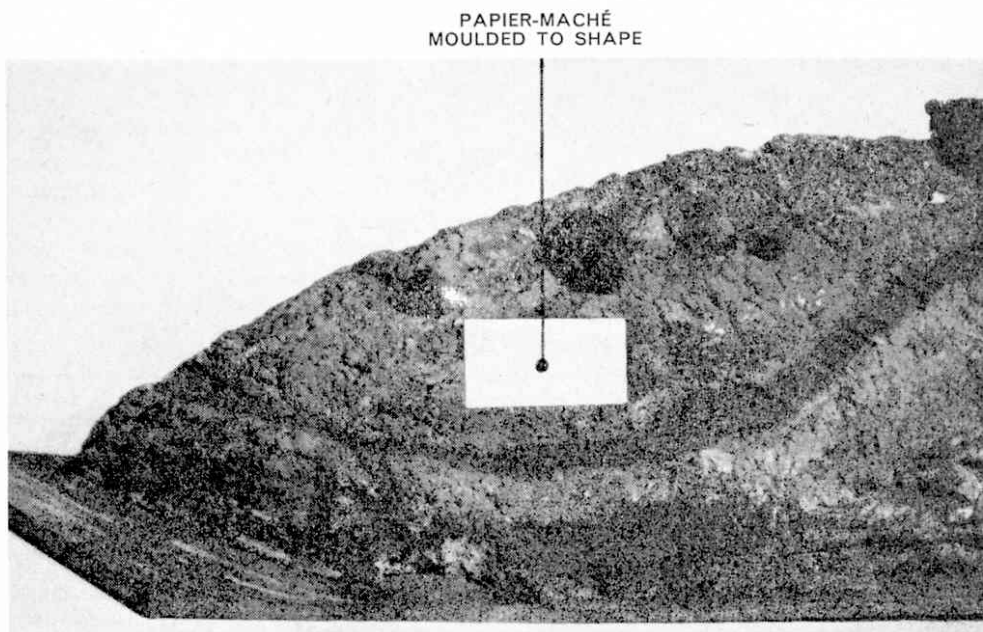
by various shades of brown. Burnt umber, raw umber, and Van Dyke brown are all excellent earth colours, and can be bought in tubes and tins from art shops. Two other colours which are used to represent earth are burnt sienna and raw sienna. The five colours mentioned can be mixed together to form an infinite number of shades, and I would suggest a little experiment. Using the two umber and Van Dyke, brown paints, squeeze a little of each on to a pallet, or a piece of white plaster, and then mix the three paints in varying quantities to discover the different shades that can be obtained.

When you are ready to mix the colours for actual use on the plaster I would suggest you adhere to the following procedure. Squeeze a little of each paint into a different lid and add turpentine carefully to all three, making sure that the mixture is not too watery. The idea is to produce a stain that will spread freely over the plaster without recourse to brushing, but which has sufficient body to colour the plaster adequately, without an under coat being necessary. The method I employ at this stage is to cover the scenery with raw umber paint, and then to accentuate any highlights with Van Dyke, and other, browns to represent different shades of earth. I would, however, be inclined to let one colour predominate and to use others simply to avoid monotony. Do not overdo the mottling process, as this can look just as ridiculous as earth of one colour. When you are modelling the banks of a stream or river, remember that an effective mud colour is Van Dyke brown which is deep, almost black brown. It suitably represents wet muddy spots, low ground, ditches and dank places under overhanging rock.

I will delve a little more deeply into painting in next month's article, which will also cover tree construction and associated subjects. I also hope to include a table giving the shades of colour required for different types of ground. This could prove invaluable to those who are not quite sure which colour to use in different situations.

Left: A section of scenery looked at from the front showing various stages in the construction of a hillside. The material employed is clearly marked. Attention is drawn to the fact that either wire mesh or crumpled newspaper may be used as the supporting material.

Right: This close-up part of the scenic section seen at the bottom of the page shows a pathway leading to the top of the hill. Readers should note the way in which *papier-maché* has been moulded into steps on the upper part of the pathway.



The art of making trees

I PROMISED, last month, to tell you how to build trees, but before doing so I would like to say a word about commercially-produced trees, some of which, although a little expensive, are excellent reproductions of the real thing. Among manufacturers of model trees are Britains Ltd., Gem, Merit, Welkut, Slater, W. & H. and E.R.G. The most recently introduced range of trees is that produced by Britains Ltd., who offer a wide range of different types, among them the oak, the apple tree, the birch, the pine and others, all of which are made singly in kit form for approximately 2s 6d. Some, however, cost more. These kits are made from resilient plastic which has moulded on it leaves, branches, and, in the case of the apple tree, the apples themselves. The trees are to scale, and it may, therefore, surprise some of my readers to learn that the model of the oak tree stands a full 9 in high.

The oldest and a well-known range of lineside accessories, including trees, is produced by Merit, who manufacture plastic products in kit form. In the case of both Britains and Merit, kits are extremely simple to assemble and can, in fact, be put together in about fifteen minutes. The kits produced by Merit are produced in threes, fours and sixes (boxed).

Trees by GEM and W. & H., also of a quite high standard, are not of plastic, and non-plastic trees are also made by Welkut Model Products. Those from the last-named manufacturer are cheap in price and are intended for overall scenic effects. They are not quite as fully detailed as Britain's or Merit's. The trees produced by Slater are of outstanding quality, and incorporate the minutest detail. They are, however, a little dearer than the other products mentioned.

The most popular method of building trees at home involves the use of twigs of a suitable size to represent an OO scale tree. These twigs should have a reasonably thick stem to represent the tree trunk, and a large number of small twigs branching off the main stem. Before carrying operations any further, it would be just as well to dip the twig in a preservative such as diluted glycerine, available from most chemists. The foliage can consist of any one of the following: rubberised horse hair, lichen, sawdust, tea leaves, steel wool and loofah.

Dealing first with rubberised horse hair, this is sold by upholstery firms, and is for rejuvenating settees and

other furniture. The material is sold in 'blocks' and has a stiff, spongy feeling. If looked at closely it appears rather like hair dipped in wax or rubber. To use this material for foliage, a piece of approximately the right size and weight for the twig to which it is to be glued should be pulled from the main 'block' of horse hair. This piece should then be expanded by pulling gently with finger and thumb. Using a strong glue, such as Evostick, Bostick (white), Uhu, or other similar adhesives, affix the rubberised horse hair to the required branch, or twig. This action should be repeated in the case of every branch of the tree, and when the glue has completely hardened, the pieces of foliage should be sprayed a medium yellow green or, alternatively, dipped in a pot containing oil paint of this shade. Before the paint dries, sawdust previously dyed should be sprinkled on to the rubberised horse hair.

When the paint has dried, the trunk can be given a coat of brown and grey, and parts of the foliage can be tinted brown to represent branches. This method gives a very inexpensive tree, and a great many can be made during the course of an evening.

Steel wool is a very similar material to rubberised horse hair in the sense that it has to be expanded with fingers and thumbs before being glued to the branch. This also has to be painted and dipped in either dyed tea leaves or, alternatively, dyed sawdust. The difference between these two materials is that tea leaves gives a more representative leaf appearance, whereas sawdust offers a better impression of foliage. Loofah is, in my opinion, much inferior to either steel wool or rubberised horse hair, but it can be used with skill. As my readers may know, this material is sold in blocks by wallpaper shops, hardware stores, and Woolworths. To make it look like foliage, it has to be skilfully cut into the shape represented by the branches and leaves. It is then coated with tea leaves or sawdust.

Lichen has recently become popular for tree making. Lichen, which gives a very effective tree, is obtainable from shops selling plants, and, in some cases from shops supplying materials for tropical fish tanks, although many model shops are now stocking it in packs costing 2s 6d. It requires some preparatory treatment before being used for foliage. It should first be washed in warm water to clear it of soil and other foreign material, and then dipped in a dilution of glycerine which should consist of one part glycerine and two or three parts

1. A panoramic view from the Coombe Bissett branch model railway owned by Mr. C. Oates. The photograph shows groups of trees built by various methods. Photo. 'Railway Modeller'.

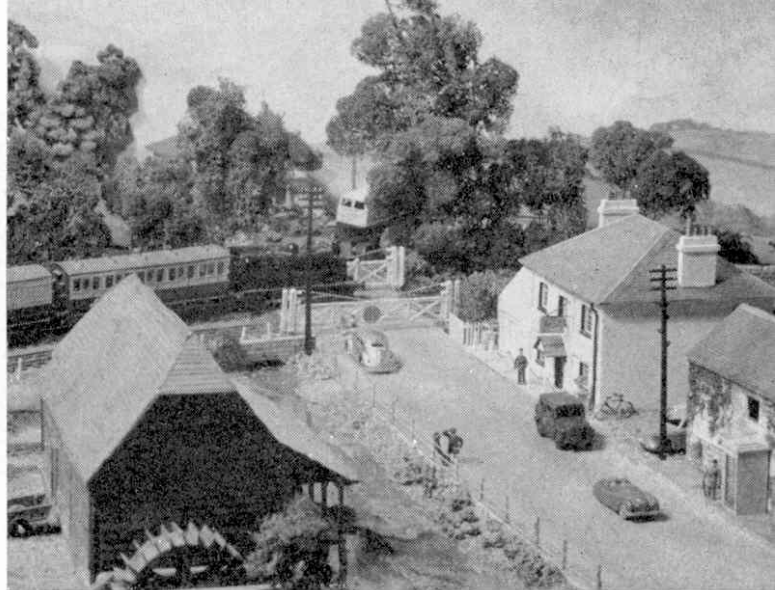
2. A picturesque scene on a layout owned by Illiffe Stokes, of Lower Dowdeswell, near Cheltenham, which shows four or five trees built on the wire principle as described in the article. Photograph by courtesy of the 'Railway Modeller'.

3. The poplar and the oak from Britains Ltd. They are constructed from quickly assembled kits and are made to scale. They are two of a range which also includes the silver birch, pine and apple.

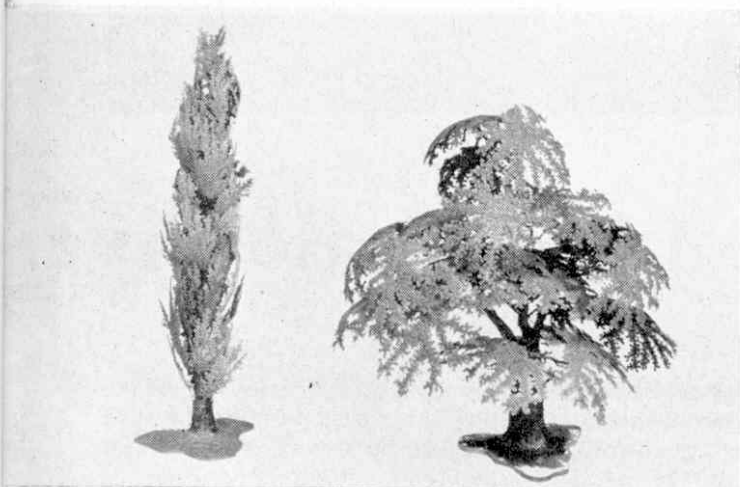
4. A typical type of twig used to form the main trunk of a model tree.



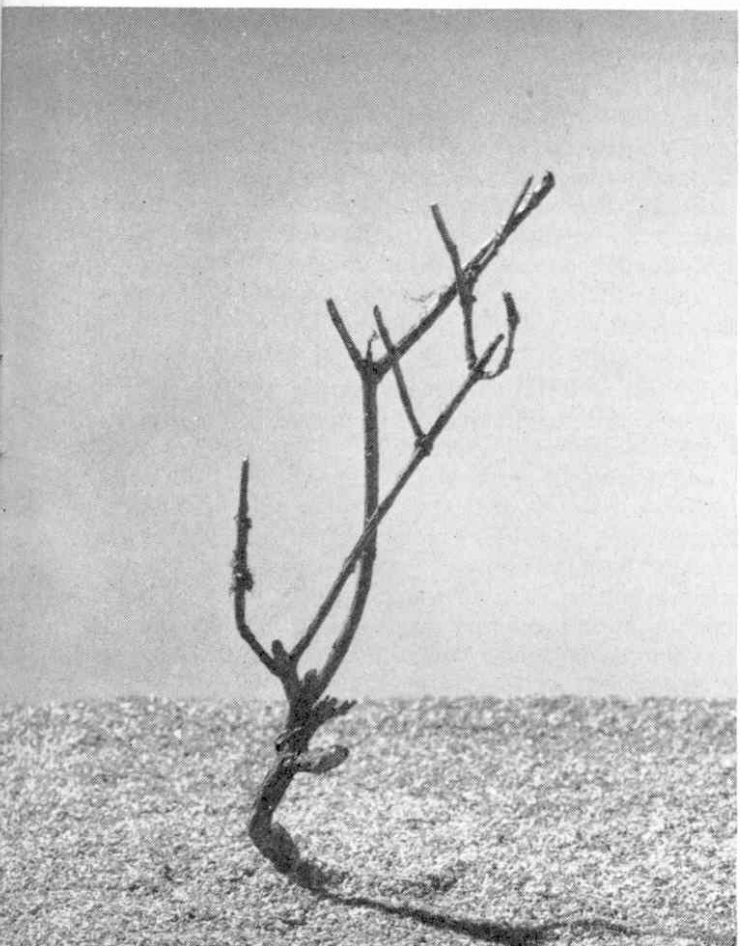
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water. When the lichen is dried it should be dipped in paint of medium green shade, or alternatively, Humbrol foliage green paint. Still another way is to colour the lichen with brown paint, to represent the branches, tea leaves or sawdust then being added.

The drier the lichen before painting, the darker the resultant colour will be. If you do not wish to add tea leaves or sawdust the foliage should be painted green. If you wish, you can add leaves to the outside of the lichen, then dip the tree in a solution of glue and sprinkle green flock over it. The green flock gives a much finer finish than sawdust or tea leaves, but in my opinion the flock method is unsuitable for use on rubberised horse hair or loofah.

The last method I want to describe this month is one involving a little more skill than those already mentioned and trees built in this way require a multi-strand cable such as Bowden cable or, alternatively, electrical multi-strand flex. The trunk of the tree is made from several of the cables bound together with cotton, and the branches are portions of one of the cables taken off at a suitable angle and divided at its ends to give the twigs and shoots.

It is advisable, when making a tree by any of the methods described, to have photographs of a tree or trees in front of you so that you can see the angles at which branches sprout from the trunk. Tree roots can be represented by splaying out the lower ends of the cables in different directions. When branches and shoots have been arranged to your satisfaction, the trunk can be wrapped with gummed paper, starting at the bottom and working up the trunk. Plastic wood is used to fill in the cracks at the lower end of the tree and to cover up the joints in the paper wrapping. The brown paper wrapping is taken only half-way along the branches, the remainder of the wire being left bare until painting. At this stage, the entire tree should be given a coat of brown paint mixed with grey and, if you like, other colours. The ends of the twigs should be coated with gum, which is then dipped into flock or very fine sawdust. This method is not suitable for beginners, or for anyone who wants to produce a lot of trees in a hurry. It does, however, give an excellent representation as you will see from one of our photographs.

A NATURAL progression of the types of scenery I have mentioned in previous months is the description of a feature that is capable of filling a corner on your base-board—usually one of the most difficult parts of the layout to fill satisfactorily. A useful feature is the merchant's coal yard, which can not only be made to look effective, but can also serve a useful purpose by providing additional shunting movements for those who enjoy the operating side of model railways.

The buildings to be seen in a coal yard are usually few in number and are sometimes dilapidated. They vary in design from town to town, so that any reader may use the models shown in the photographs as a basis for his goods yard, making variations of his own.

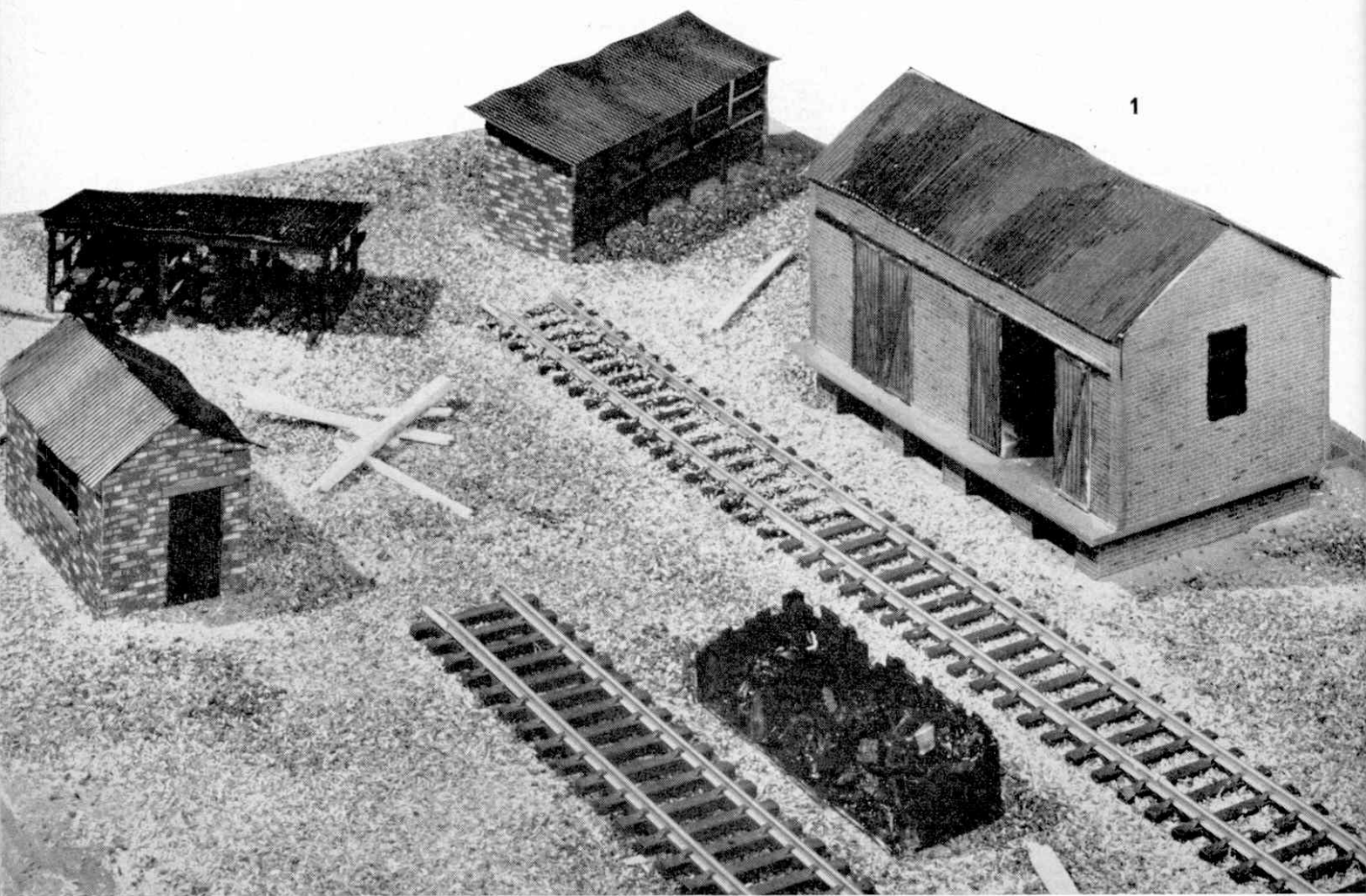
Most important of the items I used to construct the buildings shown in our top picture is that which forms the substructure of nearly every building in the photograph. This is known as styrene sheet, and is sold under such trade names as Plastikard and Synthocard. This material

is easier than cardboard, or plywood, to work with, and I can fully recommend it. An example of the ease with which various shapes can be formed is demonstrated by scoring a groove in the material, and then bending it over the crack. The card will then break to the shape already scored. The material is 'glued' by brushing on Synthi-Goo or Meg Pack, liquids which are in fact, solvents, the result being that the card is melted and merged. The solvent can usually be obtained from the same shop as the styrene sheet. This means that joints may be filled, sandpapered and worked in ways that would be impossible with cardboard.

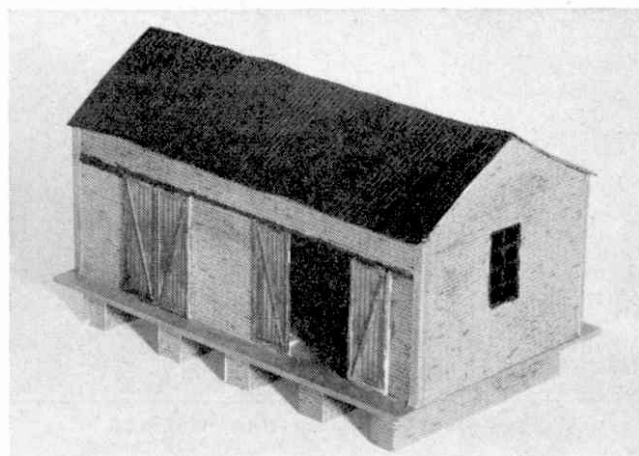
The lower illustration on this page shows the large store shed, which has a small window in one end, and a

Build yourself

representation of double sliding doors, one pair open and one shut, along one side. The two other walls are blank. First cut the two blank sides from styrene sheet (.04 is suitable) making the larger wall $4\frac{1}{2}$ in to 5 in long and $2\frac{1}{2}$ in high and the end wall 3 in long and $3\frac{1}{2}$ in high to



- 1 General view of the coal yard, showing the five structures involved. That on the extreme right is the storage shed, the coal staithes are in the foreground, the office is on the left of the picture, the woodshed is in the left background, and the lean-to is seen centre background.
- 2 A close-up of the storage shed, showing the discoloration of the corrugated iron roof. This is done by mixing rust red paint with black.
- 3 This view of the wood shed shows its extremely simple construction from balsa wood. Corrugated sheet and styrene sheet are used for the false roof. The wood is coloured with a brown paint mottled occasionally with greys and blacks.



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a realistic model local coal yard

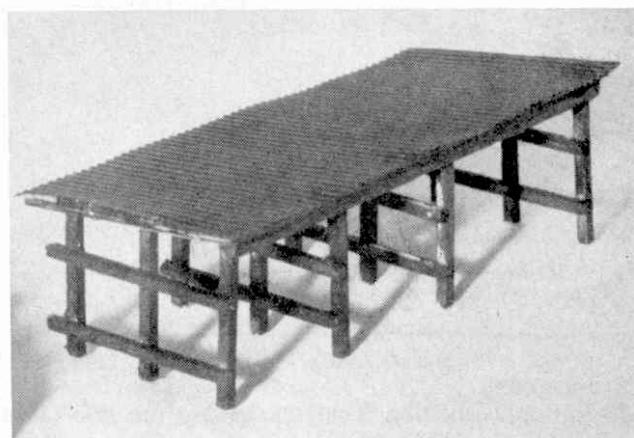
the apex of the roof. Adopt suitable proportions for the doorways, etc. and remove the spaces for doors and windows with a knife. The doors are cut from styrene, although of a thinner quality than that used for the building itself. The planking for the doors is then scribed with a blunt knife, and the framing, also of styrene, is glued round the door. When this has dried, the diagonal pieces are glued in the centre of the door, and the slide rail is glued above all four doors in one continuous piece. When this completed side has dried it may be glued to the blank end and the other side, and then left to dry.

Window Frame

The end containing the window is then placed on the work bench and the window frame pieces assembled from styrene sheet cut into strips approximately 1 mm wide. Use a sharp model knife and a steel rule for this operation. This side may then be joined to the three already glued together. The four walls of the main building are then left to dry, and the two pieces of the roof may then be cut from styrene sheet and glued on top. The base may also be cut out of the thickest card available, and glued underneath the building to give it support. When the main building has dried, the five brick piers can be constructed from a frame made of four pieces of .03 styrene sheet glued, assembled, and fixed to the underside of the floor base. The whole building is then covered with brick paper, three types of which currently available on the market are manufactured by Hamblings, Modelcraft and Superquick.

The Office

The smaller building, or office, is built in the same way as the storage shed, and when completely dry, brickpaper is glued over the walls. The roofs of the building are intended to represent corrugated iron, and the material used is made by Messrs. G. N. Slater of 6 Dalveen Drive, Timperley, Cheshire. It is obtainable either direct from them or from most good model shops. The woodshed and lean-to are made from balsa wood



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strip, and these too, are covered with brickpaper when necessary, and roofed with 'corrugated iron'.

The coal staithes are very simple in construction, and consist simply of six pieces of medium-thick styrene sheet—a base, ($2\frac{1}{2}$ in long by 1 in) a back, ($2\frac{1}{2}$ in by $\frac{5}{8}$ in) and four uprights (1 in by $\frac{5}{8}$ in). The back and the upright pieces are scribed at $\frac{1}{8}$ in intervals to represent planks, and their upper edges are cut to different heights to give the appearance of unevenness. Very small lumps of coal are glued into heaps in the spaces between the uprights and the whole structure is painted a matt black.

Bits and pieces

The ground is made simply by covering the area around the buildings with Casco glue. Sawdust, dyed in different shades, is sprinkled on. The whole area is then scattered with an assortment of rubbish such as old locomotive wheels, bits of timber, etc.

Hornby-Dublo No. 4635 Coal Wagons can be used in the yard. Bogie Bolster Wagon No. 4610 and the Low-Sided Wagon No. 4649 can also put in an occasional appearance for the transportation of the wood and other materials usually found in a coal yard.

Continuing his series on scenery
for model railway layouts,
Linesman tells you . . .

RIVERS give your scenery that natural look

MANY HORNBY-DUBLO, and other, model railways would benefit by the addition of a river, stream or canal and it is surprising that this scenic feature is not seen more often as an adjunct to a railway layout.

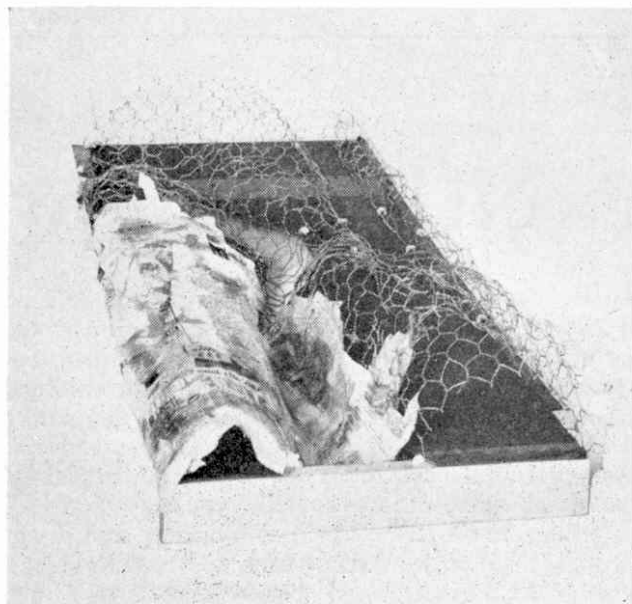
Let us start with the construction of the baseboard. This does not have to be made very strongly and is, in the case of the model shown here, quite a crude affair, probably costing a shilling or two. A piece of hardboard was used for the surface of the baseboard and was strengthened by 2 in by 2 in timber down the sides and ends. The stream was sketched on the top of the hardboard, and a fret-saw used to cut out the river. Remember that rivers are nearly always irregular in shape, but the way your river bends will obviously be determined by the proximity of the railway line, and by the lie of the scenery around it. In the section of scenery illustrated in our photographs, a railway track built from Hornby-Dublo components is laid on the right, and its purpose is to supply coal and other goods for the barges that 'travel' on the river. This will allow a large selection of wagons to be used.

When the baseboard surface has been finished, the next task is to obtain a quantity of wire mesh, known commercially as chicken wire. This is available in various sizes ranging from about $\frac{1}{4}$ in mesh up to $2\frac{1}{2}$ in, or even 3 in.

The shop from which I bought my wire mesh quoted 4s 1d a square yard for the $\frac{1}{2}$ in mesh and 2s 3d a square yard for the 1 in. I therefore chose the 1 in mesh to see if it could be used satisfactorily for the purpose. As there is no need to lay plaster straight on to the mesh, there is no great disadvantage in using the 1 in, but I

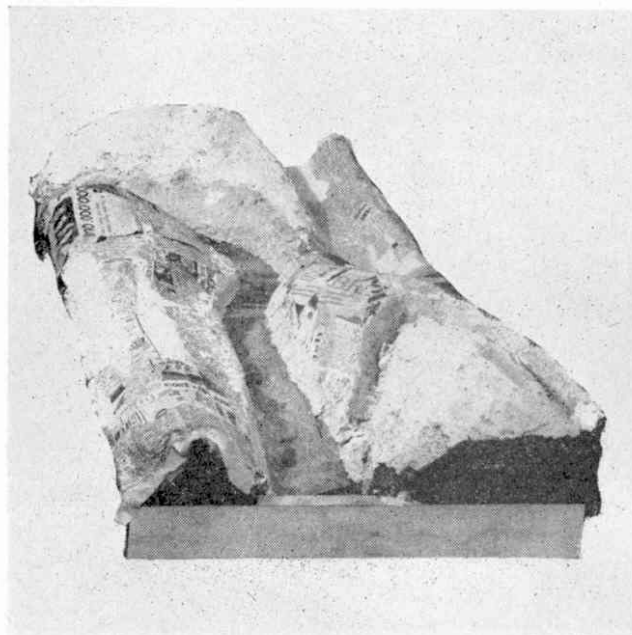
would be disinclined to use any wire mesh larger than this, mainly because it would give insufficient support. With the aid of a pair of wire cutters (tin snips would be better) the sheet of mesh was cut into sections and moulded into hilly shapes by hand. Take care when moulding the mesh with your hands in case it should cut you. The river bed is made from the mesh by bending it into a concave form, so that the actual bed of the river lies below the surface of the baseboard. This is most important.

Where two pieces of the mesh require joining, twist the ends of the wire together and bend round one of the



The baseboard complete with wire mesh shaped and stapled into position. The first layer of papier-maché can be seen glued to part of the wire mesh.

This section of scenery completed and covered with papier-maché. The river bed is in position and parts of the hills have also been covered with an earth mix.



nearest strands of wire. Pin the mesh to the baseboard with staples. When the wire mesh has been bent and shaped, and finally pinned to the baseboard, it will be necessary for you to apply a layer of papier-maché. Two methods of making this compound were described in the April issue of the Meccano Magazine. In the case of the model I am describing, I chose the quicker method of building papier-maché, but for those who did not read the article I will describe it, quickly, once again. It simply consists of strips of newspaper laid on to the wire mesh, and given a coat of glue (in this case Polycell) of high density. This is repeated two or three times, so that there are three layers of Polycell and paper. You may find it a little difficult laying the first layer of paper on the wire mesh, but this can be overcome by folding the paper under the wire mesh and gluing it with Polycell. The surface dries rather quickly, and I found I was able to begin plastering within five or six hours.

To get a 'grassy' effect from plaster add sawdust and sand to the ordinary mixture. I usually find it satisfactory to have approximately five parts of plaster to two of sand and one of sawdust. The next step is to plaster the river bed, taking great care not to plaster over what will be the surface of the water.

Allow the plaster to dry before attempting anything further, after which the surface of the river can be prepared. I used a material known as Cobex. It is a transparent substance with a slightly bluish hue about it which is ideal for the surface of a river. If you find it difficult to obtain this material, I suggest you use ordinary acetate sheet which is cheaper. A further alternative would be Polyglaze, obtainable at most multiple stores. The river is cut out of one of these materials and placed in position, at a suitable height over the river bed.

The river bed itself should be painted in browns, greens, greys and yellows. Place small boulders, weeds and other objects at the bottom of the river before painting, and before laying the acetate sheet. This is why I previously stressed the importance of not plastering to the level of the water, for any plaster above this level would cause the acetate to buckle. When the 'river' is in position, the banks can be plastered to cover up the join between the acetate and the paper, and the rest of the 'countryside' can also be coated with the same mix.

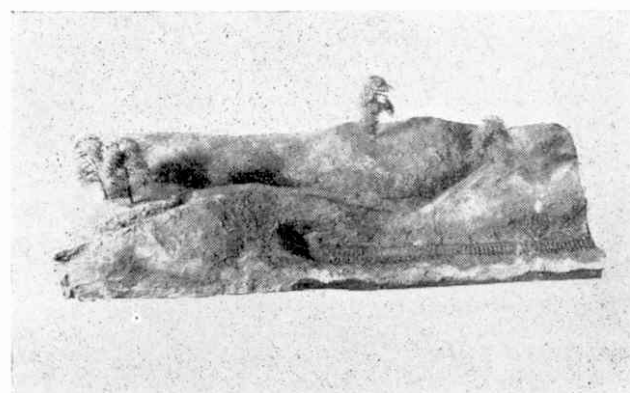
The small stream on the right of our section of scenery is built up in a similar way to the river, but you should remember that, as it is shallower, the greatest attention should be paid to the placing of stones and rock at the bottom of the stream.

The plaster must be 'filled' with a lacquer when it has dried, after which (as in the case of the river) it can be painted and allowed to dry. Two tins of clear glossy varnish—I used Humbrol—are then poured over the bed of the stream and allowed to harden. The varnish tends to find its own level and dries, as it is flowing, to give a waterlike effect. I have found this method most effective for representing small, shallow streams and rivers.



A close-up of the stream which forms a prominent part of the landscape and which flows down to join the river.

The entire section of scenery painted and finished. Trees add a further air of realism.



Now our section is virtually complete, except for painting the hills and 'planting' the trees which, in this case, are from the attractive range produced by Britains. The trees are made with bases, so that they are movable, but in this case the bases were removed, small holes were drilled in the hillside and the tree trunks affixed to the scenery with Polyfilla.

Cash sales service ends

Readers are informed that after many years of providing a limited cash sales service from their factory at Binns Road, Liverpool, Meccano Limited have found that, with their growing retail coverage, there is much less call for this facility than previously. It was therefore discontinued at the end of April. Good toy stores and shops carry most Meccano products and will always order any item not stocked by them.



A scene emphasising how the use of contrasting styles of modern and old world buildings can give accent to your railway layout

Buildings for effect

by **Linesman**

THERE MAY well come a time in the development of your Hornby-Dublo Train Set when you feel that adding a town or village to your layout will increase its appeal tremendously.

Model towns or villages need not occupy large areas and, if you are careful, you can usually arrange them in quite small spaces. You will find, in fact, that by using skill in positioning your buildings the overall effect can be to make the layout appear much bigger than it really is. Of course, a great help in this direction is the use of background sheets such as those made by Hamblings.

Aided by the use of trees in suitable positions, buildings can be made to fit in quite naturally with the rest of the scenery. A small village can look particularly effective when placed alongside the main line of a railway, provided that you remember not to place the buildings too

close to the railway track. And, of course, it is a useful aid to realism to fence the railway off. Merit and Airfix are among the firms who make realistic model fencing.

The choice of buildings to use in a scene such as we are discussing depends on the type of area the layout is intended to represent. While, for instance, it would look rather odd to have a modern block of flats sited somewhat incongruously among half timbered houses and old-world cottages, you will see from the views pictured here that the old and the new can be blended quite harmoniously in a comparatively small space.

Take care, of course, not to place older buildings too close to re-developed areas where modern cinemas and supermarkets may exist.

Before the large number of kits now available was introduced, buildings of any sort had to be made from scratch, using wood, card, and any other materials available, and although many fine structures were built in this manner, the items manufactured by various firms are very difficult to emulate.

The two types of building kit produced for the model railway market are made either from plastic or card. Cardboard kits are produced by Superquick (E. Keil & Co.). These are very realistic and include everything needed to assemble them, except glue, modelling knife and rule. The kits have the brickpaper printed on to the appropriate parts, and no colouring is needed except in places where the card has been cut or folded. Superquick buildings consist of 'A', 'B' and 'C' series.

'A' series has nine different kits of purely railway buildings, with the exception of No. A.9 which is a kit of Four Cottages—presumably railway cottages.

'B' series is made up of a large variety of buildings both

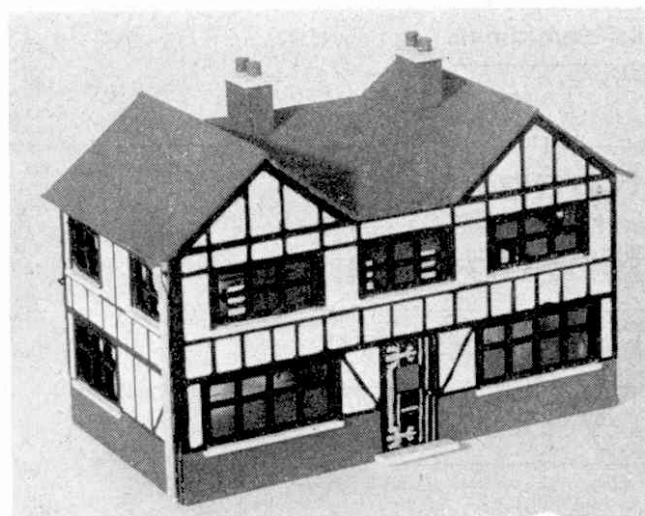
old and new. One or two buildings from this series can be seen in our pictures.

Four low-relief buildings forms the 'C' series, which modellers should find useful if their layout is of the narrow type because the total width of each building is approximately a quarter of the width of the building modelled in full.

Many modellers use this system to give their background a three-dimensional effect. Whole model towns can be built up on this principle, but remember to place the buildings where the ends or backs cannot be seen, because in this series the backs are open, exposing the materials from which they are built.

The assembling of these kits is quite simple, and you will find that all you have to do is to press the partly cut-out pieces from the sheet of printed cardboard, fold or cut, and then glue with Bondfast adhesive, which is sold in yellow plastic bottles.

As I mentioned earlier, the kits require no colouring except where the card has been cut or folded. The white strip of card showing should then be painted with Indian ink or matt black paint, according to your own preference. Prices of kits range from 2s 11d to 5s 10d. The remaining two series of buildings are of the plastic



3

type, and are produced by Airfix, and Tri-ang Real Estate. The Airfix range of buildings cost 2s 0d a kit. Only three of the kits produced by Airfix are of private buildings, the others being of the railway installation. The three private houses are very suitable for including in models of villages or towns.

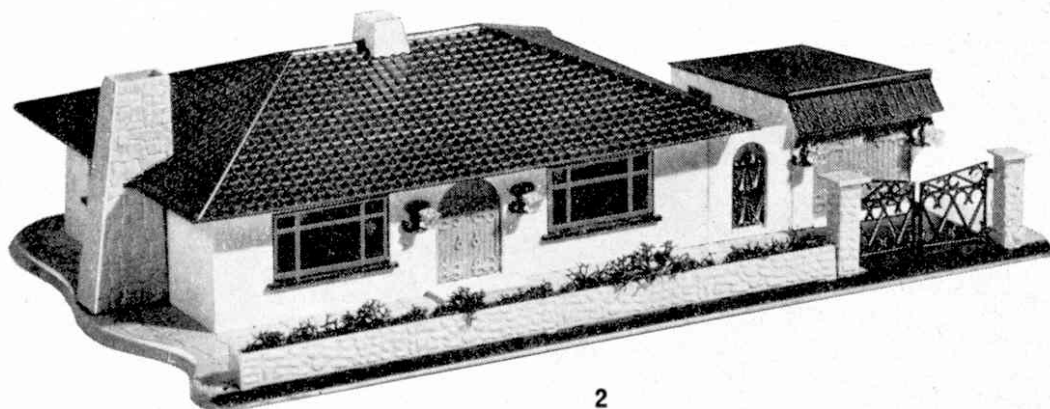
Both Airfix and Tri-ang kits are built to OO scale, as also are the Superquick range of buildings. The Airfix kits are unpainted and are supplied in kit form complete with instructions. The three buildings mentioned previously are a bungalow, a detached house, and a country inn, the last of which is illustrated.

The Tri-ang Real Estate range includes a very wide variety of kits, from a Hollywood bungalow down to 'Dove Cottage', a typically English rural dwelling. The range also includes the 'Grange', a most attractive half-timbered building suited to almost any layout, and other buildings include the Village Inn, a hardware shop, post office, the Tea Shoppe, 'Oak Tree Cottage', and 'Marigold Cottage'.

The kits are easily assembled with the aid of polystyrene cement. All parts are pre-painted, and even Swedish lichen is supplied with the kit for bushes, flowers, and other plants. Prices range between 2s 11d and 12s 6d. There is, at 24s, a village church complete with chimes which is a truly magnificent model.



1



2

1 A typical Superquick building consisting of a cinema, a post office and a chemist's shop. This is one of the low relief-type of buildings mentioned in the article.

2 From Tri-ang's Real Estate range comes this Hollywood bungalow, complete with opening gates and garage doors.

3 This inn, with prominent gables and moulded half-timbering, is from Airfix.



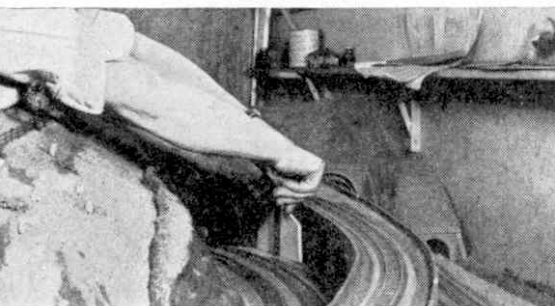
BUILD YOUR OWN TUNNELS

DO you suffer from a cramped model railway layout? If so, you can overcome the problem by dividing the layout into two or more completely different scenes, each connected to the other by a tunnel. In this way it is possible to create the illusion that the layout is quite large, with two of three stations set in a very small area.

The tunnels can, in imagination, represent long sections of railway line between stations and although this may appear to be cheating, it must be remembered that a mile, reduced to 4 mm. or Hornby-Dublo scale, would occupy approximately seventy-six feet, an obviously impossible distance on all but the largest layouts. It is therefore necessary, for the sake of realism, to create an illusion of distance where stations are, in reality, placed only a few feet apart.

Unlike normal scenery, tunnels require

Plywood, which will later be coated with plaster, is used to fill a gap



a fair amount of preparation since a path has to be left to allow a train to pass through. Also, the tunnel must be constructed so as to avoid any damage to the track and supports have to be arranged accordingly. The tunnel mouth itself can either be hand built or bought commercially, depending on the location of the tunnel mouth with reference to the surrounding countryside.

Over-the-counter tunnels

The most pleasing tunnel mouths are undoubtedly those produced by Merit. They are moulded in plastic to represent old stone and have a retaining wall on both sides. The plastic is ready-coloured in grey, which can be improved upon with a coat of matt dark grey, mixed in with patches of lighter grey. Specks of green in the cracks between stones is also an effective addition, but must not be overdone. If necessary, the tunnel mouth can be modified by removing the two retaining walls with a sharp modelling knife. Examples of both single and double track widths are shown in the photographs.

The enthusiasts who are prepared to pay a little extra, can buy a really superb tunnel mouth from the range of stone structures produced by A.C.E.M. and marketed by Edward Exley. The only noticeable disadvantage with these items is that they are produced from plaster which, if not handled carefully, is easily broken. They do not lend themselves to modifications and should only be used

in their original form. They are also supplied ready painted in the appropriate colours and, in my opinion, little improvement can be made on the original colour scheme.

The third and last range of tunnel mouths available commercially are produced by A. W. Hambling, under the trade name of 'Bilteezi'. These are produced in cardboard in cutout sheet form and are glued together with a white adhesive such as 'Bondfast'. The finished result depends a lot on the builder's skill.

Where simple tunnels are concerned—that is where no mountains or other scenery is involved—the tunnel itself will be hidden under other parts of the railway system lying above it, as shown in one of our photographs. The only work involved in this form of tunnel is the positioning of the tunnel mouth and the building of appropriate scenery such as embankments or cuttings.

Scenery such as this rarely requires additional supports and, as shown above, ordinary wire mesh is sufficiently strong to be draped on either side of the track approaching the tunnel to represent a steep cutting. Undulations can be pressed into the wire mesh and any surplus trimmed off with a pair of shears.

Build-it-yourself tunnel

If none of the over-the-counter tunnel mouths are suitable for the location, one must be hand-built from materials readily available at most model shops. I have found balsa wood, straw board, thick

cardboard and styrene sheet all very serviceable and, with the exception of styrene sheet, all can be located with a mixture of plaster and sawdust. The plaster can then be shaped to represent stone blocks.

Where more complicated tunnels are involved, such as those requiring mountains or hills of any size to be built above them, a separate technique is desirable and it might be as well to quickly describe the methods involved in the construction of hills and embankments. In major scenery of this kind, the use of papier-maché as a foundation material for the 'earth' proper has a lot to recommend it, since it does not crack or warp.

It can be made in two ways, either by tearing newspapers into strips and boiling in a pan of water together with a quantity of plaster and glue, or by laying strips of newspaper on the wire mesh base with alternate coats of diluted Polycell and newspaper. This material, which takes up to 48 hours to dry, gives a resilient but tough surface for a tunnel. It also requires less support than other, alternative, methods.

To begin construction of the type of tunnel under consideration, it is first of all desirable to protect the track from droppings of glue by making a semi-circle of card over the track, which can if you wish, be left permanently in position. The supports for the tunnel must next be arranged by nailing any odd scraps of wood, cut to odd lengths, to the baseboard. An alternative to this is to fix boards, forming the profile of the finished scenery at 8 inch intervals along the baseboard. If this is done, it must be remembered to cut a hole equal in size to the semi-circular roll of cardboard over the track.

Wire mesh should then be pinned over

the formation of supports or profile boards, taking special care that the wire mesh comes into close contact with the tunnel mouth itself, which should be the last item placed in position. The Merit tunnel mouths have included, on their reverse side, a semi-circular groove for the protective roll of cardboard over the track and, if you wish, you may glue the two together.

Once the wire mesh has been erected, the ground surface of papier-maché can be prepared using either of the methods outlined above. I would suggest that three or four coats be applied on to the wire mesh to reduce the possibility of any cracks appearing and it would be as well to allow each coat to dry before another is applied.

Whilst on the subject of papier-maché, you may find it useful to build up small embankments using a derivative of the papier-maché method, which is both cheap and easy to make. This consists of newspaper crumpled until it is quite firm and built up to the approximate size of the embankment. It should then be held in position while strips of slightly stronger paper are glued round it.

This is shown in our second photograph on the right, where you can see the tunnel mouth and an embankment formed from pieces of crumpled newspaper.

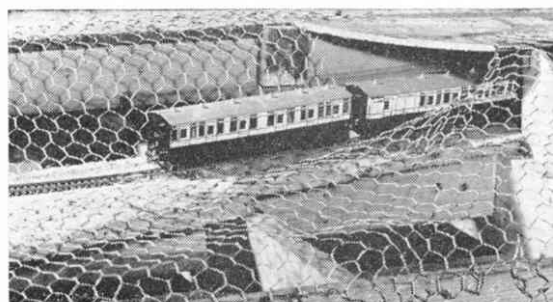
Working with Polystyrene

Mountains, especially those intended for model railways of a continental or American type, have hitherto been very difficult to model effectively. Since the introduction of expanded polystyrene, however, which is obtainable in blocks and sheets at a quite modest cost, all manner of scenic wonders have become possible. The photographs on the left show part of such a mountain, which was literally hacked out of solid lumps of white expanded polystyrene. The pieces of polystyrene must be joined together with a glue of the 'Black Bostik' type, available from any ironmongers.

When the appearance of the mountain meets with your satisfaction, its surface can be coated with a mixture of plaster and sawdust. When dry, it can then be painted in various shades of brown and grey according to the type of rock.

The final surface of papier-maché hills is also made from a mixture of plaster and sawdust, with an occasional pebble placed to represent a boulder. Rock formation can be formed on the sides of steep embankments or hills by covering the surface with plaster and 'carving' with a penknife.

An easier alternative to this is to lay cork bark along the sides, filling in any cracks with plaster and painting with a number of different browns and greys with specks of green on ledges to represent moss or grass. The papier-maché should cover any cracks between the tunnel mouth and the surrounding scenery and the final coat of plaster should cover any remaining gaps between



Wire mesh forms the basic shape of tunnel entrance. Papier-maché completes the job ready for painting and decoration



To disguise the ending of the track, a tunnel entrance can be positioned against a base board

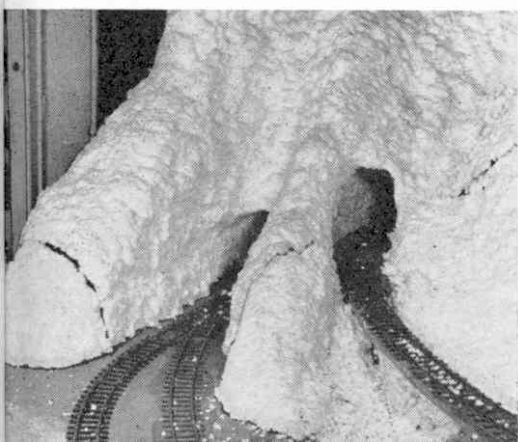


The covering of papier-maché is applied in alternate coats of old newspapers and Polycell. Five coats are sufficient



Finally, plaster or Polyfilla can be used to give a rough, rock-like surface ready for painting

Polystyrene is cut to shape with a knife or other sharp instrument for forming into tunnels as shown in the illustration below



the papier-maché and the tunnel mouth.

On the far left is a completed section of scenery with the tunnel firmly attached to the scenery. The remaining retaining wall would be fixed in place by first bending it slightly inward towards the track and then pinning pieces of spare wire mesh in the gaps at the base and top of the wall. The wire mesh would then have three or four coats of papier-maché applied to it, which when dry would be coated with a mixture of plaster, sand and sawdust. According to the final texture of the scenery, extra sawdust could then be sprinkled on to a coating of glue when the plaster is dry and the whole surface either sprayed or painted.

by Linesman