

ROUND THE YEAR

With Enid Blyton



SPRING BOOK

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SPRING TIME



THIS TINY LAMB FEELS SAFE WITH THE FRIENDLY SHEEPDOG

ROUND THE YEAR

WITH

ENID BLYTON

SPRING TIME

EVANS BROTHERS LIMITED, LONDON

ENID BLYTON'S NATURE BOOKS

ROUND THE YEAR
WITH ENID BLYTON

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IN FOUR BOOKS

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SUMMER
AUTUMN
WINTER

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there is a library edition, containing
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GREEN HEDGES,
PENN ROAD,
BEACONSFIELD,
BUCKS.

DEAR BOYS AND GIRLS,

I wish you could come with me and walk over the hills, through the fields, and down by the river, finding a hundred exciting or beautiful things by the way. I should like to take you fishing in the ponds, and fill your jars with snails and tadpoles. I should like to help you to make a fine bird-table, or to prepare a splendid aquarium. I should like to give you a garden of your own, and show you how to make it a place of bright colours and sweet scents.

But I cannot do all these things—so instead I have written these four books for you, so that you may read them and do for yourselves all the things I would like to do with you. We will go round the year together, and you must discover with your teacher and your friends all the exciting things there are to be found in Nature study.

Good luck to you in all your Nature work, and may you find as much delight in using these books as I found when writing them for you!

Enid Blyton
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CHAPTER 1

NATURE CHARTS

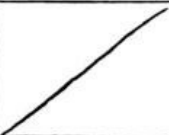
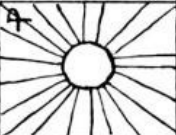
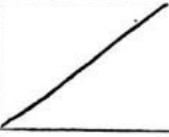

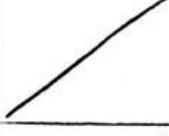
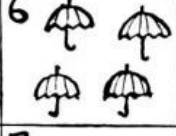
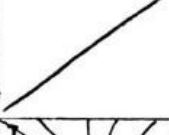
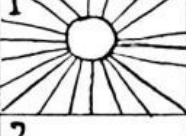


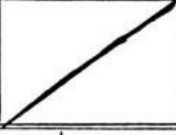
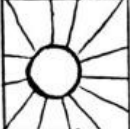



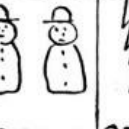
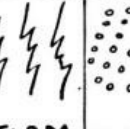
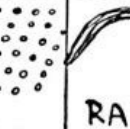

For a whole year you and I are going to look at Nature together. We are going to study the weather, the plants and trees, the animals and insects, and the birds, and we are going to *do* things as well as learn things. You will have to look for things, make things, watch for birds and flowers, and use your eyes and ears as keenly as a hare does. And if, at the end of the year, you can say, “Well, I *do* love going for walks, there’s so much to see and hear!” or “What a lot of things there are to know and enjoy!” I shall know you have done your part.

There is something that is always with us, day in and day out—and that is the weather. No matter where our home or school is, in the heart of a town or in the depths of the country, we all have the weather. Everything in Nature depends on the weather—a warm spring means early flowers and early tadpoles. A bitter winter means frozen birds and starving rabbits. The weather decides what we see around us in Nature, and for that reason we must notice it every day, and make a record of it.

Many of you will have kept weather charts before, probably weekly ones. We will keep a monthly one, because some of the other records and calendars we shall make will be monthly too. Think of all the different kinds of weather we have and make a list of them. How many can you think of? Sunny weather, rainy weather, wind, snow, hail, lightning, rainbows, and so on will appear on your lists—and sooner or later all of them will have to be entered on our charts.

Now we will make the first monthly chart. You will want a large sheet of stiff drawing or painting paper. At the top in big clear letters your best letterer must put “Weather Chart for . . .” followed by the month and the year. Then you will want four headings, or five, if the month runs, as it generally does, into a fifth week—1st week, 2nd week, 3rd week, 4th week, 5th week. Down the left-hand side put the names of the seven days of the week.

It is dull to write “Hot and sunny” or “Cold and frosty” on our charts, and besides we could not see from our seats what the weather had been like for the week or month, if the record was kept in writing. So we will choose signs or symbols to record our weather for us. At the bottom of the chart we will draw and colour these symbols to remind us what they mean, and use them each day when we fill in the weather.

	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5		
SUNDAY		4 	11	18	25		
MONDAY		5 	12	19	26		
TUESDAY		6 	13	20	27		
WEDNESDAY		7	14	21	28		
THURSDAY	1 	8	15	22	29		
FRIDAY	2 	9	16	23	30		
SATURDAY	3 	10	17	24			
							
VERY SUNNY	SUN AND CLOUD	RAINY	WINDY	SNOW	STORM	HAIL	RAIN-BOW

A WEATHER CHART

Here is part of a weather chart being kept by a class. Yours will look rather like this. Make it as large as you can, so that everyone can see it easily.

What will you choose for rainy weather? Slanting lines of rain in blue chalk, open umbrellas, Wellington boots? It does not matter a bit—choose what seems the most interesting to you. What will you have for sunshine? A bright red sun with yellow rays? A yellow sun without rays for a sunny, but

rather cloudy day? Or would you like sunshades for very hot days?

Hail could be little round balls in slanting lines. When you have chosen all you wish, draw your symbols neatly at the bottom of the chart. Look at the chart illustrated, and you will see what I mean. If you can draw or paint well, you might decorate the chart at the top or sides.

Now all you have to do is to enter the weather each day. You must make a new chart every month, of course, and at the end of the year you can string them together and use them next year to compare with future weather.

Shepherds and farmers are often very good at fore-telling the weather. They are so used to studying the sky and the wind that they know when to expect rain and when to expect sun. Some of their knowledge you will find in weather proverbs and sayings, such as "A red sky at night is the shepherd's delight; but red sky in morning is the shepherd's warning."



AIR-PILOTS BEING TOLD WHAT WEATHER THEY MAY EXPECT ON THEIR COMING FLIGHT

The weather is so important to farmers, seamen and airmen that a great




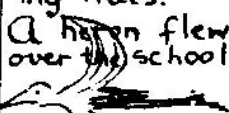





deal of attention is now paid to correct forecasting. You have probably heard the weather forecast over the wireless, or heard your father read it out of his morning paper, and have wondered how people know what the weather is going to be. You would be surprised at the great number of specially trained observers in all parts of the country, and on ocean-going ships, whose business it is to make notes of such things as rainfall, force and direction of the wind, the dampness, pressure and warmth of the air, and so on. They send their results by wireless or telegram to their headquarters, the Meteorological Office, and all the information is then carefully studied and the weather forecast made.

Airmen always study weather forecasts carefully. They want to know such things as strength and direction of winds, and these are found out for them by means of special kites and balloons sent up at various heights in different parts of the country.

And now I think you will understand how very important the study of the weather is, and will fill in your weather chart regularly.

There is another chart we ought to make, too—a record of the happenings in Nature week by week. This must be quite a big chart because there may be many things to put on it. We can have either four columns or three—four if you include a column for weather for the week, which I should certainly do. Head your chart “Nature Calendar for” Then make four section-headings, Weather, Animals, Birds, Plants. Then, each week, enter into the space beneath each heading what you have noticed for that week.

Look at the section of a Nature chart on the next page, and you will see the sort of thing you should do. You can either draw straight on the chart itself or you can draw and colour the things separately, and the best can be cut out and pasted on. You will find that this chart soon begins to look very exciting, and will be visited by many children from other classes! Be sure to keep it, when finished, to compare with next year’s chart.

WEATHER	BIRDS	ANIMALS	PLANTS
<p>The first week was hot and sunny.</p> 	 <p>We saw some swallows collecting on telegraph wires.</p>	 <p>We saw a squirrel picking nuts.</p>  <p>A heron flew over the school.</p>	<p>We found all kinds of seeds.</p> 
<p>The second week was sunny but rainy too.</p> 	<p>We are making a bird-table.</p> 	<p>We found a hedgehog in a ditch.</p> 	<p>The ash tree has bunches of keys.</p> 

A NATURE CALENDAR

THINGS TO DO

1. Write down what you remember of yesterday's weather.
2. Make a list of all the different kinds of weather you can think of.
3. Begin a collection of Weather Proverbs and Sayings.

CHAPTER 2

SOME WAYS OF GROWING SEEDS

Now I am going to tell you a good many different ways of growing seeds, so that you may watch them developing all the time. I expect most of you have already grown seeds in one or other of the ways, so I will give you a wide choice, and you can choose some of the experiments you have not tried before, leaving out the ones you already know.

There are many different seeds you may use for germinating experiments. You have probably tried the Bean, Maize, Pea, and Mustard and Cress. You can also grow Buckwheat, Sunflower, Marrow, Sweet-Pea, Sycamore, Onion, Grass, Lupin, and, of course, acorns and chestnuts in the glasses that are specially made for them. Do not stop at these seeds or fruits—gather seeds from the woods, and germinate those too. Gather them from the fields and grow little wild plants next spring! Save your date stones, and your apple and orange pips and grow those too.

You all know how a seed grows—first a root, and then a little green shoot—because you have planted seeds in your garden or in your window-box. It would be fun to see its root growing out and its shoot growing up, so you can try this experiment. It is quite an ordinary one, and if you already know it try another.

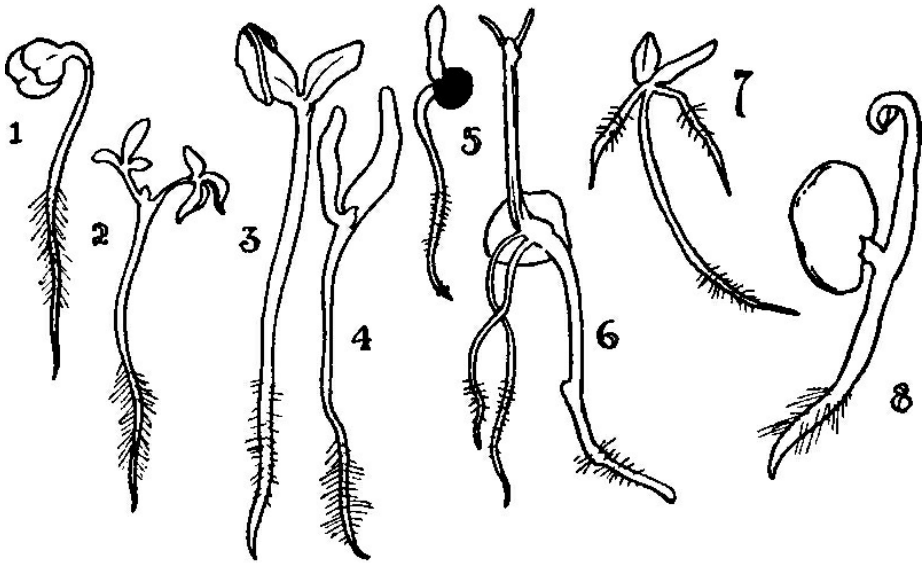
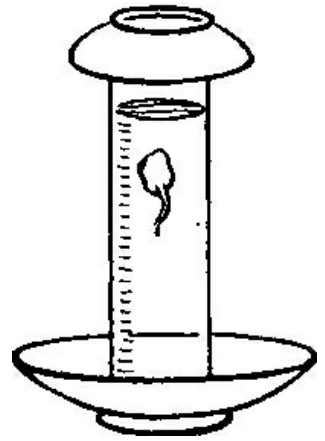
You will want a glass lamp chimney, cylindrical in shape, a saucer and a piece of clean blotting-paper. Cut the blotting-paper so that it exactly fits round the lamp glass inside. Slip it in. Stand the chimney in a saucer of water. Do you see how the blotting-paper is soaking up the water? When it gets halfway it may be very slow in getting further, so just turn the chimney upside down, and let the other half soak up quickly.

Now take some beans, which you have soaked for twenty-four hours, and slip them in between the blotting-paper and the glass. Put a little saucer or slip of glass on top of the chimney to keep the moisture in, and your experiment has begun.

Now you may easily watch the bean put out its root and its shoot, and see it grow. Draw it as it develops. You will find it very interesting.

You may grow other big seeds, such as the pea, in this way.

You will notice that I asked you to use *soaked* beans. Do you know why? It is because then they are in a fit state to grow. Look at a dry bean from the garden, or from the bean-bag. Isn't it hard and small, compared with a soaked one?



SEEDS FOR YOU TO GROW

1. MUSTARD SEEDLING. 2. CRESS SEEDLING. 3. SUNFLOWER SEEDLING (note fruit-coat being cast off). 4. SYCAMORE SEEDLING. 5. PEA SEEDLING. 6. MAIZE SEEDLING. 7. WHEAT SEEDLING. 8. BEAN SEEDLING.

Did you see the beans as they were soaking? If you did you will have noticed that the skin wrinkled very much at first, and then gradually smoothed out as the bean itself took in water and swelled. Take up a soaked bean. Squeeze it. Did you see a tiny drop of water come out of a small hole at one side? Look at the little hole. It is through there that most of the water was taken up. Would you like to prove that? Very well, we will go on to another experiment.

For this we shall want two large flat corks. Take about ten beans and divide

them into two equal heaps. Weigh each heap and write down their weight. Put each lot of beans on their corks, and slip a rubber band across them to hold them in place. See that one lot of beans is placed with the little holes in the seed-coats uppermost, out of the water. In the others let them be downwards so that they touch the water when the corks are floated in saucers or jars with their burden of beans.

Leave your beans for 48 hours and then remove them from their corks. Wipe them carefully and re-weigh each separate lot of beans. The batch that had their little holes touching the water will weigh more than the others. Why?

You can easily prepare a germination jar for almost any kind of seed. Get a glass jam-jar with a nice wide mouth. Cut a piece of clean blotting-paper to fit the inside of it neatly. Now get some sawdust and fill up the jar. It will press hard against the blotting-paper and keep it close against the glass. Next get some water and pour in enough to wet the sawdust and keep the blotting-paper moist. Then you may put your seeds between the paper and the glass, and watch them grow daily. The dampness from the blotting-paper gives them the moisture they need.

It is fun to put various different seeds into this germination jar, and watch how differently they grow. Would you like to do that? Draw them as they develop.

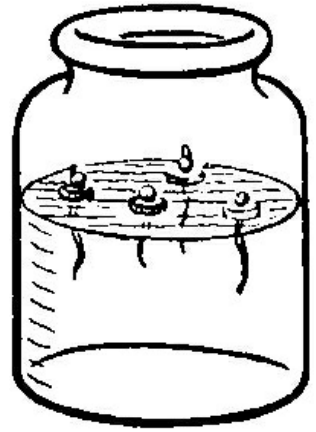
Here is a little experiment you may like to make with a few peas. Get some small corks—or cut a long cork into two or three pieces—and bore a neat hole in each one. Now put your peas one on each cork, just over the hole, and float them in a jar of water. Roots need water, and you will see your little peas putting their roots through the hole in the corks to reach the water down below! The shoot will grow upwards, of course.

The next experiment will show the whole development of a germinating seed very clearly. For this you need a wide-mouthed glass jar again and a cork to fit it. Make a hole in the cork and pass through it a knitting-needle (or long darning-needle will do). Push a soaked bean on to the end of the needle. Now put the cork in the bottle so that the bean hangs in mid-air inside the bottle, over about an inch or so of water. The water keeps the air moist enough for the bean to germinate, and you will see it sending out root and shoot in a most interesting fashion.

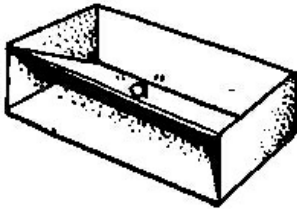
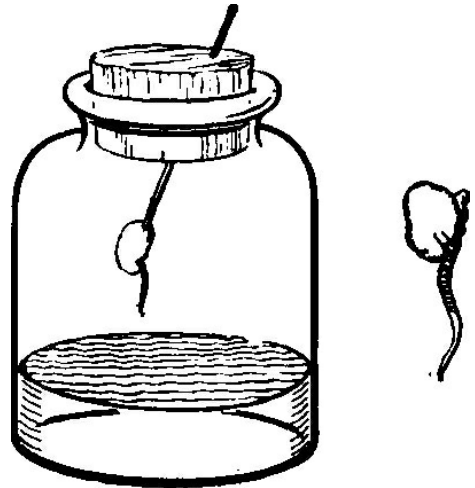
As you watch a seedling developing and see the root growing longer and longer, perhaps you wonder which bit of the root is the growing part. Shall we find out? It is quite easy to do so.



For this we shall want a bean that has a root about an inch long. One that has grown on a knitting-needle in our glass jar will do very well. Take it out and wipe it *very* carefully. Now get a bit of cotton or silk and, holding it at each end, dip the middle of it into the ink-pot. Draw the inky part across the root at the top, making a clear little mark. Now do it again a short distance above, then again and again until the whole root is marked evenly from bottom to top. Now place it carefully in your jar again.



Now you must make a careful drawing of the root, showing on it the exact number of lines, all evenly spaced. Make another drawing in forty-eight hours—and you will have found out which part of the root grows! There will be a piece of root behind the tip which has no marks at all—and that is the piece that has grown, and so made the whole root longer! Isn't that interesting? You will be able to see this happening, if you look at the marked bean's root carefully about every three hours.



It is useful to make a germinating box for seeds.

This is how

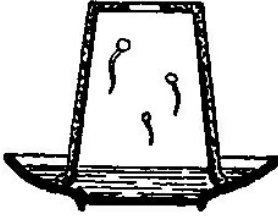
you do it. Get an ordinary wooden box without a lid. Take one side off, and get a sheet of glass to put in it slantways—*i.e.*, the glass should slant in to the further corners, instead of being vertical as the removed side was. You can tack in two little strips of wood to keep the glass in place. Fill the glass-sided box with damp coconut-fibre or with damp sawdust, then put in your seeds, about an inch or so below the surface, resting on the slanting glass. You can then watch them germinating.

Mustard and cress are good seeds to grow because they germinate so quickly. We must really have some of them. How shall we grow them?

Well, you may scatter them in the holes of a damp sponge and let them grow there; or you may grow them on moist blotting-paper or on a piece of wet

flannel.

Another way to grow mustard seeds is to soak them well, and then press them against the inside of a wet flower-pot. They will stick there. Turn the pot upside-down gently and stand it in a saucer of water. Examine the seeds in a few days. You will see that they have sent out long roots, and you will find on the roots some beautiful silky root-hairs. Hold them up to the light and see how fine they are.

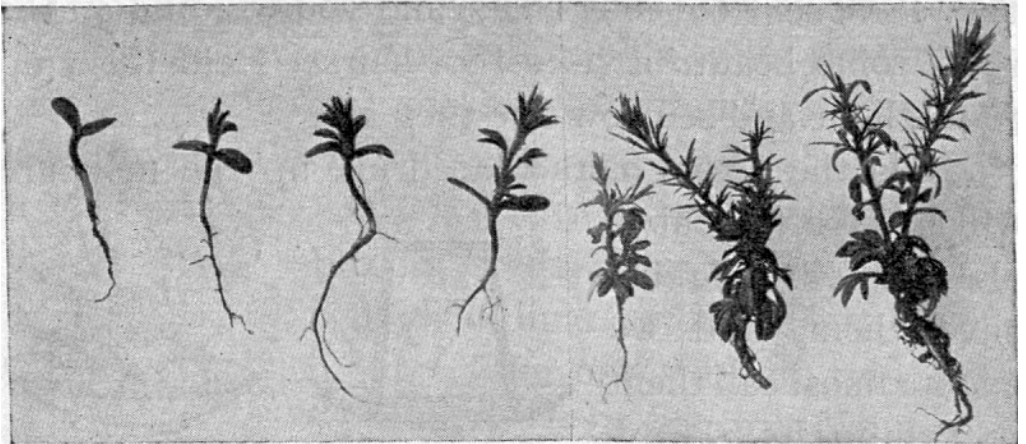


It is these root-hairs that drink up the moisture which helps the baby-plant to live. All roots have them, and we might almost call them root-mouths. They fasten themselves to the earth, when they are in the ground,

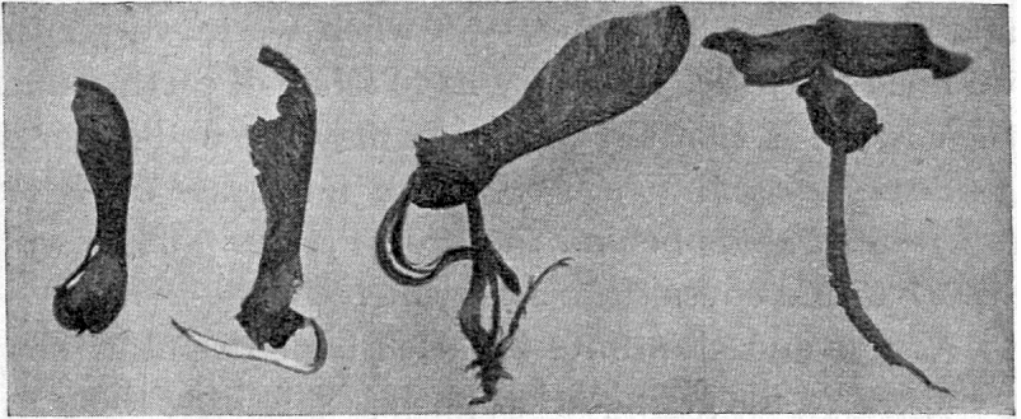
and when we pull up a plant we break these root-hairs. Then the root has to grow new "mouths," and the plant may suffer. So when we move plants we must try to see that they have a ball of earth round their roots, so that the root-hairs may not be broken.

Soak some fir-cones. Shake a few grass seeds or other small seeds behind the brown scales. They will grow out and cover the cone with green.

Acorns and chestnuts are such big seeds that they are splendid for germination purposes. Grow them in the specially made glasses sold for this purpose. If these are not obtainable grow them in the necks of bottles.



DEVELOPMENT OF A GORSE SEEDLING. GROW ONE OF THESE AND SEE HOW SOME OF THE LEAVES GROW INTO THORNS



DEVELOPMENT OF A SYCAMORE SEEDLING

Grow the seeds of as many trees as you can. Ash, plane, sycamore, beech, Scots fir, hazel, holly, and so on, will all germinate. Remember to collect as many as possible in the autumn for use in the spring. They will keep well if stored in sand. Everything may be tried—it is surprising what good results can be had with apple-pips, for instance, or date-stones. The seeds of tropical trees should be started in a warm place, and when the shoot develops, which may be after some long while, the little tree should be kept indoors, not planted outside.

All germinated seeds may be planted out in the garden when finished with. Peas and beans may provide a nice crop, even if only grown in a flower-pot!

THINGS TO DO

1. Choose which experiments you are going to make, and keep an account of them on a chart by notes and drawings.
2. Grow a bean seed and a sunflower seed in a pot of earth. Notice how differently they grow.
3. See if you can find some ivy berries. Grow them in a pot. Keep the earth damp but not too wet.
4. Write down what root-hairs do.

CHAPTER 3

THE WIND AND ITS WORK

Is it a windy day? I do hope it is, because I am going to talk to you about the wind and its work—and if you can see through the windows what the wind is doing, it will be a great help.

I expect you have often wondered what made the wind come. Where does a wind begin? It must begin *somewhere*, mustn't it! The wind is rather mysterious, I always think. We can never see it—we can only see the things it does and feel it as it goes by.

How do you know when there is a wind? Think of all the things that tell you. We see the trees waving their branches about, we see the chimney smoke being twisted here and there, the flags flutter, the weather-cock moves, the clothes on the line dance wildly, and the grass all bends one way. We *feel* the wind, too—it blows cold on our cheeks and it takes our breath away if it is very strong.

What is a wind? Who knows? Take up a book and wave it up and down in front of your face. You have made a little wind, haven't you? You can feel it cold against your face. You can tell what it is now—just a patch of moving air. Even the biggest winds are nothing more than that—air that is moving about. It is very difficult to say where a wind begins, but we know *why* it begins. When air is heated over any place it becomes lighter than the colder, denser air round about; the cold air rushes in and pushes the warm light air before it. When we feel the cold air rushing in we say, "How windy it is!" The current of cold air has made a wind, which we feel on our faces, and which we see stirring the trees.

When you have been to the seaside have you noticed that in the daytime there is usually a breeze blowing up the beach from off the sea? What makes that sea-breeze?

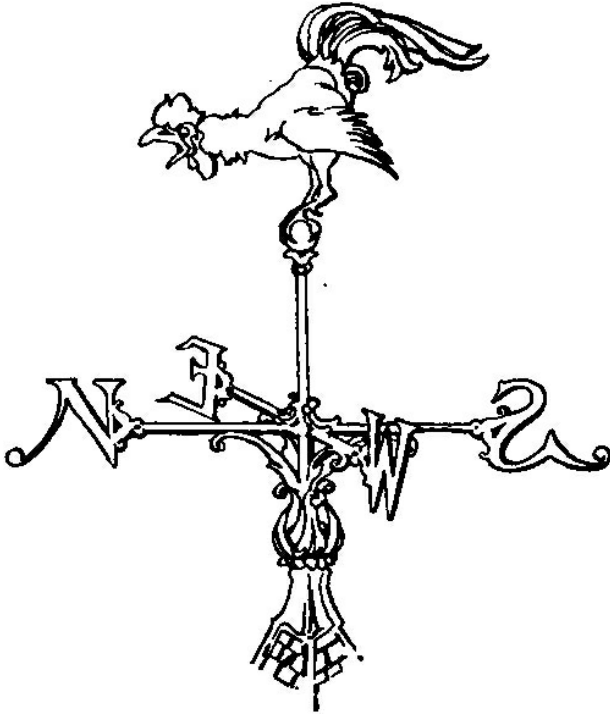
In the daytime the land gets hot more quickly than the sea does, and the *air* over the land gets warm, too. The hot air is pushed away by a rush of cool air over the land from the sea, forcing up the hot air and making a stiff "sea-breeze."

But when evening comes exactly the opposite happens. The sea-breeze dies away and a wind rises over the land and blows seawards. Why is that?

It is because the sea takes longer to cool than the land does, at night, and the air over the sea is warmer than the air over the land. So when the hot sea air is forced upwards by a rush of colder air from the land we say, in

surprise, “Oh, there’s a breeze off the *land* to-night! All day it was off the sea!”

We call these winds land- and sea-breezes, and I have told you about them because they will show you how a wind may begin.



I wonder if you have a weather-cock or weather-vane near your school or home that you have often looked at? The cock you will sometimes see on a church, and if you watch you will see him swing from side to side as the wind blows. Where his beak points is where the wind comes from. Under him are four arms pointing to north, south, east and west. You can see the letters, N, S, E, W at the end of the arms.

Sometimes there is only an arrow to point to the wind—but underneath will be the four arms to tell you which direction is N, S, E or W. A wind arrow is called a

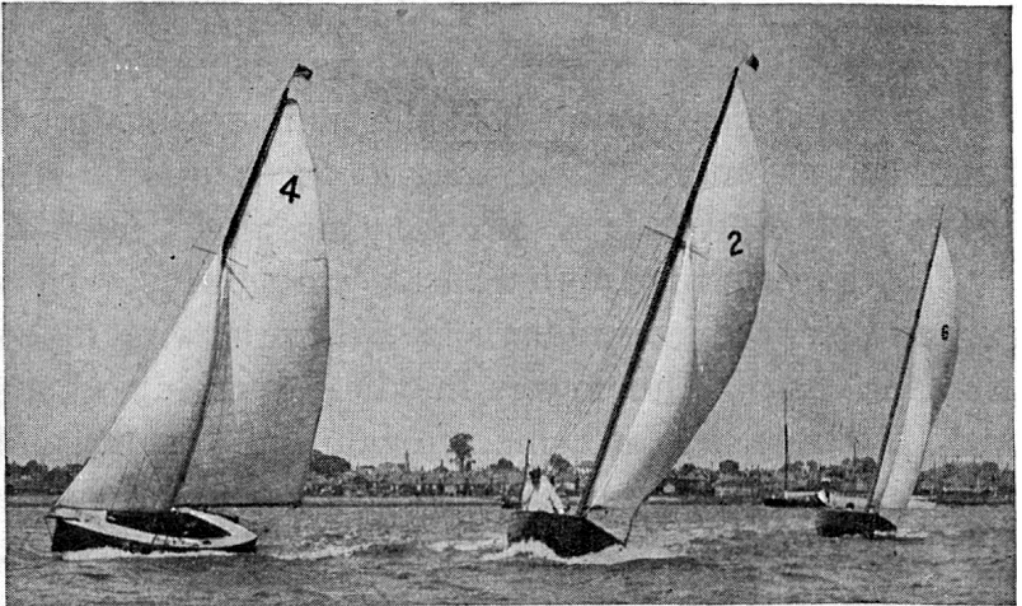
weather-vane.

When the wind blows from the north, what sort of weather do we have? Think of the old rhyme, “The north wind doth blow, and we shall have snow.” It is a cold wind, for it blows over cold lands. Get out your atlas and look to see where our north wind comes from. We are sometimes glad of it in the summer-time, for it brings a welcome coolness—but in the winter it is a bitter wind.

The east wind is another bleak winter wind. How grey and pinched everything looks when the wind blows from the east! The flowers huddle together, no buds open, the bees stay at home, we wrap up warmly, and put on gloves and scarves. The east wind brings no rain, for it comes to us over land, and has long since lost its moisture. It is a dry, bitter wind, and everyone is glad when it is gone. It often comes in March, and holds back the spring. In summer-time it is a hot wind, and seems to scorch everything up with its fiery breath.

The west wind brings us rain. Look at your map. Do you see what a long journey over the ocean the west wind has? It collects moisture on its wet journey, and gives it to us as it blows over our land. It is the west wind that piles up the big grey clouds and brings out our umbrellas.

The south wind is gentle, soft and warm. Even in winter-time it brings mild weather and sometimes rain. Look at your map. It comes from warmer climes than ours and gives us its heat, so that, even in the middle of December, we are warm if it blows, and do not need to wear scarves and gloves or to keep up big fires. It gives us a taste of spring-time. It is a good wind, spring, summer, autumn or winter.



HERE IS THE WIND AT WORK—BLOWING THE GRACEFUL YACHTS ALONG ON THE RIVER

I wonder which wind blows the oftenest over our islands. Do you know? It is the westerly wind—the wind that blows from the west. Sometimes it swings a little to the south, and then it is south-westerly. It is a wet wind, and we generally have much rain all the year round because our “prevailing” wind, as we call it, is a rainy wind. We know why it is wet because we looked at our map to see where it came from, and we found that it came over the sea.

Other countries have other winds. There are winds that bring parched heat, like the Sirocco of the Mediterranean countries. There are winds that bring icy-cold days and blinding snow, like the blizzard of the lands round the North Pole. There are strong rain-winds like the Monsoon of India, the regular,

constant winds, like the Trade Winds, which were given that name because in the days of sailing-ships the traders used to rely on them to blow their ships along.

The wind works well for us. It cleans up the earth, dries the puddles, makes the air pure and sweet. It catches the big vanes of the windmills and sends them swinging round. The machinery of the mill is set going, and the farmer grinds his corn to make bread. In Holland the wind works very hard indeed for the people, and on a windy day the countryside looks very busy with all the windmills turning round and round! The windmills work the pumps that raise water from the low-lying land.

We no longer depend on the wind to send our ships along, because we use steam or petrol now to send them over the sea—but the pretty yachts need the wind, and we also are glad of it when we take our toy ships down to the pond or the sea to sail them.

The wind helps the migrating birds, too. In the autumn, when they leave us for warmer countries, it is the north-east wind that helps them on their way. When they return to us in the spring the south-west wind blows, and by its help they find their way back safely once again.

Trees and flowers also are helped by the wind. Have you seen the catkins that the hazel-tree hangs out so early in the year? They are full of pollen, and, when the wind blows, the catkins shake out their yellow powder, and some of it flies to the tiny red blossoms that sit on the hazel twigs waiting for it. Then, once the wind has brought the pollen to them from the catkins, they begin to make the nuts we like so much in the autumn. The grasses, too, that grow in the fields and in the hedges ask the wind to help them in their seed-making by blowing their pollen about through the air from one grass to another.

In the autumn all kinds of seeds depend on the wind to take them on their journeys. The sycamore keys use the wind, and the dandelion clocks are puffed away by the breeze. The thistle-down travels on the wind, and the ash keys fly off too. They could not do without the wind.

One of the chief reasons why the study of the wind is so important nowadays is because of the coming of air-travel. Airmen must know many things about the wind—how fast it blows, how soon it may be expected to change, whether the air-currents high up differ from those lower down, and so on. Then there are those curious things called air-pockets—“holes in the air”—airmen dislike those, and want to know all about them in order to prevent accidents. The more we know of the wind and its ways, the sooner we shall be able to travel with complete safety in the air.



1. Watch a weather-cock or weather-vane each day, and see how the wind changes. If you are not sure which way the wind is really blowing, wet your finger and hold it up in the air. Which side feels coldest? That is the side from which the wind is blowing.
2. Write down five things by which you may tell there is wind about.
3. Write this down: "Our prevailing winds are westerly winds." Now write down why they are wet winds.
4. Draw a picture which will tell anyone looking at it that it is meant to show a windy day.
5. Ask someone to read you the story of Æolus and the Winds. It is an old Greek story, and you will find it in the Story of Odysseus, or Ulysses.

THIS IS A WIND-BAG AT AN AERODROME

Air-pilots can see at once from what direction the air is blowing

CHAPTER 4

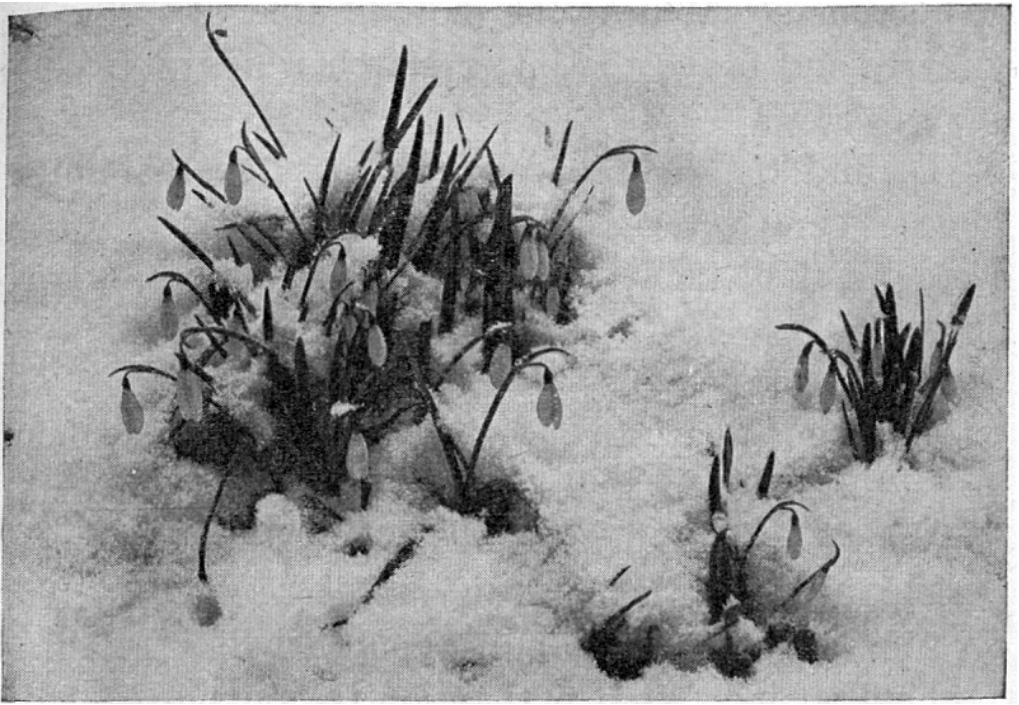
HOW OUR BULBS ARE MADE

Are the bulbs that you planted in your pots and bowls beginning to flower now? Have you some sturdy hyacinths glowing red or blue, or some golden daffodils shining on the window-sill? Perhaps it is still too early for those—maybe it is your snowdrops that are drooping their white heads, or the little scyllas making a patch as blue as the spring sky.

A great deal has happened since you tucked the crocus corms away in their bowl of pebbles and water, and hid the daffodil bulbs in the earth or the fibre. What have you noticed?

The bulbs sent white roots down into the fibre, to look for water to send up to the growing plant. They held it firmly, too. Then the shoot pushed up out of the bowl, and we said, “Oh, look! The hyacinth is growing!” The fat green shoot grew longer and longer, and one day we saw that there was a flower bud in the middle of it. The flower bud grew, too, and gradually colour came into it. Perhaps that is as far as your hyacinth has got—or perhaps it is in full flower, sending its strong, sweet scent over the classroom.

The crocuses growing in the pebbles were very easy to watch. Some of the white shoots actually pushed aside the stones to make room for themselves as they grew! Soon the white sheath round the shoot split, and we saw the thin, pointed green leaves. Then, growing between them, came the crocus flower itself, wrapped up in a white covering. Soon it, too, split its covering, and one sunny morning it opened wide—a yellow crocus beautiful to see. I hope you put the date of its flowering down on your Nature Charts!



SNOWDROPS FLOWERING IN FEBRUARY SNOW

How is it that the funny brown things we planted can grow and make such lovely flowers so early in the year? What makes the snowdrop flower in the snows of February? Why is the daffodil able to spring up so early and brave the bitter March winds? Do any of you know?

To find the right answer we must get a bulb of some sort and a crocus corm and see what is inside them. Then we shall know the secret of the early-flowering plants.

We do not need to pull up one of our daffodil bulbs or one of our hyacinths—we will get an ordinary onion instead. That is a bulb, too, and will do quite well.

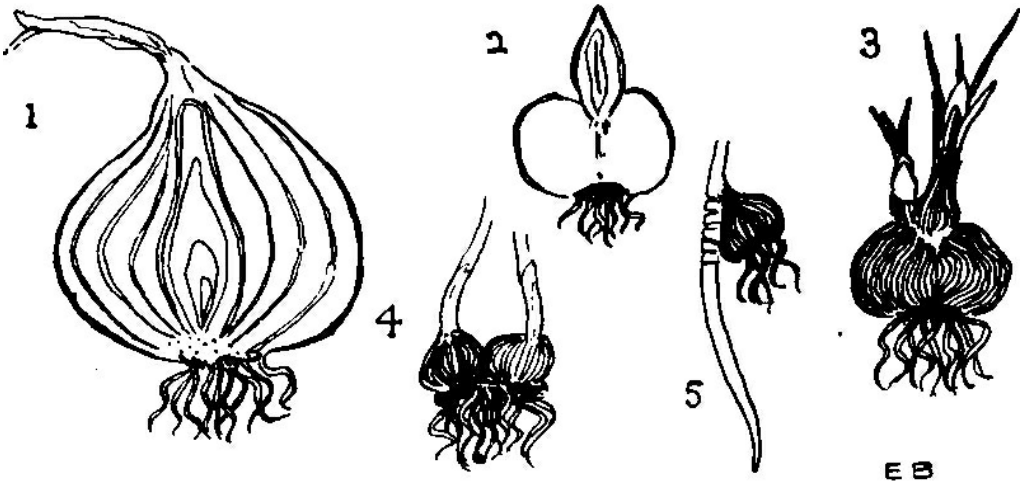
Here it is. You have all seen onions at home—perhaps you have helped your mothers to cut them up for soup. They are the bulbs you know best of all.

Look at it. What is there on the outside? Thin, papery yellow-brown scales. Let us take them off and see what is underneath. Look! Here is the solid onion, full of good food for us—and full of good food for the plant, too!

We will cut the onion in half, from the bottom upwards, right through the middle. There! Look at the two halves. What can you see?

Examine the layers of white fleshy scale-leaves. We can separate them with our fingers. They fit one on top of another. In the middle is something else, cut neatly in half so that we can see how it is made.

It is the new onion plant. How carefully it is hidden away, leaves and flower-bud, neatly packed together.



1. ONION BULB CUT IN HALF. 2. CROCUS CORM CUT IN HALF. 3. CROCUS CORM SHOOTING (note where a new corm is being formed). 4. TWO NEW CORMS (note old corm below). 5. HOW A SHALLOW CORM GETS DEEPER DOWN (notice how the root has wrinkled by the corm, so pulling the corm downwards).

All bulbs—daffodil, hyacinth, tulip, snowdrop, scylla—are made in the same way as the onion. First come the outer papery scales—then come the layers of fleshy leaves, and last of all, tucked in the midst, is the new plant with its leaves, petals, stamens and pistil all ready prepared.

Right at the bottom of the bulb you will see a flattened, solid piece, and from this the roots spring that hold the bulb in the soil, and find water for the growing plant. Can you see it?

I am sure you know what the fleshy leaves are for. They are full of food, and they act as a well-filled larder to the growing leaves. The plant tucked away inside needs plenty of food as it grows out of the bulb, up into the air, and this it takes from the juicy scale-leaves below. We enjoy an onion when we eat it, don't we? We feel there is a great deal of good stuff in it. You can guess, then, how the growing plant enjoys the stored-up food, and uses it to enable itself to grow tall and strong.

The plant sends up its leaves first, and then the flower. All the time it is eating up the stored food below. What will happen to those fat juicy white leaves in the bulb? Of course they will become thin and shrivelled, won't they? Their goodness is being taken from them and used by the growing plant. And there at last comes a time when there is no more food left at all, and the fat leaves are papery and dry.

But now the green plant-leaves are doing some work, and making food

themselves. Some of it they use—but some of it they send down to their bases, which gradually become fat, juicy, and fleshy, just like the scale-leaves you saw in the onion we cut in half—and thus a new bulb is formed, ready to feed next year's baby plant, which is tucked away in the middle of the new food-leaves. The old food-leaves only remain as the papery, yellow-brown covering outside.

I expect you have noticed that we speak of daffodil or onion *bulbs*, but crocus *corms*. Doesn't the crocus have a bulb, then, like the daffodil? It certainly looks much the same sort of thing outside, doesn't it? It is a squat little thing with a red-brown covering of paper skin. Why do we call it a corm, and not a bulb?

Perhaps it is different *inside*. Shall we look? We will cut it in half as we did the onion, and then we shall see what is inside. There! Look at the two halves of the corm. What do you see? Can you see juicy, thick food-leaves, as you did in the onion?

No, there is not a single one! All we can see is a solid white piece, and, at the top, a shoot, or perhaps two shoots, like smooth white teeth. If we have cut a shoot in half we shall find that inside are tiny leaves and a flower, just as there were in the bulb shoot—but the bulb shoot was inside the *middle* of the bulb, not at the top, as the crocus shoot is.

Do you remember seeing the flattened piece at the bottom of the onion—the piece from which the roots grow? Well, the crocus corm is entirely made up of that solid part, and has no fleshy food-leaves at all. It stores its food in the solid piece, and the growing plant takes it from there as it shoots up into the sunshine. As the food is used up, the white solid corm gets smaller and smaller. But it does not matter, because little new corms are being made at the top of it, where the new plant is growing.

A crocus may send up one, two, three or more shoots, all of which may flower. Each of these shoots has leaves, which work hard in the sunshine and begin to store up food for next year. They store it in new little corms which grow at the foot of each shoot!

Shall we take up one of the crocuses we are growing in pebbles? Find one that has finished flowering if you can. See! Here it is. Look at this corm we planted—it has long, white, tangled roots growing from it now. Here is the long shoot that contained the leaves and flower that are now hanging limply down, finished. You can still see the white sheath that held the young plant.

Now look at the base of the shoot or shoots. If we are lucky we may be able to make out two or three new little corms forming there on top of the old one. If we plant this crocus in the ground the corms will grow bigger as the leaves still do their work, and we shall soon have two or three crocus corms where once there was one. How generous of the crocus to give us two or three

corms instead of one! We shall have more flowers each year, as they multiply.

Will the crocus corms come nearer to the surface of the earth, year by year? The new corms grow continually on top of the old each spring season, and it seems as if they will at last reach the surface, doesn't it! Certainly the corms will eventually stick right out of the ground unless something happens to prevent them! The crocus has a good idea for keeping itself at the right depth. From one of the new corms grows a thick root, going right down below the little new corm. After a while the upper part of the root begins to get shorter and thicker—and the corm finds itself being pulled downwards as the root contracts—rather like a worm contracts when it is touched! For three or four years the same thing happens to each new corm, until at last the right depth is reached.



[Photo, Courtesy, Carter's Tested Seeds, Ltd.]

“DAFFODILS,
THAT COME BEFORE THE SWALLOW DARES, AND TAKE
THE WINDS OF MARCH WITH BEAUTY”

And now you can easily answer the question we asked at the beginning—How is it that daffodils, hyacinths and crocuses are able to flower so early in the year? It is because there is plenty of food stored away for them inside the bulb or inside the corm. Frost cannot get at them because they are deep down in the earth, and so they are kept safe through the winter, and can push up their

shoots early, feeding them well as they grow, out of their bulb or corm larders.

They flower early—but they die down early too, most of them! We must not cut off the long, yellowing leaves, because they may still have work to do in filling up the new bulbs or corms with food for the next year's plant. We must let the leaves die right down before we pull them off. We shall know when they are ready to come off because they will come away easily in our hands when we pull them.

Plant your old bulbs and corms—the ones that are flowering in your bowls now—in a corner of the garden when they are finished. Let the leaves stay on until they are done. Next year the bulbs will flower again, but not in bowls—only in the garden at the right time of year. They may perhaps miss a year before they flower—but sooner or later that corner of the garden will be gay for you in the very early spring!

THINGS TO DO

1. Look at an onion. Draw it.
2. Look at an onion cut in half. Draw it.
3. Look at a crocus corm cut in half. Draw it.
4. Write down how you would know a bulb and how you would know a corm.

CHAPTER 5

MAKING AN AQUARIUM

One of the most exciting things we can have is an aquarium. In this chapter I will tell you how to make one and get it ready for its many water-folk. It is perfectly easy and most interesting. Later on I will tell you how to stock your aquarium with various creatures and how to keep them healthy and strong.

To begin with, of course, we must get a glass tank of some sort. Did I hear someone mention a glass globe? No, I'm afraid that will not do. Pretty as those globes are they are not the right shape for fish or other water creatures, because they are curved in at the neck, and not enough water surface is exposed to the air. This is the reason why so many goldfish die in glass globes.

What we want is a straight-sided glass tank, say about twenty inches by fifteen, or bigger if we can get it. The height should be about a foot. We can get this cheaply from an electrician or from a wireless shop, if we ask for an old glass accumulator. Having bought our tank we must clean it thoroughly both outside and inside. Wipe it dry and stand it in the sun.

Now, set to work and find a collection of small rounded pebbles. Hunt your gardens for them. Wash them thoroughly until they are clean and shining.

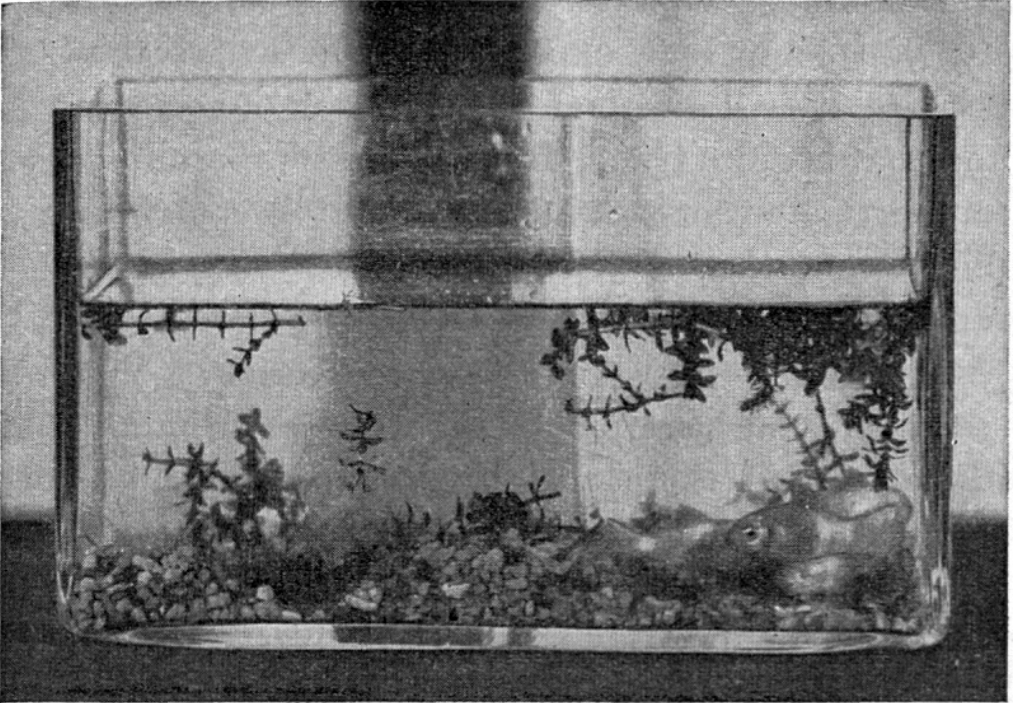
Now get some clean bird sand—or silver sand is pretty—from a shop. (Do *not* use sea-sand.)

Take your tank, and arrange all your pebbles neatly at the bottom. Cover them with your sand. Now can you find some much larger stones, which will shelter the water creatures and make your aquarium look like a real pond to them? If you can, find some stones with holes through the middle; they will like those. If you mean to keep tadpoles and let them grow into tiny frogs, arrange one of your stones so that it reaches the surface of the water. The little frogs will be glad of a resting-place at the surface.

Now we must fill the tank. For this you must get either pond-water or else rain-water from a butt. Do not use tap-water. Pond-water is full of tiny water-life, and is excellent for an aquarium. How are you going to pour it into your carefully arranged tank without disturbing your sand and pebbles? Well, you can either place a sheet of thick paper on the sand, and pour the water gently on to the paper, taking it up when the tank is about a third full and then filling in the ordinary way, or you can pour the water gently on to one of the big stones. Remember to pour slowly and gently.

Set your tank on one side until the water is perfectly clear. Whilst it is clearing you must go hunting for something else. This time you must visit

ponds for water-weed. The most useful kind is that called Canadian pondweed, which you will find in trailing masses of green stalks, round which grow closely-set oval leaves. Duckweed you will know very well from its habit of covering a pond like green scum, floating thickly on the surface. You will find other water-weed, too, some floating loose, some growing up from the bottom of the pond, like the Canadian pondweed.



THIS SCHOOL AQUARIUM IS SIMPLY AN OLD ACCUMULATOR. IT MAKES AN EXCELLENT TANK

(notice the Canadian pondweed growing in it)

Why must we have water-weed in our aquarium? Do you know? I expect someone will say, "Oh, because it will be food for some of our creatures," and that is quite true. But the most important reason for putting water-weed in is that it keeps the water pure by aerating it. If we have water-weed in we shall rarely need to change the water.

How does the weed aerate the water? You will see, when you have put it into your aquarium. Once it has settled there and begun to grow, you must watch it on a sunny day. You will see a strange and lovely thing; from the leaves, or from a new-growing bud will shoot dozens of tiny, silvery air-bubbles, rising steadily upwards to the surface. Watch for them, won't you?

You must plant your pond-weed in this way: get three or four pieces and

tie the ends of their stalks together with cotton. Now take a small stone and tie it to them. Drop the stone in the aquarium. It will sink to the bottom, dragging the weed with it. The weed will float upright in the water, and very soon will root itself in the aquarium and grow splendidly. Have as many little clumps as you like, and let one or two strands float loose to make your tank look green. If the weed grows too fast, thin it out.

Duckweed you may just drop into the water. It will grow on the top—but if you have this weed you will not be able to look in at the top of your aquarium, because it will soon cover the whole surface. Still, it's fun to try anything. You can easily take out what you do not want.

Water-cress grows well in an aquarium, but is not so graceful as the other weeds.

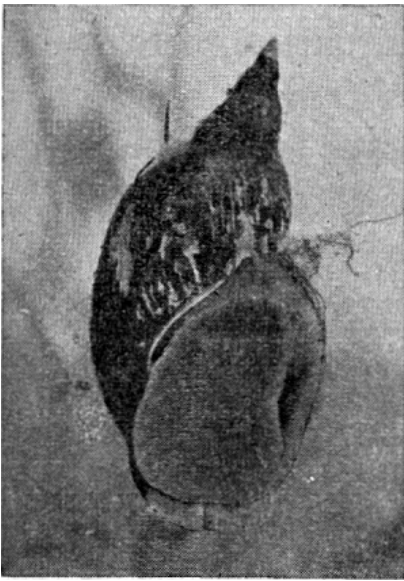
Now, with sand and pebbles in, large stones for shelter, pond-water and pond-weed, our aquarium is finished—it is waiting for its water-creatures. It is not difficult to prepare, is it? You will have great fun starting it, and I expect you are all longing to begin. But once you have made your aquarium, there is still quite a lot to do. You must keep it CLEAN, or the water will smell and become cloudy.

I am sure someone will say that it will be quite easy to keep clean, because the water can be changed as often as necessary; but I don't want you to change the water! Perhaps once every three months you may like to change it, if it has become cloudy, and I will tell you the easiest way to do this without disturbing everything—but it should not need changing any more often than that. You can keep it clean yourselves quite well.

First, the water-weed will purify the water for you with its silver bubbles of oxygen. Second, you will please find a supply of water-snails, who will act as your aquarium dustmen, removing all rubbish and eating all green slime! Isn't that a good idea? You will find water-snails in most ponds (land-snails will not do, of course). There are many kinds of water-snails, and any of them will be your dustmen. Put them gently into the aquarium.

They will feed on the pond-weed, and you will also see them rasping off the green slime that is sure to form on the sides of the tank, making it difficult to see into the water. You can watch them doing this. Their file-like tongue is rubbed up and down against the glass and, presto! it is clear and clean! You will never have slimy, blurred glass if you keep water-snails in the aquarium. They also feed on any decaying rubbish that you may have overlooked. After a time you will find that there are dozens of baby water-snails here and there, too, all helping to clear up!

Well, with the water-weed to purify the water and the snails to clean up the rubbish, is there anything left for *you* to do? Certainly there is. You must look into the tank each day and see if there is any

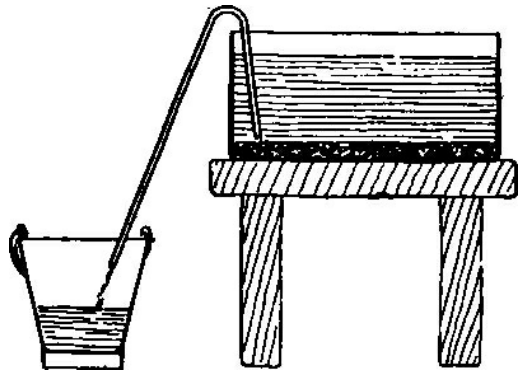


THE GREAT POND-SNAIL—A VERY USEFUL MEMBER OF THE AQUARIUM

bit of decaying food, any dead snail or other creature, and get it carefully out. I always find that a pair of wooden pincers is best for this. Some people use a long iron spoon. Nothing should be disturbed when picking out any rubbish each day.

If you really *must* change the water, this is how to do it. It is really rather an exciting job, and you should know the way to do it. It is done by *siphoning* out the dirty water. Look at the picture and you will see how to do it.

First we want a piece of glass tubing, bent in two, so that there are two arms, one short and one long. The inside of the tube should measure about $\frac{3}{8}$ of an inch (we call that the *bore* of the tube). The short arm should be long enough almost to reach the sand at the bottom of the aquarium when the tube is hung on to the tank.



HOW TO CHANGE THE WATER IN YOUR AQUARIUM, BY SIPHONING

Before placing the glass tube in position you must fill it with water. You can easily do this by laying it down in a sink of water and letting it fill. Then place your finger firmly at the bottom end, and hang it on the tank, as shown in the picture. Take away your finger and the water will flow out into the basin or pail you have placed under the longer end to catch the dirty water. Place a piece of gauze over the top end, or your tadpoles will flow away! Your tube will siphon out practically all the water for you, and you can then fill your tank with new pond-water or rain-butt water by using your siphon again (letting the new water run from a basin placed *above* the tank), or you may simply pour water gently on to one of the big stones from a jug.

Be sure that the fresh water is at the same temperature as the old. If it is not, your creatures may be chilled and die. Many goldfish have been killed in this way, by having fresh, very cold water put into their globe instead of water

of the same heat as the old.

Put the aquarium in a cool, shady place, *not* on a window-sill nor in the sun. Direct sunshine should never be allowed to heat it. If it does, your animals will die. Many children put their jars of tadpoles in the sun, thinking they will like it—but this kills them when in a jar or tank. In a pond they can wriggle up to the sun, heat themselves, and then wriggle off to a cool place. They cannot do this in a jar, globe or tank. Some aquarium-keepers paste brown paper round the back and sides of the tank; I never do this, but instead I keep my aquarium in a shady corner, preferably near a north window. If you can put yours on a table near a north window it should do well. If you have plenty of green weed a fairly strong light will not do much harm.

Put a pinch of salt in your aquarium occasionally. This helps to keep away disease.

If a hard, brown deposit forms down the corners of your tank clean it off with sand after emptying out the water.

Now I have told you all you need to know about starting your aquarium and keeping it clean. I will next tell you what to keep.

THINGS TO DO

1. Make your aquarium.
2. Search for pond-weed and pond-snails. Bring them home in a jar of water.
3. Keep your aquarium clean.
4. Watch for the air-bubbles gushing out from the pond-weed.
5. Stand by a pond and watch what you see in it—beetles, fish, snails, frogs, everything. Write down a list of them.
6. Draw an aquarium and put fish, water-weed and snails in it.
7. If you keep a goldfish in a globe find some pond-weed to put in the globe. It will like it very much. A few snails will also keep it company.

CHAPTER 6

STOCKING AND KEEPING THE AQUARIUM

I hope that you have all made an aquarium, because I am now going to tell you what to put in it in the way of livestock, and how to keep your creatures healthy and flourishing.

Have you put in your pond-weed and your water-snails? You may find the snails in most ponds. If not, they are cheap to buy, and you can easily purchase a dozen, or less, according to the size of your aquarium. A dozen will do in an ordinary tank.

I told you before that they will act as dustmen, eating refuse, and removing the green slime from the glass. They will also provide another interest—they will lay their eggs in little strips of jelly, on the side of the tank!

Watch the little dark pin-points in the jelly each day. You will see them growing bigger and bigger until at last you will be able to make out that each little amber pin-point is a tiny snail, complete with shell! Then comes a day when each minute snail walks out of the jelly, and proceeds to the pond-weed for a meal! They are beautiful little creatures. They grow rapidly, and soon become fair-sized snails. When the jelly-slab is empty you can clear it away. If you get too many snails perhaps some boys or girls would like to have one or two themselves to watch in a glass jar at home—or if anyone has a goldfish at home it will be quite pleased to have one or two of the little snails for company—but remember to put weed into the water for the snails to feed on.

There are different sorts of snails. The ones I like best are the whelk-shaped Great Pond Snail, but the little Ram's Horn Snails are pretty, too. They are shaped like a ram's horn, as their name tells you. Most ponds have them.

You may put snails with any other aquarium creature, and they will neither do harm nor be harmed.

Most children will want to keep goldfish in their aquarium. They are such pretty creatures, and may be easily tamed. Under healthy conditions goldfish are very long-lived.

Now, first of all, when you go to buy your goldfish, you must be sure to get strong healthy ones. Do you know how to tell when a fish is well or not? Look at the top fin on its back. Is it well spread out, waving about as the fish swims? That fish is well, if so. But if the back fin is closed up, flattened down, something is wrong, and you must not buy that fish.

Then look at the fish and make sure that it has no little growths on it, because goldfish often suffer from a fungus disease which shows itself in

horrid cotton-woolly-like patches here and there. These patches are a fungus growing on the fish. When it reaches its gills it cannot breathe, and it dies. Choose a fish whose scales are clean and glistening.

Do not have more than two or three small fish in a little tank. You can put ants' eggs in for them, if you like (they are really the *cocoons* of ants, not their eggs), but there is very little food in these. You will find that one of the best things to feed your goldfish on is uncooked porridge oats. Nearly all of you children will have porridge for breakfast, I expect, so I am sure your mothers will sometimes let you have a pinch out of the porridge-oat packet for your fish. Do not give them more than a tiny pinch or you will find that it decays and spoils your aquarium. It will not hurt the fish to go without their oats at the weekend, so do not worry about that. They will enjoy tiny shreds of raw meat now and again, but please watch to see that no piece is left to decay in the water. Look each morning to see if there is any stale food to remove, or decaying leaf or dead creatures.

Do not give your fish bread to eat. Bread in an aquarium is not good.

Should one of your fish show signs of developing the fungus disease I spoke of, you must cure it. It is most infectious, so you must carefully remove the fish from the aquarium, and put it by itself in a fair-sized jar of water. It is really better to catch the fish in a small net rather than to take it in your hands, for if it should jump out in fright it may injure itself.

Put it into a jar (and **BE SURE THE WATER THERE IS AS WARM AS THAT IN YOUR TANK**, or you may kill the fish), and into the water put some ordinary cake salt in the proportion of half a teaspoonful (a very generous half) to each quart of water. The fish will shake its head in dismay, for it will not like the salt water at all, but the salt kills the fungus. Each day change the water (same temperature each time, please) and put in fresh salt. You will see the fungus gradually disappear, and at the end of four or five days the fish is cured, its back fin is standing upright, and you may put the patient back into the aquarium again.

If the fish is very bad it may be longer before it is cured. Increase the salt, if so. Watch to see no other fish takes the disease. After you have taken out the ill fish you must change the water in your aquarium, in case the infection should be carried in the water to other fish. It is a good idea to put a pinch of Epsom salts into your aquarium now and again. A well-balanced aquarium (with snails and pond-weed) rarely gets unhealthy. Remember that any fish who looks weakly will benefit by a salt-water bath.

Of course, you must keep tadpoles in your aquarium! Go out to the ponds and get some frog-spawn. You will find some now. Bring it back and put it into the water. The black specks will develop into the tiny tadpoles. You may have a good many when they are very tiny—but when they get big you must

take most of them back to the pond and let them go, for if you crowd your aquarium with them there will not be enough air in the water and your creatures will die. Watch them feeding on the pond-weed. And please remember not to keep scores in a little jar at home—four or five is quite enough if you want them to live!

When they grow their legs and lose their tails you must be sure to see that some of your stones are at the surface of the water for the little creatures to rest on and poke their noses out to breathe the air.

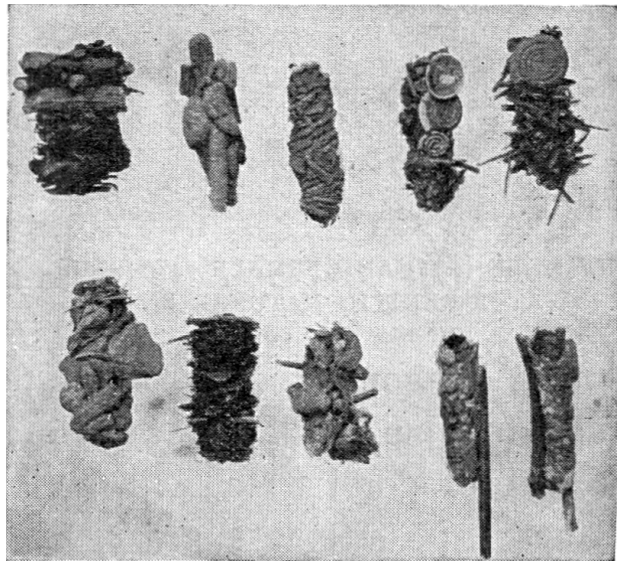
Twice a week you must tie a piece of raw meat to a string and hang it in the aquarium. The tadpoles will all come round in delight and nibble at it. Take it out before you go home.

Take a net and go to a pond. Scrape the net along the bottom and you may bring up some curious creatures called caddis-grubs, the grub of the caddis-fly. These little things have such soft bodies that to protect themselves they build hard cases of tiny sticks, pebbles, mud, shells, and so on. Put them in your tank and watch them crawling about.

If you want to perform a most interesting experiment, remove the hard case from the grub and put the grub in a glass jar with water-weed. Put into the jar some coloured glass beads—you will see the clever grub make itself a home out of the beads!

You may like to have sticklebacks and minnows in your aquarium. You can catch them in a pond. You may put minnows with goldfish, but if you want sticklebacks keep them alone in the tank, with snails and caddis-grubs only, for they are given to fighting.

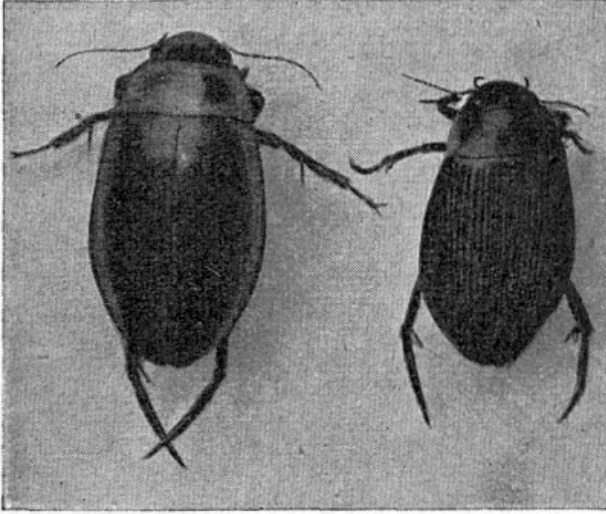
Perhaps you may catch a big black water-beetle, about two inches long! It feeds on pond-weed, and is a busy, interesting creature. Cover your aquarium when you have a Great Black Water-Beetle, or it will fly away. Many beetles can fly, you know! A piece of perforated zinc makes a good tank-cover.



SOME OF THE CASES BUILT BY CADDIS-GRUBS TO PROTECT THEIR SOFT BODIES

There is another water-beetle, about half the size of the one I have spoken

of, called the Dytiscus Beetle. Do not put him in your tank with other creatures (except snails), for he will eat them. Feed him on raw meat.



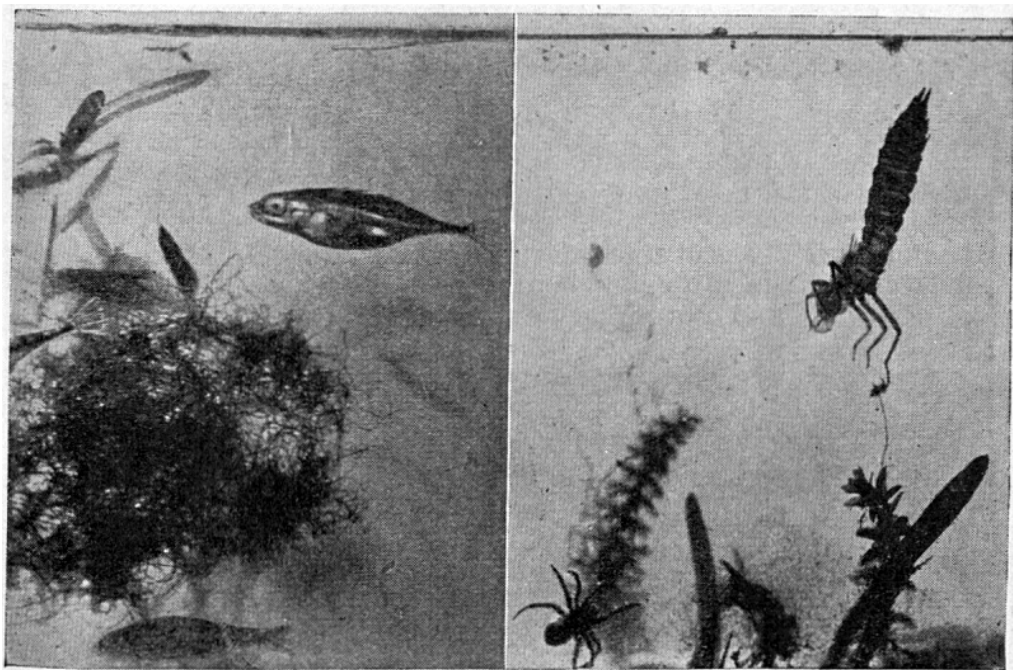
THE MALE (*left*) AND FEMALE DYTISCUS WATER-BEETLE, NATURAL SIZE

You may perhaps find a dragon-fly grub in a pond and bring him back to your tank. Beware of him also, for he is a real dragon! He will gobble up tadpoles and attack fish. He is a great, big thing, two or three inches long, a little like an enormous misshapen earwig. If you could possibly keep him in a separate tank with snails and weed, and feed him on raw meat, you might have the glorious surprise of seeing him one day climb up a piece of weed to the surface, split his skin—and

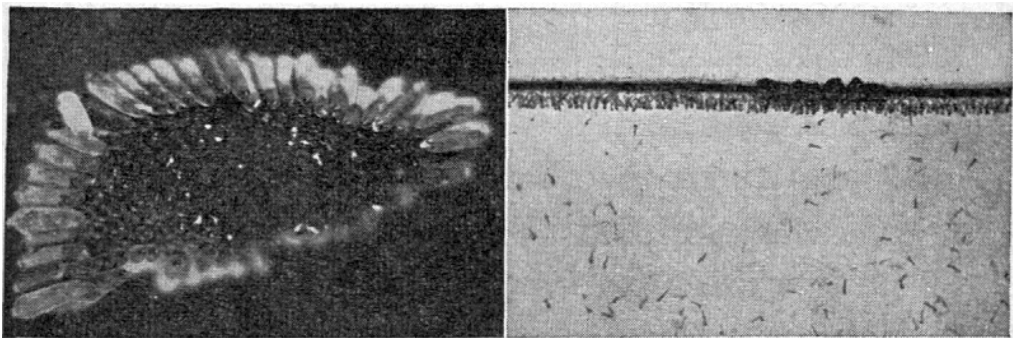
appear as a marvellous gleaming-winged dragon-fly! But it is very difficult to keep one properly.

You may be able to take some newts from a pond. There are three kinds. The great crested newt is the biggest, a beautiful creature with an enormous crest all down his back. If you can keep one for two or three days in your tank you must look at his finger-like feet, and see the wonderful colouring on his chest and under-parts. Goldfish are not very fond of newts, so do not keep them together for very long. Cover up your tank when keeping newts, or they will crawl out!

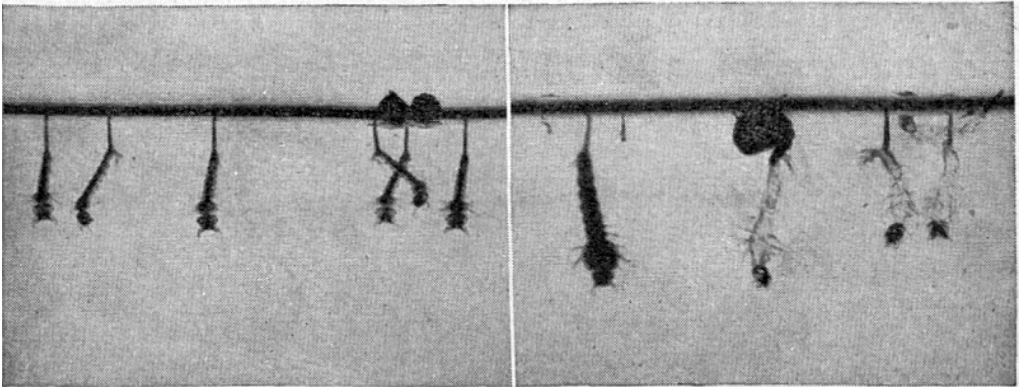
Look in rain-butts in the early summer and you will see tiny little rafts of eggs. These are the eggs of the biting gnat. Put some in your aquarium and watch them. The grubs come out from a little trapdoor on the underside of each egg. You may also find gnat *grubs* in the rain-butt. (See p. 58.)



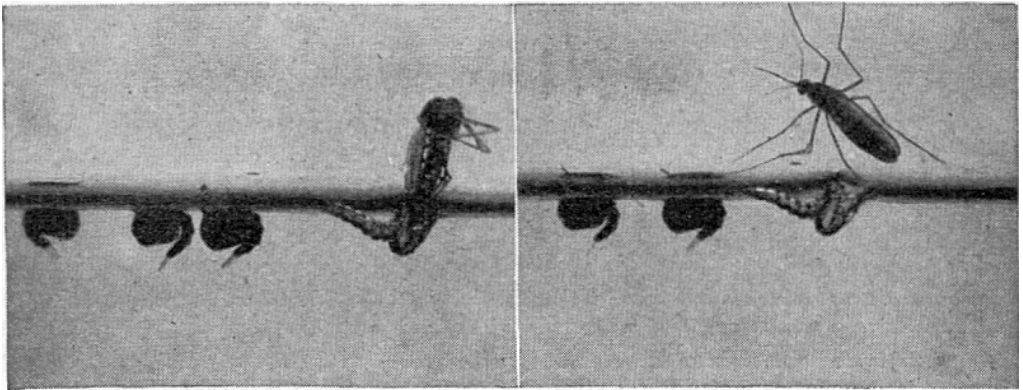
Left: THE STICKLEBACK AND HIS NEST. Right: A DRAGON-FLY GRUB STALKING A WATER-SPIDER.



Left: A raft of gnat-eggs, seen from the top. Right: Gnat larvæ or grubs, just hatched from an egg-raft. Some are on the surface of the water, some are diving.



Left: Four-day-old grubs, taking in air with their tail-tubes. *Right:* Gnat larvæ change to pupæ when 11 days old. One is in the act of changing, and cast-off larvæ skins can be seen on the right.



Left: When 14 days old the gnat-fly splits open the pupa-case and climbs out. *Right:* After resting for a few minutes it is ready to stretch its wings and fly away.

The quaint little water spider really needs a small aquarium or jar to itself. It wants a fairly deep vessel, and this must be kept covered. Put in fresh pond-weed at intervals, and it will feed on the tiny water-life contained in it. Perhaps it will make its marvellous nest of air-bubbles for you to see. It will be happy without food or fresh pond-water for a few days if you wish to keep it only for a short time.

Here is a list of water-creatures that you may safely keep together:—

1. Water-Snails, Caddis-Grubs, Tadpoles.
2. Fish, Water-Snails, Newts.
3. Newts, Snails, Caddis-Grubs.
4. Dytiscus Beetle and Ram's Horn Snails.
5. Great Black Water-Beetle, Fishes, Snails, Caddis-Grubs.
6. Dragon-Fly Grubs, Trumpet-Snails, Caddis-Grubs.
7. Water-Spiders alone.

THINGS TO DO

1. Find a book about water-life. Read all you can about water-snails, newts, minnows, water-spiders and the rest.
2. Find pictures of any water-creatures and pin them on the wall.
3. Visit any aquarium there may happen to be near you.
4. Take a net and a jam-jar to the nearest pond and do a little fishing. Put back any creature you do not need.
5. Watch your fish each day to see that their back-fins are upright.
6. Write down all you see after you have paid a visit to a pond.

CHAPTER 7

TWO SINGERS—BLACKBIRD AND THRUSH

I think everyone knows the blackbird and the thrush—the blackbird because he is so black, and the thrush because of his pretty speckled breast. Surely everyone knows, too, how beautifully they sing, even if they do not know which song belongs to the thrush and which to the blackbird!

Has the blackbird visited your bird-table and pecked greedily at the porridge, potato or soaked bread? Has the thrush come, his bright eye on the look-out for his enemy the cat? What are they like?

The blackbird is a handsome bird in his dress of glossy black. What colour is his beak? What a bright orange it is! How it shines in the sun! Look at his bright eyes. Can you see his eyelids? They are orange-yellow, too, to match his beak. He is a smart-looking fellow, to be sure, and he is proud of his unusual plumage and of his perky tail.

He is always eager to show you what a fine tail he has. Have you seen him fly down to your bird-table or to the fence? Did you notice how he switched it proudly upwards as he alighted? Watch him next time, and see how anxious he is to show you his tail!

A great many people know the blackbird very well—but when they see his wife they are quite sure *she* is not a blackbird! Do you know why? It is because she is dark brown instead of black. She really looks rather like a large sooty-brown thrush. Perhaps you thought she *was* a specially dark thrush—look closely next time you see what you think is a large, dark-brown thrush, and you will find she is a hen blackbird.

Why do you suppose she is brown instead of black? Well, as she has to sit on the eggs, and make herself as little seen as possible, a sober brown is a much safer dress for her than the glossy black plumage of her husband. The cock blackbird rarely sits on the eggs. His wife hatches them out, and when she sits closely on her nest her dark brown dress is not easy to see. She wears it for protection. You will usually find that it is the cock bird of any species who wears gay feathers, while the hen bird is content with a dull dress. It is she who has to do the important work, so she is protected by her dull colours.

How can you tell the thrush? Yes, by his pretty speckled breast! His back is olive-brown, and his buff breast is freckled with fan-shaped spots of brown. His wife has the same colouring, but she is a little smaller. She does not need a different-coloured dress because there is nothing startling or striking about her husband's dress. She can safely wear the same!

The thrush is almost as big as the blackbird, and they both have the same habit of running quickly from one place to another on the grass, or of giving very long hops—especially the thrush, who can give surprisingly long hops.



THE GLOSSY BLACKBIRD

I must just mention another thrush to you—the missel-thrush. I do not want you to muddle him up with the song-thrush. If you see what you think is a very large, pale thrush, it will be a missel-thrush, not a song-thrush. He is a rather ungainly bird, not so neat and compact as the song-thrush. Perhaps you know him under the name of Storm-Cock. He owns that name because he loves to sing in a storm.

Both the blackbird and the thrush belong to the same family, and each sings beautifully. Some people cannot tell the difference between their songs, but there really is a great difference. I wonder how many of you could tell me which is which if you heard both?

First we will take the thrush's song. He sings beautifully. His notes are sweet and true, and he likes to sit in a tree at sundown and sing a good-night song. Listen to him. He finds a tune he likes and sings it over two or three times. "Pretty Dick, pretty Dick, pretty Dick! Ju-dy, Ju-dy, Ju-dy! Why did you do it? Why did you do it? Wit, wit, wit, you'll be late, you'll be late! Mind how you do it, mind how you do it, Ju-dy, Ju-dy, Ju-dy!"

So he goes on, finding one little phrase after another, enjoying himself

thoroughly. It is delicious to listen to, and you can fit many funny little sentences or words to his song. The next time you hear a thrush singing, listen hard and see what he says to you. He may say: "Wake up, wake up, wake up!" Or, "I saw you, I saw you!" or even, perhaps, "How d'ye do!" There is one in my garden that says: "Dear dear, dear dear, dear dear!" regularly, and also "Bo-peep! Bo-peep!"

The blackbird sings more beautifully than the thrush, and he rarely repeats himself as the thrush does. He sings a melody that goes on to the end, a real tune. He sounds as if he is making it up as he goes along, thinking about it, enjoying it. But he often spoils it at the end by a funny explosive sort of noise, almost like an exasperated sneeze, if you can imagine such a thing! I do not know why he does it. It is a pity, because it does not suit his beautiful song at all. His voice is very loud, very clear, and sometimes as pure as a flute. Have you ever heard a flute? It has a beautiful liquid sound and the blackbird can imitate it well.

Do you think you will be able to tell which bird is singing now, if you hear him in the morning or the evening? Remember—the thrush likes to repeat his little tunes—but the blackbird goes on and on with his melody, sometimes ending with that funny, hissing sort of noise I have told you about. Be sure to listen well, and you will soon be delighted to find that you can tell at once which bird is singing to you, the blackbird or the thrush.

Both blackbird and thrush have loud call-notes, as well as songs. When they are alarmed they make a most tremendous noise, really startling, the blackbird especially. I know that sometimes in the quiet evening, when I have been reading in the garden just before sunset, I have been so startled by a blackbird's loud alarm-rattle that I have dropped my book and leapt to my feet in astonishment.



[Eric Hosking.

A MOTHER-THRUSH WITH HER NESTLINGS

Perhaps it was just because the blackbird had spied one of my cats somewhere, and immediately it raised the alarm. “Chacka-chacka-chacka-chacka-chacka!” it screamed and rattled, and at once all the other birds, many of whom had gone to roost, awoke in fear and cried out too. They know that the blackbird is fond of a joke and will sometimes scream just for fun—but when he is serious they pay heed to their sentinel, and a hundred frightened black eyes watch the garden closely to see whether a cat, an owl or a sparrowhawk is near. When you hear a loud alarming rattle of a call, look to see if it is made by a blackbird. You will probably spy him on the fence, switching his bold black tail up and down.

The thrush sings nearly all the year round, but the blackbird generally sings only from February to July. He is at his best in the spring evenings. Listen for him now. The birds are beginning to sing bravely in the early mornings, and if

you are awake you will probably hear both the thrush and the blackbird practising their songs in your garden.

Did you know that birds sometimes sing “under their breath” as you do? You often hum or even whisper a tune, don’t you? So do birds! I have heard a thrush singing under his breath, all to himself, as he sat in a bush in the rain.

The thrush and the blackbird like to eat worms, grubs, insects, berries and fruit. They love the juicy fruit in the autumn. When the apples and pears fall from my trees the birds fly down to them—and when I go out to gather up my windfalls I find that some of them are nothing but skin and core, for the blackbirds and thrushes have pecked out every bit of the sweet fruit for themselves! I have seen a greedy blackbird eat a whole pear in a morning! Sometimes they peck the apples on the trees until nothing is left hanging but the skin. I am quite willing for them to have their share of my fruit in return for the beautiful songs they sing me, but I sometimes wish they would leave me a few cherries! They take nearly every one of those!

The thrush is very fond of snails of all kinds. He picks them up in his beak and goes off to his “anvil.” This is a big stone, or perhaps a rock, and he bangs the poor snail down on the stone with all his might. Crack! Its shell splits and the thrush gobbles up the soft flesh inside. I have a big flint in my garden that is used by two or three thrushes because it is near a rockery where the snails hide. On a spring morning I hear, “Click, crack, click, crack!” all the time as the thrush takes one snail after another to be cracked on his “anvil.” The path around is strewn with scores of empty shells.

Most boys know the difference between a blackbird’s nest and a thrush’s. Who can tell which is which? One is lined with mud, and the other has a neat layer of grass over the mud. The thrush lines his with mud, but the blackbird prefers his lining to be softer, so he puts grass on his mud. You must often have seen, in the months when the trees are bare, a large nest, firmly tucked into a bush, with a bowl-like lining of hard mud that has withstood all the winter weather. Some thrush nested there last year.



A THRUSH AT HIS "ANVIL" WITH A SNAIL IN HIS BEAK

The blackbird builds usually in trees or bushes, but the thrush builds almost anywhere—not only in trees and bushes, but in sheds, walls, banks or on the ground. Both birds use small twigs, grass, leaves, moss, hair or wool, and make a solid, comfortable nest. The only difference is that the blackbird adds a soft lining to the mud to make the nest more cosy.

The thrush's eggs are very blue, with black spots. The blackbird's are green-white freckled with reddish-brown. Do not take them if you happen to find a nest. Do not even touch them, for fear the bird turns the touched egg out of the nest when it returns. Show a nest you have found only to those you can trust. It is best to keep it a secret just to yourself.

Watch for the youngsters when they hatch and are taken into your garden to be fed. See how they stand with open orange beaks for the bit of worm or grub their mother is finding for them. Listen to the loud piping sound they make! We will hope that the cat does not catch them, because we want our gardens to be full of music next spring-time, when all these baby songsters have grown into thrushes and blackbirds.

THINGS TO DO

1. Listen for the thrush to sing. Put some words to his song and tell them to your teacher. Remember that the thrush sings each tune two or three times over.
2. Listen for the blackbird's song. He sings a melody and does not repeat himself. Listen for the explosive sound at the end.
3. Draw a blackbird. Put him an orange beak and orange-rimmed eyes. Draw his wife and colour her dark brown.
4. Draw a thrush sitting on her nest. Write these words underneath:—

“That's the wise thrush; he sings each song twice over.
Lest you should think he never could recapture
The first, fine, careless rapture.”

(The poet Browning wrote these words.)

5. Watch a thrush on the grass. See how he puts his head on one side. Do you think he is watching for a worm, or listening?

CHAPTER 8

YOUR GARDEN (I)

I want you this summer to have a lovely, flowery garden, a place where bees and butterflies come, a place of delicious scents and gay colours. You will have to work hard at it, but I know you will love it.

Have you a garden already? Perhaps you have. Has it been a great success? I hope so—but if not perhaps it will be this year!

I am going to suppose that you have not had a garden before, and so you do not know much about it—and I shall tell you exactly what to do to make it a success the very first year.

Your patch of garden must be in a nice sunny corner. Let it face south if possible. Do not have it under trees, or near to overhanging buildings, or the drips from overhead will spoil your plants. It should have been well dug in the autumn, but if it was not, dig it over now.

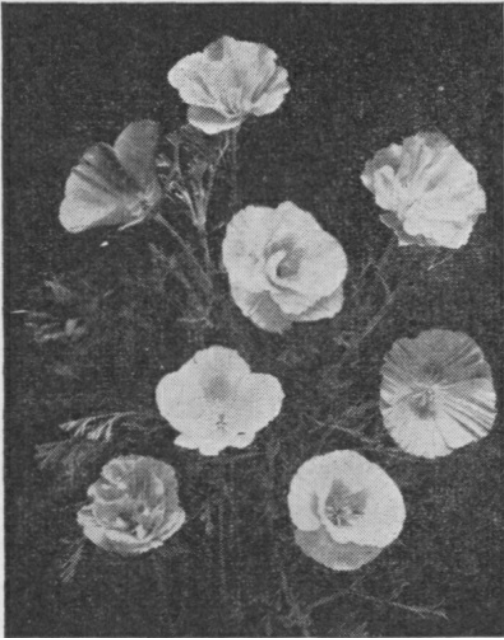
Pull up all the weeds, of course. Make your patch clean, level and smooth. Can you edge it with something to make it neat? I often use big stones or flints, but if I do I examine them once or twice a week to see that slugs are not using them for a hiding-place.

Now we have to do a most exciting thing—we must choose our seeds! I always love doing that, and so will you. One of you must go to the various seedsmen in your town and ask if you may have their seed-catalogue. Or you may write to some of the seedsmen and ask for their catalogue. You want to know prices and you want to know what the flowers are like that you mean to grow.

Here are some flowers to look for in your catalogues. They will grow in either country or town. Virginian stock, candytuft, African marigolds, nasturtiums, clarkia, mignonette, shirley poppies, cornflowers, lavatera (mallow), Californian poppies (eschscholtzia), and sunflowers. Look them up and read about them. You are fairly sure to be successful with those. You can try other kinds next year.

Write out your list of seeds. Then you can go and buy them at the seed shop, taking your list with you. You will probably see that the seedsman has a whole stand of coloured seed-packets. Have a look at them. Don't they look exciting? Whenever you have the chance of looking through them, do so, because the pictures on the packets will make you familiar with the flowers. Buy GOOD seeds, not cheap ones.

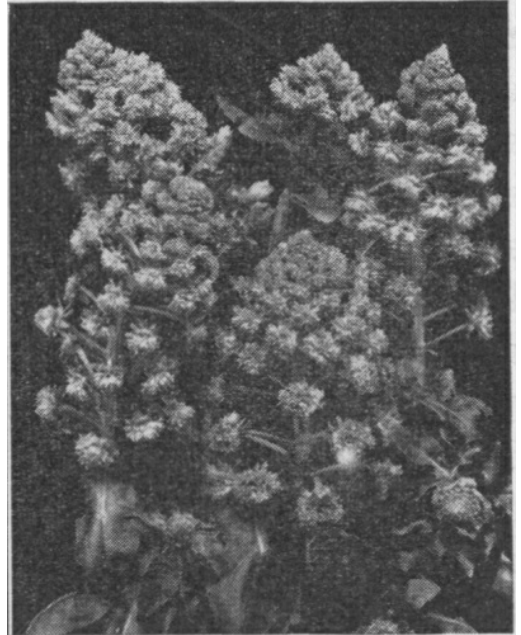
Seeds are among the prettiest things in Nature. They are so small, so



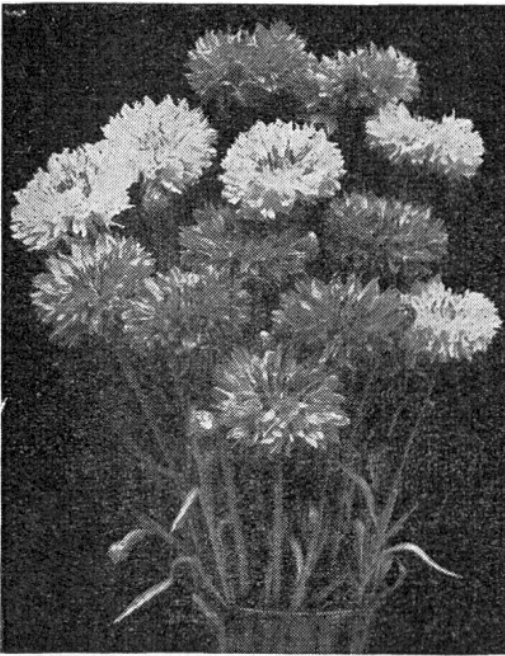
ESCHSCHOLTZIA

numerous, and many of them are so prettily marked. Look at the quaint brush-like seeds of the cornflower, and the pretty flat yellow seeds of the candytuft. Look at the big sunflower seeds with their markings. All the seeds are different, and you must have a good look at each kind before you plant them.

Before you sow your seeds go to your garden bed and make sure it is quite ready. You may have to crumble up the soil a little, because seeds like fine earth to grow in. The tiny roots they put out cannot deal with big lumps! It is best to plant seeds after a rain-shower, but if you water well beforehand it will do instead.



MIGNONETTE



CORNFLOWERS



CANDYTUFT

[Photo, Courtesy, Carter's Tested Seeds, Ltd.]

Run a stick along the soil to make what is called a shallow drill—a little furrow for the seeds. Now drop them carefully in. The big seeds you can plant one at a time—the nasturtiums, for instance, and the sunflowers. Do not plant them too closely; read the directions on the packet carefully to see the right distance apart.

Little seeds you can shake out of the packet straight away—but only a boy or girl with a steady hand must do this, or with one jerk half the seeds will land in one tiny patch, and that will not do at all! You will find that the best writers in your class will be the best persons for planting your seeds, because they are used to keeping their hands straight and steady. Do not plant the little seeds thickly, or you will have a mass of tiny plants, growing closely together, all gasping for air, and none of them will do well. Plant thinly always, except in the case of Virginian stock, when you want a good thick edging.

When you have put in your seeds you must cover them with a light layer of soft soil. I usually take up a few big pieces of earth and crumble them lightly in my hands over the seeds. Then you must get a little wooden label and write on it the name of the seeds you have planted and stick it into the ground near them.

You will, of course, be sure to plan your bed carefully so that you get the tall plants at the back and the tiny ones in front. I will give you some little

garden plans in the next chapter. In two or three weeks' time, if you have planted your seeds in April (which is the best time), you will see a host of tiny green things peeping above the ground. Each day they will grow bigger and bigger, and you must be sure to keep the bed well weeded, so that no other plant steals the light and air from your seedlings.

Water your plants if they need it, but do not flood them! Draw up a list of those responsible for watering each day, and see that a boy or girl waters before school in the morning. That is the best time, before the sun gets too hot.



CAN YOU MAKE YOUR SCHOOL-GARDEN LOOK LIKE THIS? I AM SURE YOU WOULD BE PROUD IF YOU COULD!

Keep a garden-chart, and put down on it what seeds you chose, when you planted them, when they grew, when they flowered and so on. Draw the

different leaves and flowers.

You will feel very pleased when you can actually cut a bunch of flowers to put in your schoolroom, or to take to someone who is old or ill.

When your seedlings grow you may find that they are very numerous and far too close together. You must thin them out, if so. It is better to have a dozen beautiful strong plants than to have fifty miserable little things. Stake any that need it, before the wind blows them down.

If you want your plants to go on flowering for a long time, watch for the seed pods or heads to form and nip them off as soon as they do. Once seeds have formed, the plant considers that its duty is done, and it is willing to die—but if you cut the pods off continually, the plant goes on producing more and more flowers, trying to form seeds, and your garden is kept gay for months.

Next year you will want to grow seeds again, and you might as well try growing some of your own. Towards the end of the summer term notice which of your plants are the strongest and the finest. Let them form seeds, and then, when ripe, cut off the seeding heads and shake the seeds into an envelope. On the envelope write the name of the flower and stick on a picture of it, which you can cut from a seed catalogue.

Put down on your garden-chart the different bees and butterflies that visit your flowers. Watch for any kind of blight, and syringe the plants with soapy water if they show signs of it. What a number of things there are to do in even a little garden, are there not?

In the autumn, when you return to school, you must clear up your garden ready for next year. Pull up all the old plants, pull up the weeds that have grown in the holidays, and make a heap of them. Then have a bonfire. You will enjoy that! Then dig over the ground well, and leave it for the frost to break into fine powder. Your year's garden work is done!

THINGS TO DO

1. Prepare your patch of ground.
2. Get seed catalogues.
3. Write down a list of flowers you think you would like to grow. Put down their heights, their colour and time of flowering.
4. Go and look at the seed-packets in the seedsman's shop.
5. Buy your seeds. Buy GOOD seeds, for poor seeds will not repay you for your trouble.
6. Plant your seeds carefully and label them.
7. Take care of them. Weed. Water. Keep a garden-chart.

CHAPTER 9

YOUR GARDEN (II)

In the last lesson I told you how to start a garden, what flowers to grow, and how to care for them and make them a success. Now I want to give you a few more hints, and I want to make sure, too, that even if you cannot have a garden, you will have either a window-box or a row of pots on your window-sill! There is no such word as “impossible” where flowers are concerned!

Town schools may have to make do with a window-box instead of a garden. Many schools may like to have this *as well* as a garden, for there is nothing that makes a house or school prettier than rows of flowers on the window-sills! You will have the passers-by standing and staring in delight if only you make a success of it!

First you want a long, rather deep wooden box. Measure your window-sill and find out the size. Have you any boys who are good at carpentering? Perhaps they would be clever enough to make the box for you. Or maybe one of you is lucky enough to have a father who is a carpenter, or handy with his tools, and if you ask him he might make the box for you. Do not be defeated by any difficulty, will you? It makes things even more exciting and worth while if you can get them only with difficulty.

Now we will suppose you have your stout box. Ask your teacher to let you stick the poker into the heart of the fire. Get it red-hot. And now your teacher will have the excitement of boring holes through the bottom of the box with the red-hot poker! You will have to do this in the playground because there will be a lot of smoke. These holes are for drainage, so that when you water your plants in the box the surplus water may run freely away through the holes instead of standing at the bottom of the box and causing your plants to rot.

Now the holes are made. The next thing to do is to cover the bottom with bits of broken flower-pots, or you may find your earth flowing out of the box with the water! Perhaps a nearby florist or nurseryman will let you have some if you explain what you want the bits for.

Now scatter cinders or small pebbles over the pot fragments, and fill your box with as good earth as you can get. You are ready to fix it on your window-sill and plant your seeds now! It was easy to make, wasn't it, and most interesting? Candytuft, virginian stock and nasturtiums are quite good plants for a window-box. In the autumn you can pull up your old plants, dig over the soil well, and plant crocuses and daffodils. They love a window-box.

Do not water too much at once. A little each morning before school is best,

when the weather is dry. The bees and butterflies will visit your flowers, even if you are in the middle of a big town. Choose your sunniest window.

You may grow many plants in pots for your window-ledges. Choose fair-sized pots so that the roots of your plants may have plenty of room. Scrub the pots well and make them clean. Put them in the sun to dry. Now fill them with good earth, putting pieces of broken flower-pot or small pebbles at the bottom first. Leave two or three inches space at the top to allow for watering. Plant your seeds by scattering a few on the top. Lightly cover with fine earth. Water the soil before you plant. Stand the pot in a saucer so that surplus water may run out, but do not let the pot remain standing in water—always empty the saucer and replace the pot in it.

When the seeds come up, make up your mind how many plants you want in your pot. It is *always* best to have a few rather than many, for then you will get beautiful, strong plants with fine big flowers. Too many plants will give you small, weakly flowers. You may have virginian stock fairly thick in a pot, but if you choose mignonette, have only two plants, and pull one out carefully, when you are sure that the other is going to do well.



THIS SPLENDID ARRAY OF SCHOOL GARDEN-PLOTS IS IN THE MIDDLE OF A GREAT TOWN. THE CHILDREN ARE AT WORK IN THEIR VEGETABLE GARDENS, BUSILY WEEDING AND WATERING THEM

You may have two or three plants of candytuft if you like, in one pot, but if one is an especially fine plant, pull out the others and leave just the one.

You can grow nasturtiums in pots very well. Nip off the seeds as they form and then the plant will go on flowering. Clarkia may also be grown in pots. You may have three or four plants in one pot.

Do not forget that you can grow the seeds of wild flowers in pots, too. A pot of sturdy, golden-yellow buttercups is a lovely sight!

If you are really interested in growing flowers—and I have never yet met a boy or girl who was not—you will like to know that there are three kinds to grow.

There are Annuals—those that I have told you to grow from seed, such as the candytuft and Shirley poppies. Annuals come up, flower, and die all in the same year.

Then there are Biennials. These are flowers that are planted one year, and flower the next. For instance, I sow seeds of the biennial plants Canterbury bell and Sweet William in the summer of this year. They sprout and grow into sturdy little plants by the autumn. They are strong enough to withstand the winter. I put them into their right places in my beds before the winter frosts begin, and there they stand sturdily all the cold weather through. They grow well the next spring and flower brilliantly next summer. Then they die. They have lived through two seasons, and we call them *Biennials* because of that.

[Many words that begin with Bi mean Two, as you know—think of Bicycle, Bi-ped, Bi-valve.]

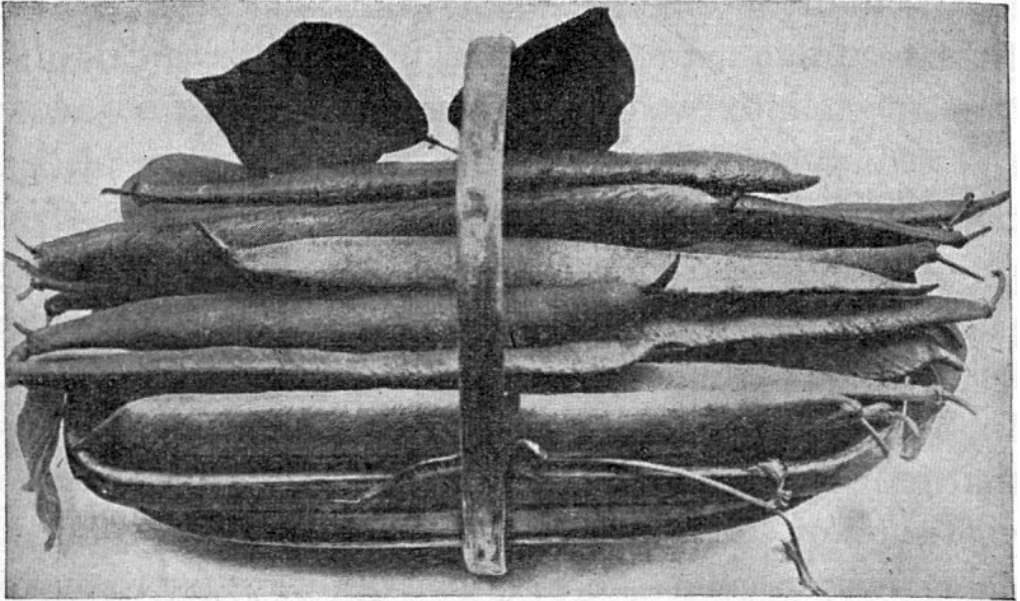
Perennials are plants that live for year after year, such as Michaelmas daisies, the big oriental poppies, Marguerite daisies and so on. They are very useful to have in a garden because they will look after themselves, and grow of their own accord each spring.

Perennials are usually grown in a new garden by means of little clumps taken from plants of friends. In the autumn many people dig up their perennials and break them into two or three pieces. They throw away the old parts and re-plant the strong new pieces. Sometimes they have clumps to give away, and they would be glad to give them to you. Have you any parks near you? If you have, make friends with the keepers and find out all you can about the park flowers. In the autumn, when they divide up the big clumps that grow in the park beds, they will be pleased to give you some of the best ones that are over, and you can plant them in your school garden. Always try to make friends with anyone who has the care of flowers, trees or animals, for they will be able to tell you a host of interesting things, and you will never be dull in their company.

Plant annuals in your garden for a show of flowers this year. Perhaps you can also get a few pansies, or violas, one or two plants of forget-me-not, and a

double-daisy or two to make the garden pretty now. Plant the seeds of biennials if you want such things as snapdragons, Sweet Williams and Canterbury bells *next* year. Plant perennials, such as Michaelmas daisies, if you want plants that flower *each* year.

In some gardens there is space for a few vegetables, too. It is such fun to grow our own mustard and cress, our own radishes and lettuces!

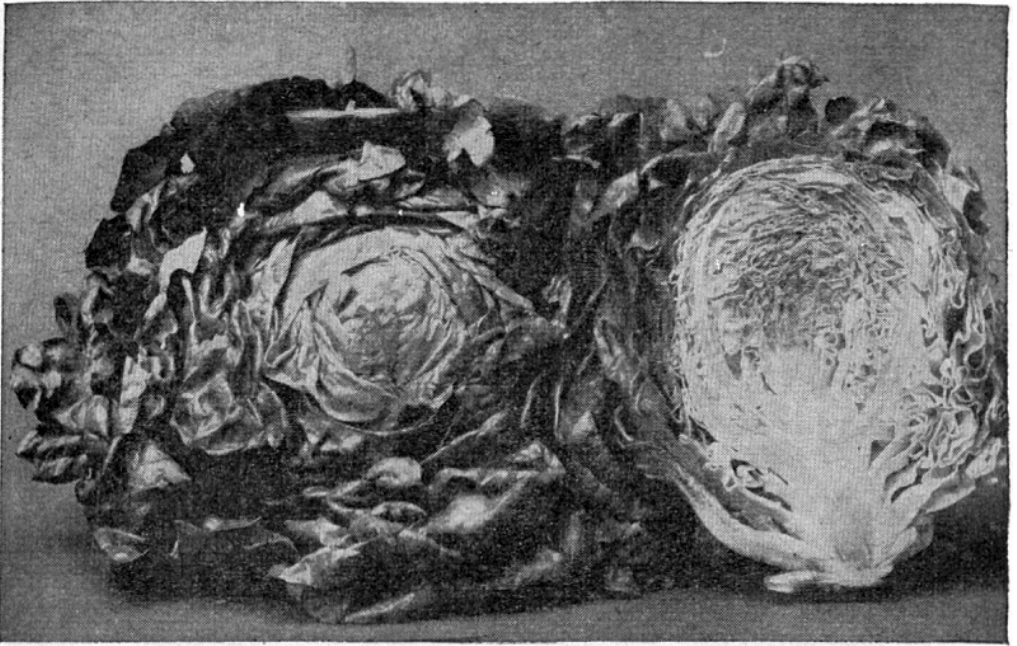


[Photo, Courtesy, Carter's Tested Seeds, Ltd.]

BEANS GATHERED FROM THE SCHOOL GARDEN

You can try growing five different things. At the back of your plot plant some scarlet runner beans. Do not plant the beans too closely—not less than a foot apart. They will climb up the sticks you put for them in no time, and put out their lovely scarlet flowers very quickly. You will have a fine crop of beans from them, and you might sell them to buy your seeds for next year. When the climbing stem reaches right to the top of the sticks (the sticks should be at least 6 ft. high), you must ask somebody tall to pinch off the top of the shoot for you. It must not grow any higher.

In front of the beans plant lettuces. The seed is so tiny that you had better mix it with sand when you sow it, or you will sow too thickly. Thin out the little plants when they grow, because you want good strong lettuces. Cabbage lettuces make pretty green rosettes as they grow, so you could choose those.

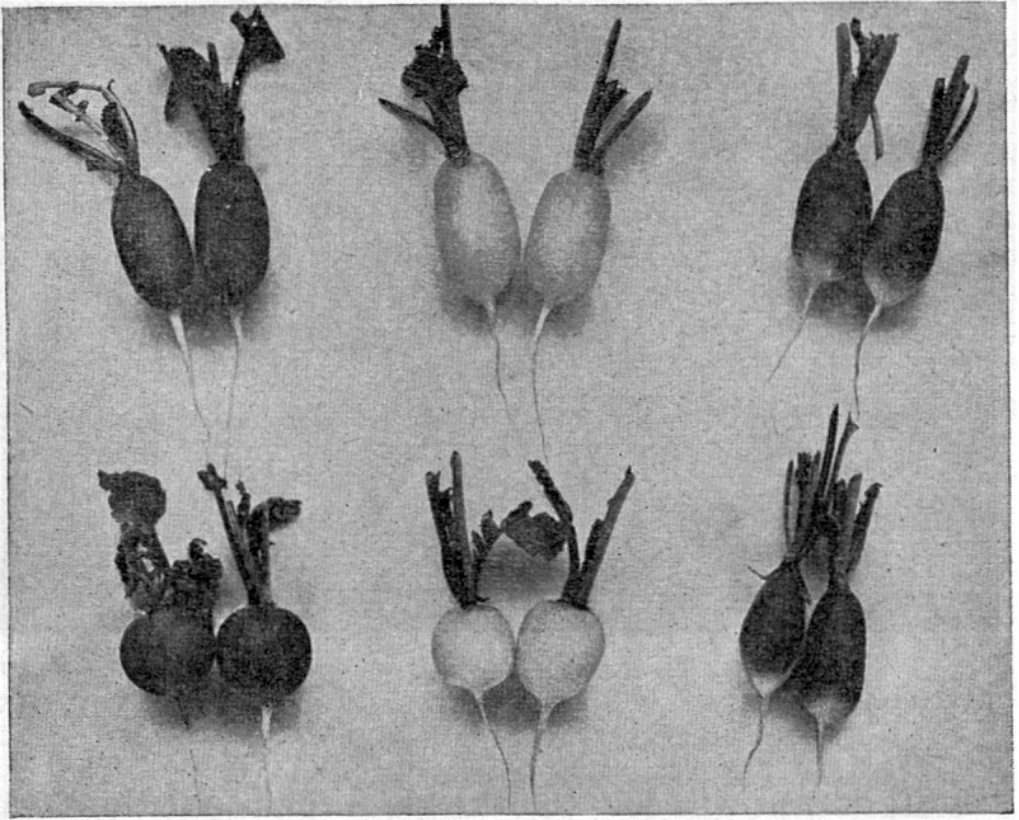


[Photo, Courtesy, Carter's Tested Seeds, Ltd.]

A CABBAGE LETTUCE WHOLE AND ONE CUT IN HALF. YOU CAN GROW DOZENS OF THESE IF YOU HAVE ROOM

Grow mustard and cress in front of the lettuces. Sow thickly. *Remember to sow the cress four days before you sow the mustard*, because it takes longer to grow and you want to eat them at the same time. You can sow it in the form of the initials of your name if you like, or in the shape of an M for mustard and a C for cress. It will come up in green letters then!

Right at the front you can grow radishes. Thin them out if they grow too thickly. Let each radish have enough room for itself. You will like to see the pinky-red roots growing rounder and rounder, peeping just above the soil. Water well in dry weather.



[Photo, Courtesy, Carter's Tested Seeds, Ltd.]

SIX DIFFERENT KINDS OF RADISHES WHICH YOU CAN GROW IN YOUR SCHOOL GARDEN

The fifth thing you can grow is mint. You must start this by a root. You can get one for a penny or twopence, but perhaps one of your fathers will give you a piece from his garden. Once it begins to spread (it is a perennial and grows each year of its own accord) you can train it all round your little garden. When new potatoes come in there may be enough for you each to take a sprig home.

When your radishes, lettuces or mustard and cress are ready to eat, it is fun to take a loaf of bread to school one afternoon, and some butter, and have a garden picnic. Things that you have grown yourself have the nicest taste in the world! Wash them well, put them on dishes, cut your bread and butter, and enjoy the things you have grown so carefully.

Here are just a few little plans for your school plots. You can make some up yourself by reading your seed catalogues carefully and finding out the heights of the different plants.

1.

2.

3.

Back.
Cornflowers.
Shirley Poppies.
Candytuft.
Virginian Stock.

Back.
Lavatera
(Mallow).
Cornflowers.
Clarkia.
Nasturtium.

Back.
Canary Creeper.
Clarkia.
Candytuft.
Californian Poppies
(yellow).

4.
Back.
Climbing
Nasturtiums.
Cornflowers.
Mignonette.
Virginian Stock.

5.
Back.
Sunflowers.
Cornflowers.
African
Marigolds.
Dwarf Nasturtium.

6.
Back.
Cornflowers.
Candytuft.
Mignonette.
Californian Poppies.

Note.—Do not use sunflowers if your plot is very small.

CHAPTER 10

THE STRANGE CUCKOO

When the spring-time comes, we look for the first swallow, we hunt for violets on the banks, we gather the dancing wind-flowers—and we listen eagerly for the first cuckoo! It is a lovely sound to hear, that first “Cuckoo! Cuckoo!”

But although we love to hear the cuckoo calling and give him a great welcome, he does not really deserve it. He is a strange bird, with strange habits, a bird “gone wrong.” He cannot help his habits now, poor thing, for he is born with them—but at some time, far away in the past, there was a time when he could choose between goodness and badness, and alas! he chose the wrong path. And now all our cuckoos are forced to follow the same downward path. Let me tell you about them.

First of all, do you know what the cuckoo is like? You may have heard his voice a hundred times, and yet have never once seen him! You may not know whether he is big or small, light or dark.

He is about as big as a jackdaw, and he is light in colouring. He is slate-grey above (the colour of slate tiles), and he has a pale grey upper breast. The rest of his under parts are white crossed with dark bars, rather like a hawk. Indeed, little birds often think he is a hawk and mob him angrily, especially when they find him near their nests, for hawks, as you know, catch and eat small birds.

The cuckoo arrives in April. We hear his cuckooing as soon as he is here. The hen cuckoo does not cuckoo. Very often the male bird cuckoos loudly when he flies. That is about the only time you are sure of seeing him.

The hen cuckoo never builds a nest, and neither does the male.

When the time comes for the cuckoo to lay an egg she hunts about for a nest like that in which she was born. If she was born in a pied wagtail’s nest, she finds one belonging to a pair of wagtails. If she was born in a meadow-pipit’s nest, she hunts for one of those. She stands near the nest and makes a sort of mewling noise. In the nest there may be three or four new-laid eggs. The cuckoo flies to the nest, sits on it and lays her own egg there among the others; sometimes she lays her egg on the ground and then carries it to the chosen nest. When it is in the nest she picks up one of the other eggs and flies off with it. I expect she thinks that “Fair exchange is no robbery,” don’t you? She eats the other egg, and then, as she will probably lay a second egg within 48 hours, she looks for another nest to put the next egg in. She lays four or five eggs on

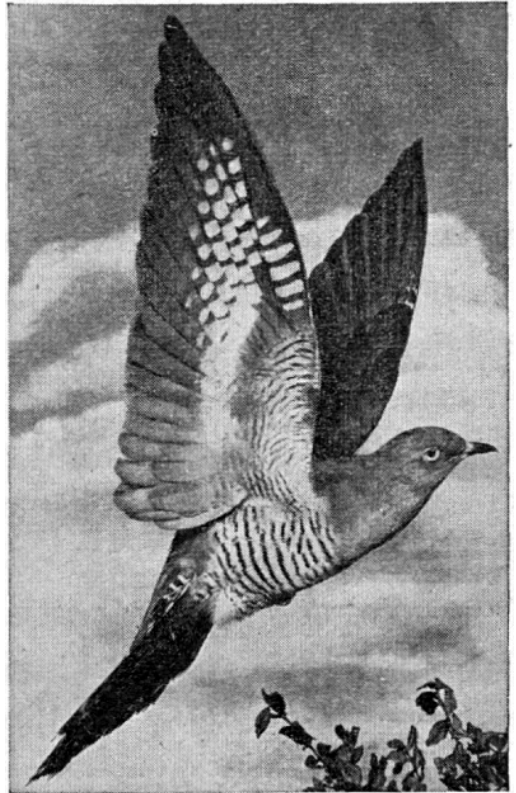
alternate days, each in different nests. Then she has a rest from egg-laying, but after a while she lays a second lot, once more in different nests.

You know how big a wagtail is, don't you, or the little meadow-pipit? Not nearly so big as the cuckoo! Therefore you would expect the cuckoo to lay much larger eggs than the small wagtail or meadow-pipit, just as a goose lays far bigger eggs than a small duck. But the strange thing is that the cuckoo, in spite of her large size, lays eggs about the same size as those of the bird into whose nest she puts her eggs. And another curious thing is that her eggs are very much the same in colouring as the other birds' eggs. The only exception is when she lays her eggs in the hedge-sparrow's nest. As I daresay you know, the little hedge-sparrow lays eggs of the purest brightest blue. The cuckoo *can* lay blue eggs, but very often she

puts into the hedge-sparrow's nest an egg that is grey-brown and spotted, and it does not match the blue ones at all. It so happens that the hedge-sparrow is one of the few birds that does not seem to notice whether her eggs match or not—so the cuckoo's egg is left unharmed!

The foster-parents, as we call the birds in whose nest the cuckoo's egg is placed, take no notice of the exchanged egg. You might think that as the egg is laid there *after* the foster-parents' eggs had been laid, the cuckoo egg would hatch out *later* than those—but it does not! It hatches out either before or about the same time, so that the young cuckoo shall not have very big birds to deal with when he is hatched himself.

What a strange baby he is when he cracks his egg and crawls out! He is quite black and quite bare of feathers or down—an ugly little imp, with curious feet. They have two toes in front and two toes behind—the feet of a climbing bird, like a parrot, not of a perching bird. Think of a sparrow's feet—three toes in front, one behind. Why has the cuckoo the feet of a climbing bird, when in



THE CUCKOO IN FLIGHT. IT IS A BIG BIRD,
AND IS BARRED UNDERNEATH RATHER
LIKE A HAWK

after life he is going to be an ordinary perching bird?

You will soon see. As soon as the baby cuckoo is hatched he knows whether or not there is anything else in the nest with him. If there is, he gets into a furious rage and resolves to throw out whatever is there. There may be two or three eggs, there may even be tiny birds, not long hatched. It does not matter how many there are, he is determined to get rid of them all.

In between his shoulders at the beginning of his life is a small hollow. Somehow or other the little cuckoo, quite blind and just newly hatched, gets into this hollow one of the eggs he can feel beside him.

Then he starts to climb up the side of the nest with his two-toed feet. Now you see why he is born with the feet of a climbing bird! It is because he needs to climb when he is very, very young—not because of any climbing when he is grown-up! The side of the nest seems very high to him, but somehow he climbs up it, backwards, so that he may tip the egg he carries overboard. He feels with his tiny wings to find out when he is at the top of the nest. When he is he jerks the egg out and it falls to the ground and smashes.

He tumbles to the bottom of the nest, exhausted. But if any more eggs are there he starts off once again, and he does not rest until he is alone in the nest, King of the Castle! If there were young birds there instead of eggs it would make no difference, for he would hoist them on to his back and climb slowly up the side of the nest to throw them out. They struggle and try to cling to his back so that they may not fall—but what is there to cling to? Not a feather, not a piece of fluff or down!

Do the parents of these poor little birds rescue them? No, they take no notice of them at all. That is strange, isn't it? Although they must have seen the baby cuckoo doing these horrid deeds, they do not seem to mind. At any rate, they make no effort to stop him, nor do they try to get their own youngsters back into the nest. Instead, they seem proud of the cuckoo, and do their utmost to feed him well. Perhaps they think he is an extra fine child!



[Eric Hosking.]

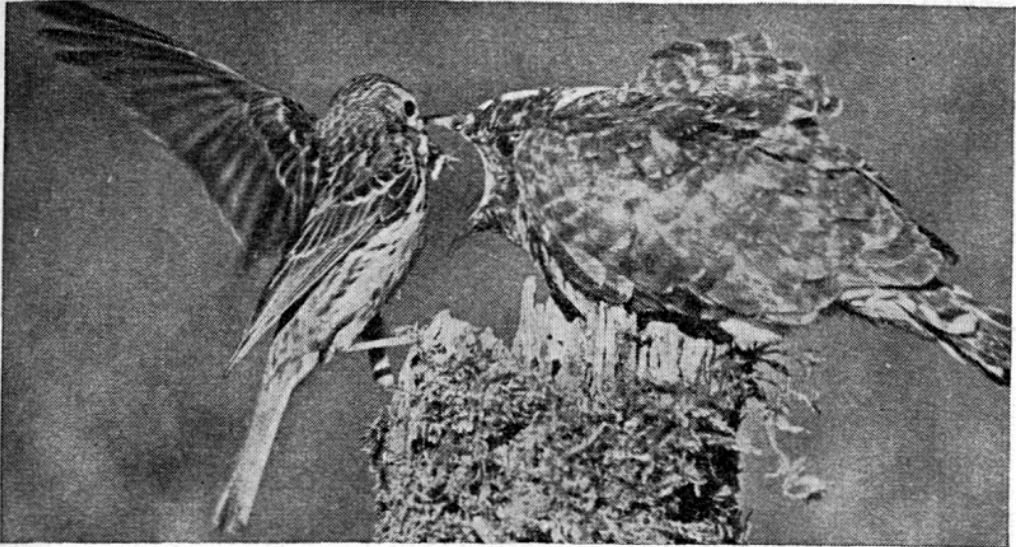
A YOUNG CUCKOO THROWING A BABY HEDGE-SPARROW FROM ITS NEST

The cuckoo keeps them busy. How hungry he is! How he grows! How he calls! He is always ravenous, always screeching for more food, always growing bigger until the nest really will not hold him! Other birds hear his piercing cries and come to feed him, too!

Soon he is far bigger than his little foster-parents. They stand on his great shoulder to feed him. He takes all they bring him, and is especially eager to eat the furry caterpillars they find. He loves those. Cuckoos are the only birds that really feast on these, and they do not seem to mind the hairs on the caterpillars at all. His foster-parents work all day long to keep him satisfied—far harder than if they had had three or four youngsters of their own kind to feed! One cuckoo eats more than half a dozen hedge-sparrow or wagtail babies! He does not heed the warnings of his foster-parents to be quiet when danger is near. He just goes on yelling, “Chiz, chiz, chiz!”

Then at last he has to leave the nest. He follows his parents about, always calling loudly and piercingly. I once had a young cuckoo in my garden, fed

and looked after by a pair of wagtails—and I always knew when he was about! *What* a noise he made! I really felt quite cross with him, and I knew how the other birds must feel who heard him—“Oh!” they thought, “for goodness’ sake, feed the child and keep him quiet!” And a robin, a hedge-sparrow and another wagtail all came to feed him, as well as the two wagtails.



[Eric Hosking.]

A MEADOW-PIPIT FEEDING A YOUNG CUCKOO

In May you will hear the cuckoo calling all day long. In June he calls a little differently. In July the grown-up cuckoos begin to leave us. In August they are all gone. What a little time they stay with us! The young cuckoos do not leave with them. They stay until September. Then the meadow-pipits (tit-larks), who look after the baby cuckoos more often than any other kind of bird in England, leave us, and the young cuckoos leave too. They seldom cuckoo before they leave, but the next year when they return they will cuckoo loudly, if they are males.

I wonder what made the cuckoo start out on its strange path, what formed its bad habits and its lazy ways. Was it because it was marked like a hawk and had its nest destroyed by little birds who feared hawks, and so was forced to lay its eggs in other birds’ nests, having none of its own? Was it because the baby cuckoos, with their piercing voices, made other birds feed them besides their parents, so that gradually the parent cuckoos left even their eggs to be looked after by the other birds? Or was it because the cuckoos built such bad, clumsy nests that at last they gave up building altogether and used their neighbours’ nests? What do you think?

There are many sorts of cuckoos in the world. Some do build nests of their own—bad, untidy ones, it is true. Some share one nest between them, and eggs, young birds and older birds lie in it together! Others do as our own cuckoos do—lay eggs in another's nest and so deceive other birds. An untidy, makeshift family, the cuckoos!

And yet we are always glad to hear their pretty double-note in the spring!

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TRANSCRIBER NOTES

Mis-spelled words and printer errors have been fixed.

Inconsistency in hyphenation has been retained.

Some faded photographs have been enhanced.

[The end of *Round the Year with Enid Blyton—Spring Book* by Enid Blyton]