Volume 1 Number 1 March 1981

Upbeat

Meet the Nomads of the Western Sahara on page 25

Animals adapt to Desert Life

In the article on the Western Sahara (on pages 25, 26 and 32) we will see how difficult desert life can be. We will also see how the nomads have 'adapted' to living in the desert. This means that they have changed the patterns of their lives, so that they can stand the heat and thirst and lack of food in the desert. Here are three animals that have adapted to desert life — the camel, the honey ant and the jerboa. They have done this both in their habits and in the shapes of their bodies.

THE CAMEL

Nomads have been using camels for hundreds of years to carry things through the desert. Camels are tall, thin animals but they are strong so they can be loaded with food, clothes, people or anything else that the nomads wish to carry. The camel manages without water in the desert far better than people do. A camel can go for as long as 8 days without water and food. After 4 days without food and water, humans begin to die. Also, a camel can drink up to 121 litres of water in 10 minutes and its stomach won't burst. We find it difficult to drink more than a few glasses in this time, before we get a sore stomach.

The most amazing thing about the camel is its hump. Here the camel stores up a smelly mess of water and chewed up food, that looks like green soup. This soup has lots of fat in it, so that when there is no water or food around for a long time, the camel can use this fat as energy.

The camel's face is also well adapted to the desert. It has long eye-lashes that keep the sand out of its eyes when the wind blows. It also has strong muscles in its nostrils. These keep the sand out of its nose.

THE JERBOA

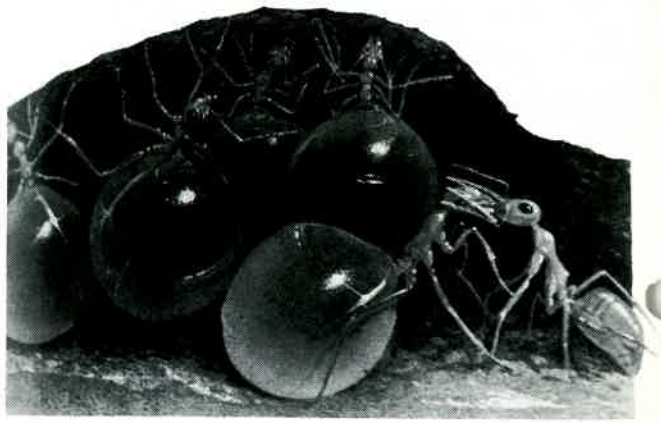
Like people, the jerboa moves on two legs. He jumps on his two long back legs. He can move faster this way, but how does he balance himself? He rests on his back legs and the strong, bushy end of his extra long tail.

This little mouse must be careful not to lose too much water into the dry desert air. For this reason it can't sweat. But if its body gets much too hot, water will drip out of its mouth. The jerboa hunts in the early morning and evening only, when it isn't so hot. It digs a tunnel with its short front legs and spends the hot part of the day in there. To keep the heat out and the air in the tunnel cool, it builds a thin wall of sand over the front of the tunnel. The wall must be thin enough for air to get through.

There is one danger in living in a tunnel so close to the surface of the sand —snakes! So the jerboa builds an escape tunnel as well. This also has a thin wall to keep the heat out. As soon as it hears a sound of another animal, the jerboa breaks out through one of the walls. It must hide in a cool place quickly, or it will die in the hot sun or be eaten by a snake.

THE HONEY ANT

Ants live and work together in what are called 'colonies'. They share the work and all help each other. With the honey ants, some of the ants are workers and some are what are called 'repletes'. When it has rained and there are lots of flowers around, the workers go out to collect honey



from the flowers. The repletes stay behind and are fed by the workers. They are fed so much that their stomachs stretch from all the food. They grow to the size of a small grape. When the flowers have died and there is no food in the desert, then the repletes feed the workers. They vomit up the honey in their stomachs for the others to eat. The repletes die after they have vomited up the honey, because their stretched stomach skins can't go back to normal. But the rest of the honey ant colony survive the hunger and thirst in the dry times of the desert because of the repletes.

DON'T READ ANYMORE of THIS MAGAZINE !!!!!!! ....

..... until you've read this page. We want a chance to welcome you. This is your magazine, written for you, to be read by you. So you should know what it is all about.

What is UPBEAT and why are we producing it? UPBEAT is an educational magazine for young people in this country. But this does not mean that it is 'educational' in the way that you may think it does. We are not trying to help you with your schooling or to help you to pass your exams.

In UPBEAT you will have a chance to read about other kinds of things - things that you will enjoy reading and that will make sense to you. Here you will read about how people live and think in other countries. There will be general articles about the way that things work — everything from a tap to a newspaper. There will be articles about our world; about the plants and animals, the stars and the stones. You will be able to read about how your body works and how we communicate with each other. You will have a chance to read what different writers have written about their lives and experiences, to find out about books that you might enjoy and about how to use libraries. You will be able to read stories, do puzzles, enter competitions and help with the articles.

Above all, you will be able to write into UPBEAT and tell us what your ideas are. We want to hear from you. This is YOUR magazine, so you must be the ones to say what you want to read about. Please write to UPBEAT at P.O. Box 39 Claremont, Cape, 7735, and tell us what you think of the articles in UPBEAT, what you would like to read, and what you think. In the first few issues we will be asking your opinion on different things: gangs, family life, language. After a while we hope that you will suggest the topics that you want to talk about.

Not all of the articles that you will find in UPBEAT are in the first issue or even in the first few issues. So you will have to keep reading UPBEAT each month to read about all the different types of things you want to know.

Remember to keep all your issues of UPBEAT You may want to look back at something later, or you may even need them for projects that you do. We will often have a series of articles on some subject, and after a few issues you may want to look up something in the first issue. You can't do this if you have thrown it away! But if you do lose a copy that you need, or if someone you know wants to get copies that have already been printed, then you can write to us. Send us 20c for every copy that you want.

NATURE'S BUILDING BLOCKS - Atoms and Molecules

HAVE YOU ever stopped to think about the things you see and touch around you? The paper of the magazine that you are now reading is thin. You can cut it, tear it or crumple it into a ball and throw it away. Plastic from a plastic bag is also thin but you can see through it, it is difficult to cut or tear and it doesn't crumple up into a nice ball for you to throw away.

Let's look at some of the other things around us and see just how differently they all behave:

If you drop a glass on the floor, it may break into many small pieces — but if you drop a rubber ball, it won't break; it will bounce up into the air again.

If you pour milk and water into a glass, they will mix with each other — but if you pour oil and water into a glass, they won't mix. The oil will remain on top of the water.

If you drop salt into water, it seems to vanish. You can taste it but you can't see it — but if you throw some sand into water, it falls to the bottom, and you can't taste it. In the sea you can taste the salt, but you feel the sand beneath your toes. What is more, something like water has three different forms (like shapes) itself: water as we know it is soft and flowing; frozen water, ice, is hard and cold; heated water, that rises into the air as steam, is light. It also disappears in front of your eyes.

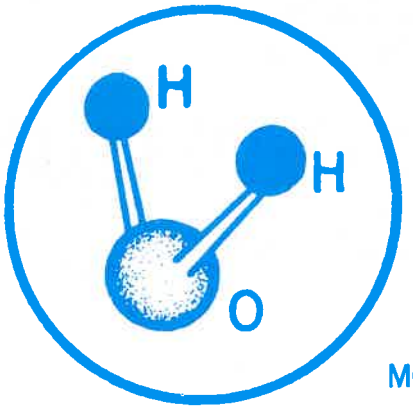
Now we can ask: what makes all these things look so different and behave so differently? One reason for this is that they are made of different **materials.** You know that shoes are made from a different material from jerseys. Well, sand is made from a different material from salt. But even sand and salt, air and water, are not the simplest materials on earth. There are much simpler materials which we call **elements.** Some of these elements that you might know in their pure form are: oxygen (in the air), silver (in jewellery) and carbon (as coal). There are 105 elements that we know of. Some of them in their pure form are gases, like oxygen. Some are solid, like carbon or silver. These elements can come together in many different ways, so that from 105 of them, you can have millions and millions of different materials. For example, oxygen is in water, it is in the air and it is in many foods we eat. Carbon is also in foods, air and under the ground.

Let's look at two different foods — sugar and bread. You know that they look and feel and taste very different from each other. But they are made from the same three elements — carbon, hydrogen and oxygen. Why then are they different if they are made from the same elements? This is because there are different amounts of carbon in sugar and bread, as well as different amounts of oxygen and hydrogen. Also, these elements come together to form different patterns in each. Sugar and bread are also very different from materials like iron or tin, which aren't made up of oxygen, hydrogen or carbon at all, but from completely different elements.

When different elements come together, we call these mixtures **compounds.** So things like water or wood are not the simplest materials on earth. They are all compounds. We already know that what goes into a compound makes it what it is. If a compound has carbon in it, it will be different from a compound without carbon, or one with much more carbon. Sometimes when elements come together, they make things that are totally different from themselves. Hydrogen and oxygen are both gases in the air, but together they make the compound water, which is usually a liquid.

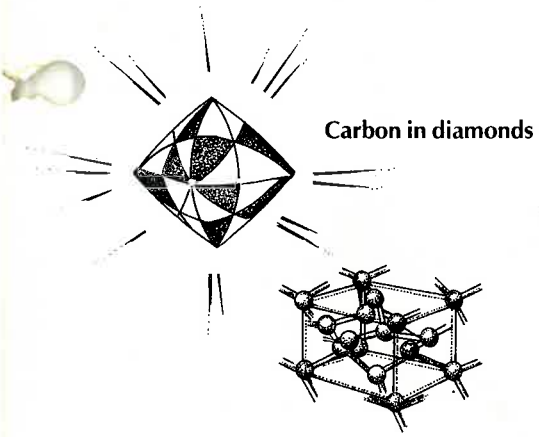
Let us now look at the way the elements come together in materials. When elements join together to make compounds, they don't just join together in lumps. They always join together in special patterns. Elements are made of very tiny particles called **atoms.** When two elements come together, say hydrogen and oxygen, the hydrogen atoms must join together with the oxygen atoms in a special way. This is important, because the amounts of each must be correct. With water, there must be two hydrogen atoms joined to every one oxygen atom. Two hydrogen

atoms and one oxygen atom joined together make up a group of atoms called a **molecule.** Here we talk about the **Water Molecule.** A molecule of water, then, is the smallest amount of water that is still water and not the gases hydrogen and oxygen. The same goes for a sugar molecule. In each tiny sugar molecule, much tinier than a grain of sugar, there must be: two hydrogen atoms, one carbon and one oxygen atom. These atoms must also join to each other in special patterns. It is important to know that molecules are so small that human beings can't see them at all, even though we know they are there. For example, at any point in the soapy covering of a soap bubble, there are about 40 000 molecules!

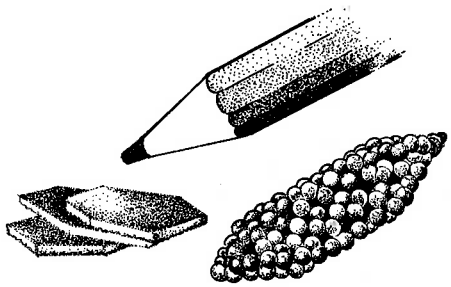


WATER MOLECULE

Let us look more closely at the special patterns that elements make when they join together. Molecules in different compounds are always different. They are made up of different elements, and in different amounts. This makes them different shapes. And because they are different shapes, they pack together in different ways. Molecules in iron are packed very closely together, and in paper, more loosely. The water molecule behaves differently in steam, water and ice. Sometimes the molecules of pure elements can be packed together so differently that you have three completely different materials: carbon looks completely different in the form of diamonds, coal and graphite, which is used in pencils *(see the illustration).*

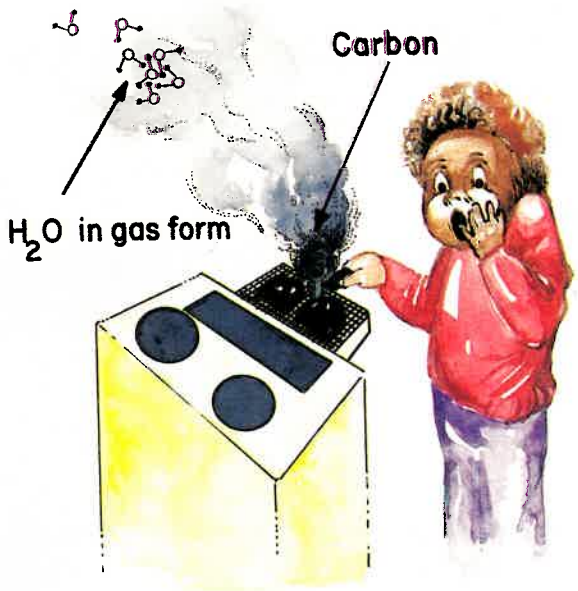

Carbon in diamonds


Carbon in coal


Carbon in graphite

To make the whole idea of molecules and atoms, elements and compounds simpler, let's compare them all to jerseys that we wear, and to the wool, stitches and colours in them. Let us imagine that the wools we knit with are the elements. Now imagine that we have three colours of wool — blue, white and red. We can make a blue, white and red jersey, we can have a blue and white one, a red and white one, a red and blue one, a pure blue one, a pure red one or a pure white one. If we get so many possibilities from three colours, or elements, then imagine just how many more 105 would make. Now we have the elements, we must make up the jersey. To do this, we must use stitches. The kinds of stitches that we could use, we could call the molecules. The wool is joined together at each stitch in the same way as the elements come together in the form of atoms at each molecule. You can have plain stitches, purl stitches, ribbing or even cableknit. The different kinds of stitches give us tight jerseys, loose jerseys or fancy jerseys. In the same way, the patterns of different molecules give us rubber that bounces, sand that scatters or glass that breaks.

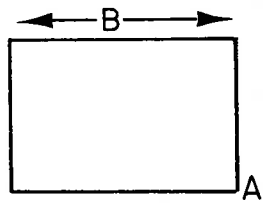
Now, what happens when we want to pull the wool apart again? We can cut a hole in the jersey and pull out the wool. Then we can roll it up again into blue, white and red balls of wool. Can we do this with other compounds? Can we "undo" them to get the simplest elements again? Nature can do it with fire, rusting or rotting, and we can use nature. For instance, bread is made of the elements carbon, hydrogen and oxygen. If you burn some toast by accident, steam rises into the air and you are left with a piece of powdery black bread. This is carbon, and the hydrogen and oxygen are given off as gas in the steam. With the wool in the jersey, if you undo one thread, all the threads come undone. But here we haven't managed to separate the steam of the toast into hydrogen and oxygen. That is a much more difficult thing to do. So atoms and molecules are not nearly as simple as our jersey with its stitches and wool. Not even scientists really understand atoms and molecules. Even so, by looking at science, we can get some idea of how things work and why things are the way they are.



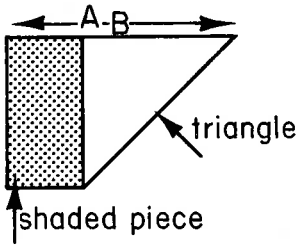
PAPER FOLDING
Make some Paper Swans

PAPER FOLDING is an easy way to make animals, flowers, decorations, all sorts of things. All you need is a square piece of paper. Then just follow the instructions very carefully. Here we will learn how to make a paper bird called a swan, like the one you can see at the bottom of page 7. If you enjoy making this, then we can make other things, like a box, a frog or a bird whose wings can flap. The pictures are there to help you with the instructions. They **show** you what to do and the instructions **tell** you what to do. If you find it difficult to make the swan, ask a friend to help you. Two people are sometimes better than one with something like this.

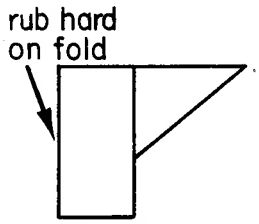
Take a piece of paper a little smaller than this page. It must be square, that is, all four sides must be the same length. There is an easy way to make a piece of paper into a square if it isn't one already.



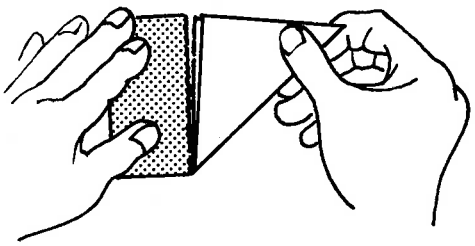
1. Take a piece of paper and fold corner A onto side B.



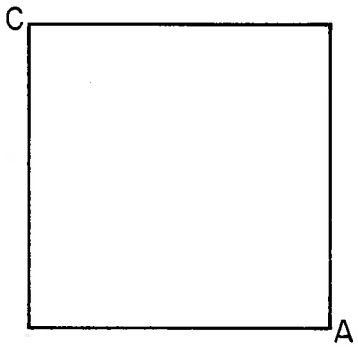
2. Rub your finger hard right along the fold. The triangle will be the square when it is opened up. Cut the shaded piece off with a pair of scissors and open up the triangle.



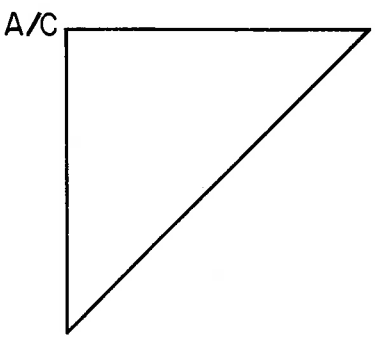
3. If you don't have a pair of scissors, this is what you do: Fold the shaded part over onto the triangle. Rub hard over the fold.



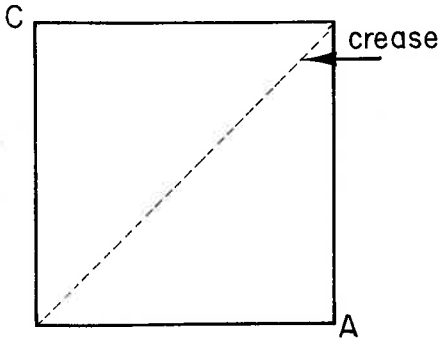
4. Then tear off the shaded piece very carefully. Open up the triangle.



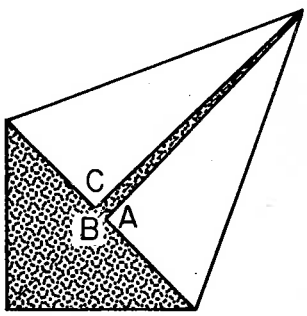
5. Now you have a square and you are ready to start your paper folding.



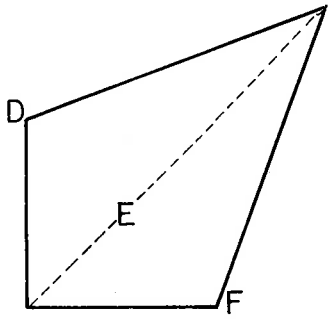
6. Fold point A onto point C. Rub hard over the fold.



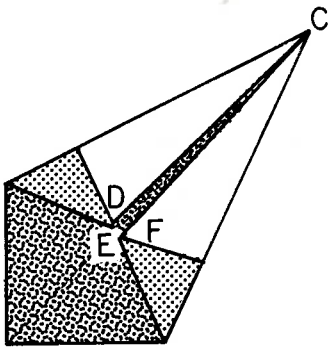
7. Now open the paper again. The line across it is called the crease.



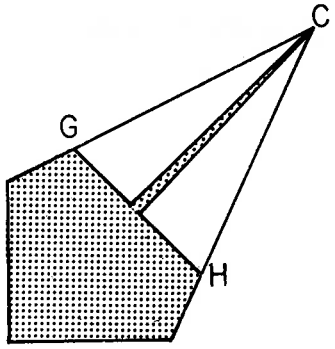
8. Now fold A and C onto the crease so that they meet at point B.



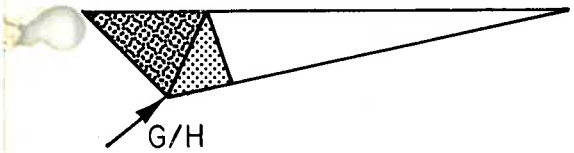
9. Turn the paper over.



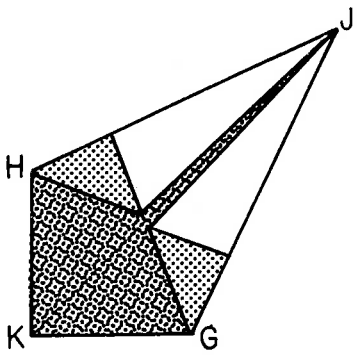
10. Now fold the new points D and F onto the back of the crease, so that they meet at point E.



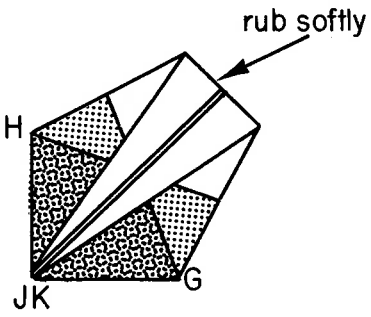
11. Turn the paper over again, so that it looks like this:



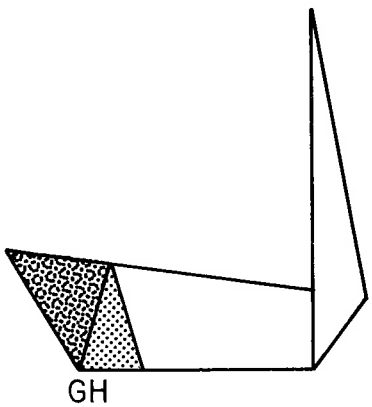
12. Fold the new point G onto point H. Rub hard on the fold.



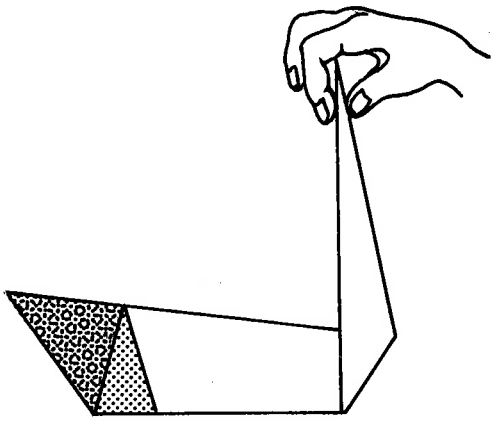
13. Undo the fold again and turn the paper over.



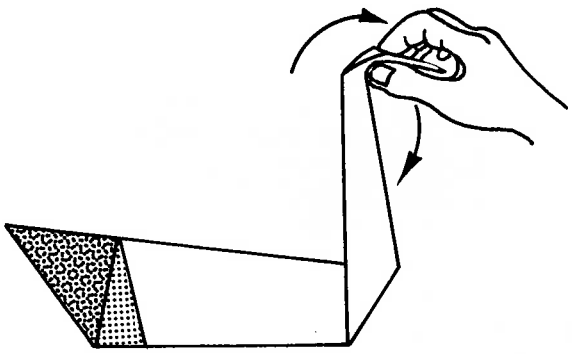
14. Fold point J back onto point K. Rub softly.



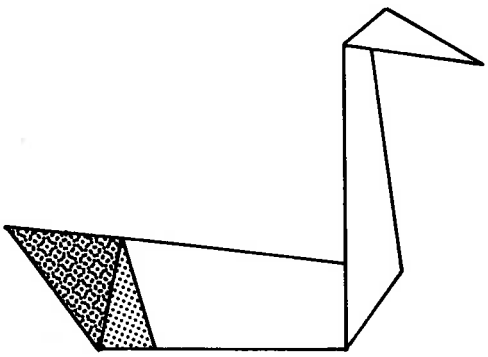
15. Fold the paper in half again, so that G and H meet at the back. Now pull point J up, so that it faces into the air. This is the swan's neck. Now rub the folds hard.



16. Put your finger and thumb at the front and back of the swan's neck.



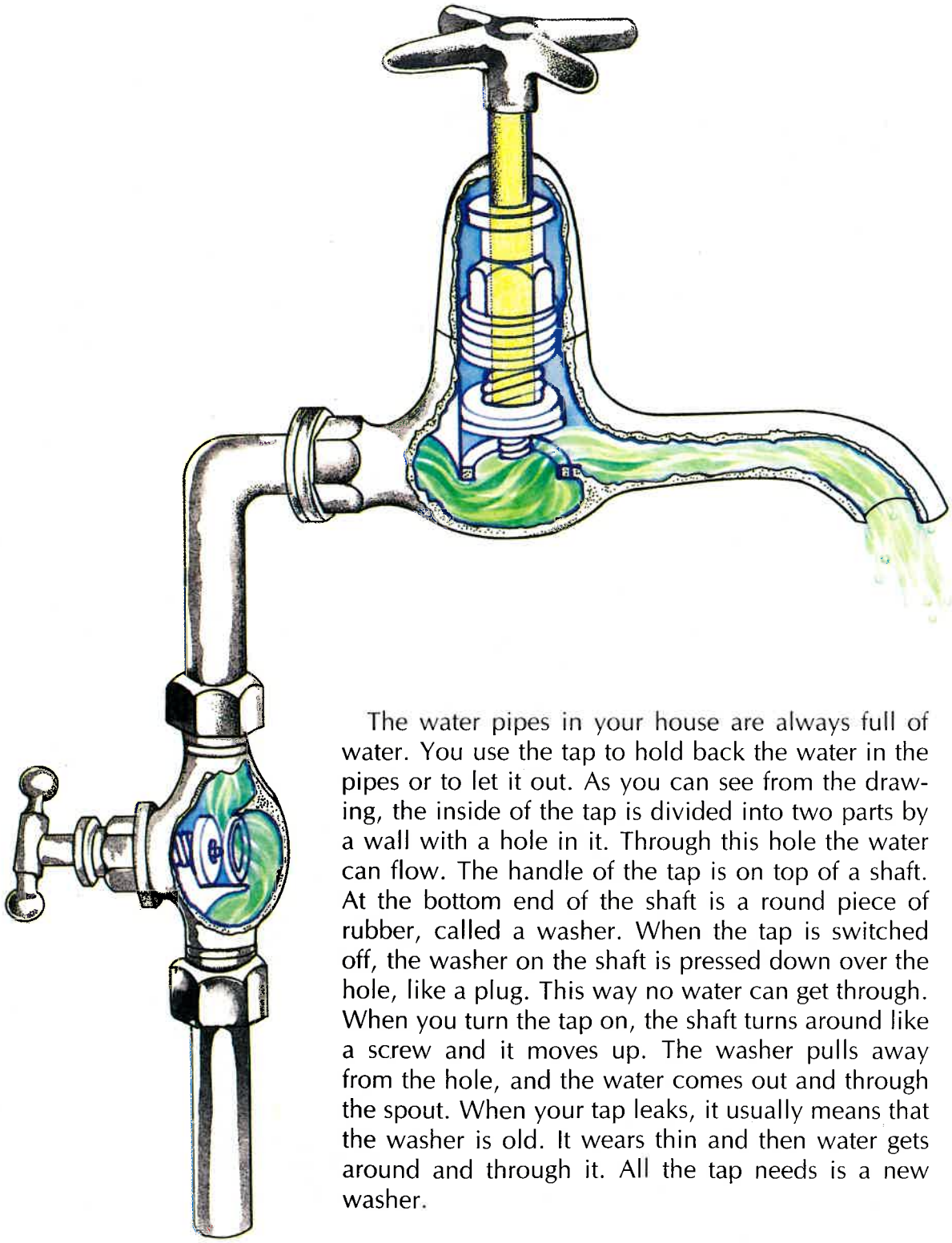
17. Pull this little piece forward over your thumb, so that it points outwards and slightly down.



18. Close the fold and rub hard. This is your swan's head.

Make two or three of these and put them together on a shelf somewhere. They look better when there are a few of them together.

Inside a Tap



The water pipes in your house are always full of water. You use the tap to hold back the water in the pipes or to let it out. As you can see from the drawing, the inside of the tap is divided into two parts by a wall with a hole in it. Through this hole the water can flow. The handle of the tap is on top of a shaft. At the bottom end of the shaft is a round piece of rubber, called a washer. When the tap is switched off, the washer on the shaft is pressed down over the hole, like a plug. This way no water can get through. When you turn the tap on, the shaft turns around like a screw and it moves up. The washer pulls away from the hole, and the water comes out and through the spout. When your tap leaks, it usually means that the washer is old. It wears thin and then water gets around and through it. All the tap needs is a new washer.

Lost in the Desert

A passage by Assia Dib

FAROUK WAS driving the lorry with Kateb in the driver's seat. They had already come a long way across the Algerian desert, and Farouk was very tired. He had to get the lorry back to the Trans Saharan Company in Ghardaia by the end of the week, so he was in a hurry. It was the end of the day and he was tired of seeing so much sand. He was also tired of the endless flies diving straight for the front of the lorry.

"Soon I'll get out and clean the windscreen," he thought. They had to get to a dune big enough for shelter as soon as possible, or they'd be spending the night out in the open.

"Farouk, a pool, over there to your left," Kateb shouted.

"Please, Kateb, that's a mirage."

All the same, the lorry began moving leftwards. Farouk felt as if he had no control over the steering wheel. They drove and drove but the pool was no nearer. Soon the shadows started getting longer and the pool disappeared.

"A mirage — I've been fooled by that after so many years in the desert!" Farouk shook his head from side to side as he tried to get back onto the path to Ghardaia.

It was frightening. The dunes looked the same, as if he'd seen it all before.

The evening came — the sand had become a deep pink. With night the air became cool and fresh, then suddenly cold. Kateb cooked their charba, a meat and vegetable soup, in the old pot. It was blackened from being on top of so many fires on nights as silent and calm as this one.

The next morning they got up very early. Farouk climbed the dune while Kateb made some tea. From the top of the high dune, Farouk could see only more dunes, stretching out into the distance.

"Will I ever find the right gap from here?" he wondered. Kateb said nothing. There was still enough petrol and water for one and a half days' travel. Allah is great. So is the desert.

Three days had gone by and still no gap or tyre marks to follow. The lorry was useless now. They had even drunk the warm, dirty water from the radiator. Now the sounds were beginning in their heads — sweet and sad, but very soft. You no longer know what you are doing when you are about to die.

Farouk thought he saw Dehbia appear in her farm clothes. She held out a glass of golden lemon tea, but it was too good to be true. You could see her standing near the lorry, throwing off her cloak and pointing to an oasis, laughing over the water. But Kateb saw nothing. There was just one idea in his mind — to drink, to drink long and deep.

Oh for a drink! Maybe by thinking of Allah, by asking him for water, maybe He performs miracles. Allah can do anything. But Farouk and Kateb had no time to think of Allah, they told themselves. They were thirsty. There was no time or energy for praying. They had one idea, to drink. You have to be amongst real people and sounds to think of praying. Over here anyone is in a position to meet death. The two lorry drivers had gone round in circles all that night, the night before that, and the night before that.

"Would it have been different if we were on camels?" Kateb wondered. "Then there would have been the juice in the camel's hump, if it came to that."

But he soon had a new idea and could think of nothing else: he could taste snow. He thought of the cold sour milk and crushed ice they sell at Ghardaia, sour milk and crushed ice that you want to swallow all at once, sour milk and crushed ice so cold that it hurts your throat.

So now?

So nothing!

Farouk tried to stand up — but he fell on his knees and remained there.

Yes, the sun has seen worse things in its time.

Kateb was trying to open his veins. He was thirsty and wanted to drink his blood.

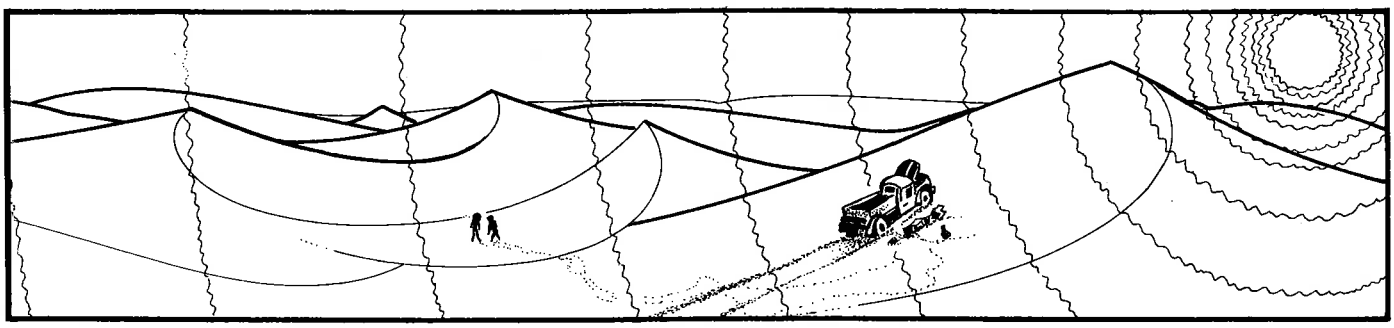
"He's gone crazy," Farouk told himself. "A man is not a camel."

Kateb didn't have the strength to open his veins. His hand let go of the small knife and it fell onto the sand.

"Farouk, please, just one favour. Do it for me quickly. Please."

Kateb's last words died away into the silence. There was none of the usual peace of death on his face. Even in death he must have been thirsty.

Farouk was alone now.



???? Where

Where are all these places? What do we mean when we talk about NORTH, SOUTH, EAST and WEST?

Now you know that the sun comes up in the morning . . .

. . . and it goes down in the evening

and that it goes down in a different place from where it comes up. We call where it comes up 'east' and where it goes down 'west'. They are not places, they are **directions.** If you go and visit a friend who lives a long way away from you, you still call the place where the sun comes up 'east' and where it goes down 'west'.

Now, you know where the sun comes up and goes down every day. And for you your house is in the middle,

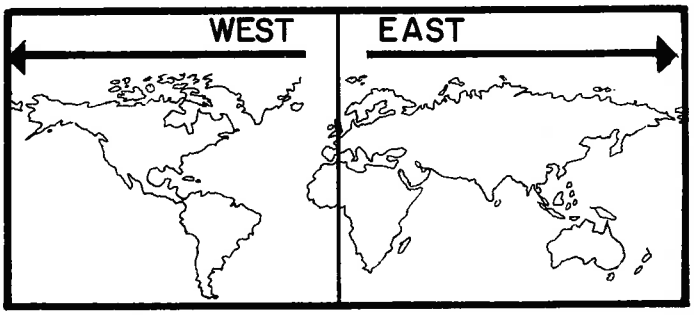
NOMATHEMBA'S HOUSE

YOUR HOME

ADAM'S HOUSE

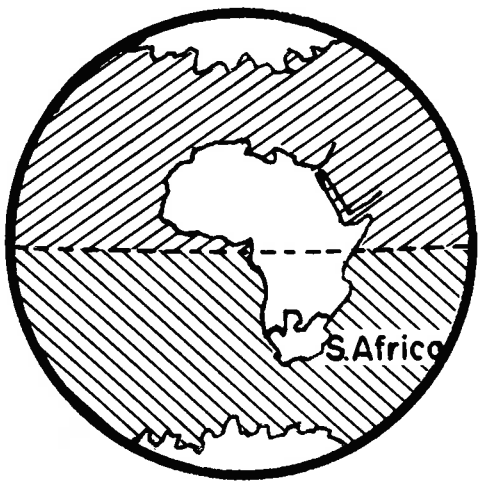
Adam's house is on the east side and Nomathemba's house is on the west side. But what happens when you go to Adam's house? Then your house is on the west side, and when you go to Nomathemba's house, then your house is on the east side. So where is the middle line of the world?

Let's open up a map of the world and imagine that the earth is flat. It isn't, of course. The earth is round like a ball. If you run your finger round the middle of a ball you can see that there is no beginning or end of it. So there is no place on the earth that we can call the centre of the earth, where east begins and west ends. You can see from



this map where people have put the centre of the world, and which countries we call east and which countries we call west. Why have we chosen this place as being the centre? Well, a long time ago, people who lived in England divided the world into east and west. They thought that England was the centre of the world. They also thought that everything English was best! They sailed all over the world and wherever they went they took with them their culture and the English way of doing things. Many people in the world were forced to start doing things in the English way. That is why we now use this line as being the centre of the world. In reality, there is no centre, it is all one world. Now you can see that east and west are not actual places. They are different ways that you face, when you go somewhere. We call them directions.

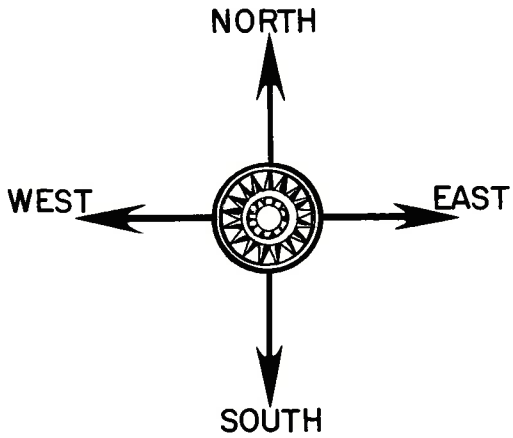
But now, what about north and south? At the 'top' and the 'bottom' of the earth are places that are tremendously cold. They are the ice-caps of the earth, called the Poles.

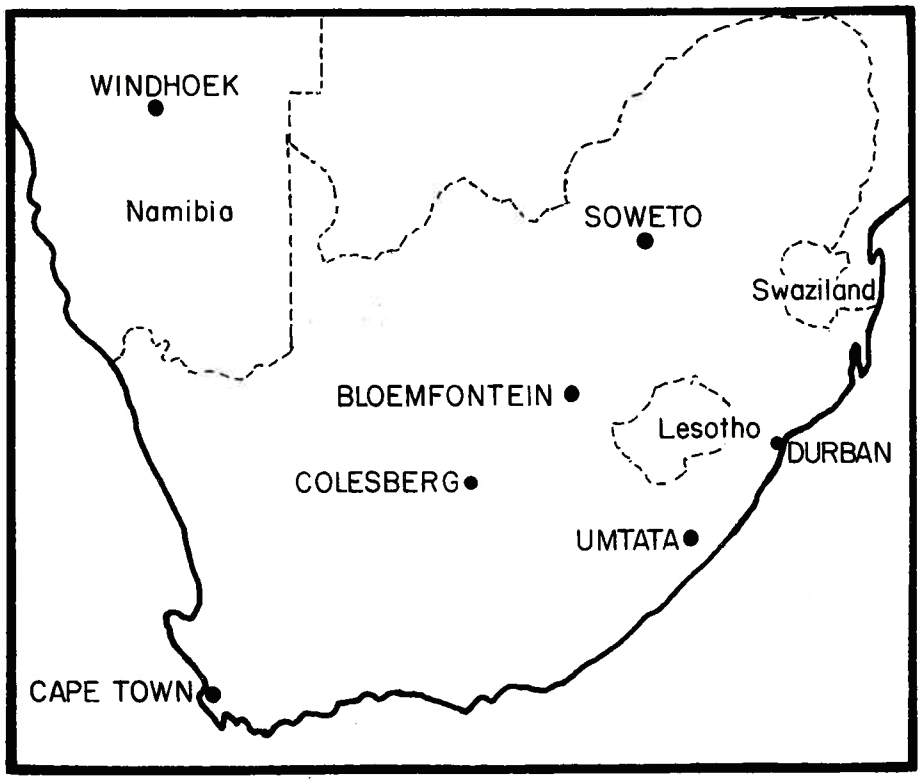


The North Pole is at the 'top' and the South Pole is at the 'bottom' of the world. Because of these, we also divide the world into two halves, a northern half and a southern half. We in South Africa are in the southern half of the world. We would have to travel for a long time northwards before we reached the northern half. It would take even longer to reach the North Pole.

are we ????

So all these words that we use — north, south, east and west — are directions. We draw a plan and say that they are like this in relation to each other. This means that if you are looking out of a window and you see the sun set, you must be looking west. North will then be on your right hand side and south will be on your left hand side. If you watch the sun rise, you are looking east. North will now be on your left hand side and south on your right side. This is very useful to know.





Let's look at a map of South Africa with a few places marked on it and see why it is useful to know where these different directions are. If you live in Soweto and you want to go to Bloemfontein, you can see that you must travel south. But if you travel straight south, you will go past it. You must also travel slightly east as well. What happens if you live in Cape Town and you need to go to Bloemfontein? Now you have to travel north and east to get there. If you know that, and you don't have maps to show you the way, you could use the sun as your guide. You turn yourself to where the sun rises, which is east. But you don't want east but north-east, so you turn so that the rising sun is slightly to your right. This way you will be heading in more or less the right direction.

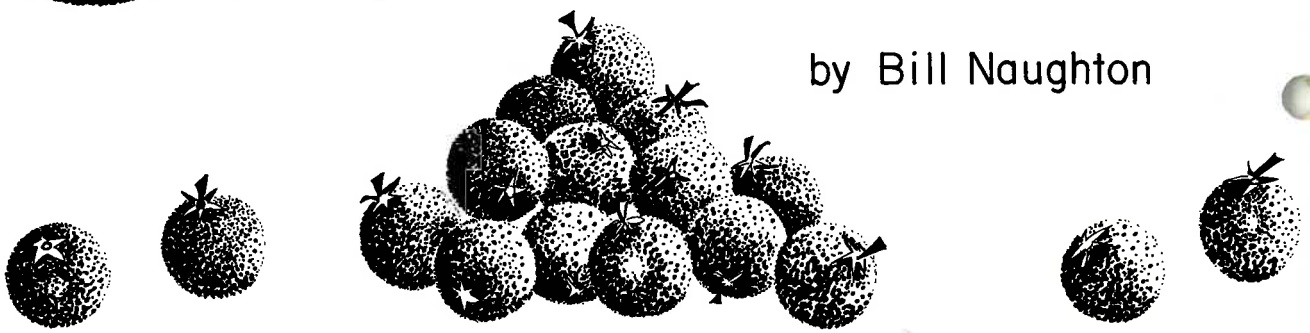
THE ANSWERS ARE ON PAGE 30

Now try and test yourself on direction, using the map as a guide. See if you can answer these questions:

1. If you are in Umtata, which direction must you go in to get to Durban?
2. Which towns are to the east of Bloemfontein? Which towns are to the west of Bloemfontein?
3. From which town do you have to travel west to reach every other town on the map?
4. From Windhoek which direction must you go in order to reach Soweto?
5. Is Cape Town east or west of Umtata?
6. Which town is the farthest north — Colesberg, Bloemfontein or Durban?
7. If you are in Bloemfontein and you travel south west, which town will you reach?
8. From Colesberg, work out which directions you will have to take to get to each of the other towns on the map.

SEVENTEEN ORANGES

by Bill Naughton



A small theft can give you a big stomach — if you're caught, as this young worker was at the London Harbour many years ago:

I USED to like oranges so much, that I could suck one after the other the whole day long. That is, until the time I was caught by a policeman with seventeen oranges hidden away in my pockets. I've never looked at oranges again, because that day I had my fill of them.

I was driving a little pony-and-cart for the Swift Delivery Company in those days, and lots of my pick-ups were at the docks. If I was quick enough, I could pick up a little extra for myself, even before the other carters had watered their ponies.

Now I was not what you'd call a proper thief, and I didn't take things just because they didn't belong to me, like some people do. All the same, I almost always came off the docks with a bit of something to chew.

Say they were unloading a banana boat: I'd come up in my cart and grab some loose bunches, or a friendly foot would kick them towards me. Then I'd hide them under my brat. This is an apron which was supposed to protect me from the rough weather. But I used mine mostly to hide things like the bananas, though I didn't like them nearly as much as oranges.

I always took things as the thought came to me, not like Clem Jones. He planned his moves very carefully, like the time he came out of the gates carrying a box.

'What have you got there?' asked Pongo, who was the policeman on duty.

'A cat', said Clem, 'but don't ask me to open it, or the blighter will get away.'

'A cat?' said Pongo. 'You can't fool me. Let's have it opened.' Clem wouldn't, at first. Pongo insisted, so Clem pretended to get mad and he flung it open. Out leapt a ship's cat, which ran along the docks with Clem after it, shouting. Two minutes later he came out with the same box. He held the lid down tight and scowled at Pongo, who was smiling. But when he arrived home, in his own kitchen, Clem opened the box and took out a full-sized Dutch cheese.

The time I got caught, it was because the string of my brat broke, and Pongo noticed my bulging pockets. He made me draw the pony-and-cart to one side, and then he took me in his cabin and went through my pockets. There were seventeen oranges in all, and he placed them carefully on the table.

'An example has to be made,' he said, 'of somebody or other — and I reckon you're the unlucky one. Now, my lad, what have you to say for yourself?'

I said nothing. I was dead frightened, but I forced myself to keep my mouth shut. I had read too many detective stories to make the mistake of saying anything. ANYTHING YOU SAY MAY BE USED IN EVIDENCE AGAINST YOU. I kept that in my mind, and refused to be *interrogated*. Pongo didn't like my attitude, and went to fetch another policeman to be a witness. He went off, carefully locking the door behind him.

I felt awful then. It was the suspense. I looked at the walls, I looked at the door, and I looked at the seventeen oranges, and I looked at my brat with the broken string. I thought of how I would get sacked and get sentenced, and of what my mother would say and my father do.

There was no escape. I was there — and the evidence

was there before me on the table — and Pongo had gone for his mate to be witness. I was ruined for life.

'Oh, my God,' I moaned to myself, 'whatever shall I do?'

'Eat 'em!' spoke a voice in my head.

'Eh?' I asked, 'Eat them?'

'That's right,' replied this inner voice — 'and then the evidence will be gone. But be quick about it.'

I thought for half a second. Then I grabbed an orange, peeled it, crushed the juice out, swallowed the orange. I was just about to squirt the pips out when the voice cried:

'No!'

'Eh?'

'You have to swallow them too!'

'What — the pips?'

'Yes — peel an' all! Evidence.'

'Oh — oh, of course,' and I forced the pips to the back of my mouth and took a handful of peel to help get them down my throat.

'Don't bother to chew,' said the voice, 'it's a race against time!'

It certainly was. After that first orange I took out my penknife and slashed the fruit into chunks and gulped them down as fast as I could pick them up.

I was just about full to the brim, with three oranges to go, when I heard Pongo and his mate coming back. I sighed and gave up, but the voice warned me to guzzle on. The more I ate the less evidence there would be. I was lucky, because Pongo and his mate were *detained* over checking up some wagons going out. My sigh seemed to have cleared up the traffic jam in my *oesophagus,* so I set about finishing off the last few. By the time the key turned in the lock I was finishing off the last piece of the seventeen oranges.

'This is him,' began Pongo to his mate, 'I caught him with his pockets ramjam full of oranges —' He looked to the table. 'Hi, where are they?'

'Whew,' sniffed his mate, 'I can smell 'em.'

I never spoke.

Pongo began to search. He looked high and low, went through my pockets, and felt at my brat. Of course he found no trace of an orange. Finally he worked out what must have happened, but even then he couldn't believe it. 'Seventeen oranges,' he kept saying, — 'big 'uns at that! — how has he managed it?' But I said nothing, AND HE COULDN'T arrest me, because he had no evidence — and because I suppose he didn't want to be laughed at. So all he could do was to swear and fume, while I kept my lips shut tight, and then he had to let me go.

When I told Clem Jones about it he said that I had been very slow; he said that I could have *sued* Pongo for hundreds of pounds because of *wrongful detention,* if only I had been quick-thinking enough. But I was never the nasty type, and anyway, it was days and days before I could stand really still and think things out. Those seventeen oranges — peel, pips, and all — kept working away in my inside something awful.

These words are printed in *italic* letters in the story and are explained here.

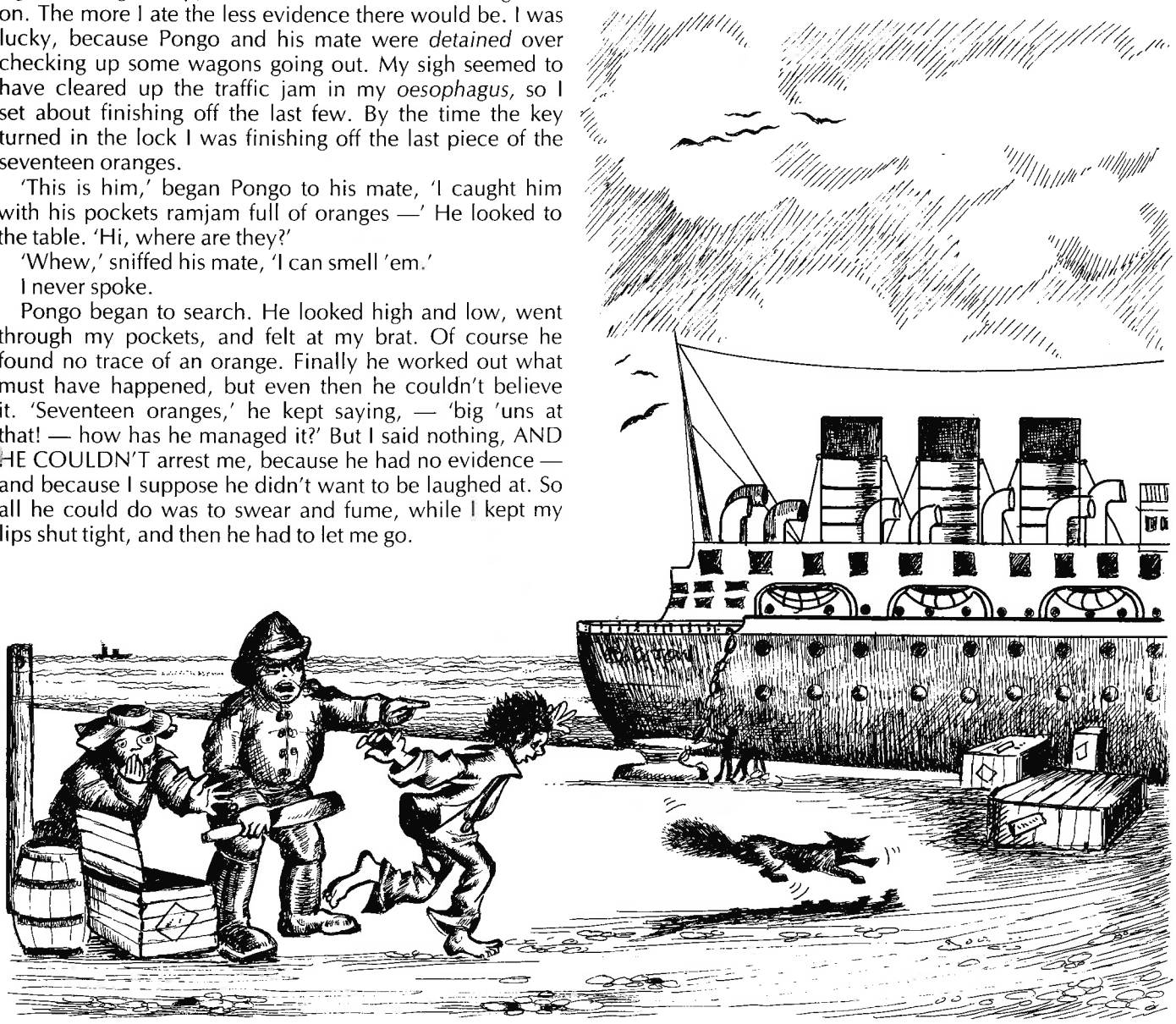
interrogated; means questioned, often roughly, and often over and over again.

detained; means being kept back or arrested.

oesophagus; means food pipe.

sue; means to ask for lots of money from someone in court because he has done you harm.

wrongful detention; means being arrested for something you didn't do.



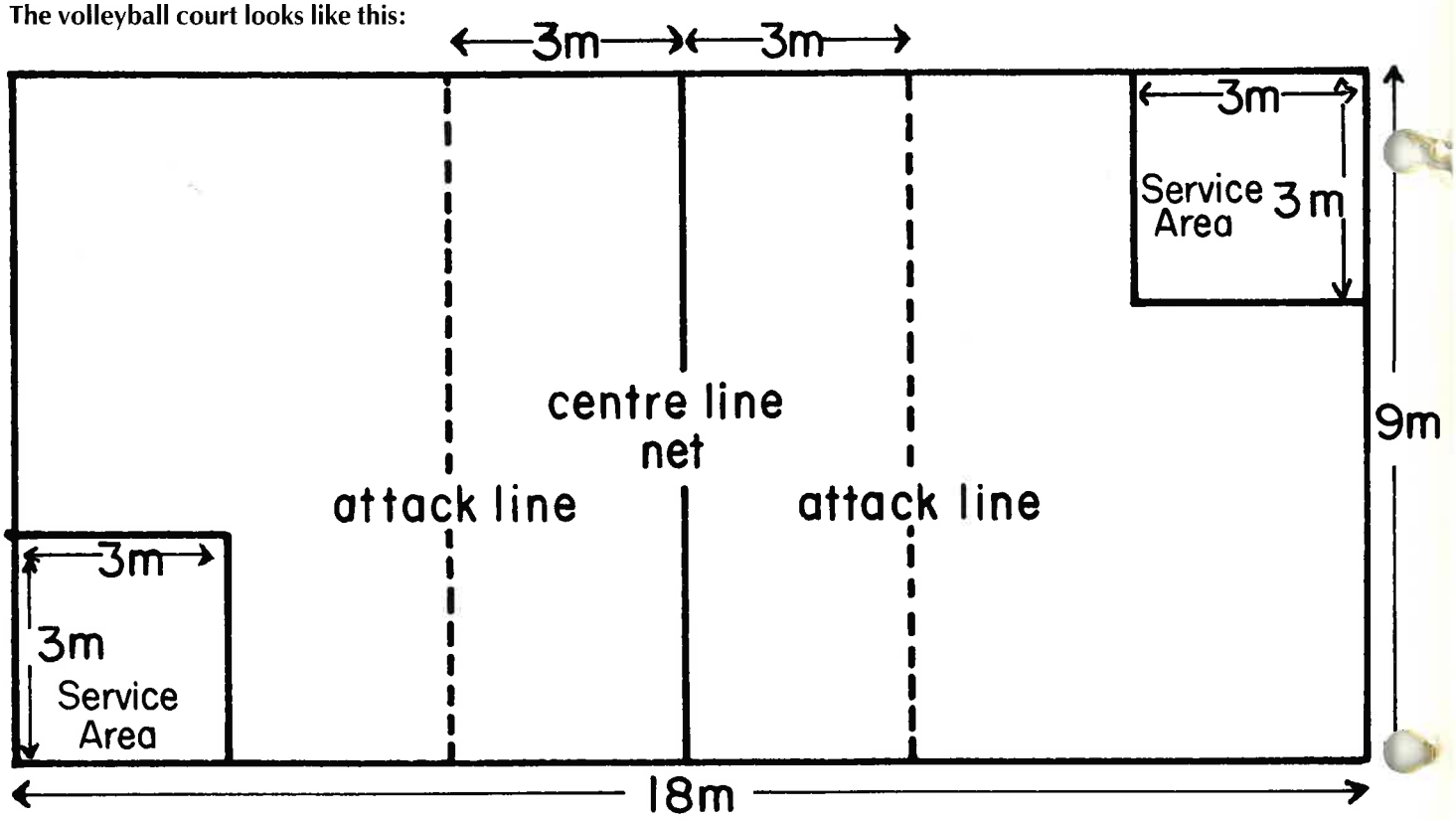
Sports and Games:

VOLLEYBALL has become a popular sport with both boys and girls in this country. It is a fast and exciting game and you don't need much equipment to play it. All you need is a ball and a net, but if you don't have a net, a rope tied between two poles will do.

The basic idea of volleyball is this: two teams play opposite each other on either side of a net. They hit the ball to each other and if either side lets the ball fall to the ground, the other team gets a point. The ball does not have to be hit straight over the net. Each team can hit it three times on their own side before hitting it over.

If you have never played volleyball, these rules will show you how it is played. If you can already play volleyball and you want to be able to play a more difficult game, study the rules carefully. They should make the game go a little faster, and they should make it more exciting. If you want to find out even more about the game, there are books on volleyball in many public libraries. These will be under "Non-fiction" in the Sports section. The book that these rules come from is **Better Volleyball** by W. B. Black. There are very good pictures in this book.

The volleyball court looks like this:

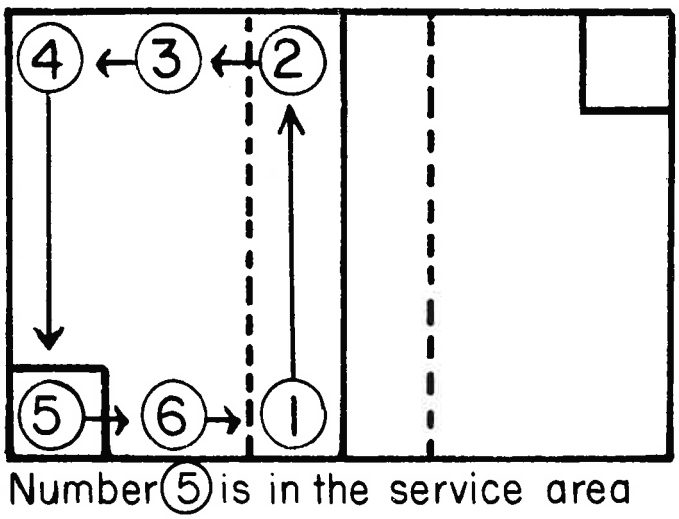


It is easy to mark off a court. Measure the distances for the court on the ground. You can use stones or string for the service areas and the other lines. The top of the net should be between 2,24 and 2,43 metres above the ground.

Each team must have **6 players** on the court at a time. It may be better to have more than 6 players in your team. Then you will have extra people in case anyone gets hurt or tired.

It is always a good idea for the players in a team to change places on the court every time a point is won. This gives everyone a chance to play in each position.

These are the positions of the players:

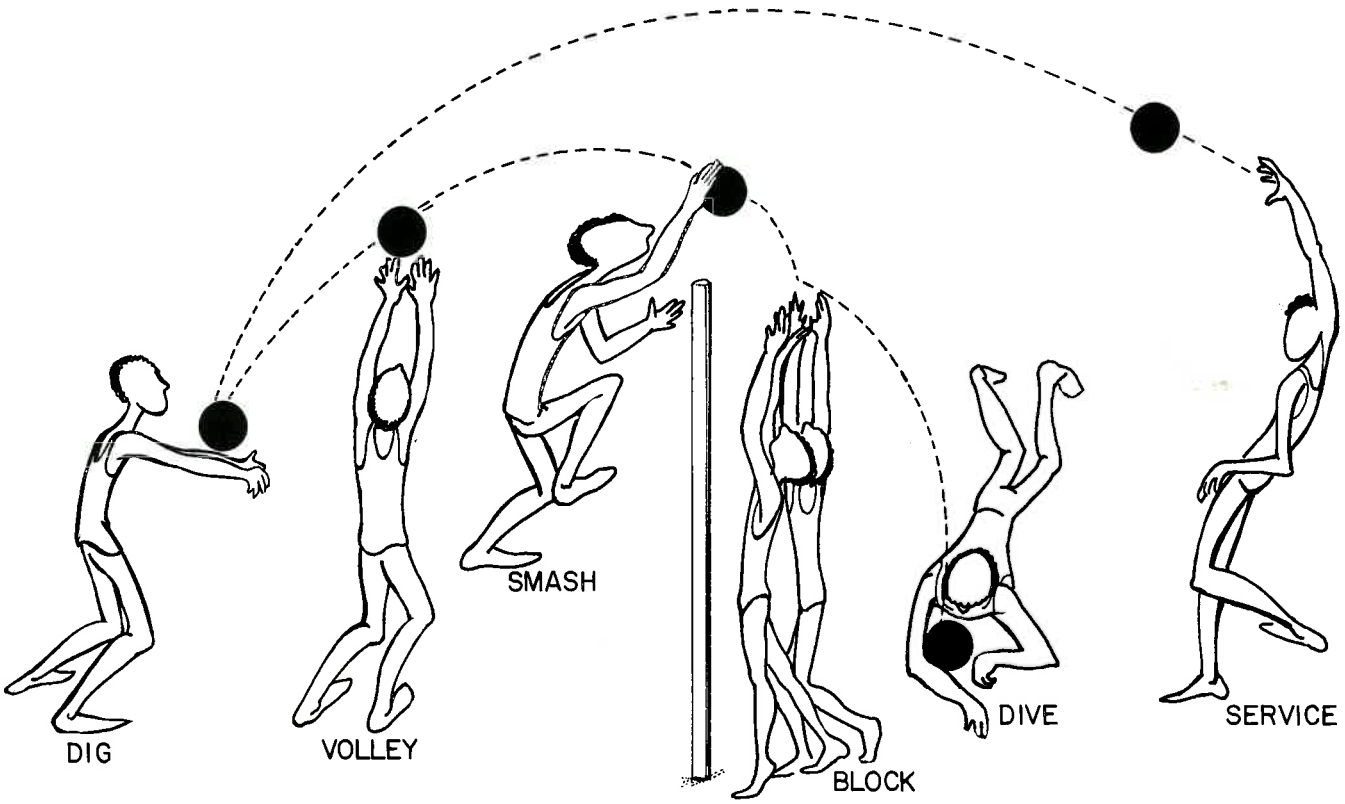


Volleyball

The rules are these: The ball can touch any part of the body, but it must be hit or bounced off the body. A player must not catch or throw the ball or keep it in his hands for a while. The ball musn't fall to the ground, and one player can't touch the ball more than once in a row. Also, one team can only have the ball for three touches. They must get it back over the net by the third hit. The other team gets a point if:

* someone catches and holds the ball
* someone lets the ball fall to the ground
* someone touches the ball twice in a row
* the team can't get the ball across the net in three touches.

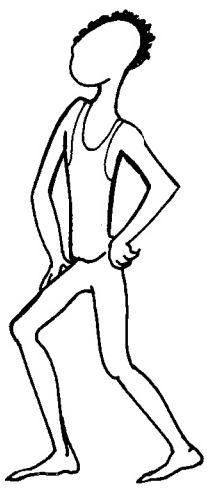
A game is played for 3 or 5 sets. The team that wins more sets than the other team, wins the game. A set is won by the first team to get more than 14 points, but they must have the lead by at least two points. For example, if one team has 15 points and the other has 14 points, they will have to go on playing until the score is 16–14, or 17–15, and so on.



If you are going to play with these rules, then you should know the 6 ways of hitting the ball:

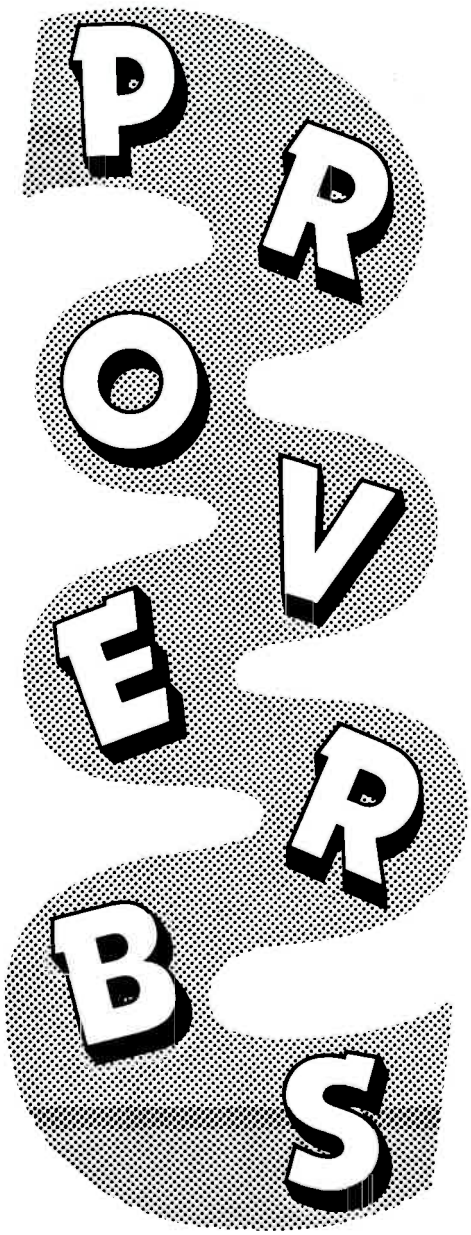
Dig — you use 1 or 2 hands to receive services or hard hits. The ball bounces off the front of your arms.
Volley — the ball touches the fingers of both hands. It is passed immediately on to the next player.
Smash — use one open hand to hit the ball downwards hard into the other team's court.
Block — two or three people use their hands to stop the ball from passing over the net.
Dive — use the front or side of your arms to stop the ball reaching the ground.
Service — puts the ball into play.

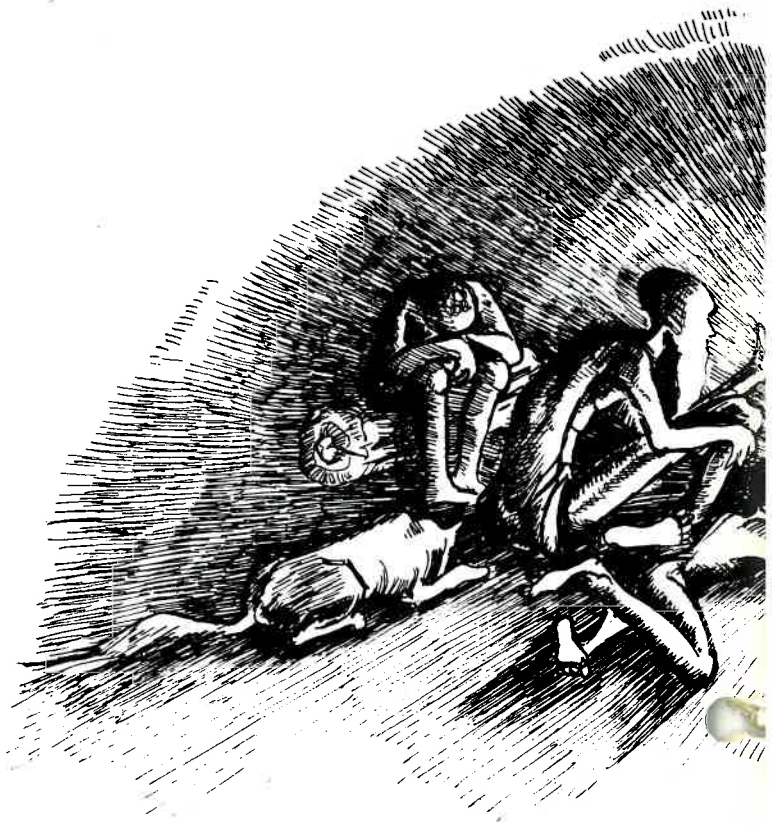
If you use these ways of hitting the ball, you will find that the game should be faster and more exciting. But the main thing in volleyball is to keep the ball moving. Try to guess which way the ball is moving, so that you can be facing it, ready to hit it. This is a good position to stand in while you wait for the ball.



Enjoy the game!

Learning without writing: Part 1





HAVE YOU ever thought of how people teach their children in societies where they don't read or write? When people can't read or write they need a way to remember the wise things that are passed on from parents to children. Also, there must be a way of telling these things so that the young children will listen. We usually call these clever sayings and stories "folklore". Folklore usually has: **riddles** — questions put in an unusual way with clever answers; **proverbs** — clever sayings; **fables** — stories with a message; and **songs.** In traditional societies in Africa where the people haven't learnt to read or write. this folklore is very important. There are many people in South Africa today, especially older people, who still know traditional riddles, fables and proverbs.

In traditional African societies, the children learn these riddles and proverbs from grandparents, parents, aunties, uncles, and older brothers and sisters. Often, the stories are told around a fire at night, usually by an old man. They are sometimes sad, sometimes funny and sometimes cruel. When we look at some of these songs and proverbs, we will see that they are easy to remember. They are also interesting to think about, so that one doesn't want to forget them quickly. They tell us about life, how it is sometimes difficult and sometimes good. They talk about how we should behave and they describe all sorts of things in the world around us. They are very much like the poetry we read today, but the language is simpler even if the ideas are more difficult to understand.

In this series on popular culture and traditional culture, let's begin with PROVERBS. Here are some from the Shona people in Zimbabwe. They are quite difficult to understand and they need to be explained:

* A CHILD WHO DOES NOT CRY WILL DIE IN HIS CRADLE — better speak out if you have something to complain about.
* WHO DRAGS A BRANCH DRAGS ITS LEAVES ALSO — if you marry a woman with children, you must accept them as well.
* WHAT FORGETS IS THE AXE, NEVER THE TREE — the person who has been hurt or insulted never forgets, though the person who hurts him might forget.

The Yoruba people who live in Nigeria in West Africa have some very clever proverbs. Some of them need explaining but some don't.

* THE MOUTH THAT COMMITS A CRIME MUST TALK ITSELF OUT OF PUNISHMENT.
* HE WHO SHITS ON THE ROAD WILL MEET FLIES ON HIS RETURN.
* HATRED IS LIKE RAIN IN THE DESERT — IT IS OF NO USE TO ANYBODY.
* WHEN THE MAN WHO KNOWS NO DISASTER HEARS CRYING — HE THINKS IT IS A SONG.
* THE POT THAT BOILS OVER ONLY DIRTIES ITSELF.

There is even one proverb which explains what proverbs are all about:

PROVERBS ARE THE HORSES OF SPEECH: WHEN IDEAS GET LOST WE USE PROVERBS TO DRAG THEM OUT.

Here is a fable which explains the Yoruba proverb, HALF A TRUTH IS NO TRUTH. It is about a tortoise and a monkey, who are very good friends. Like many fables, the story is about animals but the message is for all people:

The monkey and the tortoise both fall in love with the same girl and decide to marry her. The monkey said he would have her upper half, and the tortoise, her lower half. They were happy enough until the girl had a baby. The tortoise wouldn't let her feed it, saying that he owned her upper half and wouldn't share it with anyone. He and the monkey argued, while the child was getting hungrier and hungrier. The girl ran to the king for advice. But the

king was also confused. "Who will be able to judge this case? When two honest men quarrel, it is easy to give judgement. When a crook is trying to deceive an honest man it is even easier to give judgement. But when tortoise is quarrelling with monkey — who is to decide which is the more deceitful of the two?"

Then the king called the oldest Babalawo (seer) in his kingdom and said: "It is the wisdom of the dead that does not allow an old man to look a fool. You have had a chance to gather more wisdom than any of us from all those who have departed. Only you can solve this problem and save this child's life".

When the old man had heard both tortoise and monkey state their case, he said to monkey: "You said you own half?" And monkey said: "Yes". The old man said again to tortoise: "You said you own half a wife?" and tortoise said: "Yes". Then the old man smiled and said: "Neither of you owns any wife at all. You may divide a bag of seed, and each of you will have half a bag of seed. But if you divide the truth between you, you will each own half a truth, which is a lie. Therefore I decide that neither of you owns a wife and you must let her return to her father's house, where she may feed her child in peace."

Then the girl was happy to be rid of her two husbands and she went home saying: "Too much rain is as bad for the farmer as too little rain". This was how the friendship between monkey and tortoise came to an end.

We have seen some difficult and some easy proverbs. Some don't need too much explanation, like THE POT THAT BOILS OVER DIRTIES ITSELF. Others, like the Shona ones, need to be explained for people who don't know them. Some are best when they come at the end of a story, like the Yoruba ones we looked at. The most important thing about proverbs is that they are only one or two sentences long, and that the words are easy to remember. It is also necessary that the idea behind them is clever enough for us to want to remember them. The idea itself can be simple or complicated. Many proverbs use words like AXE, TREE or POT, instead of the people that they are describing.

COMPETITION:

UPBEAT has arranged a competition. If other groups of people can make up proverbs, why can't we? There will be a prize for the person who makes up the best story of his own to explain a proverb. For the person who sends in the best collection of clever and funny proverbs that they know, there will also be a prize. Send in what you know; other readers will enjoy them too. Send your proberbs to UPBEAT PROVERBS, Box 39, Claremont 7735.

African societies are not the only ones to have a traditional culture. All societies do, but some lose it when the people learn to read and write. In England, over 1 000 years ago, people called the Anglo-Saxons used to sing beautiful songs and tell riddles. Today in England, many of the old sayings and songs are forgotten, but the people in London called "Cockneys" still make up their own ways of talking. For ordinary words they use a rhyming phrase, like: SKIN AND BLISTERS (means sisters), HAM AND EGGS (legs), RASPBERRY TART (fart), TROUBLE AND STRIFE (wife) and CHINA PLATE (mate). As some of you might know, the last one is shortened to CHINA, which means "friend". We do this too: we say things like "see you later alligator", or "level with the grevel". These kinds of sayings or rhymes (the words sound the same) are made up by ordinary people like us. Because these things are thought up by the ordinary PEOPLE, we talk about it as "POPULAR" culture.

Building Blocks and Bombs

What the discovery of the Atom has meant to the world

ON THE 5th August, 1945, the first Atomic Bomb was dropped on Hiroshima, Japan. The air was so hot and poisonous that for a long time people were too scared to go to Hiroshima and see the damage themselves. Instead, they took photographs from aeroplanes. Later, they saw the damage done to human life. It was horrifying. 66 000 people were killed in Hiroshima, and 619 000 people were hurt. It is difficult to know whether the people who died weren't luckier than those who stayed alive. People were very sick and vomited a lot; their skins were burnt so badly that they stuck to their clothes; many got cancer. Cancer is a terrible illness, and it sometimes only shows up ten or twenty years after a person gets it. This means that twenty years after the Atom Bomb was dropped, people were still suffering from its effects. Babies born to mothers who were in Hiroshima on that terrible day were affected badly. And as if this wasn't enough, America dropped a second Atom Bomb on another Japanese city called Nagasaki. The damage here was almost as bad.

How did this come about? In the 1930's scientists in Europe and America discovered that the smallest particle on earth, the atom, can be split in half. But when atoms are split in half, they give off dangerous energy called "radiation". Radiation stays in the air and water for a long time, poisoning all life in the area. During the Second World War military advisers were in a hurry to use this discovery to make a bomb. They thought they could use the bomb to win the war. They didn't know exactly what kind of damage the bomb would do. They spent thousands of rands to pay for chemicals and to pay scientists to work on the project. When the war was almost over, America dropped two atom bombs that killed thousands of people in Japan.

But the energy given off when atoms are split is not only used for bombs. It can also be used for other things, like a cure for some kinds of cancer, or to make electricity in 'nuclear power stations'. In the past, burning coal was the main way to make electricity. There is not much coal left now, so scientists have looked at two other ways of getting electricity: straight from the energy of the sun, and from nuclear power stations. They settled mainly on nuclear stations, even though these are very expensive to build. They can also be very dangerous if anything goes wrong. Many rich countries have already built such nuclear power stations. Although there have been a few dangerous accidents at one or two of these places, South Africa decided that it also wants a nuclear power station. One is being built twenty-five kilometres from Cape Town. It is called "Koeberg".

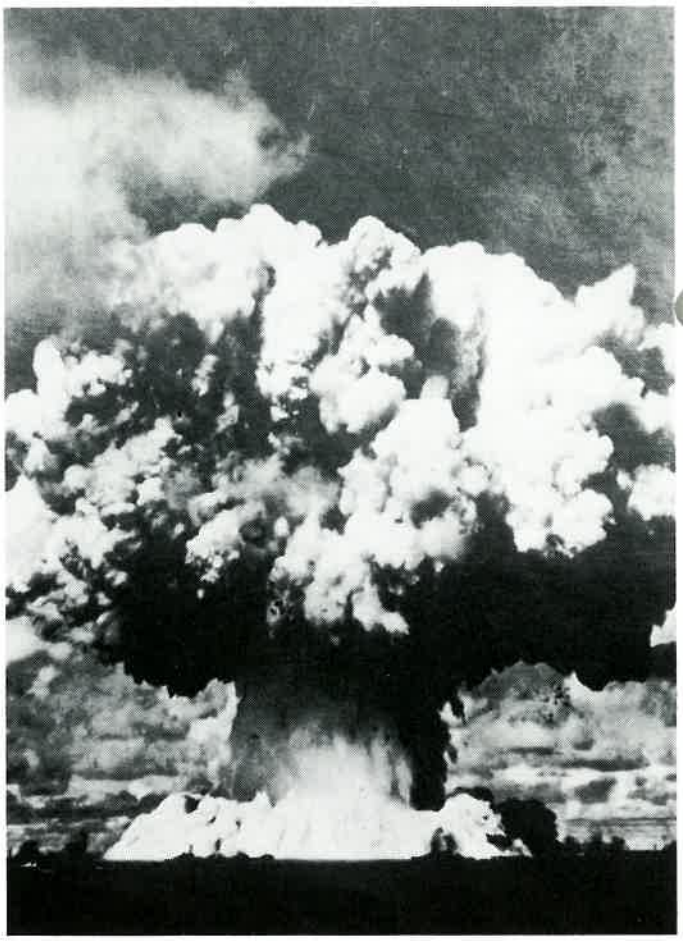
Here are some of the problems with Koeberg:

* If something big goes wrong, the whole town can blow up.
* If radiation does escape, it will poison many people around Cape Town. It can poison the water as well as plants and crops on the farms.
* There is a problem with waste coming from the power station. Much of this is buried under the ground, but a lot of warm water will be poured into the sea. As the sea becomes hotter, some kinds of fish will die.

Here we have seen how the discovery of the atom has been used for good and for bad; for X-ray therapy and for atom bombs. This often happens with scientific discoveries. When Alfred Nobel invented dynamite in 1867, he knew it could be used for good things, like building dams. But he was shocked to find out that armies used it to blow up things and people in war.

This is a problem for science, and for all knowledge: who decides what to do with the discoveries? Most of the money for scientific research these days comes from governments, universities and big companies. They can spend the money on making bigger weapons for war, or on ways to get more food to more people in the world.

Where do you think money for research should go?



The mushroom cloud made by an atomic explosion.

Street Beat

FROM: The Story of Mboma (Published by Ravan Press, Johannesburg)

The Fight with Siphamandla

There was a lot of fighting at this time. The Mtshalis had been fighting the Mthembus for many years. I don't know why they started fighting, but I remember one thing. That was when Siphamandla Mtshali spat into Mdidiyeli's grandfather's beer at a party.

My uncle went to help the old man, because they were both Mthembus. He hit Siphamandla on the neck with his fighting stick.

A few days later my uncle was going to the dip. Siphamandla hid in a pipe near the dip and jumped out when my uncle walked past . . .

Do you want to hear what happened to Mboma's uncle and Siphamandla? If you do, then send 30c to UPBEAT and we will send you a copy of THE STORY OF MBOMA. The book is a true story about Mboma's life in Natal. He writes about the hard work and difficult times on the farms. He also tells us about things like school, and the fights between the families on the farms. At the end of the book Mboma gives his address and asks others to write to him. He is 14 or 15 now. Perhaps if he gets too many letters, he will pass some onto his friends.

The book should interest UPBEAT readers, especially those who want to know more about other South Africans of the same age. The book is very short, and the English is not difficult. There are also drawings by Mboma and his friend Mdidiyela. The drawing on this page is by them.

If you want a copy of THE STORY OF MBOMA, send your name and address to UPBEAT, P.O. Box 11350, Johannesburg 2000, with 30c. If you go to a post office, they will make out a postal order for you. This is probably one of the easiest and safest ways of sending the money.

Penfriends...Penfriends...Penfriends

Do you want to write to someone your own age from Southern Africa? If you do, send us your name, address, age, a few details about yourself, and about the people you would like to write to. Send this in to UPBEAT PEN FRIENDS, P.O. Box 39, Claremont, C.P. 7530.

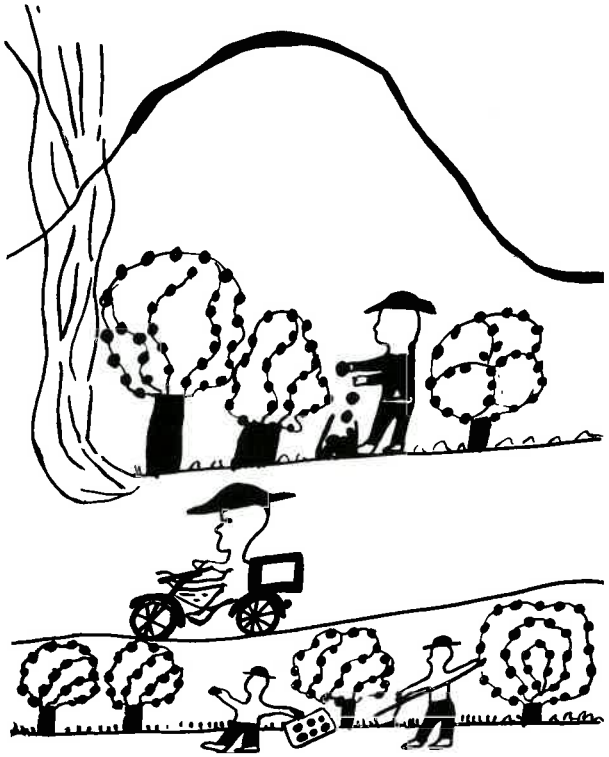
This way you can find out about people that live quite far away from you in different towns or even in different countries. You can learn about how they go to school (if they do), what they do with their spare time, and what the country is like that they live in. You can tell them about yourself, what kinds of things you like doing, and what you think about all sorts of topics.

If you don't want to send your own name and address in, you can write to any of the people with names and addresses on this page. Remember, though, that writing letters costs money — money for the paper, envelopes and stamps. Also, you shouldn't just write once and forget about the penfriend. You must keep on writing every time you receive a letter.

The Orange Farm

When I was 10 I went to work on an orange farm near Weenen. I had to work because there was no more food at home. I stayed on the orange farm, and went home on Sundays.

We slept in sheds and brought our own plates and blankets. The beds were very close together. The bunks in the girls' shed were so narrow that the girls fell off. The food was good — porridge, cabbage, beans and some meat, but there was very little of it, so we were often hungry. Our work was to pick and sort oranges.



Dion Landor is fifteen and his address is: 3 Hanlyn Road, Hanover Park, Cape Town, South Africa. Dion writes: I've got brown eyes and black hair. I'm 5 ft 7 inches tall. I am well built. I am in Std. 7e2 at a school "Crystal". My hobbies are rugby, soccer, disco, wrestling. My father is a clerical worker. My mother works in the same factory but as a machinist. I would like a girl from the age of 13 to 16. I would appreciate it if you could get me one from the Transvaal. I am a member of a youth organisation. I am quite good at rugby.

Devona Visagie. 12 years. Std. 5c, 29 Leadwood Street, Bonteheuwel, Cape Town 7764, South Africa. My hobbies are tennis, hockey and dance. I have long black hair. I am a tall girl with black eyes. My ideal in life is to be a doctor. My language is English. I attend Disa Primary school. I have two brothers and one sister. I would like a boy to write to me. I am a very quiet and sensitive girl.

You can write to **Judith Muropa (16)** and **Josephine Korera (18)** c/o Wayside Properties, P.O. Box 1589 Salisbury, Zimbabwe. They are both going into Form 7 and are living on a collective farm. (Many people live on it and work on it and they share the profits.) Both haven't been to school for three years now, because of the war in Zimbabwe. Judith writes: I want to know all about South Africa. I have never seen the sea. For the past three years I have just been helping my parents on the farm.

Thami and Nomhle

continued on next page

Thami and Nomhle

PUZZLE PAGE

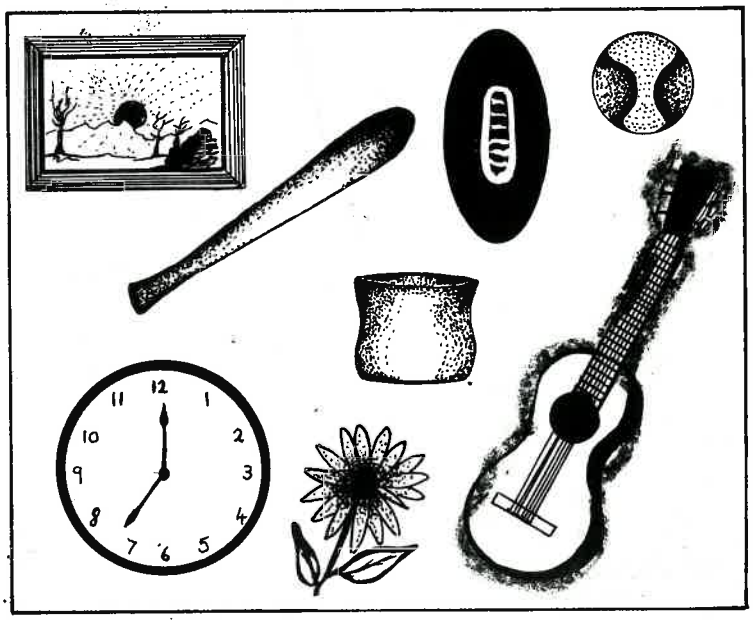
1. _ D _ _ _
2. _ _ _ E
3. _ _ _ _
4. _ _ _ _ _
5. _ _ _ _ R _
6. _ _ S _ _ _
7. P _ _ _ _ _ _
8. S _ _ _ _ _ _ _
9. _ _ _ E R _ _ _
10. _ _ _ _ N _ _ _
11. L _ _ _ _ _ _ _

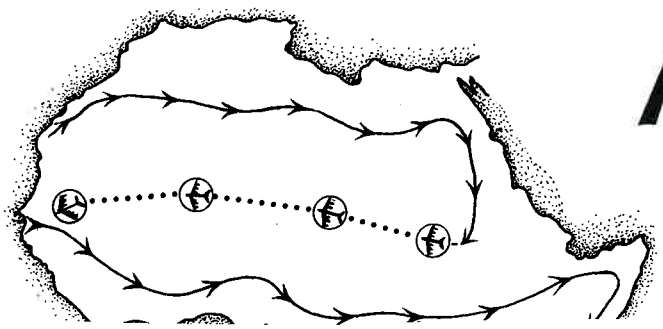
See if you can fill this Jabbering Jar with its words: Each word you must find can be used in two different ways. The second half of each clue is how the word is used in the magazine.

1. To change a story a bit — to change one's habits or body to suit one's needs.
2. You do it to get into the water quickly — a move in volleyball.
3. You can see this bird floating down a river — you can make it from paper.
4. When two cars or buses bump into one another — a move in volleyball.
5. To leave someone alone and helpless — a place with little water.
6. Person who washes dishes — part of a tap.
7. If you have many friends you are . . . — culture that comes from the people is called . . .
8. What you get in a shop, cafe or hotel — the first move in tennis or volleyball.
9. Something to make clothes with — the things that the earth is made of.
10. Places in Africa that used to belong to countries in Europe — where honey ants live.
11. The place where something is — another word for "township".

ANSWERS ON PAGE 31

Test your Memory. Look at this picture for twenty seconds. Then look away and see how many objects you can remember.





AFRICA...

Join us in journey from the lorth of Africa) the South

will be in the next issue. There we'll meet the Tuareg go through the desert on camels, and we'll hear ıt the war of independence fought by the Algerians. ı we'll move through oil country, yet more desert, eventually we'll go down the River Nile . . .

you look at the map, you'll see the route we are tak- from the North of Africa to the South. After about two s of travelling through deserts, jungles, down rivers in big cities, we'll end up in South Africa. Maybe l be ready to start again. Or go to another part of the d.

you want to know MORE about the different places, ɜ are many ways you can make the journey more in- ɜting:

/rite and tell us what you want to know about.

ɜep your eyes open for articles on African countries in e newspapers and magazines. You could even make scrap book with the articles you get.

ɜnd in to UPBEAT with your name and address and ɔstal orders for 25 cents for a wall map of Africa. Then, as we get to each country, you can fill in some interesting details about the country on your map. This way you won't forget where you've been and what it's like.

Are you ready? We are beginning the trip in the Western Sahara. When we've learnt what this war-torn desert is like, we'll move across the border to the next country.

— WELCOME TO THE WESTERN SAHARA —

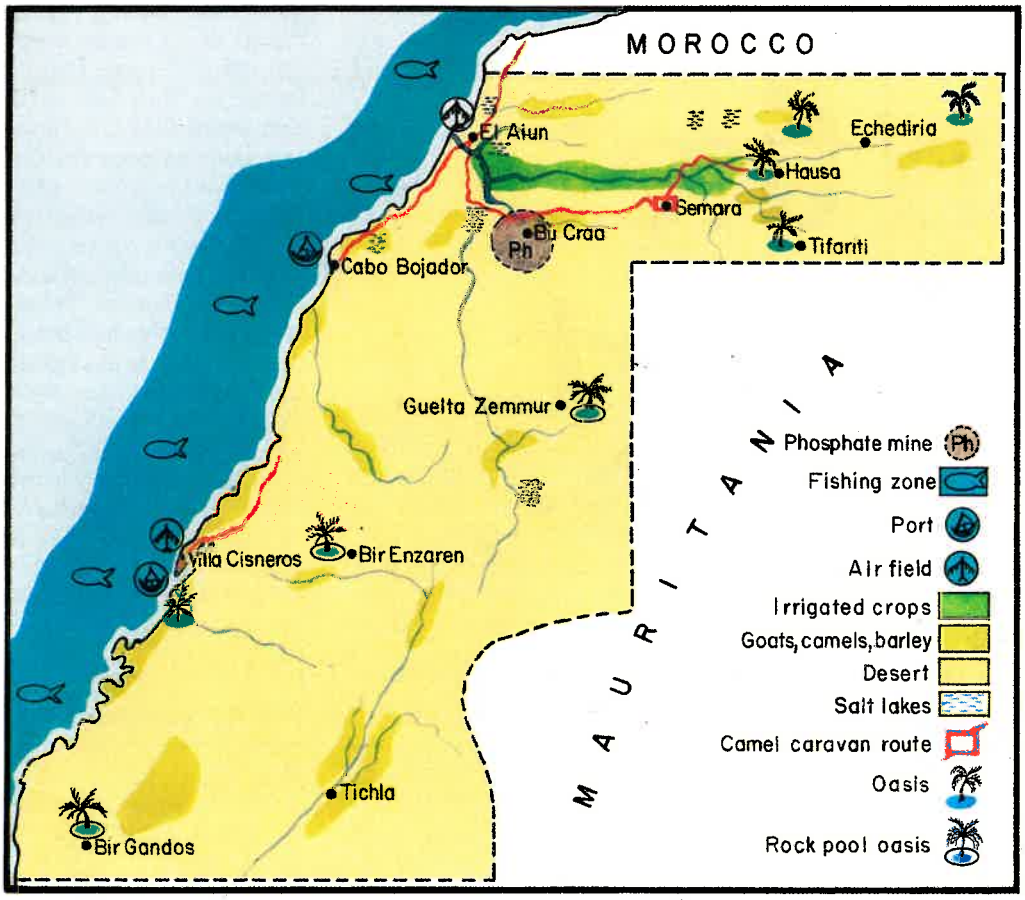
We are starting our travels through Africa in a country that is not even a country! It is still struggling to become one. The people who are fighting to make it independent call it the United Arab Democratic Republic. But you won't find this name on most maps. Most maps call it the Western Sahara and some don't call it anything. Why are people fighting over this small corner of the Sahara desert and is it at all worth fighting for? By having a good look at the place, we might be able to answer these questions.

This country is part of the enormous Sahara desert, the largest desert in the world. The Sahara stretches across most of the top of Africa. This means that nearly one third of all Africa is desert — hot, dry, dusty country where almost nothing grows. The weather here in the desert is very difficult to get used to. It is boiling hot during the day and freezing cold at night. Travellers in the desert do most of their walking or riding early in the morning or in the evening, when it is not too hot. During the day the best thing to do is to try to find some shade to rest in.

What does the desert look like? In some parts it is mountainous, with dry river beds and a few thin trees, but in most parts it looks like a sea of sand. Wherever you look and for as far as you can see, there is just sand. The sand is not usually flat. It is piled up into huge hills called dunes. Some of these dunes are as tall as a twenty-storey building. How do these dunes get their shapes? A few days in the howling wind gives us the answer! The wind blows most of the time in the desert. It is very strong, and it blows the sand into the air. When there is a sandstorm, we can't see anything around us. The air is full of sand that gets into your eyes, your hair and your clothes. The wind is one of the worst things about the desert. When it drops, it leaves the sand in piles that look just like waves. It is very difficult to find your way in the dunes. They all look the same and they change every time the wind blows. So you have to use a compass to find your way. People who live in the Sahara, the nomads, use the sun and the stars to work their way through the dunes. On

the Western Sahara

Here we can see where the Western Sahara is in Africa



This is a map of the Western Sahara, showing what is in the country. The key on the right tells you what the things are on the map.

page 9 you can read about someone who lost his way in the desert.

In some places in the sand you find quicksand. This is sand that looks the same as the sand around it, but it is much more loosely packed. If you step on it, you will be sucked down into it. Trying to get out doesn't help. It only pushes you further in. The only way you can get out is if someone who is standing on firm sand pulls you out. Many animals die in this way, but camels seem to be able to tell quicksand before they step on it.

NOMADS

So far the desert seems like a really uncomfortable place to be in. And it must be very lonely too. There doesn't seem to be any living thing, and everywhere around you is sand, tremendous heat and howling wind. But there are people who live in the desert — the nomads. How do they manage to survive desert life and what do they find to eat? The first thing to remember is that nomads have lived in the Sahara for hundreds of years. They have adapted (changed) their way of life so that they will be able to survive the heat, the wind and the thirst of the desert. Nomads often wear long cotton robes (like dresses) as well as a cloth over their heads. This protects them from the heat and the cold as well as from the sand in the sandstorms. They don't stay in any place for very long. They move in groups from one waterhole to the next. They camp near the waterhole until their camels or goats have eaten all the grass in the area. Then they must move on to the next place. At each new place that they go to, the nomads put up their low, flat leather tents that are open at the sides — like the one on the front cover of the magazine. Because they are always on the move, nomads have very few things — just their tents, some clothes, pots and pans and a few other bits and pieces. Most nomads live by eating their goats and drinking milk from their camels. A few groups, like the Inadan, also make things. They make silver jewellery, clothes, tools, saddles and camelbags for the Tuareg. (We will learn more about the Tuareg in issue 3 when we get to Algeria.) Desert life may be very hard, but there is still time for the luckier ones to make and buy jewellery and other kinds of decorations.

When you live in the desert, like the nomads do, you see other things about the desert. There are many animals and birds that we would not notice — lizards, snakes, desert mice, foxes, owls, all kinds of creatures. On page 2 you can read about how some of these creatures have adapted to the desert. Then, when it rains, the whole desert looks different. From being a dry sea of sand, it suddenly is alive with flowers. Everywhere you look there are bright patches of yellow, orange, white and purple flowers. Imagine how beautiful this must look after seeing only endless kilometres of sand dunes.

Continued on pages 32 and 26

Africa . . . the Western Sahara

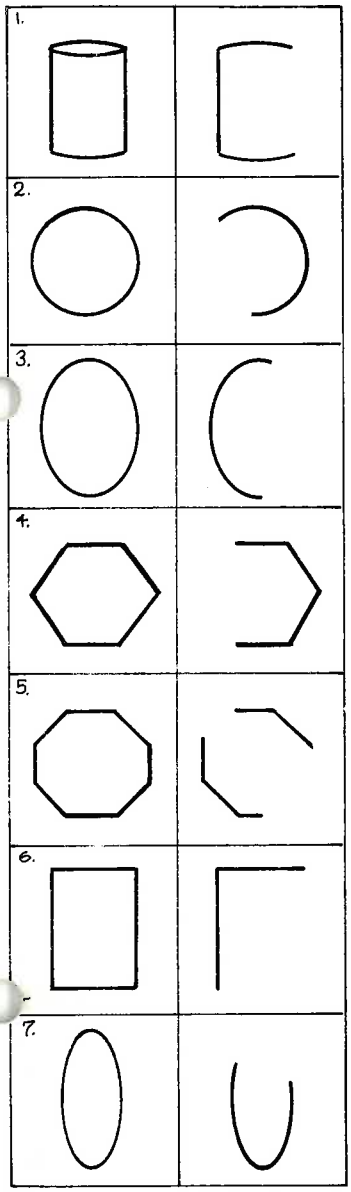
Fighting in the Desert

IN THIS small corner of Africa that we are travelling through, a war has been going on for the past five years. Why are people fighting over a small piece of desert like this? To begin the story: Western Sahara, like almost every African country we'll be looking at, was once ruled by colonists. Those who colonised Africa in the 1700s and 1800s came from Europe and took over large pieces of Africa. The colonial countries divided the land they ruled into countries. Sometimes the divisions weren't very clever ones. The nomadic people who live in the Western Sahara are very much like the people who live in Mauritania, next door. Spain was the country that ruled over the area now called the Western Sahara. They ruled over it until 1976. When Spain left, both Mauritania and Morocco tried to claim the Western Sahara. Mauritania said the people of the Western Sahara spoke the same language as they did, and so they belonged together. Morocco said that the Western Sahara had been part of Morocco one hundred years ago, and that it belonged to them. Why did both these countries want the Western Sahara? Here we come to the key to the problem: at a place called Bou Craa in the north of the Western Sahara is a 'phosphate' mine. Phosphates are chemicals that are very valuable. They are used by farmers to make their soil rich. Because phosphates bring a lot of money to a country, both Morocco and Mauritania wanted the Western Sahara and its phosphate mine. But the people of the Western Sahara — known together as the Saharwi —want to rule their own country. They got together a small army which is called the POLISARIO.

It looks like the Polisario are winning the war, which isn't surprising. It is their own piece of land and independence that they are fighting for. Also, they know the country where they are fighting, which makes it easier for them. They have used the desert to help them with the war. For example, the Polisario use landrovers, which are cars that can be driven over the desert sands. They camouflage the landrovers. (Camouflage means to make something look so like the country around it that people won't notice it. Camouflage is often used by animals to protect themselves from their enemies or to hunt their prey.) The Polisario camouflage their landrovers by sticking sand onto the outside of them. They also take all the windows and mirrors off the landrovers so that these won't reflect the light of torches at night. By using these landrovers, the Polisario are able to cross the border into Morocco to fight. Like in any war, there are times when the Polisario are winning and times when they are losing. Keep watching the newspapers for news of what is happening in the Western Sahara!

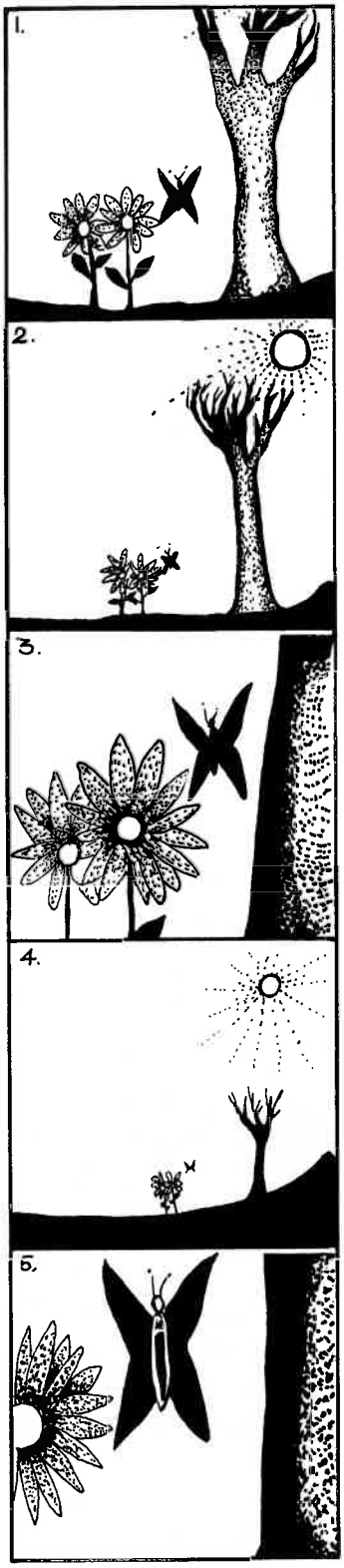
The Moroccans marching into the Western Sahara

PUZZLE PAGE



SHAPES IN THE MIRROR. Finish off the shapes on the right, so that they look like the shapes on the left. When you have finished, find: two oval shapes, one rectangle, one hexagon, one cylinder, one sphere, one octagon.

BYE BYE BUTTERFLY. In which picture is the butterfly nearest to you, and in which is it furthest? List the pictures from nearest to furthest.



CONGRATULATIONS !!!

These lucky readers have each won R20 in the competition that went with the sample issue:

Lorraine L. Nine
1606 Mnumzane Street
Thokoza, Alberton.

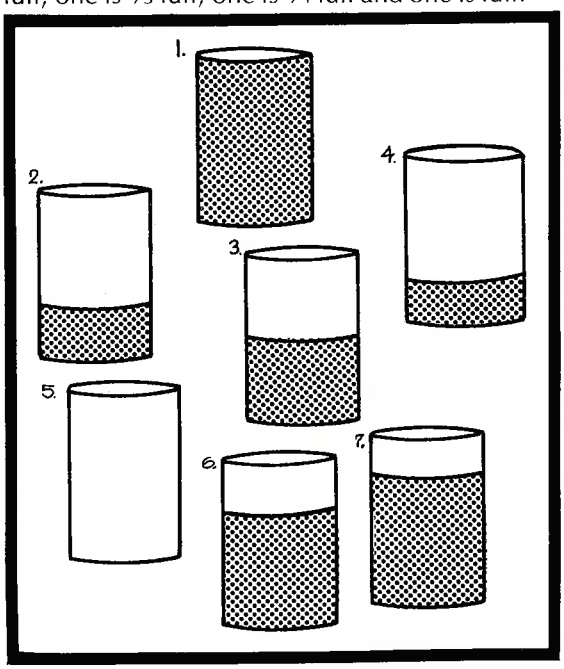
Yaasien Thomas
2701 Kiepersol Street
Extension 3, Eldorado Park.

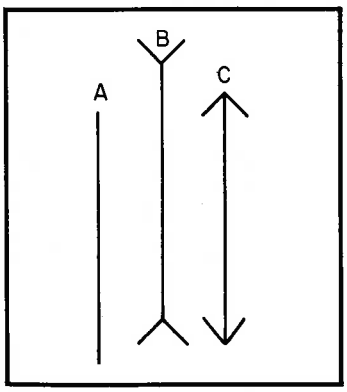
Nontuthuzelo Tyutu
1807 Rockville
P.O. Moroka

Sergius Mokhine
1329 Molabatse Street
Dobsonville, Roodepoort.

Fahmida Ebrahim
23 Penguin Avenue
Lenasia.

How full are these glasses? One of them is empty, one is ¼ full, one is ⅓ full, one is ½ full, one is ⅔ full, one is ¾ full and one is full.

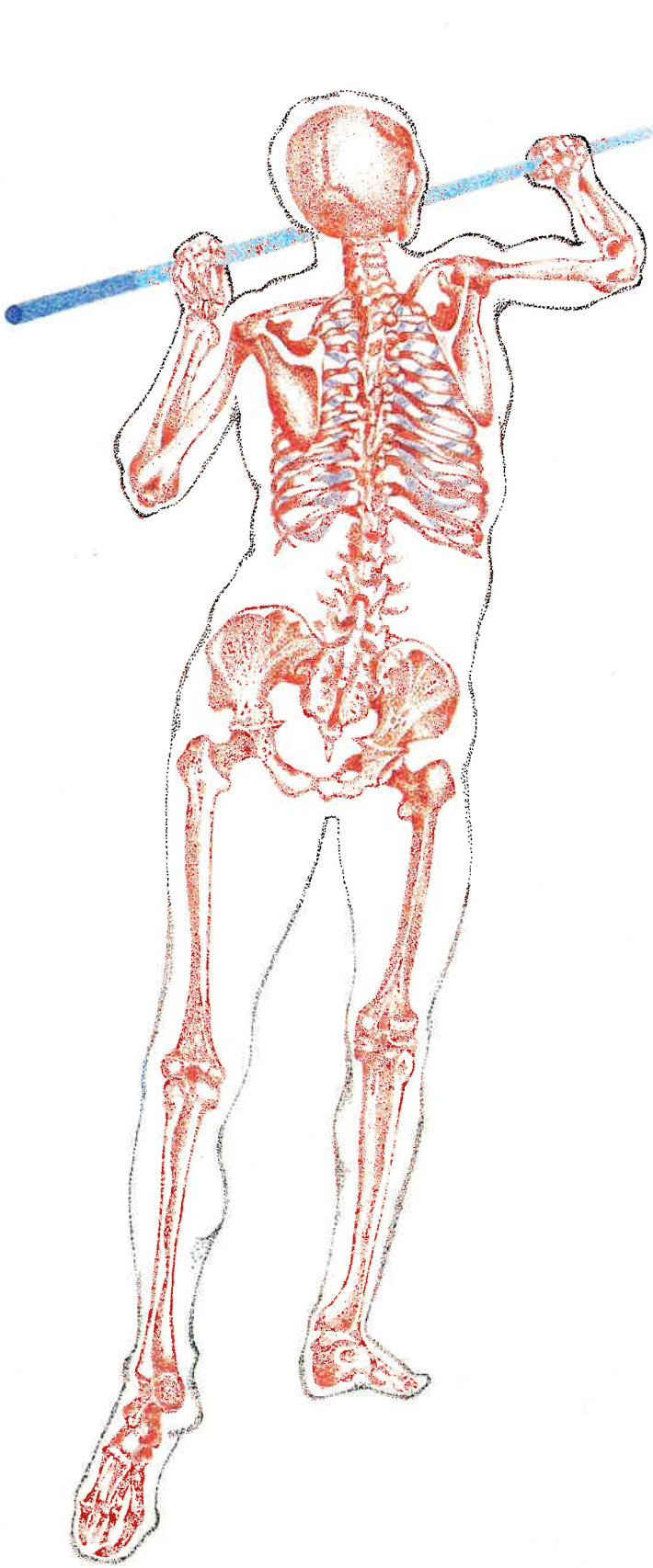




Which of these three lines is the longest? Which is the shortest?

ANSWERS ON PAGE 31

YOU and your Body



WITHOUT bones in our bodies, we would flop around like jellyfish. So we have a framework of bone inside us called a skeleton. Because of our skeletons we can stand upright, move from place to place and have strength and firmness in our bodies.

That is not all our skeletons do for us. The hard bones protect the soft organs inside our bodies — the brain, heart, lungs, liver and spleen. Bones form a cage that protects them so that they do not easily come to harm. In our limbs, bones give us the strength to be able to move around and do things.

When you were born you had more than 300 bones in your body. When you are an adult you will only have 206 real bones. The rest will have joined together. A baby's bones are very soft. As he grows older his bones harden and some of them join together. For example, the flat curved bones in an adult's head are locked together to form the skull. Inside this hard case the brain is protected. The same bones of a baby's skull are soft and not joined together. There are six places on a baby's head where there is only skin protecting the brain. That is why a baby's head must be protected.

Let's look at ourselves and the different kinds of bones of our bodies.

Put your hands on your head. You will feel that it is more or less round. You will also feel that it is hard. You can actually feel the very hard bones of your **skull** underneath your hair and scalp. The skull bones are on the outside of your head, giving shape to your head. They are also the casing for your brain, your most vital organ. The brain is the nerve centre of the body and it must have the greatest protection.

From the base of your skull you can feel your **spine** or backbone running down your back. Your spine is the most amazing structure. It makes you able to stand upright. It frees your hands for work and play. It holds your head up straight so that you can always be in touch with the world around you.

You can feel bumps all along your spine. This is because your spine is a series of bones working together. If it were one solid bone you would hardly be able to move at all. But it is not, and because of that, you can move your head without moving your body, you can turn your body without moving your feet and you can bend your body sideways, forwards and even backwards a short way.

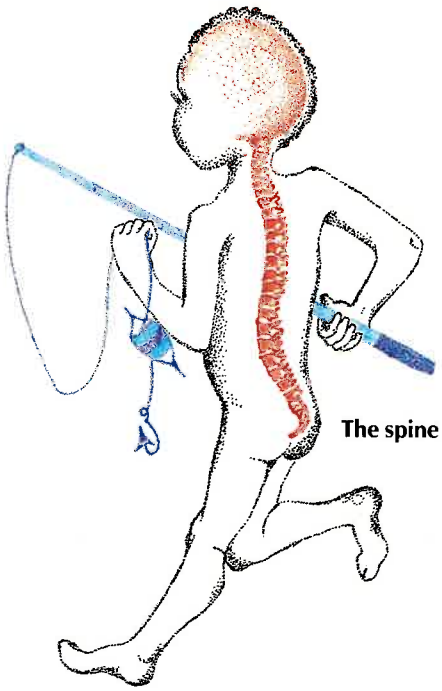
You will also notice that your spine is sort of S-shaped, not straight. Look at a very small baby. You will see that her back is perfectly straight, even at her neck. As she grows, her back develops the curves it needs. Soon she can lift up her head. At about 6 months she can sit up on her own and at about a year she can start to walk. All this is made possible by the curves of the spine. If you had a straight spinal column, you would feel a shock through your body with every step you took. A spine with curves allows you to run, jump, play football and dance.

The next part of your skeleton to feel is the upper part of your trunk, on either side of your body. Here you can feel

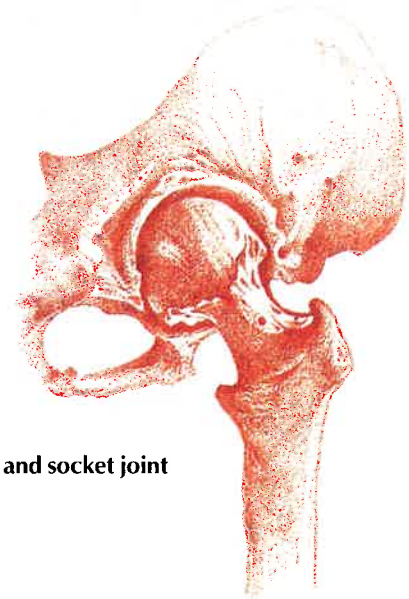
Your amazing Bones

your **ribs**, which are also bones, but not solid bone like your skull. The ribs are separate. Most people have 24 ribs, 12 on each side of the trunk. As you can feel, your ribs are attached to your spine and come round in a half-circle to the front of your body, to your chest. They form a rounded cage, inside which is your heart, your lungs, your liver and your spleen. Your heart and lungs are always getting bigger and smaller, your heart as it beats and pumps your blood around your body and your lungs as you breathe in and out. These vital organs also need to be protected by bone. But it must be elastic enough to grow and shrink with them. They could not function inside a protective case like your skull, which is firm and unmoving. Put your hands on your ribs and breathe deeply in and out. You can feel how your rib cage moves in and out with your breathing.

Now we come to our **limbs** — our arms and legs. Here, as you will feel, the bones are not on the outside. They are right inside the flesh of your arms and legs, and they are covered with muscle. This is because we don't need protection for any soft organs in our arms and legs. Instead we need the internal support of bone to make our arms and legs strong for the work they have to do. The biggest bones of your body are inside your arms and legs. A huge bone, the femur, runs from your hip to your knee. Another two bones run from your knee to your ankle. These give your leg the internal strength and support it needs for the muscles to work. But bone is very hard and unbending. A straight, unbending arm or leg would be useless to us. We would not even be able to walk or pick up anything, let alone turn cartwheels or somersaults. So between the bones in our limbs and where our arms and legs join our trunks, we have **joints**. There are two types of joints.



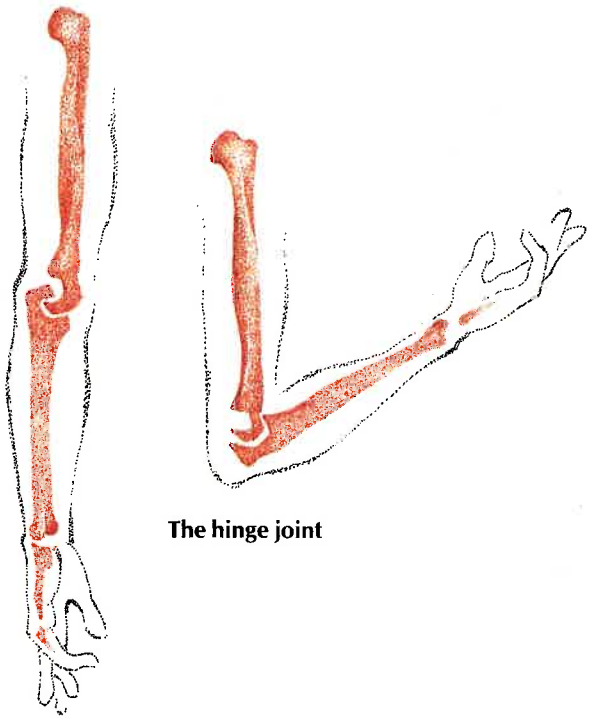
The spine



The ball and socket joint

Where your arms join your shoulders and where your legs join your trunk there are **ball and socket joints**. These are like a greased cup with a ball that exactly fits into it. Your arms and legs can swivel right around with this type of joint.

Then at your elbows and knees you have **hinge joints**. You can move your arms and legs up and down at the elbows and knees, but in one direction only.



The hinge joint

The bones of an adult are stronger, weight for weight, than iron. But there is nothing dead about bone. Our bones grow with us as we grow. They can heal themselves when they are injured or broken. And inside the hardness of bone is a very special living material called bone marrow. Bone marrow actually makes the red blood cells of our body. And without red blood cells we would die. So marrow is protected right inside the hardest part of our body.

You can see, by looking at what the different bones in your body do, how amazing your skeleton is!

QUIZ

Do you want to quiz yourself on the articles in this issue of UPBEAT? All of the questions have been taken from here, so you can look them up if you want to. They are all general knowledge questions, and you should find them useful to know. The answers are on this page, upside-down. Try to get the answers yourself without looking!

1. Why do nomads have to keep moving from one place to another?
2. What is a proverb?
3. What are the four directions that we spoke about?
4. What are the simplest materials on earth called?
5. What is your spine?
6. What do we call the trick of light in the desert that looks like a pool of water?
7. What do we call the two cold areas at the top and bottom of the world?
8. What is a penfriend?
9. What is the smallest group of atoms called?
10. What do we call water when it is (a) a solid, (b) a gas?
11. What are the two types of joints that we have in our bodies?
12. What is the huge desert that takes up nearly one-third of Africa?
13. What is the name of the nuclear power station being built outside Cape Town?
14. Name three different forms of carbon.
15. Of what use is the camel's hump in the desert?
16. What is radiation?
17. When the washer on a tap is pressed down over the hole, is the tap on or off?
18. What is the name of the army in the Western Sahara?

Acknowledgement

Picture of Moroccans on page 26 is taken from Africa Survey, published by John Wiley and Sons, Inc.

ANSWERS TO QUIZ

1. To find food.
2. It is a clever saying that means something.
3. North, south, east and west.
4. Elements.
5. It is the series of bones running down your back.
6. A mirage.
7. The North Pole and the South Pole.
8. Someone you write to.
9. A molecule.
10. (a) Ice, (b) steam.
11. Hinge joint and ball and socket joint.
12. The Sahara desert.
13. Koeberg.
14. Coal, diamonds and graphite.
15. It stores up food and water for times when there isn't any.
16. It is the energy given off when atoms are split.
17. Off.
18. Polisario.

ANSWERS TO THE 'WHERE ARE WE' TEST

1. North east.
2. Durban, Soweto and Umtata are to the east, and Cape Town, Windhoek, and Colesberg are to the west of Bloemfontein.
3. From Durban.
4. South east.
5. West.
6. Bloemfontein.
7. Colesberg or Cape Town.
8. Colesberg to Windhoek: north west.
   Colesberg to Durban: north east.
   Colesberg to Bloemfontein: north east.
   Colesberg to Cape Town: south west.
   Colesberg to Soweto: north east.
   Colesberg to Umtata: south east.

Willie Wordworm YOUR DICTIONARY PAGE

On the Willie Wordworm page you will always find words which are fun to learn and which you can use. Here are some words which come out of the articles in this issue of UPBEAT. In the brackets after the word you will find the name of the article where the word appears.

camouflage

camouflage — to make something look so like the country around that people won't notice it. Soldiers camouflage themselves and their landrovers. Some animals have natural camouflage. *(Fighting in the Desert).*

illiterate

illiterate — can't read or write.

This Cartoon needs a Caption

Write to UPBEAT and tell us what is happening here, or what these two are saying. We will print the funniest answer in the next issue of UPBEAT.

refugees

refugees — people who run away from trouble like war or floods. They look for safety in other places or other countries *(Fighting in the Desert).*

direction

direction — the path you take, or the way you face when you go somewhere. North, South, East and West are directions. *(Where are We?)*

survive

survive — to keep alive. *(Africa — Western Sahara).*

triangle

triangle — shape with three sides. *(Do it yourself — Paper Folding).*

traditional — living by the rules and laws from the past, e.g. traditional African, Islamic, Jewish and Christian beliefs. *(Learning without Writing).*

ANSWERS TO THE PUZZLES

Glasses: Glass number 1 is full, number 2 is ⅓ full, number 3 is ½ full, number 4 is ¼ full, number 5 is empty, number 6 is ⅔ full and number 7 is ¾ full.

Shapes in the mirror: The two oval shapes are numbers 3 and 7, the rectangle is number 6, the hexagon is number 4, the cylinder is number 1, the sphere is number 2 and the octagon is number 5.

Words for the Jabbering Jar: (1) Adapt; (2) Dive; (3) Swan; (4) Smash; (5) Desert; (6) Washer; (7) Popular; (8) Service; (9) Material; (10) Colonies; (11) Location.

Bye Bye Butterfly: (from nearest to furthest) 5, 3, 1, 2, 4.

Lines: They are all the same length!

Africa . . . the Western Sahara

Continued from page 25. On page 26 you can read about the fighting in the Western Sahara

But, of course, living in the desert for the nomads is a very different thing from what it would be for us. The desert has been the nomads' home for hundreds of years and they choose to live here. Here they have the freedom to come and go with the seasons. Here they can live the way they want to — travelling around as they wish, taking their belongings with them. That does not mean that it is an easy life. It is very difficult indeed to survive in the desert. People who are too old or sick to keep up with the others have to be left behind. Nomads must keep moving to find their food. If they waited with the old and sick, the whole group would be in danger. When there is a drought and there is no rain for years at a time, there is nothing to fall back on, except perhaps some roots. There is no food for the camels and goats, there is no water to drink. Animals die and so do people unless they can go to the towns to look for work and food.

Nomads on the move

The desert was greener

Hundreds of years ago the Sahara was greener than it is today. Then the nomads used to make a living by taking goods to the market places in the big towns. Every year large groups of nomads used to travel along the same routes to the markets. These were called the Trans Sahara Trade Routes, and they made the Sahara a busy and important place. Nowadays modern business has made this kind of life impossible for the nomads. Some groups of nomads make their living by catching fish in the sea. Like other nomads, they also move around and live in tents. They have to move where there is fish to catch and fresh water to drink.

What makes a desert?

Have you been wondering by now what makes a desert? There are many things that help to make a desert, and one of them is the fact that very little rain falls there. When it does rain, it is usually quite a quick storm. Because there are so few plants and trees, there is nothing to hold the water down and it just rushes away. People have also helped to make the desert what it is, by bringing in animals like camels and goats. These animals eat plants and grass, but not in the same way that cows or sheep do. Camels and goats eat even the roots of plants, so that the plants can not grow again. Then they eat the new plants before they have had time to grow properly. One day there might be no more greenery left in the desert.

The desert grows

Now there is something really frightening about the desert — it grows! Every year the wind blows the sand into big dunes nearer the cities and fields. As the sand creeps up, it covers everything in its way, killing plants and trees because they can no longer breathe. But there are things that can be done about the creeping desert. Iran, a country with lots of oil, sprays oil onto the sand dunes near the cities and fields. The people then plant trees and crops on top of the sticky sand that won't blow away in the wind. Other countries plant enough trees at the edge of the desert to keep down the nearby sand.

Join us in the next issue of UPBEAT
as we move on to Algeria in the Africa series.

Don't be fooled by this lake of water! It isn't water at all. It is a trick of the light that makes it look just like water. Many travellers have been misled by these mirages.

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