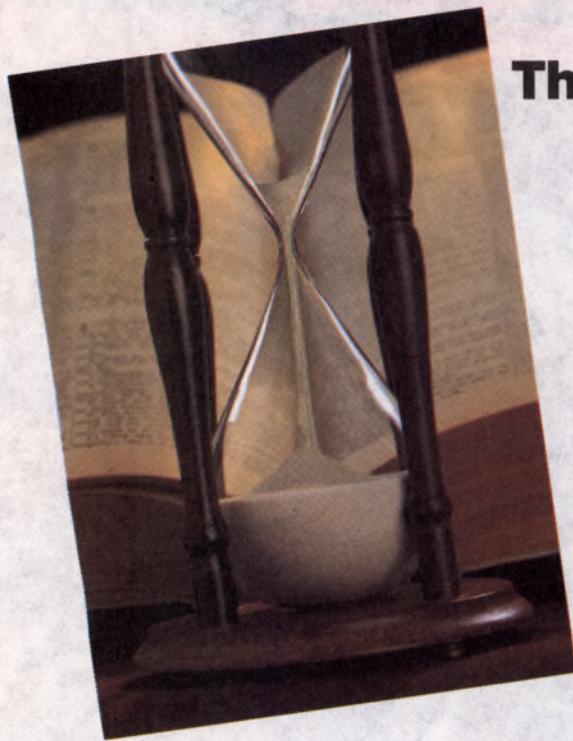


Awake!

March 22, 1993



**The World's End
How Near?**



The World's End —How Near? 3-11

Through the centuries and continuing down to our day, there have been many predictions of the end of the world. Why have so many been false alarms? How could they have been avoided?



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The World's End—How Near?

Why So Many False Alarms?

THE story is told of a boy who watched the sheep of the villagers. To stir up a bit of excitement, one day he cried out, "Wolf! Wolf!" when there was no wolf. The villagers rushed out with clubs to drive off the wolf, only to find that there was none. It was such great fun that later on the boy repeated his cry. Again the villagers rushed out with their clubs, only to discover that it was another false alarm. After that a wolf did come, and the boy sounded the warning, "Wolf! Wolf!" but the villagers dismissed his cry as another false alarm. They had been fooled too often.

So it has become with those who proclaim the end of the world. Down through the centuries since Jesus' day, so many unfulfilled predictions have been made that many no longer take them seriously.

Gregory I, pope from 590 to 604 C.E., in a letter to a European monarch, said: "We also wish Your Majesty to know, as we have learned from the words of Almighty God in Holy Scriptures, that the end of the present world is already near and that the unending Kingdom of the Saints is approaching."

In the 16th century, Martin Luther, progenitor of the Lutheran Church, predicted that the end was imminent. According to one authority, he stated: "For my part, I am sure that the day of judgment is just around the corner."

Concerning one of the first Baptist groups, it is reported: "The Anabaptists of the early Sixteenth Century believed that the Millennium would occur in 1533."

"Edwin Sandys (1519-1588), Archbishop of York and Primate of England . . . says, . . . 'Let us be assured that this coming of the Lord is near.'"

William Miller, generally credited with founding the Adventist Church, is quoted as saying: "I am fully convinced that sometime between March 21, 1843, and March 21, 1844, according to the Jewish mode of computation of time, Christ will come."

Does the failure of such predictions to come true convict as false prophets those who made them, within the meaning of Deuteronomy 18: 20-22? That text reads: "The prophet who presumes to speak in my name a word that I have not commanded him to speak or who speaks in the name of other gods, that prophet must die. And in case you should say in your heart: 'How shall we know the word that Jehovah has not spoken?' when the prophet speaks in the name of Jehovah and the word does not occur or come true, that is the word that Jehovah did not speak."

There are some who make spectacular predictions of the world's end to grab attention and a following, but others are sincerely convinced that their proclamations are true. They are voicing expectations based on their own interpretation of some scripture text or physical event. They do not claim that their predictions are direct revelations from Jehovah and that in this sense they are prophesying in Jehovah's name. Hence, in such cases, when their

words do not come true, they should not be viewed as false prophets such as those warned against at Deuteronomy 18:20-22. In their human fallibility, they misinterpreted matters.*

Undeterred by previous failures, some seem to have been spurred on by the approach of the year 2000 and have made further predictions of the end of the world. *The Wall Street Journal* of December 5, 1989, published an article entitled "Millennium Fever: Prophets Proliferate, the End Is Near." With the year 2000 approaching, various evangelicals are predicting that Jesus is coming and that the 1990's will be "a time of troubles that has not been seen before." At the time of this writing, the latest occurrence was in the Republic of Korea, where the Mission for the Coming Days predicted that on October 28, 1992, at midnight, Christ would come and take believers to heaven.

* Jehovah's Witnesses, in their eagerness for Jesus' second coming, have suggested dates that turned out to be incorrect. Because of this, some have called them false prophets. Never in these instances, however, did they presume to originate predictions 'in the name of Jehovah.' Never did they say, 'These are the words of Jehovah.' *The Watchtower*, the official journal of Jehovah's Witnesses, has said: "We have not the gift of prophecy." (January 1883, page 425) "Nor would we have our writings revered or regarded as infallible." (December 15, 1896, page 306) *The Watchtower* has also said that the fact that some have Jehovah's spirit "does not mean those now serving as Jehovah's witnesses are inspired. It does not mean that the writings in this magazine *The Watchtower* are inspired and infallible and without mistakes." (May 15, 1947, page 157) "*The Watchtower* does not claim to be inspired in its utterances, nor is it dogmatic." (August 15, 1950, page 263) "The brothers preparing these publications are not infallible. Their writings are not inspired as are those of Paul and the other Bible writers. (2 Tim. 3:16) And so, at times, it has been necessary, as understanding became clearer, to correct views. (Prov. 4:18)"—February 15, 1981, page 19.

en. Several other doomsday groups made similar predictions.

The flood of false alarms is unfortunate. They are like the wolf-wolf cries of the shepherd boy—people soon dismiss them, and when the true warning comes, it too is ignored.

But why has there been such a tendency through the centuries and down to our day for false alarms to be sounded, as Jesus said they would be? (Matthew 24:23-26) Jesus, after telling his followers about different events that would mark his return, said to them, as we read at Matthew 24:36-42: "Concerning that day and hour nobody knows, neither the angels of the heavens nor the Son, but only the Father. For just as the days of Noah were, so the presence of the Son of man will be. . . . Keep on the watch, therefore, because you do not know on what day your Lord is coming."

They were told not only to be on the watch and to be prepared but also to watch with eagerness. Romans 8:19 says: "For the eager expectation of the creation is waiting for the revealing of the sons of God." Human nature is such that when we fervently hope and yearn for something and wait in eager expectation of it, a powerful temptation arises within us to see it at the door even when the evidence is insufficient. In our eagerness false alarms may be sounded.

What, then, will distinguish the true warning from the false ones? For the answer, please see the following article.

Awake!

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The World's End—How Near?

A Composite Sign of Many Parts

AFABLE from India tells of six blind men from Indostan who went to see an elephant. The first one touched its side and said: "Bless me! but the elephant is very like a wall!" The second one touched its tusk and said: "An elephant is very like a spear!" The third touched its trunk and said: "The elephant is very like a snake!" The fourth reached out and felt its knee and said: "Tis clear enough the elephant is very like a tree!" The fifth touched its ear and said: "This marvel of an elephant is very like a fan!" The sixth seized its tail and said: "I see the elephant is very like a rope!" The six blind men disputed long and loud about what an elephant was like, but no one gave a correct description. Incomplete information did not give a complete picture.

A similar problem arises when it comes to identifying the sign of Christ's return. In response to his disciples' question: "What will

be the sign of your presence and of the conclusion of the system of things?" Jesus answered: "Nation will rise against nation, and kingdom against kingdom; and there will be great earthquakes, and in one place after another pestilences and food shortages." (Matthew 24:3; Luke 21:10, 11) But when only these things are cited as proof that Christ returned in 1914, people object: "Oh, we've always had wars, famines, pestilences, and earthquakes!" And they are right.

These few things—although creating heretofore unequaled distress—are not for many people sufficient to mark Christ's return; more is needed to make the sign complete, unmistakable. When proclamations that the world's end is at hand are made on skimpy evidence, on just one or a few of the parts of the sign that are seen, false alarms are the result. What is needed are all the features Jesus gave relative to his return, not just one or a

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few. What he gave to mark his presence was a composite sign, one made up of enough features to make the sign certain, a combination of several different parts that, taken all together, make it unmistakable.

As an example of a composite sign, consider the one that is given in the Bible to identify Jesus as the Messiah at the time of his first coming. It involved many events relative to the Messiah that were given in the Hebrew Scriptures. Jesus had told his disciples about some of these texts, but they had not understood their import. The disciples, like the Jews generally, wanted a Messiah who would overthrow Rome and rule the world with them as associates. So when he died, they were confused and devastated. After Jesus was resurrected, he met with them and said: "These are my words which I spoke to you while I was yet with you, that all the things written in the law of Moses and in the Prophets and Psalms about me must be fulfilled." Then he opened up their minds fully to grasp the meaning of the Scriptures."—Luke 24:44, 45.

According to the Kingdom Interlinear translation of verse 45, Jesus did this by "putting together the Scriptures" from the Hebrew portion of the Bible that foretold the events and circumstances of the life of the promised Messiah who was to come, and he placed them alongside the events of Jesus' life that had fulfilled them. Later on, the apostle Paul used this same method when "explaining and proving by references" that Jesus was the Messiah. (Acts 17:3) Again, it is the *Kingdom Interlinear* that clarifies the process by saying that he did so by "opening up thoroughly and putting alongside" the Messianic prophecies in the Hebrew Scriptures the events of Jesus' life that fulfilled them. The accompanying box gives the substance of many of these Hebrew prophecies that were fulfilled by the events of Jesus' life and that proved that he was the

foretold Messiah. It illustrates what constitutes a composite sign.

The Composite Sign of Christ's Presence

It is just such a composite sign that marks the time of Jesus' second coming, or, more accurately, his presence. The Greek word *parousia* that many translations render "coming" at Matthew 24:3 does not mean a time when he would come or arrive but means that he has already arrived and is on hand, is present. In Jesus' case it means that he is invisibly present as Jehovah's enthroned King and is reigning from heaven. This is in keeping with Jesus' statement at John 14:19: "A little longer and the world will behold me no more." Since he would not be physically visible, he gave a sign that would indicate his return and invisible presence as Jehovah's reigning King.

The sign he gave did not have just one feature or a few features. It had many that were to be taken together as a composite sign, just as was the case with the composite sign at the time of his first coming as Messiah. Thus, with many features or events, he unmistakably signifies his invisible presence at this time as Jehovah's reigning King enthroned in heaven but extending his power and influence to the affairs of earth. False alarms may result when only one or two of these features are stressed, rather than the many features that make up the composite sign. It is like the six blind men from Indostan, each one of whom jumped to a wrong conclusion because of feeling only one part of the elephant's anatomy.

The fulfillment of this composite sign given by Jesus, plus some additional conditions given by three of the apostles, began in a remarkable way from 1914 onward. A digest of these various features along with their fulfillments follows.

"Nation will rise against nation and kingdom against kingdom." (Matthew 24:7) World War I began in 1914 with 28 nations involved,

14 million people killed. World War II followed with 59 nations involved, 50 million people killed.

"In one place after another pestilences." (**Luke 21:11**) As World War I ended, some 21 million people were felled by the Spanish flu. Since then, heart disease, cancer, AIDS, and other pestilences have killed hundreds of millions.

"There will be food shortages." (**Matthew 24:7**) The greatest famine in all history struck after World War I. Another terrible one followed World War II, and now malnutrition affects one fifth of the world's population. Annually, some 14 million children die from malnutrition.

"There will be great earthquakes." (**Luke 21:11**) Earthquakes after 1914—consider a few major ones. In 1915, in Italy, 32,610 lives lost; 1920, China, 200,000 killed; 1923, Japan, 143,000 killed; 1939, Turkey, 32,700 killed; 1970, Peru, 66,800 killed; 1976, China, 240,000

(some say 800,000) killed; 1988, Armenia, 25,000 killed.

"Increasing of lawlessness." (**Matthew 24:12**) Lawlessness has run wild since 1914; today it is exploding. Murders, rapes, robberies, gang wars—they dominate the headlines and fill the newscasts. Politicians rip off the public, teenagers carry guns and kill, schoolchildren prey on one another. In many areas it is not safe to walk the streets even in daytime.

"Anguish of nations, not knowing the way out . . . Men become faint out of fear and expectation of the things coming upon the inhabited earth." (**Luke 21:25, 26**) Crime, violence, drug addiction, family breakups, economic instability, unemployment—the list is long and growing. One prominent scientist wrote: "We will eat fear, sleep fear, live in fear and die in fear."

"In the last days critical times hard to deal with." (**2 Timothy 3:1**) The apostle Paul spoke of people "having come to be past all moral sense." (**Ephesians 4:19**) He elaborated, however, on the moral breakdown he foretold for "the last days." It sounds like today's newscasts: "Know this, that in the last days critical times hard to deal with will be here. For men will be lovers of themselves, lovers of money, self-assuming, haughty, blasphemers, disobedient to parents, unthankful, disloyal, having no natural affection, not open to any agreement, slanderers, without self-control, fierce, without love of goodness, betrayers, headstrong, puffed up with pride, lovers of pleasures rather than lovers of God, having a form of godly devotion but proving false to its power; and from these turn away."—**2 Timothy 3:1-5**.

"In the last days there will come ridiculers." (**2 Peter 3:3**) Newspapers, newscasts, magazines, books, and movies scornfully dismiss the Bible and replace it with their own free-thinking propaganda, saying, as Peter foretold: "Where is this promised presence of his? Why, from the day our forefathers fell asleep

Composite Proof for Jesus' First Coming as Messiah

BORN into the tribe of Judah (**Genesis 49:10**); to be hated, betrayed by one of his apostles; lots cast for his garment; given vinegar and gall; reviled on the stake; no bones broken; didn't see corruption; resurrected (**Psalm 69:4; 41:9; 22:18; 69:21; 22:7, 8; 34:20; 16:10**); born of a virgin; family of David; stone of stumbling; rejected; silent before accusers; took on sicknesses; numbered with sinners; sacrificial death; side pierced; buried with the rich (**Isaiah 7:14; 11:10; 8:14, 15; 53:3; 53:7; 53:4; 53:12; 53:5; 53:9**); called out of Egypt (**Hosea 11:1**); born in Bethlehem (**Micah 5:2**); offered as king; riding on an ass; betrayed for 30 pieces of silver; followers scattered.—**Zechariah 9:9; 11:12; 13:7**.

in death, all things are continuing exactly as from creation's beginning."—2 Peter 3:4.

"People will lay their hands upon you and persecute you." (Luke 21:12) Starting in 1914 and through the years, Jehovah's Witnesses have been cruelly arrested, falsely convicted, mobbed, and thrown into Hitler's concentration camps by the thousands, where they were tortured, many killed, some brutally by beheading. In other lands, both in dictatorships and in democracies, their work of witnessing to Jehovah and his Kingdom has been banned and the Witnesses thrown in jail. All of this in fulfillment of Jesus' words for the last days.—Matthew 5:11, 12; 24:9; Luke 21:12; 1 Peter 4:12, 13.

"This good news of the kingdom will be preached in all the inhabited earth." (Matthew 24:14) What good news? The good news of Christ's Kingdom ruling from heaven, for that was the question put to Jesus that produced his prophecy of the composite sign of that event. It has been preached by Jehovah's Witnesses since 1914. Four thousand were doing it in 1919, over four million by 1990, and in 1992 in one month 4,472,787. Bible literature was distributed in some 200 languages in 229 lands. Never before has this feature of the composite sign been fulfilled.

"Bring to ruin those ruining the earth." (Revelation 11:18) Greedy men have always been willing to ruin the earth for selfish gain, but never before this generation have they had the power to do so. Now, since 1914, modern technology has put that power into their hands, and they are misusing it. They are ruining the earth.

Here are a few of the atrocities resulting: acid rain, global warming, holes in the ozone layer, dangerous pesticides, toxic dumps, garbage glut, nuclear waste, oil spills, raw-sewage dumping, dead lakes, destroyed forests, polluted groundwater, species endangered, human health damaged.

Scientist Barry Commoner says: "I believe that continued pollution of the earth, if unchecked, will eventually destroy the fitness of this planet as a place for human life. . . . The difficulty lay not in scientific ignorance, but in willful greed." *State of the World 1987* says: "The scale of human activities has begun to threaten the habitability of the earth itself." A television series aired in 1990 was significantly entitled "Race to Save the Planet."

These many events brought together as one sign during one generation can hardly be dismissed as coincidence. Their magnitude also adds weight. And there are some of these events, such as the global preaching of this message of the good news and the ruining of the earth, that have never occurred from creation's beginning. The composite sign of the presence of Christ Jesus is overwhelming.

"Whoever has ears to listen, let him listen."—Mark 4:23.

Composite Sign for Jesus' Royal Presence at Second Coming

WORLD war; food shortages; pestilences; earthquakes (Matthew 24:7; Luke 21:10, 11; Revelation 6:1-8); increased lawlessness; betray and hate one another; disobedient to parents; no natural affection; without self-control; not open to any agreement; lovers of money; love pleasure more than God; form of godly devotion but false to its power; blasphemers; fierce; persecute Christ's followers; bring followers before courts, and kill Christ's followers (Matthew 24:9, 10, 12; Luke 21:12; 2 Timothy 3:1-5); ridiculers of Jesus' presence; say all things continuing as from creation's beginning (2 Peter 3:3, 4); destroyers of the earth's environment.—Revelation 11:18.



The World's End—How Near?

Why Such Eager Expectation of the New World?

WHAT does it mean for this world to end? Destruction of the earth by fire, as some religions teach? No; how could that be, when Psalm 104:5 states: "It will not be made to totter to time indefinite, or forever?"

The answer is revealed when we look back many centuries to a world that preceded this one. It had become corrupt and had rebelled against God, so "the world of that time suffered destruction when it was deluged with water." But when that world, consisting of both heavens and earth, was destroyed by the Flood of Noah's day, the literal heavens and earth did not pass away. Neither will this world's end mean fiery destruction for the starry heavens and planet Earth.—2 Peter 3:5, 6; Genesis 6:1-8.

At times the Bible uses the terms "heavens" and "earth" in figurative ways. "Heavens" may be used to mean Satan, the god of this world; world rulers under his control; and wicked spirit forces in heavenly places—all of which exercise demonic influence over mankind. (2 Corinthians 4:4; Ephesians 6:12) "Earth" is frequently used to refer to the peoples on the earth. (Genesis 11:1; 1 Kings 2:1, 2; 1 Chronicles 16:31; Psalm 96:1) It is these symbolic heavens and earth of this present wicked world that 2 Peter 3:7 says are to be destroyed by "fire."—Galatians 1:4.

Peter then gives the joyful news that this old world will be replaced by a new one: "There are new heavens and a new earth that we are awaiting according to his promise, and in these righteousness is to dwell."—2 Peter 3:13.

A New World Without Tears or Death

Peter's declaration that righteousness would dwell in that new world is welcome news, but what John adds concerning it makes one absolutely ecstatic! Of it he says at Revelation 21:3, 4: "With that I heard a loud voice from the throne say: 'Look! The tent of God is with mankind, and he will reside with them, and they will be his peoples. And God himself will be with them. And he will wipe out every tear from their eyes, and death will be no more, neither will mourning nor outcry nor pain be anymore. The former things have passed away.'"

Rather than destroy the earth by fire, Jehovah purposed that it be inhabited forever: "This is what Jehovah has said, the Creator of the heavens, He the true God, the Former of the earth and the Maker of it, He the One who firmly established it, who did not create it simply for nothing, who formed it even to be inhabited."—Isaiah 45:18.

Righteousness will dwell there because no unrighteous persons will be there: "The



Exquisite peace for all in the promised new world

upright are the ones that will reside in the earth, and the blameless are the ones that will be left over in it. As regards the wicked, they will be cut off from the very earth; and as for the treacherous, they will be torn away from it.”—Proverbs 2:21, 22.

Under inspiration the psalmist David also testifies to this: “Just a little while longer, and the wicked one will be no more; and you will certainly give attention to his place, and he will not be. But the meek ones themselves will possess the earth, and they will indeed find their exquisite delight in the abundance of peace.”—Psalm 37:10, 11.

Jesus himself confirms this, saying in his Sermon on the Mount: “Happy are the mild-tempered ones, since they will inherit the earth.” As their government, these meek ones will be blessed with the righteous new heav-

ens they pray for: “Let your kingdom come. Let your will take place, as in heaven, also upon earth.”—Matthew 5:5; 6:10.

The exquisite peace the inhabitants of that new world will enjoy extends even to the animal realm: “The wolf will actually reside for a while with the male lamb, and with the kid the leopard itself will lie down, and the calf and the maned young lion and the well-fed animal all together; and a mere little boy will be leader over them. . . . They will not do any harm or cause any ruin in all my holy mountain; because the earth will certainly be filled with the knowledge of Jehovah as the waters are covering the very sea.”—Isaiah 11:6-9.

How Near?

If you are inclined to dismiss all of this as pie in the sky, too good to be true, pause again and reflect. In addition to the features of the composite sign of Christ Jesus’ presence, there is Bible chronology that pointed to 1914 as the beginning of his presence. Jehovah’s Witnesses published the date 1914 as a significant year in the development of Jehovah’s Kingdom rule of the earth, doing so in the *Watch Tower* magazine of July 1879. Many historians and observers of world affairs have noted that the year 1914 ushered in an entirely different and significant period in human history, as the accompanying box indicates.

Another event that Jesus gave is found at Matthew 24:21, 22: "Then there will be great tribulation such as has not occurred since the world's beginning until now, no, nor will occur again. In fact, unless those days were cut short, no flesh would be saved; but on account of the chosen ones those days will be cut short."

Jesus also indicated that this composite sign would be completed during the life of the generation that saw it begin in 1914. At Matthew 24:32-34, he said: "Now learn from the fig tree as an illustration this point: Just as soon as its young branch grows tender and it puts forth leaves, you know that summer is near. Likewise also you, when you see all these things, know that he is near at the doors. Truly I say to you that this generation will by no means pass away until all these things occur."

To see this old world—with all its wars,

famines, diseases, and deaths—over and done with will be a cause for rejoicing. To see it replaced by Jehovah God's new world of righteousness—bringing an end to mourning, tears, sickness, and death—will give cause for endless celebration and joy and everlasting praises to Jehovah God, the Grand Creator and Universal Sovereign.

With this prospect ahead, no wonder many have such eagerness for Jehovah's new world of righteousness to hurry up and replace this old one filled with sorrow, crime, sickness, and death! No wonder their eagerness is so great that they are prone to set early dates for its arrival! Now, however, there are not just bits and pieces of the sign of its incoming to tempt us into sounding false alarms. Now we can see the complete composite sign unfolding to give solid foundation for our eager expectation of this wicked world's end and Jehovah's new world to supplant it.

1914

—A Turning Point in History

EVEN after a second world war, many refer to 1914 as the great turning point in modern history:

"It is indeed the year 1914 rather than that of Hiroshima which marks the turning point in our time."—René Albrecht-Carrié, *The Scientific Monthly*, July 1951.

"Ever since 1914, everybody conscious of trends in the world has been deeply troubled by what has seemed like a fated and predetermined march toward ever greater disaster. Many serious people have come to feel that nothing can be done to avert the plunge towards ruin."—Bertrand Russell, *The New York Times Magazine*, September 27, 1953.

"The modern era . . . began in 1914, and no one knows when or how it will end. . . . It

could end in mass annihilation."—*The Seattle Times*, January 1, 1959.

"The whole world really blew up about World War I and we still don't know why. . . . Utopia was in sight. There was peace and prosperity. Then everything blew up. We've been in a state of suspended animation ever since."—Dr. Walker Percy, *American Medical News*, November 21, 1977.

"In 1914 the world lost a coherence which it has not managed to recapture since. . . . This has been a time of extraordinary disorder and violence, both across national frontiers and within them."—*The Economist*, London, August 4, 1979.

"Everything would get better and better. This was the world I was born in. . . . Suddenly, unexpectedly, one morning in 1914 the whole thing came to an end."—British statesman Harold Macmillan, *The New York Times*, November 23, 1980.

Where Do Shooting Stars Come From?

"OOH, LOOK! There goes another one!" "Where? Where?" Have you ever uttered such words as you searched the night sky for shooting stars? Perhaps the first time you saw one suddenly tracing a luminous line across the star field above you, it looked as if one of the stars had suddenly gone shooting across the sky. Of course, shooting stars are really misnamed. They may "shoot," but they are a far cry from being stars.

Astronomers call them meteors. And whereas an average star could swallow up our whole planet a million times over, it is our planet that swallows up these meteors by the millions. What are meteors, and where do they come from?

Well, they have a lot to do with comets. Halley's comet, a famous example, swept by the earth in 1986 on its 76-year-long elliptical journey around the sun. Because comets apparently consist mostly of ice and dust, they are sometimes called dirty snowballs. When a comet approaches the sun, its surface warms up, releasing dust and gas. The radiation pressure of sunlight pushes the solid material back in a glowing tail of dust. The comet thus leaves in its wake a dusty trail of debris—particles that while still in space, are called meteoroids. Most cometary dust is too small to become visible meteors. A small fraction are about the size of a grain of sand, while a few are as large as small pebbles.

In a few cases, a comet's orbital path intersects that of the earth. That means that the earth meets the same trail of dust each time it plows through the comet's orbit. When this happens the tiny me-

teroids plummet into the atmosphere at high speeds—up to 44 miles per second. As they fall, the larger ones heat up and burn, making the white-hot streaks across the sky that are known as meteors.

When the earth crosses a comet's path, the meteors appear to shoot out in all directions from the same point in the sky, which is called the radiant. From these radiants, meteor showers fall at

regular times of the year. One popular display is the Perseids shower, so named because its radiant is found in the Perseus constellation. When the Perseids reaches its peak about August 12 or 13 every year, it is a dazzling show. Over 60 meteors may fall every hour.

About October 21 you may see the Orionids shower, which, like the earlier Aquarids shower, is said to be caused by meteoroids from Halley's Comet. According to the journal *Astronomy*, scientists estimate that Halley's comet "can make 100,000 orbits before losing all of its material." If their hypothesis is correct, Halley's comet will make

regular visits during the next 7,600,000 years! And even after it is long gone, no doubt its trail of dust will continue to provide the earth's inhabitants with shooting stars for ages thereafter. Many of the meteors we currently see apparently come from comets that have long been defunct.

Scientists figure that worldwide, there are some 200 million visible meteors in our atmosphere every day. And as for the more spectacular meteor showers, well, there is always next year—and millions more to come!



Young People Ask...



How Can I Keep Music in Its Place?

ITHINK it's built into us to like music," says a youth named Jackie, "because it can express how you feel. It's a pretty big part of your life when you are young."

Jackie is right. While youths seem to be particularly drawn to music, a capacity to enjoy melody and harmony appears to be built into all of us. And you have only to hear the cheerful melody of a songbird or the soothing rhythm of lapping waves to know that music is a loving gift from our happy Creator. (1 Timothy 1:11; James 1:17) Nevertheless, it is a gift that is often misused. In fact, if music is not kept in its place, it can do you more harm than good.

Hooked on Music?

Good music can be healthy, beneficial. However, too much of even a good thing can be bad for you. A wise proverb warns: "Is it honey that you have found? Eat what is sufficient for you, that you may not take too much of it and have to vomit it up." (Proverbs 25:16) Honey has well-known curative properties. Yet, "the eating of *too much* honey is not good" and can nauseate you. (Proverbs 25:27) The point? Good things should be enjoyed in moderation.

Music virtually dominates the lives of some youths, however. For example, a young woman named Jodie confesses that as a teenager, she "basically had music on all the time." Do you likewise try to fill every waking moment with sound? Then what you may excuse as music appreciation may be more like music *addiction*.

A youth named Steve recalls: "I went to school with kids who even listened to music in class." However, he admits: "Keeping Walkman [headphones] in their ears really hurt their study." Similarly, do you find yourself playing distracting music even when doing your homework? And what about those times set aside for studying the Bible or preparing for Christian meetings? Is the beat of your favorite song playing in the background?

Take a look, too, at how much it costs you to keep up with all the latest music releases. How much of your earnings or allowance is presently being spent on records, cassette tapes, or compact discs? Could some of that money be put to better use?

What about family relationships? Are you involved in family conversations, present at family meals—or do you stay in your room listening to music? The Bible cautions: "One isolating himself will seek his own selfish longing; against all practical wisdom he will break forth."—Proverbs 18:1.

Modifying Your Listening Habits

If music is taking too much of a bite out of your personal life, you would do well to consider the words at Ephesians 5:15, 16: "Keep strict watch that how you walk is not as unwise but as wise persons, buying out the opportune time for yourselves, because the days are wicked." This may involve setting yourself some limits and being more moderate in your listening habits. (Compare 1 Timothy 3:2.) For example, you may need to break a habit of turning music on the minute you get home. Learn to savor some periods of silence.

At the very least, doing so may help your grades. Periods of quiet are conducive to study. Now, you may feel that having music playing helps you relax. But why not try studying *without* music, and see if your concentration improves? "You may be able to get your studies done [with music]," says young Steve, "but you'll get a whole lot more out of them if the music is off."

You will also want to buy out, or schedule, time for reading and studying the Bible and Bible-based publications. Jesus Christ at times sought out a quiet, "lonely place" for prayer and meditation. (Mark 1:35) Is your study environment similarly quiet and peaceful? If not, you may be stifling your spiritual growth.

Learning to Think for Yourself

Perhaps the greatest area of concern, though, is the *kind* of music you listen to. Steve puts it this way: "Why do all the good tunes get saved for the really ugly lyrics?" In Bible times, there were songs that promoted heavy drinking and prostitution. (Psalm 69:12; Isaiah 23:15, 16) Similarly, a good deal of today's popular music promotes drug abuse, premarital sex, and violence.*

* See the February 8 and February 22, 1993, issues of *Awake!*

Peers may put tremendous pressure on you to listen to such music. There is also pressure from the music industry itself. With the help of radio and television, rock music has become a powerful, multibillion-dollar industry. High-powered marketing experts are hired to shape—and control—your musical taste.

But when you let your peers or the media dictate what you listen to, you lose your power of choice. You become a mindless slave. (Romans 6:16) The Bible urges us to think for ourselves. It tells us to "keep on making sure of what is acceptable to the Lord." (Ephesians 5:10) Certainly we could not expect the Christian congregation to scrutinize the thousands of songs released each year and provide a list of approved or banned musical selections. No, you must train your own "perceptive powers . . . to distinguish both right and wrong."—Hebrews 5:14.

How can you do so? Well, consider the following suggestions:

Examine the Packaging: Often, one look at the packaging or promotional material is enough. Sexually explicit, violent, or occult images should be a warning. The music inside is probably just as objectionable. If possible, read the jacket notes.

Check Out the Content: 'Test out the words' of a song by considering the titles and lyrics. (Job 12:11) What are they saying? Do you really want to be listening to or repeating these ideas over and over again? Are these thoughts in harmony with your values and with Christian principles?—Ephesians 5:3-5.

Notice the Effect: What is the overall impact on you? Does the music tend to depress you or overexcite you? Do you find yourself dwelling on wrong thoughts after hearing it? Are slang expressions used in the music starting to creep into your conversation?—1 Corinthians 15:33.

Consider Others: How do your parents feel about your music? Ask their opinion. Think, too, of how fellow Christians might feel about your music. Might some be disturbed by it? —Romans 15:1, 2.

Broadening Out in Your Musical Taste

It may be that you need to make some changes in your musical taste. But since taste is acquired, it can be changed. Says one prominent musician: "Most kids have never been in contact with anything other than this highly merchandised stuff." The solution? Don't limit yourself to just one style of music. Try expanding your musical taste.

Of course, you still need to be selective. But within the realms of folk, jazz, and, yes, classical music, there is an abundance of wholesome music that you can learn to enjoy. In fact, you may already enjoy such music without realizing it. Classical music, for example, may have set the mood for some of your fa-

vorite films and television shows. Think of how enjoyable that music might be if you heard it without distraction.

Some Christian youths have begun adjusting their musical tastes by listening to the *Kingdom Melodies* tapes produced by the Watch Tower Society. These melodies, familiar to all of Jehovah's Witnesses, incorporate a variety of wholesome musical styles. There are various forms of good music that friends may recommend. "One friend taught me to appreciate orchestral music—like Beethoven," says Michelle. "I used to hate it," she admits.

Another way to broaden out is to learn to play a musical instrument yourself. Not only can this be challenging and satisfying, but it may expose you to other forms of music besides rock. "Playing music is really nice," says Jackie, "because you have a talent and you are using it." With some effort you may even be able to provide wholesome entertainment for others.

Music is truly a gift from God, but you must take care not to misuse it. One youth admits: "I have music that I know I'm supposed to throw out. But it sounds so good." Think of the harm, though, that this youth does to mind and heart by listening to what is bad! Avoid that snare. Don't let music corrupt you or take over your life. Hold to high Christian standards in your music. Pray for God's guidance and help in choosing your music. Seek out companions who share your convictions.—Romans 12: 2, 12.

Music can help you relax and unwind. It can help fill the void when you are lonely. But when it stops, your problems are still there. And songs are no substitute for real friends. So don't allow music to become the big thing in your life. Enjoy it, but keep it in its place.

Is music interfering with your studies?



African Toys for Free

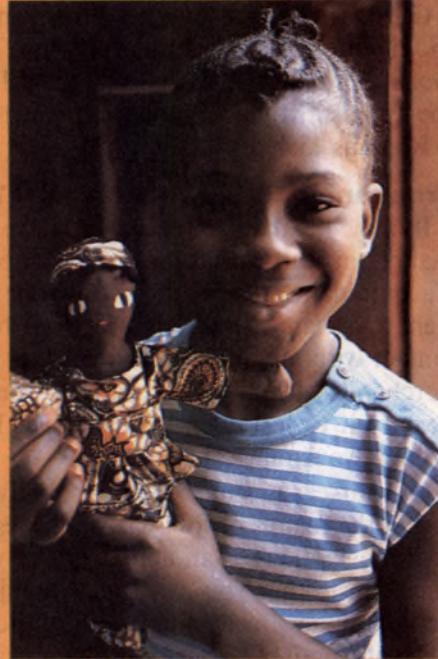
By Awake! correspondent in Sierra Leone

Clad only in faded khaki shorts, a little boy strolls along, pulling his toy truck—a rusty sardine can.

Heaped inside is his cargo—a bundle of small stones.

Up the road a little, a group of barefoot boys are playing a game of soccer. Their football, though, is a tightly bound ball of rags. Their goalposts are stones.

Over there, a three-year-old girl cuddles her doll—a brown stick wrapped in soft, red cloth.



These are common sights in African lands. Yet, they may seem strange to readers who live in industrialized nations. Perhaps you believe (as the advertising industry has encouraged you to believe) that toys are things to be bought. However, long before the age of factory-produced playthings, children fashioned their own toys. And in Africa the creative tradition is very much alive.

Boys' Toys

From ancient times boys have been fascinated by vehicles. Greek and Roman boys played with miniature carts. And not surprisingly, mechanized transport still fascinates and stirs the creativity of young boys.

Abraham, a Ghanaian schoolboy, hacks branches from a coconut palm with a long knife. From them he constructs a pickup truck. The wheels are disks cut from discarded plastic.

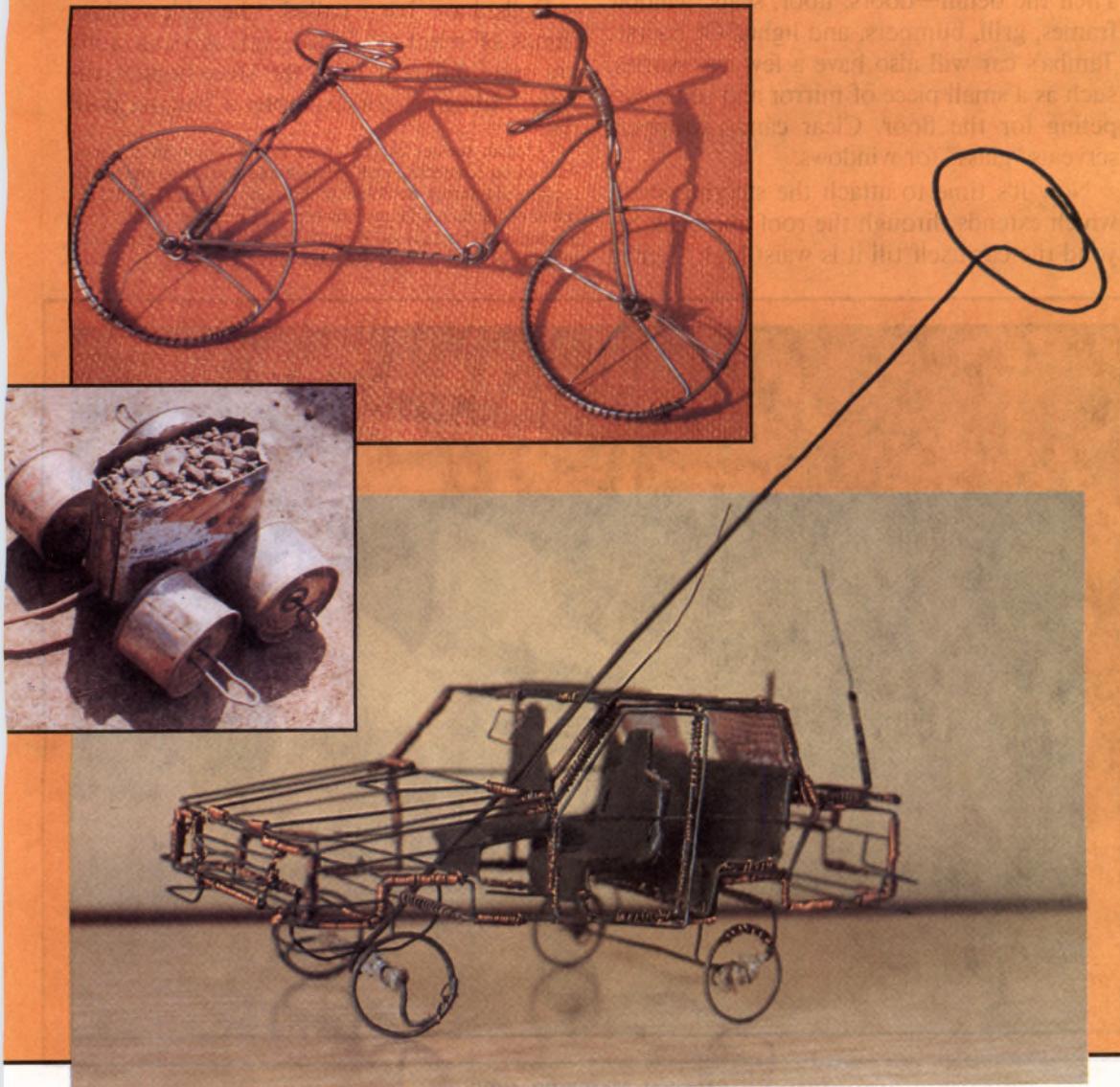
In Lesotho a lad named Chepa fashions a Land-Rover from beer cans and wire. Splitting the cans open, he flattens them, cuts them to size, and bends them over a wire framework to form the car body. Halves of beer cans make the wheels for this vehicle.

Yes, from cans, cane, cardboard, wire, and bamboo, African boys construct planes, buses, bikes, trucks, tractors, cars, and canoes. And no two are identical!

Making a Wirework Car

Perhaps this ingenuity is best expressed in what are called wirework cars. These are vehicles wrought from scrap wire and tin cans.

First, though, the wirework car maker must find the materials. Tamba, for example, leaves home early in the day to begin his search. A neighbor gives him some old coat hangers —ideal for the chassis and the body framework. A dump yields some electrical wire.



Three-inch tin lids will serve for wheels. And on the way home, Tamba gets permission to take a four-foot length of thick wire from a broken-down fence.

Now comes the design phase. After sketching a rough blueprint on a card, Tamba is ready to begin actual construction. Using Dad's pliers, he cuts, bends, and ties the coat hangers according to design. The framework completed, he adds axles and tin-lid wheels. Then the detail—doors, floor, seats, window frames, grill, bumpers, and lights. Of course, Tamba's car will also have a few accessories, such as a small piece of mirror and some carpeting for the floor. Clear candy wrappers serve as "glass" for windows.

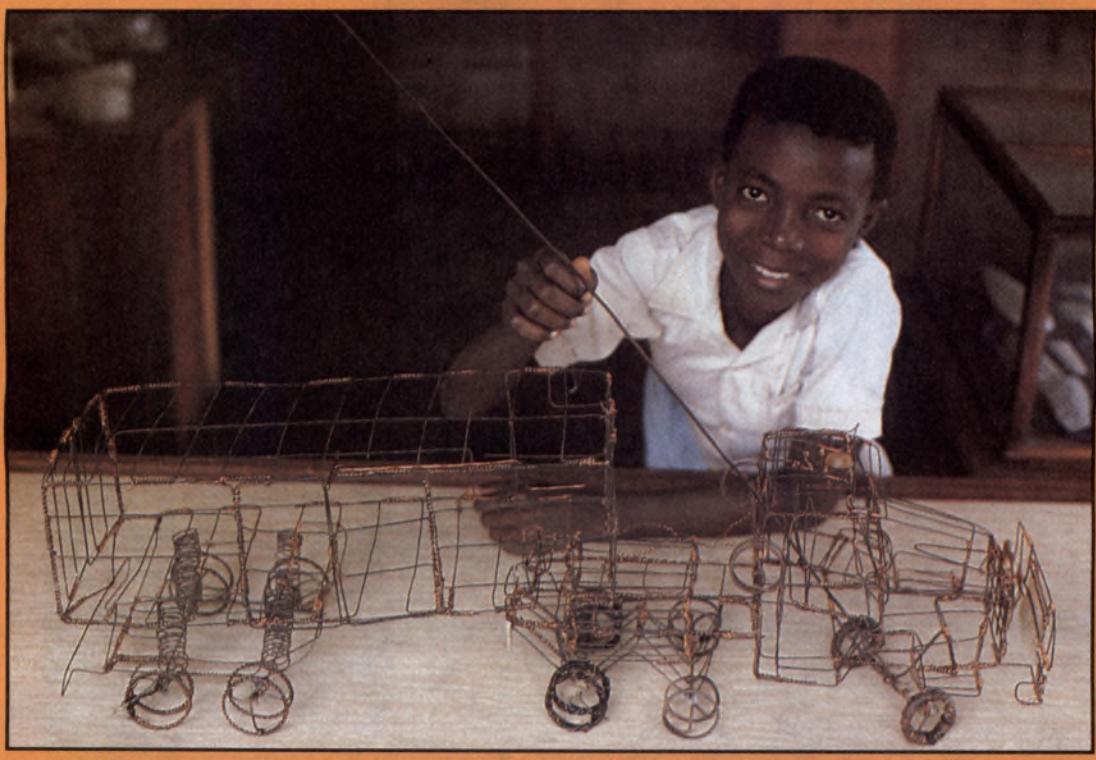
Now it's time to attach the steering shaft, which extends through the roof and back beyond the car itself till it is waist high. Tamba

fashions this end into a steering wheel, which will enable him to "drive" his car by pushing it along. Time spent in construction? Two days. But now comes the real fun—driving it! His hand on the steering wheel, Tamba pushes his car and deftly maneuvers it around obstacles. And for night driving, some boys install battery-powered headlights, that is, flashlight bulbs.

African Dolls

Dolls have been called "the oldest playthings of mankind." However, African dolls are quite different from the store-bought variety.* Imagine, for example, a banana doll!

* African statues carved from wood, which in the past were often connected with religion and spiritism, are rarely used as playthings by African children. Mr. H. U. Cole, director of the Sierra Leone Museum in Freetown, further told *Awake!* that because of Western influence, such images are increasingly being used for decorative purposes.



These are popular among West African girls. After drawing a pair of eyes, a mouth, and a nose on the fruit, they dress the doll appropriately. Some youngsters even tote their play children on their backs—just like Mom!

South African girls similarly know how to make "babies" out of ears of corn. Sticks are added for arms and legs. A few bits of cloth become clothing. And the husk hair is ideal for braiding.

Cynthia, a girl from Sierra Leone, goes from tailor to tailor collecting scraps of material for yet another kind of doll. This is the pieces baby, or rag doll. Borrowing scissors, needle, and thread from her mother, she cuts her fabric and sews her doll together. Small bits of fabric serve as the stuffing or are sewn on as facial features.

Changing Times

In recent years, though, Africa has seen a huge influx of inexpensive, manufactured toys from the Far East. In West Africa, for example, plastic dolls can be bought for as little as 40 cents. Because they are durable and more closely resemble real babies, girls often prefer them to corncobs or rag dolls.

A teenage girl named Saffie sells stylized pieces babies at a roadside stall in Freetown, Sierra Leone's busy capital. They go for a modest \$2.50 (U.S.). Her clientele? Admits Saffie: "It's mostly the American and European tourists who want pieces babies now. The African children prefer plastic babies."

But do boys really prefer the shop-sold toys? Thirteen-year-old Raymond had just spent a full week in constructing an elaborate wire-work truck. "If somebody offered you a manufactured toy truck in exchange for your truck," we asked, "would you take it?" His reply was immediate: "Of course! It looks more like a real one."

Yes, homemade vehicles are losing popularity as factory-made toy cars become plen-

tiful. States Patricia Davison in *African Arts* magazine: "It seems that poor socio-economic conditions common to the communities producing these toys have stimulated this form of creative expression and, conversely, that it may be inhibited by material abundance."

Will manufactured toys thus eventually replace handmade ones in Africa? Time will tell. Interestingly, a number of organizations

Long before the age of factory-produced playthings, children fashioned their own toys

throughout Africa are attempting to keep the homemade toy tradition alive by sponsoring toy-making competitions. Also, some museums are collecting examples of this craft for their displays. Nevertheless, given a choice, children almost always prefer factory-made toys for their realism.

Perhaps this is a pity. For unlike the store-bought kind, homemade toys stimulate creativity, originality, resourcefulness, artistry, and imagination. Making them is fun and results in a sense of accomplishment. And the cost in money could hardly be less.

In Our Next Issue

Science —Can It Meet Our Needs?

Home Schooling—Is It for You?

Jumping Musicians of the Insect World

Drawing Close to God Helped Me Cope

HAD no interest in religion. All organized religion seemed hypocritical to me. I couldn't see that it did much for people, except make them intolerant of others. It was the late '60's. A U.S. president had been assassinated, and thousands were dying in a war in Vietnam. The world was a mess. My own life was falling apart. How could there be a God who cared about me or mankind?

I was 27 years old, married with two small children, and working full-time in a mental institution when a neighbor started talking to me about the Bible. Surprisingly, I found myself listening. She talked about what she called the last days. She sounded different, and I wanted answers. She left with me a book entitled *The Truth That Leads to Eternal Life*. I read it in one night, looked up all the scriptures, and found myself wondering, 'Have I really found the truth?'

If I had, it presented a problem. I was born into a Jewish family, had a Jewish husband and two small children, and Jewish relatives. I knew they would be upset if I became one of Jehovah's Witnesses. I didn't want to hurt my family needlessly; I had to be sure. I began to devour Bible literature. Within a week I became convinced that this was the truth. It was something I had to do. So I began to study with Jehovah's Witnesses. Within weeks I was preaching to everyone. I was thrilled to learn that God's name

was Jehovah, that he cared about me and all mankind, and that life everlasting on a paradise earth was possible. I was baptized on June 12, 1970.

As I had suspected, my family as well as my in-laws were very upset, and some rejected me. My husband studied off and on for years but never became a believer. My children, however, did become Jehovah's Witnesses. From the beginning, I wanted to be a full-time minister, preaching from door to door the good news of God's Kingdom. But I had a growing family and an unbelieving husband. Even with me working full-time, we lost two homes, and several times had no place to go. Life was very difficult.

One time our house was in foreclosure. We had to be out of that house by noon on a Sunday, and we had no place to go. I did everything I could, and finally Saturday morning, the day before, I decided I would do as Jesus said at Matthew 6:33—seek first the Kingdom and wait for Jehovah to provide the things I needed. I went out in my public ministry. I remember crying because of the stress the situation had produced, but within five minutes I felt better. I have always found that preaching has a very positive effect on me; it elevates me above my problems, and Jehovah's spirit keeps me happy and productive and gives my life meaning. Anyway, when I came home that day, we still had no place to go, but I felt better.

That evening we got a call from the real-estate agency that was handling our needs. It was 11:30 p.m., and the real-estate agent was so concerned that we had no place to go that he found us a place to live temporarily until the house we were supposed to get was ready. So my fellow Witnesses moved us into that house on Sunday. We lived there, out of boxes, for three weeks and finally moved into our house when it was ready. It wasn't easy, but Jehovah provided for our needs. This strengthened me very much and built my faith. It was just as King David said at Psalm 37:25: "A young man I used to be, I have also grown old, and yet I have not seen anyone righteous left entirely, nor his offspring looking for bread."

There were difficulties in the management of family funds. At times I would assume the management of the money and straighten everything out. I tried desperately to keep the marriage together during these years, mostly because of my love for Jehovah and his regard for the marriage arrangement, and deep down I hoped my husband would change and come into the truth.

I constantly prayed about regular pioneering, and enrolled for auxiliary pioneering at every opportunity.* I knew that preaching was the best and most important way I could use my life. I loved Jehovah and wanted to serve him whole-souled. I also loved people and wanted to help them. I came to appreciate from my own difficult life how beneficial Bible principles were and knew that people needed the hope that the Kingdom provided. But I was afraid my family wouldn't survive if I didn't work. We were hardly surviving as it was.

* "Pioneering" is a term used to indicate full-time preaching activity.

I Screamed, the Rapist Fled

Then something happened in my life that gave me the faith that Jehovah would always provide and care for me. Someone broke into my home and attempted to rape me. He attacked me as I slept, and when I awoke, he threatened to kill me if I screamed or moved. Although I was terrified, Jehovah helped me to be calm and have the presence of mind to pray and weigh every alternative. I knew what the Bible said about screaming, but I also felt that he would probably kill me if I screamed, and then my children would wake up, and he would kill them. I saw my name flash in the obituaries and prayed that Jehovah would protect my children if I died. Even so, I did what the Bible alluded to—I screamed. (Deuteronomy 22:26, 27) The rapist fled. I really believed I was going to die that night. I drew ever closer to Jehovah.

I quit my job and began to serve as a regular pioneer in 1975. For six years I pioneered, and my husband paid the bills. Unhappily, I developed diabetes at a young age and was very ill at one point. To cope, I continued to rely on Jehovah even more. In spite of my circumstances, those were the happiest and most productive years I had ever had up to that point. Jehovah blessed me with many Bible students who progressed to baptism. Some went on to become pioneers themselves.

Then, in 1980, our lives fell apart. An estrangement developed between my husband and me. My children were very distraught, so for their sakes I tried to save the marriage, but my husband did not respond to my efforts. At this point, I knew that it was time to get a Scriptural divorce. The effect his leaving had on my children was devastating.

I was trying desperately to continue to pioneer at this time and was able to hold on for about a year. However, my daughter, unable to cope with the situation, began to rebel against everything, including me and the truth. I stopped pioneering during this time because of her conduct. This crushed me; my lifeline was cut. I felt very alone, as though everything was gone except Jehovah.

It was about this time that Jehovah provided two dear brothers who helped me more than they will ever know. One was a circuit overseer, and another was an elder in another congregation who knew our circumstances, as he had studied with my husband. I can never thank Jehovah enough for these gifts in men. They will always be very dear to me.

Not too long after, at a very young age, my daughter married out of the truth. This shattered the family and completed our despair. My son went out on his own very soon after. I prayed constantly for Jehovah to help my family to survive in the truth. They were so precious to me, and the only thing that I desperately wanted was for them to stay with Jehovah. This had been a constant prayer during my life in the truth. That time was worse for me than the entire 20 years of marriage—and they were bad. However, I knew that somehow Jehovah would help us through it, and whatever the cost, I had to do his will.

One incident I remember very well. I was still pioneering, and we had no money but needed about \$70 to get through the week and have carfare for the next week's work. I had worked two days as a temporary employee. Usually, I had to wait about a week to get the money I earned—about \$40. I had no money for food, much less for transportation. The next night I had a Bible study

with a woman who was able to assist me with fare for the subway.

The next morning was Friday. I went to get the mail, and there were two letters. One was the check I was expecting the following week. It went to the city and back in less than three days. I was amazed. I still needed \$29 or \$30 to get by. In the second envelope was a check for \$29, just what I needed. The really amazing thing about this was that in February of that year, the government had given me a grant for oil to heat my house. It was now August, and they decided they owed me \$29—in August, for heating? Why would they think they owed me anything, and oil in August at that? What a faith-strengthening effect this had on me!

Material Things Not the Answer

I began to work full-time and learn computers on the jobs that I took. The years I didn't pioneer were very difficult. Even though I had an excellent job and had some financial security and material things, I was not happy. My children were on their own and having very difficult problems. My daughter was coming back to the truth but still had problems. My son was having his problems too. After a period of time, I felt that I was losing that very close relationship with Jehovah that I cherished so much. I sensed that I was drifting away from Jehovah even though no one else could see it. I was at all the meetings, studied, went out in service, but it wasn't enough. I tried socializing more with the friends, but that didn't help either.

I started to feel sorry for myself. I began to turn inward and think about myself. Didn't I deserve to have something more? Obviously, it was just what Satan wanted. For the first time, I felt myself begin to be

drawn to my workmates. I thought, 'Well, I'll preach to them.' And I did. But deep down I could sense that my heart was beginning to overlook things it shouldn't. It was not problems outside of me. It was just me. I could not run away from my Bible-trained conscience. I prayed to Jehovah.

I was working full-time. I needed to let go of the material security I had built up. I was commuting three hours a day from Long Island to Wall Street. Too much time! Also, dealing with a lot of worldly people on the trains didn't help. I began talking to the elders and going to assemblies on weekends to help me focus. For the first time in my life, I didn't have to be concerned about material things, so why did I now want to struggle again? After a year of prayer, carefully con-

sidering whether I should make a move, I did.

I moved to the Brooklyn Heights area. I had visited the congregation and knew that the spirituality there was just what I needed. So many faithful Witnesses, serving full-time for so many years—it gave me a feeling of coming home. Within six months I was ready to give up my career and pioneer. I took a part-time job, and in 1984, I was again appointed as a regular pioneer.

Through the years, Jehovah has provided wonderful blessings for me, as well as many, many valuable lessons. I have tried to remain positive and to find the lesson in every test. It is not shameful to have problems; the sin comes in not using Bible principles to resolve them. Here in Brooklyn, I don't have the same problems I had in my early years in the truth. Finances are no longer a problem. An unbelieving husband is no longer a problem. My heart has been repaired. I have been blessed with many spiritual children.

But there are always new problems and challenges. In 1987 my son, Marc, had a breakdown and suffered from serious depression, but Jehovah has helped us through that. Marc is now reaching out and is doing very well in the congregation. My daughter, Andrea, came back to the truth and got baptized and is raising her children in the truth. Since we're fast approaching the great tribulation, I expect the problems to continue and perhaps become even greater, but Jehovah will always be there to help us through whatever obstacles or challenges may come along.

Truly, Jehovah has helped me to have a very happy and productive life. I look forward to spending the rest of it keeping close to him and doing his will.—*As told by Marlene Pavlow.*

Marlene Pavlow, full-time preacher of the Kingdom good news



Red Splashes on the Snow —Unless It's an Early Spring



"ONCE seen, never forgotten; the brilliant red is startling in the filtered sunlight against a dark background of forest duff." So *Western Forests*, an Audubon Society nature guide, comments on the snow plant, *Sarcodes sanguinea*. It is even more startling if you catch it a little earlier, when it is pushing its way through lingering patches of snow. "An unusual plant that is stout, fleshy, entirely bright red, with bracts overlapping on lower stem and curled among racemes of flowers above," *Western Forests* elaborates. Its range is limited to the mountainous coniferous forests of California and southern Oregon.

"ONCE seen, never forgotten; the brilliant red is startling in the filtered sunlight against a dark background of forest duff." So *Western Forests*, an Audubon Society nature guide, comments on the snow plant, *Sarcodes sanguinea*.

The snow plant is one of the saprophytes, a group that has no green matter, no chlorophyll, and therefore does not perform photosynthesis. Saprophytes live on dead or decaying plant or animal matter. Mushrooms, molds, and some other fungi and certain bacteria are saprophytes, but also in this group are some flowering plants. The snow plant is one of these.

Some of the saprophytic higher plants have become entirely dependent on certain fungi for food, which is called a mycorrhizal relationship —a mutually beneficial combination of a fungus (*myco*) and the root system (*rhiza*) of a higher plant. In such cases the roots of the saprophyte typically lack root hairs. The fungus takes over the job of absorbing minerals and moisture. *The Encyclopedia Americana* (International Edition) says: "The significance of mycorrhizae as symbiotic associations was discovered in the late 19th century by the German botanist Albert Bernard Frank as an offshoot of a study of truffle breeding for the Prussian government."





Where Man and Turtle Meet

By Awake! correspondent in Australia

THE best time to meet an untamed sea turtle is when she is laying eggs in her newly formed nest in the sand. So would you like to come with me while we visit Mon Repos—a mile-long beach on the coast of Queensland, Australia's sunshine state? Do not be concerned that you will be troubled by the burning subtropical sun, for our visit will be nocturnal. The best time for such a fascinating excursion is between eight in the evening and midnight.

It is preferable to go with a trained guide and a small group, for there are several dos and don'ts if we are to see and touch a large mother turtle. As we walk along the beach above the high-tide mark, the guide asks us to keep our flashlights off because light disturbs the turtles. And we are surprised at how well we can see the yard-wide turtle tracks in the sand even without lights.

Next, our guide gives us some interesting facts about the marine turtles in the area. There are six different species in Australian waters, but only four of these are found here

at Mon Repos, which is the main nesting area along the Bundaberg coast. In order of prevalence, these four species are: loggerhead turtles (*Caretta caretta*), flatback turtles (*Natator depressa*), green turtles (*Chelonia mydas*), and leatherback turtles (*Dermochelys coriacea*).

Our First Sighting

There is great excitement when we spot a large turtle. She is one of the first kind we listed—a loggerhead. We watch quietly as she continues her crawl up out of the surf to above the high-water mark on the sand. When we at last move closer, we see that she has dug a saucer-shaped hole by scraping the sand and vegetation away from around her. This prevents grass from growing over the nest and trapping the hatchlings when they emerge in 7 to 12 weeks. She has also finished the pear-shaped nest by alternately scooping and flipping sand with her rear flippers—scoop right, flick left; scoop left, flick right. All of this takes about 45 minutes.

Up until now, she could easily have been disturbed and have returned to the water, but



Top left clockwise: minor surgery, returning to the sea, eggs being relocated, flipper being tagged

once she starts laying the eggs, we are allowed to touch her. The ranger shines a light on her, and we can take photos if we wish. The turtle continues dropping her eggs into the nest for 10 to 20 minutes, along with a clear, mucous-like fluid that protects the eggs from fungus and insects while incubating. Loggerhead turtles average 120 eggs the size of Ping-Pong balls per clutch—14 days apart several times per season—with two to four years between seasons.

When we actually touch the turtle, we are surprised how soft her skin is—a factor that makes turtle leather so desirable and endan-

gers the existence of turtles. Her shell, or carapace, is made up of plates and is comparable to a backbone and ribs. Now she begins to cover her eggs. But since she has laid them close to the tide line, they must be relocated if they are to survive. This will be done by two members of the research team who have joined our group.

Tagging the Turtles

Our turtle is going to be tagged on one of her front flippers to assist in research about marine turtles. This is not an easy task in view of all the sand she is busily flipping

everywhere. The tags are made from a non-corrosive titanium alloy. On the back side is an address, and it is vital to the research project that all sighted turtles be reported by number. Only when the turtle dies should the tag be removed and returned, together with details of the turtle's location. On the front of the tag is the turtle's identification number. Our turtle is T54239, but we decide to call her Tabitha.

Because Tabitha has not previously been tagged, it is likely that she has never nested before and could therefore provide some vital information to help enforce the protection of turtles and their eggs in the South Pacific. Now, in order to get this information, we witness minor turtle surgery right here on the beach! The procedure is called laparoscopy and is commonly used on humans. Tabitha is gently turned over and placed on a wheelbarrow gurney. We feel sorry for her and find that stroking her throat seems to calm her. Those are not tears we see, but it is a salt solution she excretes to wash sand from her eyes and dispose of excess salt that is a result of her drinking seawater. They are not associated with pain. Her skin is scrubbed above her lower flipper; then a tube is inserted through a small incision, and a little air is blown in. By looking at her ovaries, the researchers discover that this is her first reproductive season, and she has many more eggs ripening. All this information is recorded; then the air is released through a valve, and the incision is stitched.

After being turned back over onto the sand, Tabitha instinctively heads for the water. The waves wash over her and sweep a relieved Tabitha out to sea.

Relocating the Eggs

As we turn back, we see that the eggs have already been removed from the nest. After four hours the egg attaches to the inside of

the shell and forms blood vessels. If they are turned after this, they will be ruined. At the rookery, usually two hours are allowed for the relocation process, and the success rate in relocating eggs is very high. The purpose of this is to protect the nest and eggs from water and erosion. The temperature of the sand determines the sex of the hatchlings. Most islands have cooler sands and produce mainly males, whereas the warmer sands of Mon Repos produce mostly females.

Hatchlings emerge from January until March. They scratch at their sand roof, causing the sand to sift in and raise them higher. If the temperature of the sand is not too high, they continue their journey out of the nest and scramble toward the sea. But their journey has only just begun. It is believed that it takes 50 years to reach reproductive maturity. Only a small percentage make it that far.

Man Must Learn to Care

Unfortunately, mankind's carelessness and thoughtlessness are doing much to decrease the six known species of sea turtles. Plastic bags thrown into the sea are often mistaken for jellyfish and are eaten by the turtles. This blocks their digestive tracts and causes them to starve to death. Other rubbish may strangle the turtles. Even boat propellers may present danger if the navigator is not careful. Added to this are oil spills and toxic wastes that may wipe out entire coastal populations during a breeding season. And because a turtle must surface every 15 minutes for air, fishing nets that entangle a turtle may cause it to drown.

As more people become aware of these hazards and learn to take greater care of the environment, increased opportunities will undoubtedly come for man and turtle to meet—impressing and enthraling humankind with yet one more marvel of creation's amazing reproductive cycle.

Watching the World

Infectious Disease Comeback

"The danger posed by infectious diseases has not gone away. It is worsening," says Robert Shope of Yale University regarding a report released by the U.S. National Academy of Sciences. "If we don't gear up again to bring matters under control, we could face new crises similar to the HIV pandemic or the 1918-1919 influenza pandemic." Four diseases have already "appeared seemingly out of nowhere, causing much misery and death," adds Joshua Lederberg, fellow chairman with Shope on the committee that prepared the report. The diseases are drug-resistant TB, AIDS, Lyme disease, and a deadly new form of streptococcal infection. Although many drugs and antibiotics have been developed over the past three decades, microbes have developed resistance to them in various ways. Bacteria, for example, can exchange genetic material, including the genes for antibiotic resistance. Consequently, hospitals, day-care centers, and shelters for the homeless have become breeding centers for drug-resistant infectious diseases. And increased international travel has spread the "superbugs" around the globe. Says Barry Bloom of New York's Albert Einstein College of Medicine: "In terms of infectious disease, there's no place from which we are remote and no person from whom we are disconnected."

Canada's Violent Crime

"Think Canada is a peaceful place? Think again," says *The Toronto Star*. "Canada is ranked with the second-highest violent crime rate in the western world," after

the United States. An international study showed Canada's crime rate to be from two to three times higher than that of Western Europe, which, in turn, was three times higher than Japan's. Recent decades have seen crime in Canada double and even triple, with the cities of Vancouver, Edmonton, and Ottawa having the highest crime rates. London, Ontario, came next, followed by Toronto and Montreal. According to University of Ottawa criminologist Irvin Waller, violent crime may get worse unless more is done to get at the roots of the problem, such as poverty, housing, neglect, unemployment, and substance abuse.

Pastoral Symphonies

Dairy farmers in Japan have been looking for a more efficient and less time-consuming way to round up cows scattered over hills, where visibility is limited. So they conducted an experiment to see if



the cows could be herded by music. For 13 days they played the Japanese tune *Haru no Ogawa* (Brook in Springtime) to 16 cows for three minutes at a time, two to four times a day. Immediately afterward, they gave them their favorite food. After a winter break during which the cows gave birth, ten of the "trained" cows were put out to pasture along with their nine calves. The same tune was played again. "In two minutes," re-

ports *Asahi Evening News*, "the whole herd had arrived, brought together by music they had not heard for about four months."

Well-Kept Medical Secret

One of the best-kept secrets of the Danish medical fraternity was revealed by Professor Margareta Mikkelsen, a consultant. She disclosed that medical personnel examining patients for inherited illness regularly discover that the man designated as the father of a child cannot be the biological father because of chromosome incompatibility. According to the newspaper *Süddeutsche Zeitung*, between 5 and 8 percent of fathers in Denmark are not the biological fathers of their children. This means that at least 3,000 of the 60,000 births a year are attributable to infidelity. The men are not told of the discovery, however, lest the family be disrupted.

"Tragedy Within the Tragedy"

A recent seminar organized in Rome by the World Health Organization and the International Center of Research and Relief revealed a "long list of monstrosities, waste, and incredible errors of which the powerful international aid machine is regularly guilty," says *Economia*, a supplement to the newspaper *Corriere della Sera*. The list includes diet candies sent to famine-stricken Ethiopia; summer tents sent following an earthquake to Anatolia, Turkey, where the thermometer read 10 degrees Fahrenheit (-12° C.); expired medicines; and vaccines that need refrigeration sent to places lacking electricity. Relief supplies often remain undistributed in warehouses

or do not reach those needing them. Why do these gross errors continue? Says *Economia*: "International aid has to produce visible, and if possible, spectacular results." It also said: "Public opinion demands it, so it doesn't matter if, nearly always, it's just throwing away money." Experts call it "a tragedy within the tragedy."

Killer Algae

Increasing pollution of water sources is responsible for the proliferation of toxic algae that threaten fish worldwide, say scientists. According to a report in the *International Herald Tribune*, dinoflagellates, a type of algae, produce a toxin that kills fish. They then attach themselves to bits of fish flesh by means of a stalk, through which they secrete digestive juices to liquefy the flesh before sucking it in. In these major fish kills, researchers have counted up to 175,000 dinoflagellates in a teaspoon of water. A concentration of only 1,500 dinoflagellates per teaspoon is sufficient to kill fish in aquariums. The dinoflagellates are often released in new areas through the dumping of ballast water from ships.

Clergy Divorce Rate Rises

"One in every three marriages in Germany ends in divorce," notes *The German Tribune*. And correspondingly, "more and more Protestant ministers' marriages are failing." Hans-Martin Heusel, deputy to the president of the Protestant Church in Hesse and Nassau, admits that "the divorce rate among both male and female ministers is now as high as in the population as a whole." While the church teaches that the marriage union should be insoluble, states the *Tribune*, "the reality, even among churchmen themselves, is something quite dif-

ferent. Personal, Christian witness and the preaching of the Church diverge widely in divorce involving pastors." With few exceptions, "a divorced pastor can remain in the cloth either in his old position or elsewhere."

"Masked Depression"

An increasing number of retiring Japanese office workers are suffering from symptoms ranging from stomachache to paralysis. As retirement approaches, these workaholics lose influence at work and are treated as nuisances at home by the families they have neglected. "Although they get depressed," reports the newspaper



Asahi Shimbun, "they try to hide it by acting cheerfully. Soon symptoms such as stomachache set in." Checkups reveal nothing wrong physically. Dr. Tooru Sekiya, who named these symptoms "masked depression before retirement," says of the typical patient: "He pampers himself by thinking the only way to be accepted would be to get sick, and this naturally leads to a variety of symptoms." What can be done? "Find values in something other than work, such as a hobby," counsels Dr. Takashi Sumioka, who treats many such patients in Tokyo, and "make it a habit to cherish your family all the time."

Mexico and the Catholic Church

On September 21, 1992, after a break of more than 130 years,

Mexico and the Vatican restored full diplomatic relations. This followed the proposal by President Carlos Salinas de Gortari to change the Constitution and to give back to religious groups the rights that were taken away after the revolution of 1910. "Most of those rights were initially revoked between 1856 and 1861 when rebellious liberals, eager to curb the vast power of the Catholic Church, severed the country's ties to the Holy See," notes *The New York Times*. However, most of the prohibitions have long been ignored. The Constitution remained unchanged, though, as many Mexicans still mistrusted the Catholic Church's power. All churches now have a defined legal status, have the right to conduct religious education, and can own property.

Body Temperature Revision

For over a century, the average human body temperature has been accepted as 98.6 degrees Fahrenheit, the result of a paper published by Carl Wunderlich in 1868, based on over a million measurements of body temperature in 25,000 adults. This was quite a feat, since it took thermometers of the time about 15 or 20 minutes to record temperatures, and they had to be read while still in place in the armpit. However, Philip A. Mackowiak at the University of Maryland School of Medicine says that the figure should be changed, as his studies showed that 98.6 degrees Fahrenheit "was not the overall mean temperature, the mean temperature of any of the time periods studied, the median temperature, or the single most frequent temperature recorded." In fact, it accounted for only 8 percent of the 700 readings taken. The average body temperature, he says, should be 98.2 degrees Fahrenheit.

From Our Readers

Child Rearing The series "Your Children—Doing What's Best for Them" (September 22, 1992) exposed my deficiencies as a parent. My attention has been focused on personal matters and congregation activities—all to the neglect of my three-year-old son. He became a very restless child. I also tend to be short-tempered, irritable, and embarrassed about expressing affection. Rather than hugging my child, I have gone too far in trying to be strict. Since Jehovah freely showers all of us with love, I will now try to shower with love the inheritance I have received from Jehovah.

T. T., Japan

Although I am not a parent, I am a lover of children, and this issue touched my heart. I cried to learn of the sad problems children face today. Your article was also very informative in showing how to deal with these problems at the very early stages of life so as to avoid horrifying problems in later years.

L. B., United States

The articles made me examine myself as a father. When I got married, I was very young and more interested in being with my friends than in being with my family. Reading the articles made me realize that I did not give my daughter enough of my time. May these articles move parents to do what's best for their children.

A. V., Italy

Animal Tales Thank you for the article "The Capybara—Mistake or Marvel of Creation?" (September 22, 1992) I often read articles about animals to my child. With Mr. Capybara himself doing the talking, the article delighted my child!

C. T., Japan

A refreshing alternative to the junk food served up by many magazines! My children and I read it together. Learning about new and different animals is *fun!*

C. H., United States

Thank you for the article "Those Amazing Marsupials From Down Under." (July 22, 1992) The way these animals give birth and produce different kinds of milk I found to be particularly interesting. It made me think of how Jehovah's power is so clearly seen from his creations!

N. S., Italy

I am 14 years old, and I enjoyed the article "The Arabian Camel—Africa's All-Purpose Vehicle." (June 8, 1992) You put things in a way that made the information very, very entertaining.

G. C., Argentina

Public Speaking The article "You Can Speak Before an Audience!" (July 22, 1992) was helpful to me in gaining employment. I first read it with a view to applying it to the Christian ministry. But upon being notified of a job interview, I reread the article and put into practice many of the points it mentioned, such as the nerve-calming exercise. I then said a prayer and went to the interview. I got the job, and I am grateful to you for providing this article at the right time.

K. B., United States

Space Exploration As an avid reader of science fiction, I was simply enthralled by the series on space exploration (September 8, 1992) It gave me a balanced view of this most exciting subject. It was also uplifting to see that God has a wonderful purpose not just for this planet but for the entire universe.

A. C., United States

Lake Victoria's Feathered Clown

By Awake! correspondent in Kenya

OUR boat is skimming along the placid waters of Lake Victoria when suddenly it comes into view. There, wedged into the main fork of an old tree overhanging the lake, is a huge bird's nest. It measures over six feet in diameter—large enough to evoke fear that some pterodactyl-like creature must surely inhabit this nest.

Nevertheless, determined to see the nest, we tie our boat to a large rock near the base of the massive tree, and all of us climb up to the fork for a closer look. All, that is, except our boat driver. The lake people avoid any contact with it whatsoever. Even its name sounds ominous—*hammerkop!*

As we approach the nest, we see that it is unlike any nest we have ever seen. It takes a male and a female hammerkop from three to four days of feverish work just to lay the "foundation" of their home—a rather loosely constructed, saucer-shaped platform. It consists of reeds, sticks, and straw. When this stage of construction is finished, they build up the walls all around and then start on the roof from the back. When the roof is half built, the female makes herself at home. She will stay in the nest while the male hunts for more building material.

After the front porch is completed, they apply a mud lining to it and to the inside chamber. Various loose materials are then added to the sides and roof to help make the nest waterproof and warm. Finally, their home is "decorated." Tin cans, snake skins, rags—really anything the male can find—are added to the top of the nest. The whole project takes five or six weeks.

Our nest inspection completed, we climb

back in the boat and wait. It isn't long before a hammerkop makes his grand appearance, landing right on the roof. But to our surprise, this is not a giant bird. It is but 22 inches long, dusky brown, and quite ordinary in appearance. Except for its head, that is. A heavy bill and a large crest at the back give it the appearance of the head of a claw hammer. Hence its name hammerkop.

The hammerkop soon begins the routine that has earned him his reputation as a feathered clown. He utters a high-pitched cackle and begins to dance and jump around. Suddenly his mate appears and joins him by jumping on his back and joining in the insane choreography. The bird's routine is not finished, however. Now he swoops down from his lakeside mansion and alights on the back of a sleeping hippo. When the hippo moves, the muddy lake bottom is disturbed. Startled frogs swim to the surface—only to be snatched up by the hammerkop. Small fish, worms, insects, and crustaceans are also on hammerkop's menu.

Whether you call him a clown or a master builder, hammerkop is fascinating—another example of the limitless imagination of our Creator.



The hammerkop and his nest



A Day to Remember

The evening before he died, Jesus shared a loaf of unleavened bread and a cup of wine with his apostles and said: "Keep doing this in remembrance of me." —Luke 22:19.

This year the anniversary of his command falls on Tuesday, April 6, after sunset.