

# **Awake!**

July 8, 1994

**SHOULD YOU  
GUIDE YOUR  
LIFE BY THE  
STARS?**

## Should You Guide Your Life by the Stars? 3-8

Millions of people consult their horoscope daily. Can the stars really influence our lives? What role do stars play in the Bible? What can we learn from them?

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Lelli & Masotti/Teatro alla Scala

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# WHAT'S IN THE STARS FOR YOU?

BY AWAKE! CORRESPONDENT IN BRAZIL

**H**AVE you heard it's in the stars, next July we collide with Mars?" These words of Cole Porter's lilting song well express the common and ancient belief that man's future is somehow related to the stars.\* But is there any real relationship between the heavenly bodies and mankind's life on this earth? If so, how is mankind affected? If not, just what purpose do the stars fulfill?

It is not surprising that so many people are interested in the future when we consider some recent dramatic happenings—the fall of the Berlin Wall and the rapid breakup of the former Soviet Union, the lack of confidence in political leaders, the ethnic hate surfacing in Africa and Europe, the religious enmity in India and Ireland, the galloping inflation afflicting so many countries, and the rebellion of youth. According to a report from the University of Hamburg, 1992 was the most bellicose year since the end of World War II, with 52 armed conflicts in different countries. Peace-loving people naturally ask: "Where can we look for stability, peace, and security?"

The uncertainty of the future has led to a boom in fortune-telling in its various forms. Astrology is probably the best known. Distinguished from the science of astronomy, astrology is "the divination of the supposed in-

fluences of the stars and planets on human affairs and terrestrial events by their positions and aspects." Today, millions of people just cannot resist reading their horoscope for hints about their future.\*

Other areas in which astrologers profess to foretell the future include the outcome of marital difficulties and health problems, the rise and fall of political leaders, the best date to open a new business, and the numbers to use to win a lottery.

A Reuters dispatch reported that astrologer Joan Quigley was regularly consulted by Nancy Reagan as to when her husband, then president of the United States, should give his talks and when his plane should take off and land. The *New Catholic Encyclopedia* revealed that "astrology was used by Pope Julius II [1503-13] to set the day of his coronation and by Paul III [1534-49] to determine the proper hour for every Consistory." Alfred Hug, director of a Swiss firm that uses astrology to advise investors on the stock market, guarantees excellent results. "It is written in the stars," he affirms.

Evidently, many feel that the stars do influence the lives of human beings. How did astrology get its start? Does the ancient book the Bible have anything to say about astrology and astrologers?

\* In ancient China, . . . signs in the sky as well as natural disasters were thought to mirror the deeds and misdeeds of the Emperor and his government."—*The International Encyclopedia of Astronomy*.

\* The horoscope is "a diagram of the relative positions of planets and signs of the zodiac at a specific time (as at one's birth)" and is used by astrologers to try to foretell future events in a person's life.



# THE STARS AND MAN IS THERE A CONNECTION?

BY JOHN CORBESER/DOVER PICTURES

**T**HE practice of watching the stars is not new. According to *The World Book Encyclopedia*, farmers thousands of years ago "watched the stars to know when to plant their crops. Travelers learned to use the stars to tell directions." Even today in space travel, stars are still used as guides. Ancients also invented myths of persons and animals that they felt were pictured in groups of stars, or constellations. In time people came to feel that stars could influence their lives.

## A Vast Choice of Stars

The sheer number of and size of the stars inspire awe. It is estimated that there are some 100 billion galaxies, or huge groupings of stars, in the universe! *The International Encyclopedia of Astronomy* says: "That is the number of grains of rice that could be packed into an average cathedral." The Milky Way galaxy, of which our solar system is a part, is estimated to have at least that many stars. The star nearest our Earth (other than the Sun), one of the Alpha Centauri group, is about 4.3 light-years away. A light-year is the

distance light travels in one year. That means that when we look at that star, the light entering our eye left the star 4.3 years earlier and during all that time was traveling through space at a velocity of 186,282 miles a second. It is beyond our mental capacity to imagine the distance involved. Yet, that is only the nearest star. Some stars are billions of light-years from our galaxy. No wonder God's prophet declared: "Look! The nations are as a drop from a bucket; and as the film of dust on the scales they have been accounted. Look! He lifts the islands themselves as mere fine dust." (Isaiah 40:15) Who bothers about a little speck of dust?

The closest heavenly body to earth is the moon, which exercises a definite influence on our earth, its gravity even causing a difference of over 50 feet between high and low tides in some places. According to three French scientists, the moon's gravity is now believed to be what keeps the earth's axis inclined 23 degrees, thus ensuring a regular change of seasons. (*Nature*, February 18, 1993) Since the moon exerts such a physical

## Awake!

**Why Awake! Is Published** *Awake!* is for the enlightenment of the entire family. It shows how to cope with today's problems. It reports the news, tells about people in many lands, examines religion and science. But it does more. It probes beneath the surface and points to the real meaning behind current events, yet it always stays politically neutral and does not exalt one race above another. Most important, this magazine builds confidence in the Creator's promise of a peaceful and secure new world before the generation that saw the events of 1914 passes away.

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## What Some Have Said

**ASTROLOGY:** "an adjunct and ally to astronomy."—Johannes Kepler (1571-1630) German astronomer.

"Astrology is a disease, not a science.... It is a tree under the shadow of which all sorts of superstitions thrive."—Moses Maimonides (1135-1204), Jewish scholar of the Middle Ages.

"A proto-science which claims to be able to assess individual personality and behaviour and to foretell future trends and events from the aspects of the heavens.... Probably about the 6th century BC—the Chaldaeans in the south of Iraq are thought to have introduced the personal horoscope. This was concerned with the influences exerted at the time of birth by the fixed stars, as well as the Sun, Moon and five planets.... The procedures of astrology and the interpretation of horoscopes rely on ideas astronomers and most other scientists find subjective and unacceptable."—C. A. Ronan, project coordinator, East Asian History of Science Trust, Cambridge, England, and contributor to *The International Encyclopedia of Astronomy* from which this quotation is taken.

To illustrate this subjectivity, Ronan explains that while to the Western mind, the red planet, Mars, is associated with war and bellig-

erence, to the Chinese, red is a beautiful color, and Mars is viewed as having a benign influence. In contrast, Western mythology associates Venus with white and beauty. To the Chinese "white . . . is considered the colour of death, decay and destruction; Venus was therefore referred to as the 'gloomy planet of war.'"

Ronan continues: "In spite of its proto-scientific nature, astrology in early times played a useful part in promoting astronomical observation and providing funds to carry it out."

Nineteen Nobel prize winners, together with other scientists, issued a manifesto in 1975 entitled "Objections to Astrology—A Statement by 192 Leading Scientists." It declared: "In ancient times people . . . had no concept of the vast distances from the earth to the planets and stars. Now that these distances can and have been calculated, we can see how infinitesimally small are the gravitational and other effects produced by the distant planets and the far more distant stars. It is simply a mistake to imagine that the forces exerted by stars and planets at the moment of birth can in any way shape our futures."\*

\* For further information on astrology, see *Awake!* of May 8, 1986, pages 3-9.

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influence over our planet, it is reasonable to ask, What about the billions of stars? But first, what do ancient sources, such as the Bible, tell us about the stars?

### Stars in the Scriptures

The Bible makes many references to stars, both in a literal and in a figurative sense. For instance, according to one psalmist, the Creator made "the moon and the stars to dominate the night" so that the stars would help furnish light for the earth. (Psalm 136:9, *Tanakh*) Later, when making a covenant with faithful Abraham, God said: "Look up, please, to the heavens and count the stars, if you are possibly able to count them." And he went on to say to him: "So your seed will become." (Genesis 15:5) The apostle Paul points out that stars have differences, saying: "The glory of the sun is one sort, and the glory of the moon is another, and the glory of the stars is another; in fact, star differs from star in glory."<sup>\*\*</sup> (1 Corinthians 15:41) At the same time, this vast number of stars and their glory are not outside the realm or the control of their Creator: "He is counting the number of the stars; all of them he calls by their names."—Psalm 147:4.

On the other hand, in the Scriptures we find that stars are often used to refer to persons, rulers, and angels. Jacob's son Joseph has a dream in which his parents are pictured as "the sun and the moon" and his brothers as "stars." Angels are referred to as "morning stars." Babylon's king is spoken of as aiming to be above "the stars of God," the Davidic rulers of the nation of Israel. Unstable men in the Christian congregation are likened to "stars with no set course," whereas faithful bodies of congregation elders are mentioned as being "stars" in the right hand of Christ.

\* Modern astronomy confirms Paul's words, since stars differ as to color, size, amount of light produced, temperature, and relative density.

—Genesis 37:9, 10; Job 38:7; Isaiah 14:13; Jude 13; Revelation 1:16.

One account in the Bible says that 'the stars from their orbits fought against Sisera,' the army chief of King Jabin of Canaan, who had oppressed the nation of Israel for 20 years. Jehovah assigned Judge Barak of Israel to save Israel from bondage and gave him an overwhelming victory over Sisera, even though the latter had nine hundred chariots with iron scythes on their wheels. In the song of victory, the Israelites sang: "From heaven did the stars fight, from their orbits they fought against Sisera." No explanation is given as to just how the stars fought. Rather than assume that the stars exercised a direct influence in the battle, it is more reasonable to believe that the expression indicates some form of divine intervention in behalf of Israel.—Judges 5:20.

### "The Star" of Bethlehem

Probably one of the best-known stars mentioned in the Bible is "the star" of Bethlehem that guided the astrologers from "eastern parts" to the house where Jesus had been taken by his parents after his birth in a stable. What was that star? Certainly it was not an ordinary one, since it was low enough for the astrologers to follow it for about a thousand miles. "The star" led them first to Jerusalem. Hearing of this, King Herod questioned them and then decided to kill the infant Jesus. Then "the star" led the astrologers to the particular house where Jesus was living. Certainly no normal star could do that. Did this starlike object originate with God? Since the astrologers' visit led indirectly to the slaughter of 'all the boys in Bethlehem and in all its districts from two years of age and under,' is it not reasonable to conclude that "the star" was something used by God's Adversary, Satan, in an attempt to destroy God's Son?—Matthew 2:1-11, 16.

It should also be borne in mind that the

astrologers came from the East, perhaps from Babylon, which was an ancient center of magic, sorcery, and astrology. A number of heavenly bodies have been named after Babylon's gods. In the days of King Nebuchadnezzar, divination was used to help him decide which route to take in his battle campaign.—Ezekiel 21:20-22.

The prophet Isaiah challenged Babylon's counselors, saying: "You [Babylon] are powerless in spite of the advice you get. Let your astrologers come forward and save you—those people who study the stars, who map

out the zones of the heavens and tell you from month to month what is going to happen to you. They will be like bits of straw, and a fire will burn them up! They will not even be able to save themselves . . . and none will be left to save you." True to Isaiah's prophecy, mighty Babylon fell to Cyrus the Great in 539 B.C.E. The guidance that those Babylonian astrologers claimed to bring from the stars turned into disaster for all concerned.—Isaiah 47:13-15, *Today's English Version*.

Does this mean that we cannot learn anything from the stars?



# THE STARS DO HAVE A MESSAGE FOR YOU!

**A**S SHOWN in the preceding articles, in spite of the glory the stars manifest, man was meant to consider them just for what they are—inanimate objects placed in the heavens by the Creator for his purpose. They were not to be worshiped. As an integral part of Jehovah's marvelous creation subject to his laws, the stars were to 'declare the glory of God' and at the same time serve as a source of light for man as he carried out the Creator's purpose for him.—Psalm 19:1; Deuteronomy 4:19.

In the Bible we read: "There should not be found in you anyone who . . . employs divination, a practitioner of magic or anyone who looks for omens or a sorcerer, or one who binds others with a spell or anyone who consults a spirit medium or a professional foreteller of events or anyone who inquires of the dead. For everybody doing these things is

something detestable to Jehovah." (Deuteronomy 18:10-12) Isaiah said: "Let [your counselors] stand up, now, and save you, the worshipers of the heavens, the lookers at the stars . . . Look! They have become like stubble."—Isaiah 47:13, 14.

## What We Can Learn From the Stars

However, the inanimate stars can tell us something if we are willing to listen. Edwin Way Teale wrote: "The stars speak of man's insignificance in the long eternity of time." Yes, when we realize that the vast majority of the stars we see with our naked eye on a clear night were seen by our ancestors centuries ago, does it not humble us? Do we not feel reverence for the Majestic One who created them "in the beginning" and who later brought forth mankind? King David of Israel reverently wrote: "When I see your heavens, the works of your fingers, the moon and the

stars that you have prepared, what is mortal man that you keep him in mind, and the son of earthling man that you take care of him?" The heavens should humble us and make us question what we are doing with our lives.  
—Genesis 1:1; Psalm 8:3, 4.

On one occasion David prayed: "Teach me to do your will, for you are my God." (Psalm 143:10) The record of David's life indicates that his prayer was answered. He learned to do God's will as set out in His Law. He also learned the Creator's purpose for mankind, and he wrote about it. "Just a little while longer, and the wicked one will be no more . . . But the meek ones themselves will possess the earth, and they will indeed find their exquisite delight in the abundance of peace. . . . Turn away from what is bad and do what is good, and so reside to time indefinite. . . . The righteous themselves will possess the earth, and they will reside forever upon it." With knowl-

edge of that purpose came a responsibility: "Turn away from what is bad and do what is good."—Psalm 37:10, 11, 27-29.

The stars have the same message for all mankind. Without worshiping them or "consulting" them, we can see the Creator's love, wisdom, and power reflected in them. The study of astronomy, as opposed to astrology, should instill reverence in our hearts. But more than that, does it not implant in us the desire to learn more about God? He has provided his Word, the Bible, for that very purpose. If you have discerned this message from the stars, you can learn what Jehovah has in store for mankind and, more important, how you can share in the blessings he has prepared for them. If you have questions about God and the purpose of life, feel free to contact Jehovah's Witnesses in your area, or write to the nearest address indicated on page 5.

***The stars can teach us humility***



Young  
People  
Ask...



## Thrill Sports Should I Take a Chance?

**T**HIS will be the most terrifying moment of your life," you are told as you stand quivering on the platform. The countdown begins: "Five, four, three, two, one—JUMP!" The fall takes your breath away. You hurtle toward a seemingly certain death, but suddenly you feel the abrupt pull of an elastic cord. An exhilarating feeling of relief sweeps over you. You have survived!

Bungee jumping.\* The sport has attracted an estimated one to two million participants

\* "Bungee jumping" is a sport in which jumpers, attached to a long elastic cord called a bungee, leap from bridges, cranes, and even hot-air balloons. This allows for a virtual free-fall before the cord stretches tight, halting the plunge.

in the United States alone. It is just one of many sports that have recently skyrocketed in popularity—rock climbing, paragliding, white-water rafting, and sky surfing, to name a few. "The 90's are the decade of the thrill sport," says one bungee-jump promoter.

Risky activities are not the domain solely of the affluent. Urban thrill seekers engage in such dangerous (and illegal) feats of daring as elevator surfing (riding the tops of moving elevators), tunneling (scampering through the duct systems of large buildings), subway surfing (riding on the roofs of moving subway cars), and stair diving (sliding down greased stairways).

### What's the Attraction?

"I'll try anything that gets me scared," says young Norbert. "I enjoy all sports—baseball, basketball—but bridge jumping got me scared! It's totally unique." Young Douglas agrees. "Regular sports are cool, but they're calculated," he says. "You're always tied down. I like the feeling of falling. And the speed . . . You never have that feeling with other sports."

Thrill sports go beyond challenging your athletic ability; they bring you face-to-face with death! Participants seem to enjoy the adrenaline high produced. Some experts claim that certain people are genetically programmed to be Type-T, or thrill-seeking, personalities. However, most youths engage in some kind of risk taking; it's their way of testing limits and developing self-confidence.

Unfortunately, youths do not always use good judgment in doing so. "The beauty of young men is their power," says Proverbs 20: 29. But some appear to think that their power is unlimited. Dr. David Elkind says that teenagers often believe "they are special and unique—exempt from the laws of probability that apply to others. It is this belief in being special, in being wrapped in a cloak of

invulnerability, that contributes most to teenagers' decisions to take risks." Dr. Robert Butterworth similarly notes: "When you do something like skydiving, it gives you a sense of defying the odds, controlling your own fate."

However, risk taking can also be prompted by darker motives. In her book *Childstress!*, author Mary Susan Miller indicates that many young daredevils take foolish risks because they simply cannot cope with the stresses of their lives. Thrill sports may thus reveal self-destructive or even suicidal tendencies. "They deliberately put themselves in dangerous situations," says Miller, "as if defying fate to do the job for them."

### Really Risky?

Whatever their appeal, thrill sports can be dangerous. 'So can crossing the street,' some argue. But someone crossing the street is not deliberately seeking danger or thrills. And while many sports, such as bungee jumping, have fairly good safety records, things can go wrong. Mark Bracker, M.D., put it this way: "With a lot of these high-



risk sports, when something goes wrong it can be catastrophic. The higher the thrill, usually the higher the risk, whether it's jumping out of airplanes or hang gliding or motorcycle riding." One 20-year-old youth bungee jumped from a hot-air balloon hovering 190 feet above the ground. The problem? His cord was 260 feet long! He leapt to a terrible death.

Granted, some activities, such as motorcycling, may be enjoyed in a relatively safe and moderate manner. But one expert in sports medicine says of thrill seekers: "As their skills get better and better, they pick something harder and harder, and they end up with an injury." One youth confessed: "I'm an addict. It's harder now to get that fear level and the rush."

### For Christians?

Does the Bible categorically rule out all sports? No. It is foolish extremes that are condemned. As recorded at Ecclesiastes 7:17, Solomon asked: "Why should you die when it is not your time?"

**Should Christian youths go in for thrill sports like bungee jumping?**

'Life is short. Play hard,' urges one advertisement for athletic footwear. But we have a responsibility to ourselves, to those who love us, and to our Creator to treasure our life. Life is a gift from God. (Psalm 36:9) In Bible times serious penalties could be imposed if a life was taken accidentally. (Exodus 21:29; Numbers 35:22-25) God's people were thereby encouraged to avoid needless risks.—Compare Deuteronomy 22:8.

Christians today likewise have an obligation to show respect for life. Would it be appropriate to pursue a sports activity that might expose you to unnecessary risks? When Satan the Devil tried to tempt Jesus, he argued that the angels would catch Jesus if he hurled himself down from the temple battlement. Jesus responded: "You must not put Jehovah your God to the test."—Matthew 4:5-7.

Besides, as strong and healthy as you may feel, you simply are *not* impervious to harm. It is unrealistic to reason: 'It can't happen to me.' The Bible warns us that 'time and unforeseen occurrence befall us all.'—Ecclesiastes 9:11.

### **Looking Before You Leap**

It makes sense to think seriously about the possible consequences of leaping off a crane, of diving out of a plane, or of doing anything that might seem excessively risky. Do not simply rely on hearsay or on the enthusiastic reports of other youths. (Proverbs 14:15) Get the facts.

For example, just what is the accident rate for a particular sport? What safety precautions are taken? One expert says regarding scuba diving: "[People think that] going from the medium of air to water is dangerous . . . . But it is only dangerous if you do it without proper instruction." So you should also ask, What training and equipment are needed for this sport? Are there any legitimate benefits, such as exercise? Are any risks incidental, or

is the primary objective of the sport to defy death?

If the latter is the case, you might ask yourself why risk taking so appeals to you. Is it simply a response to boredom or stress? Then why not find a safer, more wholesome way of dealing with such feelings?\* The book *Teenage Stress* reminds us that risk taking is a "dangerous and ultimately ineffective method of coping with the negative side of stress." —Compare Proverbs 21:17.

After researching matters thoroughly—and talking things over with your parents—it may well be concluded that you would be better-off steering clear of extreme thrill sports. Your parents may prefer that you pursue activities that seem to be less inherently life threatening, such as bicycling, skating, skiing, and snorkeling, to name a few. Of course, even relatively safe activities can be dangerous if proper precautions are not taken.

This happened to a small group of Christian youths who decided to go for a hike. They veered off the trail and began climbing a narrow edge on a steep cliff. Before long they found themselves virtually trapped, unable to go safely either forward or backward. The youth leading the group then heard a sudden noise. Two of his companions had fallen to their death. How tragic!

So please be cautious! 'Rejoice in your youth,' enjoying the strength and vigor with which you are blessed. (Ecclesiastes 11:9) But before accepting an invitation to do something risky, do what young Brian does. He says: "I ask myself, 'How would Jehovah feel about it? How would it reflect upon my attitude toward the gift of life he has given me?'" Yes, weigh the risks, search your motives. Life is too precious to do otherwise.

\* If you are depressed or are fighting self-destructive urges, why not talk to someone and get help instead of taking unnecessary risks?—See "Young People Ask . . . Is Suicide the Answer?" in our April 8, 1994, issue of *Awake!*

# Was the Apostle Paul Against Women?

**T**HE apostle "Paul's teachings have been used as the basis for much of the anti-female bias within the Christian . . . church." So said Judge Cecilia Rushton of Auckland, New Zealand, in a paper presented early in 1993 to the Commonwealth Law Conference at Cyprus. "His Epistle to Timothy," she added, "reveals his thinking: 'But I suffer not a woman to teach, nor to usurp authority over the man, but to be in silence.'"—1 Timothy 2:12, *King James Version*.

When Paul wrote with respect to the role or station of women, was it simply his personal opinion that was being expressed, or was he divinely inspired? Viewed in their entirety, do the epistles, or letters, of Paul truly reflect an antifemale bias? In what context do the words of Paul to Timothy quoted above apply?

### Paul's Credentials

Of the 27 books of the Christian Greek Scriptures, 14 are attributed to Paul. Indicative of the operation of holy spirit upon him was his miraculous ability to speak in many tongues. Additionally, he attested to supernatural visions. (1 Corinthians 14:18; 2 Corinthians 12:1-5)

His self-sacrificing, whole-souled, and loving example engendered a close bond of warm brotherly affection between him and his Christian contemporaries. (Acts 20:37, 38) His writings, including what he said about women, form part of the "all Scripture . . . inspired of God and beneficial for teaching."

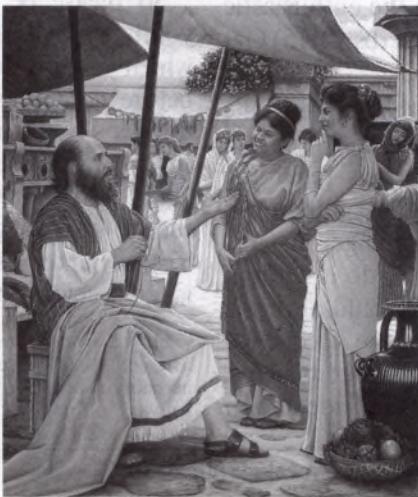
—2 Timothy 3:16.

### Women in Paul's Letters

Paul's recognition of and regard for women are in ample evidence throughout his writings. Repeatedly, he makes reference to them in their varied congregational and family roles. In one of his letters, he likened the desirable qualities of a Christian shepherd to those displayed by a nursing mother.

—1 Thessalonians 2:7.

Many of the apostle's Christian sisters, mentioned by name in his letters, are the subjects of his warm commendation. Included in his greetings to members of the congregation in Rome were those addressed specifically to certain women "working hard in the Lord." (Romans 16:12) With reference to Euodia and Syntyche, he encouraged the brothers in Philippi to "keep



assisting these women who have striven side by side with me in the good news.” (Philippians 4:3) In his letter to Timothy, Paul acknowledged the exemplary faith of that young man’s grandmother Lois and his mother, Eunice.—2 Timothy 1:5.

In turn, is there any indication as to how Paul’s Christian sisters felt about him? Gratefully, he testified concerning Aquila and Prisca, a married couple with whom he had close personal association, that not only Aquila but also his wife, Prisca, “risked their own necks for [his] soul.”—Romans 16:3, 4.

#### Antifemale Bias?

“Do not severely criticize an older man. To the contrary, entreat him as a father, younger men as brothers, older women as mothers, younger women as sisters with all chasteness.” (1 Timothy 5:1, 2) Do not these words of Paul to Timothy reflect a wholesome respect for womankind? Paul assigned to men and women in the Christian congregation an equal measure of honor. “There is neither Jew nor Greek,” he wrote, “there is neither slave nor freeman, there is *neither male nor female*; for you are all one person in union with Christ Jesus.”—Galatians 3:28.

With respect to the God-assigned roles in marriage, Paul wrote: “Let wives be in subjection to their husbands as to the Lord, because a husband is head of his wife as the Christ also is head of the congregation, he being a savior of this body.” (Ephesians 5:22, 23; compare 1 Corinthians 11:3.) Yes, the respective roles of husband and wife differ, but this does not imply that one mate is inferior. The roles are complementary, and the fulfillment of each constitutes a challenge that promotes family well-being if met. Further, the husbandly exercise of headship was not to be oppressive or unloving. Continued Paul: “Husbands ought to be loving their wives as their own bodies,” being willing to make major sac-

rifices for them. (Ephesians 5:28, 29) Children were to obey both father and mother.—Ephesians 6:1, 2.

To be noted, too, are Paul’s words with regard to marital intimacies. It was with impartiality that Paul wrote: “Let the husband render to his wife her due; but let the wife also do likewise to her husband. The wife does not exercise authority over her own body, but her husband does; likewise, also, the husband does not exercise authority over his own body, but his wife does.”—1 Corinthians 7:3, 4.

#### “Woman . . . to Be in Silence”

In reference to Paul’s words at 1 Timothy 2:12, quoted in the opening paragraph, did his advocacy of womanly “silence” stem from an antifemale bias? No! The “silence” called for was in relation to teaching and exercising spiritual authority in the congregation, this out of regard for the earlier-mentioned divinely prescribed man-woman relationship.\*

This does not mean that women cannot be teachers of divine truth. Paul encouraged older women to be “teachers of what is good” to younger women. In following the example of Eunice and Lois, who instructed Timothy, Christian mothers are to train their children in godly ways. (Titus 2:3-5; 2 Timothy 1:5) Today, in congregations of Jehovah’s Witnesses, hundreds of thousands of Christian women find spiritual fulfillment in following the examples of Euodia and Syntyche in preaching the good news publicly and in making disciples of men and women.—Psalm 68:11; Matthew 28:19; Philippians 4:2, 3.

Thus, what is your assessment? Do Paul’s writings, viewed in their entirety, justify the charge of antifemale bias?

\* In regard to the expression “full submission” at 1 Timothy 2:11 (*New International Version*), Bible scholar W. E. Vine states: “The injunction is not directed towards a surrender of mind and conscience, or the abandonment of duty of private judgment; the phrase ‘with all subjection’ is a warning against the usurpation of authority, as, e.g., in the next verse.”

# The Battle for a Tunnel

BY AWAKE! CORRESPONDENT IN BRITAIN

**T**HE project of the Century" is how some view the construction of the tunnel that now links England to Continental Europe.

In this feat of civil engineering, some 15,000 British and French workers joined forces with giant tunnel-boring machines nicknamed Brigitte, Cathérine, Pascaline, Virginie, and Europa. Together they built the world's longest underwater tunnel below what the British call the Channel and the French, *la Manche*.<sup>\*</sup> But their success has not been without difficulty and setbacks. Nine men lost their lives during the project.

## Many False Starts

"There are few projects against which there exists a deeper and more enduring prejudice than the construction of a railway tunnel between Dover and Calais," said British statesman Winston Churchill in 1936. When, in 1858, the British Parliament heard a proposal to build a tunnel under the Channel, Lord Palmerston reportedly exclaimed: "What! You pretend to ask us to contribute to a work the object of which is to shorten a distance we already find too short?"

Earlier, in 1802, a French mining engineer, Albert Mathieu-Favier, had proposed to build a lamp-lit tunnel with chimneys rising above the waves to provide ventilation for the horse-drawn carriages. However, the scheme proved to be technically impractical.

\* The Seikan Tunnel linking the islands of Honshu and Hokkaido in Japan is longer (33.5 miles compared with the Channel Tunnel's 30.7 miles), but the underwater stretch is some 9 miles less than that of the Channel Tunnel.

In 1856 another Frenchman, engineer Thomé de Gamond, recommended the construction of a railway tunnel to join France and England. The French accepted, but the British were hesitant. Undeterred, de Gamond next consulted with William Low, a British mining engineer. Then, in 1872, Low and fellow engineer Sir John Hawkshaw established a company to raise money for a Channel link. In 1880, boring machines designed by Colonel Beaumont began to tunnel away from Shakespeare Cliff, near Dover, and from Sangatte, on the French coast. After 1,100 yards, work halted when fear of a military invasion frightened the British government off the project.

The next attempt took place in the 1920's, with a 420-foot trial tunnel bored near Folkestone, England. Again British fear of an invasion terminated the work. In the 1970's tunneling recommenced, only to stop when the British government withdrew support.

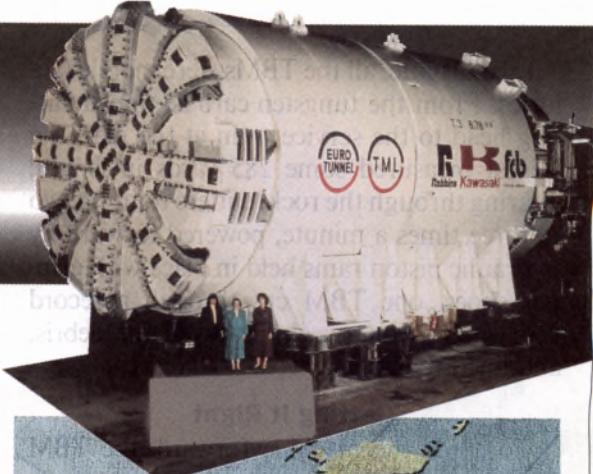
Then, 1986 saw the signing of the Channel Tunnel treaty. Ratified the following year by both France and Britain, it permitted work to start in earnest.

## The Financial Battle

A group of French and British private companies (known collectively as Eurotunnel) commissioned Transmanche-Link (TML), a consortium of ten construction companies, to design and build the tunnel. At government insistence, private money was to pay for the whole project.

Only two years after work started, Eurotunnel had to revise the financial estimate upward from £5.23 billion to £7 billion. By 1994 the

*Below: Workers celebrating completion of the world's longest underwater tunnel  
Right: A TBM*



financial forecast for the project had increased to some £10 billion.

### The Underground Battle

In reality the Channel Tunnel is not just one but three tunnels. On December 15, 1987, the first TBM (tunnel boring machine) started work in England, and its French counterpart, Brigitte, began on February 28 the following year. Their job was to dig the 15.7-foot-diameter service tunnel, designed for maintenance and emergency purposes. Larger TBMs ground their way through the rock to open the two main running tunnels, each 25 feet in diameter when lined.

"At Shakespeare Cliff, we went down a large shaft," relates Paul, who worked on the tunnel. "When you descended, you got a cold, damp feeling until you reached the bottom, where the air was thick with diesel fumes from all the machinery. As you went through the tunnel, the atmosphere became even more humid and hot."

Down in the tunnel, a total of 11 TBMs toiled away. Three tunneled landward from Shakespeare Cliff to the site of the British terminal just outside Folkestone. Three more set off seaward under the Channel to meet up with three

French ones that started from a shaft at Sangatte. The two remaining TBMs bored the three tunnels inland from there to the terminal at Coquelles, near Calais.

Brigitte operated in one of two modes. When boring through porous, fissured chalk, she worked with both her cutting head and body sealed to withstand water pressure of 156 pounds per square inch, more than ten times normal atmospheric air pressure. But once out in the chalk marl, a mixture of chalk and clay, she doubled her speed. Then, following this layer between 80 and 130 feet beneath the seabed, Brigitte pressed on toward her counterpart from the English side.

Workers: Eurotunnel Ph. DEMAIL; TBM: Eurotunnel

Like Brigitte, all the TBMs were mobile factories. From the tungsten-carbide-tipped cutting head to the service train at the rear, the largest measured some 285 yards in length! Tearing through the rock, cutters rotating two to three times a minute, powered forward by hydraulic piston rams held in place with gripper shoes, one TBM cut through a record 466 yards in one week, removed the debris, and lined the hole as well.

### Getting It Right

To guide the machine forward, the TBM operator watched computer screens and television monitors. Satellite observations helped plan the exact route in detail before tunneling began. Narrow drills probed the rock face over 160 yards ahead, samples of chalk marl indicating the way forward. A laser beam directed at a light-sensitive target on the machine enabled the driver to navigate the correct course.

About four or five miles out under the Channel, the tunnelers built crossover caverns where trains can be switched from one running tunnel to the other when need arises. Every 410 yards, hand-tunnelers hewed out passages to link the running and service tunnels.

They also cut out piston relief ducts that join the two main tunnels, in an arc over the service tunnel. "It's like an old bicycle pump. When you put your thumb over the valve, you can feel the heat," Paul explains. "The trains generate a lot of heat too. The piston valves open to relieve the pressure and heat of the passing trains."

Brigitte and her English counterpart halted about a hundred yards from each other. Then, very cautiously, a drill forced a 1 1/2-inch-diameter hole through the chalk marl. On December 1, 1990, breakthrough occurred some 13.9 miles from England and 9.7 miles from France. Imagine the relief when a final check

revealed that the alignment error between the two tunnels was only a few inches! The British TBM was then driven on a curve to be left below and to the side of Brigitte. The hand-tunnelers finished the job. Thereafter the running tunnels joined up, and the British TBMs were diverted into underground graves. The French ones were dismantled and removed from the tunnel.

### Monotonous but Fast

"There is a very clinical, concrete feel to the tunnel now," notes Paul. "It's very monotonous. As you travel through the tunnel, there's nothing to see except the odd opening where the piston relief ducts and pipes are." The inauguration was on May 6, 1994, although the public use of the tunnel has been delayed. So, what will it be like?

To find out, you will leave the highway at either Folkestone or Calais, enter the terminal area, pay the fare (from £220 [\$330] to £310 [\$460] per car depending on the season), drive through customs checks and down the ramp, continue along the platform, and proceed onto the specially designed train, Le Shuttle. Some 35 minutes and 31 miles later, you emerge on the other side of the Channel. Drive off the train straight onto the highway—a simple, peaceful passage that allows you to continue your journey quickly. Or stay on the train to London or Paris—with one difference—you will get to Paris at 180 miles per hour and to London at 50 miles per hour. The Folkestone to London express line will not be ready until 2002!

The battle, however, continues. Disputes persist over the high-speed rail route to link London to the Tunnel. Spare a thought, then, for those relentless TBMs. One of them, on display outside the tunnel exhibition center at Folkestone, bears a sign, "For Sale—One Careful Owner," yes, ready for another battle!

# The Yearly Call of the Giant Leatherbacks

BY AWAKE! CORRESPONDENT IN MALAYSIA

C. Allen Morgan/Peter Arnold

IT IS almost midnight. The full moon overhead casts a golden sheen across a benign and calm sea. On the beach at Rantau Abang are groups of people, some standing, others squatting or sitting on the cool, fine sand. What are they doing here at this hour? They are patiently waiting for the visit of an enormous shell equipped with four flippers—the giant leathery turtle, or leatherback.

These mysterious amphibious visitors have brought international renown to this otherwise overlooked beach. Rantau Abang is situated on the east coast of Peninsular Malaysia, just north of Dungun and some 250 miles up from Singapore. It is one of the few places in the world where the leatherbacks call annually on a noble mission.

Here the egg-laying season stretches roughly from May to September. During the peak months of June, July, and August, it is quite easy to observe the egg-laying process. Usually the turtles will start coming up after darkness falls. Will these visitors from all over Malaysia, Singapore, and the West have waited in vain?

## Out Of the Sea They Come!

Suddenly, silhouetted against the shimmering water not very far out from the shore, something is spotted bobbing up and down. The crowd gets excited! As it comes closer to shore, a dome-shaped object begins to emerge from the water. It is a turtle coming ashore! The few guides who are present caution all to watch as quietly as possible, lest the noise frighten it away.

First the head appears, then the neck, followed by the front part of the shell and the front flippers, till finally the whole turtle is exposed on the shore. The gentle tide washes over its tail and back flippers. What a giant indeed, about six feet or more from the nose to the tip of the tail! There on the beach it lies motionless.

Abruptly, the turtle lifts itself up by the front flippers and throws its body forward, hitting the ground with a thud. It lies still for a moment, as though to muster up breath and strength for the next lift and throw. This is how it moves on land. The crowd on both

C. Allen Morgan/  
Peter Arnold



Leathery  
turtle.  
Lydekker

**Six feet from head to tail,  
the leatherback lays dozens of  
eggs. About eight weeks later,  
the hatchlings emerge**

where its eggs have every advantage of hatching successfully. There it starts digging a hole. The back flippers become spades, scooping up the sand.

After what seems to be a long time, one of the guides, who is also a licensed egg collector, comes forward and stretches his hand into the hole, which is so deep that his elbow disappears into it. As he withdraws his arm from the hole, everyone gasps with surprise and excitement. He brings up an egg!

The leatherback's egg is dull white in color. It varies in size from that of a ping pong ball to a tennis ball. The last few in a clutch are usually only the size of a marble. Unlike poultry eggs, the shell is actually a tough skin that is easily dented when pressure is exerted on it. Curiously, the white of the egg (albumen) stays fluid even when cooked. The taste, it is said, is somewhat coarse and mildly fishy. A turtle lays an average of about 85 eggs at a time. But a record nest of 140 eggs was reported in 1967.

Now the crowd can take greater liberties. Some timidly touch and examine the turtle. Others climb on it or lean against it to pose for snapshots for their family albums. A close look at the turtle reveals a thick trans-

David Harvey/SUPERSTOCK

sides of it are kept at a distance. The guides are very strict about this. With each forward move, the crowd also surges forward—but very quietly. As the leatherback hobbles up the shore, it instinctively knows its destination. Its programmed knowledge enables it to find a spot

lucent mucus dripping from the eyes, studded with sand grains. The change from water to air is said to cause this. From time to time, the turtle opens its mouth to breathe with a bellowing sound.

### Burying the Eggs

After quite a while, the creature begins to move its back flippers to push the sand back into the hole. As soon as the hole is filled, the leatherback sends its back flippers into a powerful windshield-wiper action. Sand flies in all directions! The crowd step back quickly to protect their faces and bodies. The swinging flippers continue flailing for some time. What stamina and power are being exerted! When the flippers finally stop, the crowd cannot see a trace of the hole the leatherback dug. Instinctive wisdom indeed! But how infinitely greater is the wisdom of the Creator of this turtle!

Before the leatherback makes its way back to sea, a licensed egg collector tags one of its front flippers. This is done so that its subsequent land visits and its movements in the open seas can be monitored. Each season it nests from six to nine times, with an inter-nesting interval of from 9 to 14 days.

Suddenly the leatherback heaves and hurls itself forward. It turns and heads back to sea, hobbling out comparatively faster than it arrived. When it touches water, the head goes in, then the shell. Finally it is out of sight. When the head eventually pops up, the turtle is quite far out. Swiftly it cuts out to the open sea, the moonlight catching the apex of its nose. How agile and swift it is in water! A far cry from its clumsiness and slow progress on land.

### Conservation Efforts

As with increasing numbers of other animal species, leatherback turtles are endangered by the ravages of a polluted environment and human greed. In the mid-1970's,

hundreds of not fully matured turtles were found washed ashore in the neighboring state of Pahang—dead! And the turtles' eggs are unscrupulously collected to satisfy the exotic palate.

Fortunately for these turtles, deep concern in Malaysia for their declining number caused the passage of the Turtle Enactment in 1951. Private collection of eggs was outlawed. However, mercenary individuals defy this law, profit being too great a temptation. Even so, conservation efforts have not been in vain.

On the beach at Rantau Abang, it is a joy to see rows of tiny placards stuck in the sand. Each marks the site where a small batch of leatherback eggs is buried. The placard shows the number of eggs, the date of planting, and a code number identifying the original clutch of eggs. About 45 days after planting, a wire netting is placed around each placard to prevent the hatchlings from escaping. The incubation period ranges from 52 to 61 days. As hatchlings emerge, usually in the evening after sunset, the number from each hole is recorded. They are then placed in containers and later released at the edge of the sea.

The conservation program has successfully raised many thousands of hatchlings and returned them to their watery home. But their low rate of survival, as well as the declining number of leatherbacks coming to Rantau Abang, continues to be a source of concern.

### IN OUR NEXT ISSUE

**Manners Rejected  
by the "New Morality"?**

**Mexico Changes  
Its Laws on Religion**

**California's Quakes  
—When Will the Big One Come?**

# A Train With "Teeth"

By Awake! correspondent in Greece

**I**MAGINE yourself in the midst of a wild and narrow ravine full of lush trees, with huge rocks overhanging dangerously and a twisting river flowing fiercely at its bottom. Just as you begin to feel that you are all alone, suddenly from a distance you hear a grinding and rattling sound. The last thing you would ever anticipate seeing in this solitary place, which seems so inaccessible and untouched by man, would be a piece of modern transportation. But the sound is unmistakable—a train is coming!

As the sound comes nearer, you discern a small train among the tall trees, with only two cars and a diesel engine in the middle, slowly laboring its way up the steep mountain ascent. Welcome to the Dhiakoptón-Kalávrita Rack Railway, one of the most interesting and spectacular railways in Europe, situated in the Peloponnissos region of Greece. In Greek this railway is referred to as *odontotós*, which literally means "toothed," a very fitting name, as you will find out.

## Why Needed?

The town of Kalávrita, situated in northern Peloponnissos, is the economic and administrative center of the surrounding area. It is also a place of religious and historical interest because of some famous monasteries located nearby. Since it nestles in a mountain valley, the town is also famous for its natural beauty, the forests surrounding it, its many springs, and its healthy climate.

At the peak of its history, during the mid-19th century, the town had a population of 6,000. But it was isolated from the coastal towns and villages by rugged mountainous terrain. There were no paved roads or any other means of communication, and transportation to and from the town required many grueling hours of travel by horse- or donkey-drawn carts. The most convenient way to reach the coast was by way of a deep canyon with the Vouraikós River at its bottom, this river ending at the village of Dhiakoptón.

Before the turn of the century, it was decided that this should be the route of a useful and enchanting railway, a vital lifeline to the coastal towns. Engineering studies revealed, however, that the route over which the railway had to pass included very steep slopes. What was needed in this case was a rack railway.

What is a rack, or cog, railway? It is one that is designed for terrain with very steep grades; between the normal rails, it has a toothed rail—a steel rack rail—into which a circular gear on the engine can be engaged. This prevents the train from slipping backward when it is ascending or forward when it is descending.

In the case of the Dhiakoptón-Kalávrita Rack Railway, the maximum inclination is 1 in 7 (an incline of 1 foot vertical for 7 feet horizontal), and this exists at three different

places on the route. Thus, for these three sections of the railway, the train engineer has to stop the train, engage the gear on the rack, and continue at a controlled low speed.

### **Difficult Construction**

Because of the difficult terrain that the railway had to cross, its construction represented a major engineering feat. The job was assigned to an Italian construction firm, which started work in 1891. To make things easier for the construction, a narrow-gauge line (30 inches) was selected.

Five years later, in 1896, tons of rock had been removed. Nine tunnels had been bored through the mountain rock, and six bridges had been built. In the beginning all the bridges were of the masonry-arch type, but years later some were replaced with steel bridges. A brand-new railway, climbing for 14 miles to an elevation of 2,400 feet was ready to be used. Now that you know its background, would you like to board the train and enjoy its fascinating course?

### **A Breathtaking Route**

Let us take the morning train, No. 1328, from coastal Dhiakoptón. The ride starts smoothly and slowly as we pass through the village. Although we are filled with eager anticipation, the people of the village, who have evidently used this train numerous times, do not even bother to turn their heads to glance at it. But with undiminished excitement we continue.

After a few minutes, we see the entrance to a formidable ravine. It is a breathtaking sight. The surging river is at our left, and huge rocks are hanging threateningly over us, pine trees precariously rooted on them. The winding river has carved its way gracefully through the rocks.

The vegetation is dense and lush. Our train seems to sneak through forests of big plane

### **"The Courtroom"**

This is the name the locals have given to one of the biggest caves situated along the railway route. Why? Well, the shapes of stalactites and stalagmites in this cave offer a striking resemblance to a courtroom. In the background you can see the "judges" seated at the bench—heavy figures made of stocky stalagmites. At both sides, more stalagmites, "witnesses" and "attorneys," watch the proceedings. Finally, at the mouth of the cave, one can observe the lifeless "defendants," convicted and executed, hanging from the ceiling of the cave as two long stalactites.

trees and beech trees, whose branches almost touch our railroad car. Although the railway has operated for almost a century now, certain parts of this gorge are virtually unapproachable, surrendering their beauty only to the eye of the traveler.

We reach the first train stop, called Niáma-ta, where a few local farmers get off to head for their fields on foot. As we continue, the terrain gets even steeper. Suddenly the train stops. Nothing is wrong, of course, but the engineer now has to use the middle rack rail to continue with caution. We feel the engine gear engage the rack, which gives the railroad car a more steady motion. Despite the reassurance of the experienced passenger next to us that everything is fine, we feel a little bit anxious as we notice the very steep ascent.

Along the walls of the more open parts of the ravine, we see big caves that are used by the local people as pens for sheep. On the left side, there are smaller caves with very impressive stalactites and stalagmites. Big

cascades fall from all sides, and their sound, mingled with its echo, is reinforced by the shape of the gorge. Here, at the left, are landslides that have created some less permanent cascades that will eventually be washed away by the surging river. We pass by some hardy souls who decided to walk instead of boarding the train.

The canyon and the river get deeper as we pass over a high bridge. At one point, the gorge is very narrow—barely seven feet wide—and the train has to pass through a tunnel parallel to the steep slope.

After we pass more tunnels and bridges, the gorge gradually opens and finally becomes a narrow valley, and before long we reach the second stop, the village of Káto Zakhlorou. The sign posted at the small station shows an altitude of 1,970 feet. The few houses in this village are built on both sides of the valley, hidden between huge plane trees and walnut trees. You can feel the heavy humidity in the air, and if you ask the residents of the village, they will readily agree that in this dark valley, they have not enjoyed a lot of sunshine in their lives. Because of the shape of the valley and the thickness of the trees, the sun is visible only a few hours each day—and even less during the winter.

Continuing on after Káto Zakhlorou, the train snakes along a more normal route, escorted by the now flat riverbed of the Vouraikós, passing through willow trees and eucalyptus trees. After a spectacular ride of 65 minutes, we can see the buildings of Kalávrita through the morning mist. Although this town only has about 3,000 residents, it attracts many tourists every season of the year. Some come to enjoy the nearby ski resort, while others come to savor its good climate and the delicious local cooking.

### 'Much Safer Than in Your Own Home'

As we get off the train, we chat with Ioanní, the train engineer who brought us up here so smoothly and safely. "I always enjoy this ride," he says with reserved contentment. Raising his eyes, as if recalling something, he adds: "But things get tough during winter-time. You see, the train is not always full, and you feel very lonely in the middle of this terrible ravine. Then you have the landslides, the snow, the cold, and the relentless fog. But I would not trade this route for any 'normal' one."

When we ask about the safety of this railway, Ioanní is adamant: "You are much safer on this train than in your own home!" As a matter of fact, only one minor mishap, with no severe injuries, has occurred during the almost 100-year history of this railway.

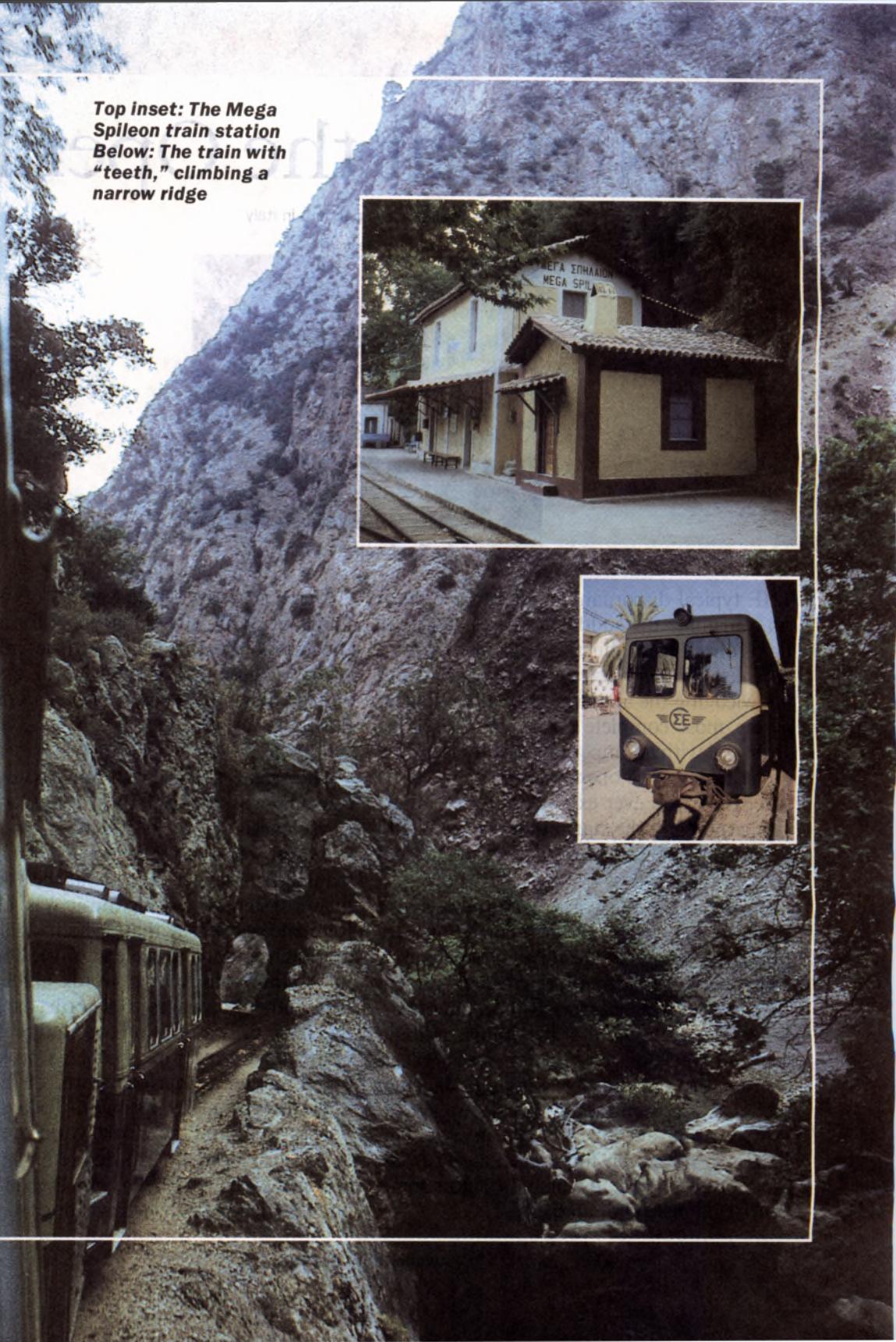
During the 1940's and 1950's, this unique train was the means used to bring "the good news" of Jehovah's Kingdom to the inhabitants of the remote town of Kalávrita and the hard-to-reach surrounding villages. (Mark 13:10) Today, as a result, there is a small but zealous congregation of Jehovah's Witnesses in Kalávrita.

So if you should visit Greece, why not include on your sightseeing itinerary the Dhiakoptón-Kalávrita *Odontotós*, the train with "teeth"? Undoubtedly, you would enjoy a rewarding experience—one to be remembered for a long time!



*The route of the train with "teeth"*

*Top inset: The Mega Spileon train station  
Below: The train with "teeth," climbing a narrow ridge*



# A Night at the Opera

By Awake! correspondent in Italy

Lelli & Masotti/Teatro alla Scala



**La Scala auditorium**

THE typical discordant sound of an orchestra warming up suddenly ceases, and the lights dim. The conductor, welcomed by brief applause, makes his way to the podium, acknowledging the audience with a bow. Then, in the most complete silence, he raises his arms and with an imperious gesture leads the orchestra into the opening notes of the overture. Have you ever experienced such an exciting moment, the start of an opera? Would you like to? What exactly is an opera, and what are its origins?

Opera is the theatrical performance of a drama (*opera seria*) or of a comedy (*opera buffa*) set to music and divided into one or more parts, or acts; the characters present their parts in song. Opera is made up of various elements: the text of the drama, or libretto, (the work of a writer or poet); music written by a composer; singing; dancing; scenery; and costumes. Musicals are similar to operas but are much lighter in style. Perhaps you have seen films, such as *West Side Story* or *Oklahoma*, in which the actors sometimes sing instead of speaking.

There is a very wide variety of operas: Those of Wolfgang Amadeus Mozart and Gioacchino Rossini have been described as brilliant; those of Giuseppe Verdi, as vigorous and moving; Richard Wagner's, complex, slow, and austere; Georges Bizet's, colorful and lively; Giacomo Puccini's, sentimental.

The origin of music and song more or less coincides with the beginning of human history. (Genesis 4:21; 31:27) Numerous musical instruments have been made throughout mankind's existence, and about the 11th century, a system of writing music was adopted. Reference works say that opera had its origin in Florence, Italy, at the end of the 16th century. Numerous Italian words are used in many other languages to describe aspects of this form of composition (*opera*, *libretto*, *soprano*, *tenor*), attesting to opera's origins. As opera spread to various parts of Europe, it underwent many changes. Today, opera houses are found the whole world over.

To learn more, let us listen in on a conversation between Antonello, who lives in Milan, and his friend Max, who is visiting from Swit-

zerland. Antonello and Max are passing an unusual and stirring evening at La Scala, Milan, one of the most famous of all opera houses.

### At the Opera

Max: I read in the guidebook you gave me that La Scala was inaugurated in 1778, and after being badly damaged by bombing in World War II, it was rebuilt and inaugurated again in 1946. The book also says it can hold an audience of more than 2,000.

Antonello: That's right. As you can see, it was built in the classic horse-shoe shape adopted by most 17th- to 19th-century opera houses. There are six tiers of boxes all the way around; the orchestra pit is there in front of the stage. La Scala is neither the oldest nor the biggest opera house in the world. Its fame derives from the fact that the first performances of several operas were presented here, and many famous conductors and singers have performed here. Among them was the famous conductor Arturo Toscanini, who could conduct without the score. They say that the acoustics of La Scala are perfect, which is fundamental for an opera house, where neither the music nor the voices are amplified by microphones and loudspeakers.

Max: Can you tell me something about opera singers?

Antonello: There are six types of voice. Three male—bass, baritone, and tenor—and three corresponding female voices—contralto, mezzo-soprano, and soprano. The bass and the contralto are the deepest, while the tenor and the soprano are the highest in each

group. Baritone and mezzo-soprano are the intermediate voices.

To become a good opera singer, a person must first be gifted with a fine voice and then study for many years at a special school. Without such schooling, which teaches the student how to use the qualities of his voice to the full, no one could become an opera singer. Soon you will see the soloists. You will notice that even though they sometimes play the roles of idealized young men and women in love, all of them, with few exceptions, are mature, quite robust people. Do you know why?

Max: No, I'm curious to hear the reason.

Antonello: Because they reach the height of their career in maturity and have to have a strong physique to sing opera. It's no joke to have to hit powerful

high notes repeatedly over a long period of time. It has been said that the famous soprano Maria Callas, who often sang here at La Scala during the '50's, began to decline after undergoing rigid dieting to slim down. So, Max, rather than being distracted by the outward appearance of the soloists, you should appreciate their voices. Look! The conductor is coming out. Take the opera glasses so that you can see the singers and the whole performance better. Just one piece of advice, though: To get the best out of the opera, concentrate on the music and the song as we did for the first act.

### What Happens Backstage?

Max: What long applause! The singers really have beautiful voices. Now how long is the interval?

Lelli & Masotti/Teatro alla Scala

Antonello: About 20 minutes. But do you know what is going on behind the curtain during the interval?

Max: I can't imagine.

Antonello: Frenzied activity! Guided by a stage manager, specialized stagehands, machine operators, electricians, carpenters, and other workers dismantle the stage decoration in perfect synchronization and install the new scenery. Today, opera houses are equipped with modern technology to change scenery quickly, sometimes even while the performance is underway. Hydraulic platforms, mechanical lifts, and other machinery are used to raise and lower parts of the stage. All opera houses are equipped for special tricks or scenic surprises—equipment that produces vapor to simulate clouds or mist, smoke effects, the sound of rain or wind, or even the crack of a bolt of lightning. A system of spotlights of different power can create scenic effects and shafts of colored light that never fail to amaze.

Max: Sitting here, we see and hear the opera. But what is going on backstage during the performance?

Antonello: That's an interesting point, Max. While we are comfortably enjoying the performance, a small army is working behind the scenes and in the wings. Imagine what would happen if a singer, the chorus, or the dancers did not

move at the right moment. Backstage, the stage manager's assistant or assistants follow the orchestra with the score and give the singers their cue to go on stage at the right moment. The choirmaster does the same thing with the chorus.

Winnie Klotz



Above: Scene from the opera "Samson et Dalila"

There's the prompter at the center of the stage, hidden from the audience in that box. He (or she) follows the orchestra conductor's movements over closed-circuit television, and from the libretto, the prompter speaks the lines, keeping slightly ahead of the soloists, in case a singer forgets a line.

Finally, the director oversees scenery changes and mass entrances onstage of large numbers of actors and also keeps an eye on the electricians so that the beams of colored light are directed at the appropriate sections of the stage at the right moment. Plans have been made to equip La Scala with two rotating or elevating stages like other opera houses to facilitate scenery preparation and to make it possible to work on more than one show at a time.

Max: All those people and all that work to stage an opera! I'm amazed!

Antonello: Oh yes! Large opera houses have a permanent orchestra, choir, and dance troupe—hundreds of artists. Then there are scores of others if you count all the craftsmen, tailors, shoemakers, carpenters, make-up artists, electricians, and one or more scenographers to produce and paint the scenery. Besides these, personnel are needed for security, administration, and other services.

### Bible-Based Operas

Max: Are any operas derived from the Bible?

Antonello: Yes, many. Opera has drawn on a large field of subjects—history of ancient peoples, mythology, medieval legends, the works of William Shakespeare and other writers. *Nabucco*, an abbreviation of “Nebuchadnezzar,” by the Italian composer Giuseppe Verdi, speaks about the Jews deported as slaves from Jerusalem to Babylon. Gioacchino Rossini, another Italian composer, set *Mosè* (Moses) to music and the French musician Charles-Camille Saint-Saëns composed

*Samson et Dalila* (Samson and Delilah). The story lines of these dramas do not stick strictly to the Bible, but it's interesting to know that these three operas contain God's name, Jehovah.

Max: Really? I know that it's mentioned in the works of Handel and Bach, but I didn't know that it's in lyric opera too.

Antonello: At the end of *Nabucco*, the chorus sings about 'Great Jehovah,' and the high priest Zechariah mentions God's name. In Rossini's opera, Moses invokes 'Iehova,' while in *Samson et Dalila*, 'Iehova' or 'Jehova' is mentioned a number of times.

Max: Very interesting.

Antonello: Then there are several other Bible-derived operas. Among them are *Salome*, by Richard Strauss; *Moses und Aron* (Moses and Aaron), by Arnold Schönberg; and *Debora e Jaaele* (Deborah and Jael), by Ildebrando Pizzetti. But look! The last act is about to start.

### A Fascinating Evening

Antonello: Did you enjoy the opera?

Max: I did, especially because, thanks to your suggestion, I had already read the libretto and so I could follow the plot. Otherwise it might have been difficult to follow.

Antonello: It is, in effect, impossible to understand all the words sung by the soloists and the chorus, since at times the music overpowers the voices, and in the high notes the words are sometimes hard to pick out. In many opera houses now, they supply translated subtitles or superscriptions so that the audience can better follow the plot.

Max: It was an excellent performance, Antonello. Fine music and singing really make us appreciate the Creator, who gave man the gift of voice and the ability to compose, play, and appreciate music. Thank you for treating me to such an enjoyable and thrilling evening.

## WATCHING THE WORLD

### Famine Afflicts Large Portions of Humanity

Never has the earth produced so much food to feed humanity; yet, never has so much of humanity been afflicted with famine. The news agency France-Presse reports that according to the latest statistics from the World Bank, famine gripped the lives of some 1.13 billion persons in 1990, more than ever before. It affected almost 30 percent of the people living in developing countries. The world's worst-affected regions were southern Asia, where 562 million people suffer from famine (49 percent of the population); Africa, with 216 million (47.8 percent of the population); the Near East and North Africa, with 73 million (33.1 percent of the population); and Latin America and the Caribbean, with 108 million (25.2 percent of the population). These figures do not include almost another billion persons who suffer from malnutrition.

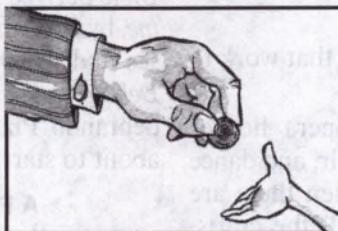
### Boosting Income the Sensational Way

At the start of 1993, the Association for Scientific Research into the Parasciences in Germany gathered 70 predictions made by astrologers and then evaluated the results at the end of the year. In view of prediction failures of previous years (see *Awake!* of June 8, 1992, page 29, and July 8, 1993, page 29), did astrologers fare better in 1993? They "told a pack of lies," reports the *Nassauische Neue Presse*. "Most astrologers don't even believe their own annual prognoses," remarks a spokesman for the association. But astrology in Germany is big business, with an annual turnover of \$57 million

(100 million deutsche marks). Many fortune-tellers regard sensational forecasts as "an effective way of getting into the headlines" in order to boost income, reports the newspaper.

### Children's Job Market

An estimated eight million children occupy the job market in Brazil, reports *O Estado de S. Paulo*. These minors may perform the same work that adults would do. Often being underpaid, however, they contribute little to the family income. Likely, without adequate



schooling these small workers remain semiliterate and as poor as their parents. What is more, Luiz Cláudio de Vasconcelos of the Ministry of Labor states, "the minor who works eliminates the jobs of other family heads, as he is willing to receive a third of an adult's wages."

### World Population Hammered by AIDS

□ "AIDS will have a devastating toll in human lives in the 15 countries with the highest prevalence rates for HIV," warns *Populi*, the magazine of the United Nations Population Fund. Based on a recent UN report, *World Population Prospects: The 1992 Revision*, the magazine predicts that some ten years from now, "population growth in these countries will be

12 million less because of AIDS. About 9 million additional people will die from AIDS in these countries, and fewer children will be born because of the deaths of women in their childbearing years."

□ World AIDS Day was celebrated on December 1, 1993. But the results of campaigns to fight the disease did not offer much cause for celebration. A WHO (World Health Organization) official admitted: "I honestly don't think we've made any impact on Aids in Africa." He acknowledged the need to stress the importance of marital fidelity in fighting the disease. The newspaper *Cape Times* stated that Africa "has a third of the world's reported cases." According to WHO, an estimated one million adult AIDS cases exist in sub-Saharan Africa.

### Curb on Smoking Accelerated

New laws requiring specific warnings about the dangers of cigarette smoking have been passed in the Australian Capital Territory. Starting April 1, 1994, all cigarette packages must carry clearly visible warnings, such as: "Smoking Kills," "Your Smoking Can Harm Others," "Smoking Is Addictive," and "Smoking When Pregnant Harms Your Baby." According to *The Canberra Times*, the warnings must occupy not less than 25 percent of the packet's front. The rear of the packet must have at least one third of its area covered with the following statement: "Tobacco smoke contains many cancer-causing chemicals. When the smoke is breathed in, these chemicals can damage the lungs, and can cause cancer. Lung cancer is the most common cancer

caused by smoking. Lung cancer usually grows and spreads before it is noticed. In most cases it kills rapidly. [Smoking] kills almost three times as many people as are killed by alcohol and all other drugs, combined. Six times more people die from the effects of smoking each year than from car accidents."

### Fruit-Picking Robot

The latest innovation in Italian agricultural technology is a computerized robot capable of picking "up to 2,500 oranges an hour directly from the trees." The machine is equipped with eight "extremely sensitive" mechanical arms, each furnished with an electronic eye, and is programmed to "perceive the intensity of colors" and choose "the ripe fruit, unerringly passing over the unripe, after delicately feeling them," according to *La Stampa*. The track-equipped robot, "powered by a diesel engine, can work day and night even in bad weather and pick oranges on trees of up to three and a half meters [11 feet] high . . . During picking, it moves at a maximum speed of eight kilometers [5 miles] per hour and has a traveling speed of up to 14 kilometers per hour [9 miles per hour], hauling a trailer that can carry up to 500 kilos [1,100 pounds]."

### Where Weeds Are Popular

"Weeds cover the entire park, and there are many fruit and chestnut trees," says *Asahi Evening News* of a new type of park in Tokyo. There are no paved surfaces, and the "usual park items like swings, slides and sand boxes cannot be found." Nearby residents are delighted. Two years ago they suggested to the local council that a park "should have

grass growing and contain insects and small animals" and that "children should be able to dig holes and play with mud, and there should be no signs banning anything." Since then, a second park, also described as "close to the natural state, being overgrown with weeds" has been constructed in Tokyo. Nationwide urban planners and park designers have been amazed to see how much city dwellers want this type of park, noting that when they have it, they eagerly share in its cleaning and upkeep.

### Cooling Off Hellfire

"Churches are not emphasizing the old fire-and-brimstone sermons nearly as much" as they have in the past, says Robert Wuthnow, a sociologist at Princeton University. Why not? "Damnation isn't what it used to be," reports *The Edmonton Journal*, a Canadian newspaper. A recent



Gallup survey showed that while 60 percent of Americans said they believe in a fiery hell, only 4 percent expect to go there. In Canada, 38 percent of those surveyed believe in hellfire; in Spain, 27 percent; and in Sweden, 7 percent. "The thought of hell does not seem to motivate people to either serve God or accept Christ as their savior," claims Pentecostal clergyman Bruce Klepp. The hellfire "teaching makes no ultimate moral sense at all," claims Tom Harpur of *The Toronto Star*.

### Karaoke Culture

One of the entries in *Merriam-Webster's Collegiate Dictionary*, tenth edition, is the word "karaoke." This word refers to "a device that plays instrumental accompaniments for a selection of songs to which the user sings along" and comes from a Japanese word made up of *kara*, meaning "empty," and *oke*, an abbreviation for "orchestra." It gratifies the user's ego by letting him sing with a full-scale orchestra. For the first time in Japan, karaoke was recognized in the "education white paper" as a "cultural activity," and the country's most popular one at that. An amazing 74 percent of those in the 19 to 29 age bracket participated in it during the one-year period preceding a survey. Commenting on the change of mentality among Japanese, Tetsuo Sakurai, a professor of sociology, said in *Mainichi Daily News*: "People are now eager to express themselves freely and publicly."

### Human Rights Situation: "Distressing"

"Respect for human rights is crucial to the future well-being of humanity," stated Ibrahim Fall, assistant secretary general for human rights at a UN World Conference on Human Rights. "But in many [countries]," he noted, "the level of human rights violations that continues is distressing." *World Conference on Human Rights*, a UN newsletter, confirms that at least half the world's population suffer under human rights violations today. Adds Mr. Fall: "Death, destruction, discrimination, poverty, persecution, rape, slavery, starvation and stunted or blighted lives remain the daily curse of millions of people." Even worse, that curse is spreading because "rights problems," warns the UN, are "skyrocketing."

## FROM OUR READERS

**International Conventions** I would like to thank you for the series "What Will Unite the World?" (December 22, 1993) I really enjoyed the part about the international conventions of Jehovah's Witnesses in Eastern Europe. It was encouraging to hear that some Christians in war-torn areas could attend them.

E. R., United States

My husband and I are both full-time ministers; so, much to our regret, our budget did not permit us to be delegates at an international convention. Yet, when reading your articles, I was transported into the convention's ambience. I could even imagine myself heartily singing along with the Christian sisters shown on page 9. The article has encouraged me to persevere.

I. F., France

**Communication** After reading the series "Communication in Marriage" (January 22, 1994), I realized that for the 28 years I have been married, I have not been giving my wife the love she needs. Every time she sought anything in that direction, I blindly put it down as immaturity. These articles helped me to understand just how God created women. In the future, I will try to give my wife the love she needs. Thank you for this accurate knowledge.

Y. K., Japan

I cannot tell you how much I enjoyed the series. I was struck by the accurate examination of the emotional and psychological differences between men and women. I was able to take a look at myself and understand myself better. I am not married, but I believe that these articles will help me to be better able to understand other people's points of view.

D. R., Italy

You say that independence is something precious to men. But I know several women who also value independence. It disturbs me that you portray the thoughts, feelings, and desires of men as being poles apart from those of women.

U. B., Germany

*The article admitted that "it is impossible to label any trait exclusively male or strictly female" and that "the elusive 'typical man' or 'typical woman' may exist only in the pages of psychology books." The characteristics attributed to the couple "Jerry" and "Pam" served simply to illustrate how individual husbands and wives may differ in communication styles.—ED.*

**African Toys** The article "African Toys for Free" (March 22, 1993) was like a wonderful souvenir of my childhood. In our African towns and villages, toys were not available to all children. So we spent our time making our own toys so as to be like the wealthier white children. They did not appreciate our homemade toys, though. At any rate, the article brought me great joy.

A. A., Cameroon

**Solving Problems** I am writing to express my gratitude for the many fine "Young People Ask . . ." articles you provide for us. The series is the first thing I turn to when I receive the latest issue of *Awake!* I especially appreciated the article "Who Can Help Me Solve My Problems?" (December 8, 1993) I am a senior in high school, and I find making decisions that affect my future overwhelming to say the least. My parents and I have always had open lines of communication, yet at times I still feel they don't understand. This article helped me see how important it is to ask their advice and talk to them about my feelings and concerns.

H. L., United States

# Is the Magpie Really a Thief?

WHEN the 19th-century Italian composer Rossini wrote the opera *La gazza ladra* (The Thieving Magpie), in 1817, he certainly believed that the magpie was a thief. And others have a similar opinion of this extrovert of a bird. "Pesky rogues, magpies are among the playful bad boys of the West," says the *Book of the North American Birds*. These black-billed magpies, while known elsewhere, were discovered in the United States during the famous Lewis and Clark expedition of 1804-06 that opened up the West. Members of the group said that magpies entered their tents and stole food.

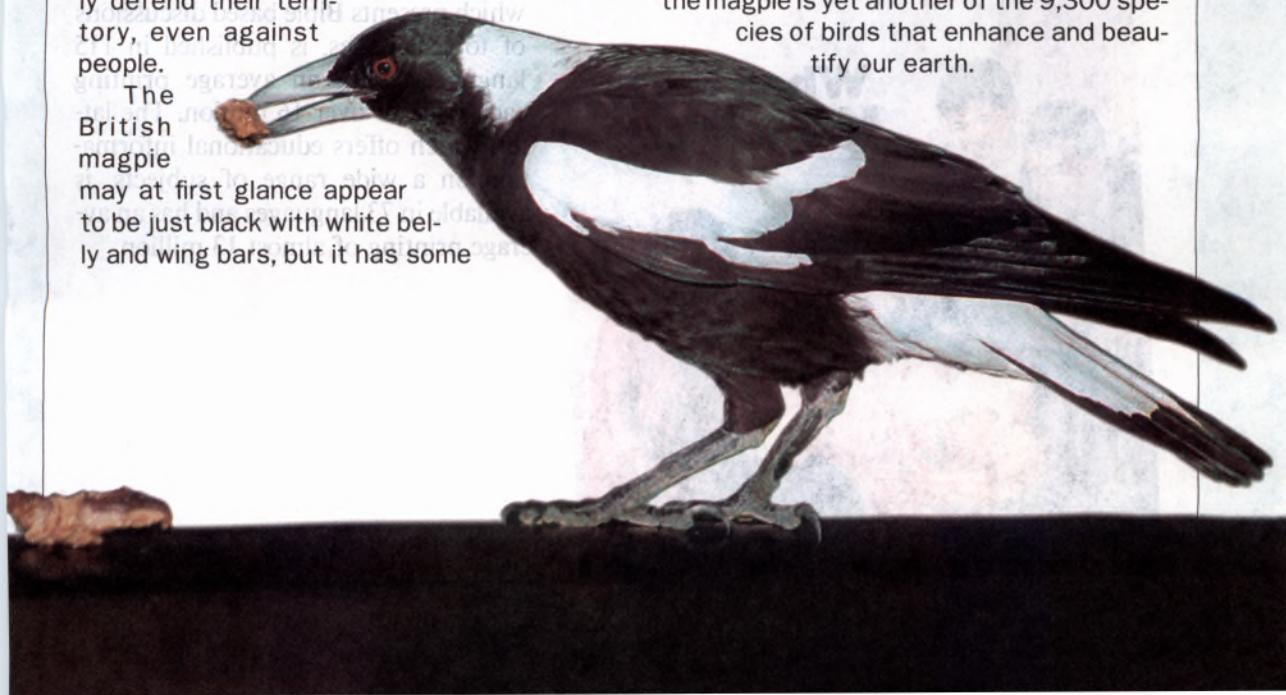
If you live in Europe, Asia, Australia, or North America, you might get to identify your local magpies. It is usually a large bird, up to 22 inches long, with a clearly defined black-and-white design on its wings and body. It has a long iridescent green tail and strong beak. Magpies often live in groups and stoutly defend their territory, even against people.

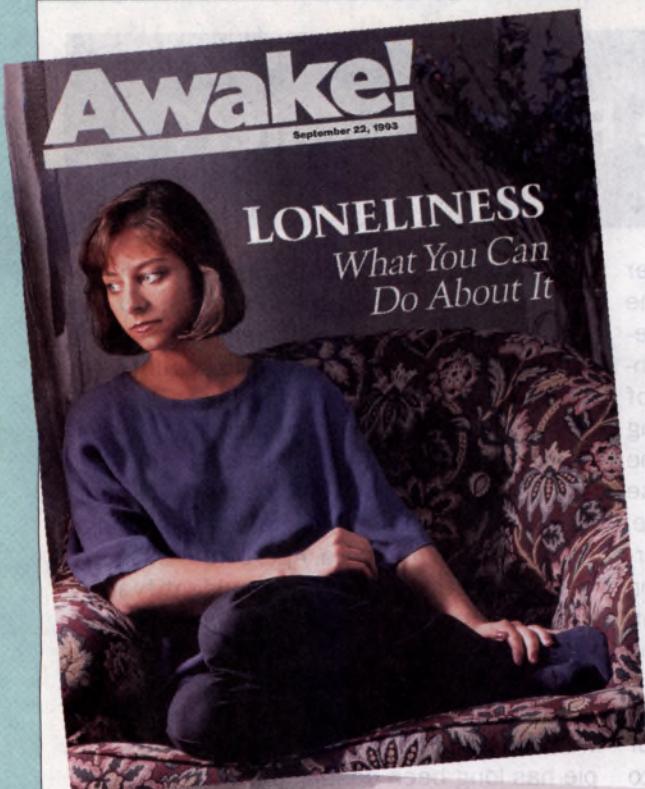
The British magpie may at first glance appear to be just black with white belly and wing bars, but it has some

brilliant yet subtle colors. There is an iridescent purple and green sheen to the body and the long tail feathers, which also have some bronze near the tips. Its tail accounts for more than half of its length.

Australian magpies are a delight to hear as they warble and carol their melodic call. The calls of the magpies and the kookaburra, called laughing jackass, are one sure sign that you are in Australia. Apart from the magpie's distinctive song, you can identify it by the white patches on its glossy back, rump, wings, and under the tail.

So is it really a thief? The book *Song and Garden Birds of North America* states: "In the western United States the black-billed magpie has long been despised as a thief and a scavenger." Yet, in that last barb, there is a compliment. Why? Because scavengers clean up the dead bodies of other animals and birds. Whether derided or appreciated, the magpie is yet another of the 9,300 species of birds that enhance and beautify our earth.





# "The Writing Is Excellent"

A letter of appreciation came to the Watch Tower Society from a reader in California, U.S.A., in which she stated: "The *Awake!* on 'Loneliness—What You Can Do About It' (September 22, 1993) compels me to pick up my pen and tell you how much I have been enjoying the magazines lately. The writing is excellent, and the articles on loneliness were so well written and poetic. Also, I appreciated the honesty of the articles in putting the responsibility for loneliness with the lonely person himself. Truly the articles express Jehovah's deep love and caring concern for his people."

The magazines *The Watchtower* and *Awake!* are distributed by Jehovah's Witnesses worldwide. The former, which presents Bible based discussions of topical issues, is published in 115 languages, with an average printing each issue of over 16 million. The latter, which offers educational information on a wide range of subjects, is available in 73 languages and has an average printing of almost 13 million.