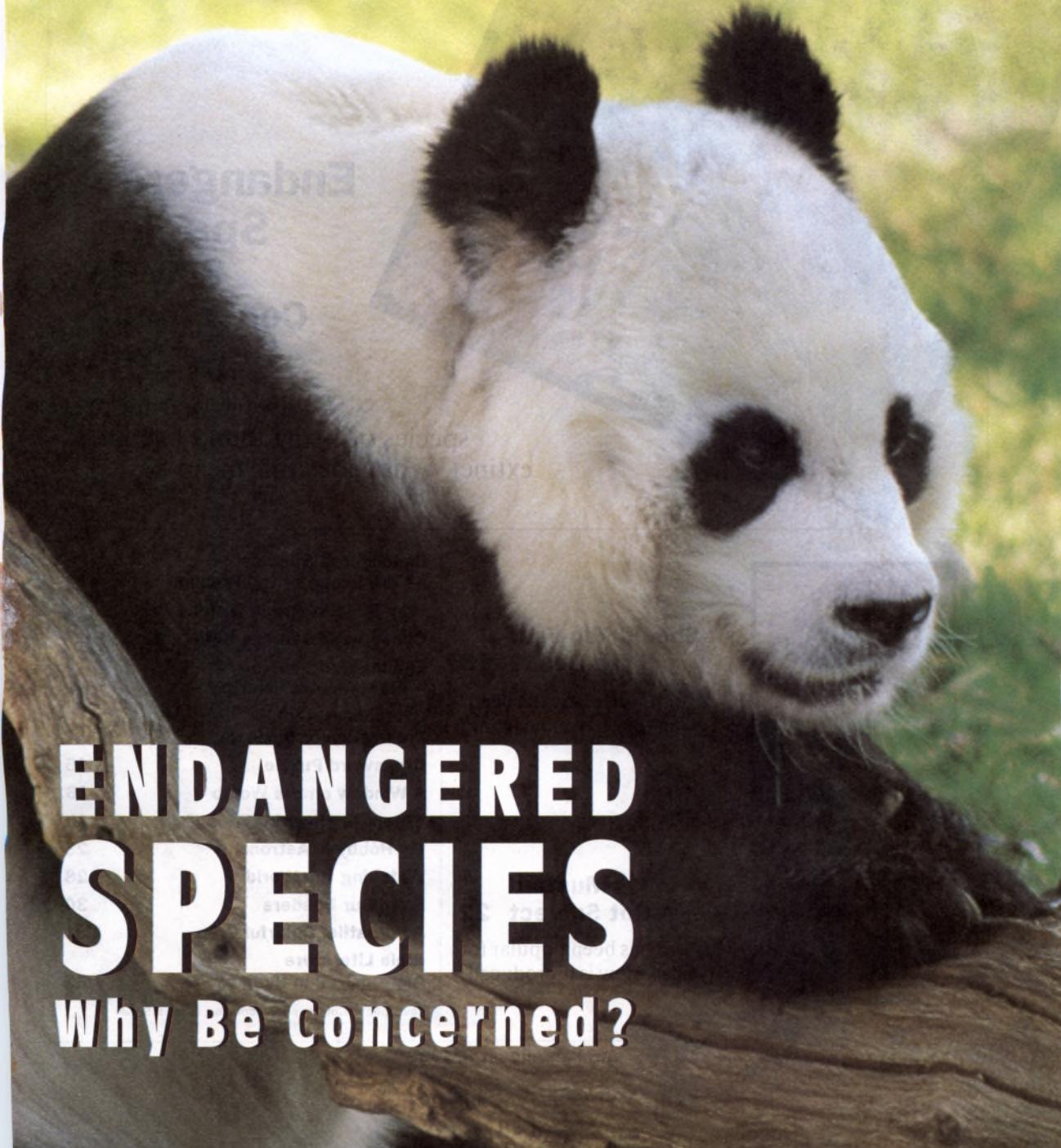


Awake!

August 8, 1996

ENDANGERED SPECIES

Why Be Concerned?



Endangered Species Why Be Concerned?

3-10

Every year more species of living things become extinct. What does this mean for us?



Should You Fear the Dead? 18

Where are the dead?
Can they harm the living?



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Mustard has been popular for ages. How is it produced?

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Cover photo: Courtesy of Madrid Zoo, Madrid, Spain

ENDANGERED SPECIES THE SCOPE OF THE PROBLEM



DOES have become a symbol of extinction. The last of these flightless birds died about 1680 on the island of Mauritius. Many of the species presently at risk live on islands too. In the last 400 years, 85 out of 94 species of birds known to have disappeared have been island birds.

Animals on vast continents are also in danger of extinction. Consider the tigers that once roamed throughout Russia. Now only the Amur subspecies remains in Siberia, and its numbers have dwindled to a mere 180 to 200. The tigers of southern China reportedly number only 30 to 80. In Indochina these animals face extinction "within ten years," reports *The Times* of London. Likewise, in India, home to some two thirds of the world's tigers, authorities estimate that these majestic creatures could be extinct in a decade.

Rhinoceroses and cheetahs are on the decline. Only about a thousand giant pandas are now found in the wild. Pine marten are nearly extinct in Wales, and red squirrels "may disappear from mainland England and Wales in the next ten to 20 years," claims *The Times*. Across the Atlantic in the United States, bats are the most endangered land mammal.

The outlook in the world's oceans is no less bleak. *The Atlas of Endangered Species* labels marine turtles as "perhaps the most endangered group" of sea creatures. Amphibians appear to fare better; however, according to *New Scientist* magazine, 89 species of amphibians have come to be "at risk of extinction" in the last 25 years. Some 11 percent of the world's bird species face extinction too.*

But what of smaller creatures, such as butterflies? The picture is similar. Over a quarter of Europe's 400 butterfly species are in danger—19 being threatened by imminent extinction. Britain's large tortoiseshell butterfly joined the dodo on the list of extinct species in 1993.

Growing Concern

How many species of creatures become extinct every year? The answer depends on which expert you ask. Though scientists disagree, all accept the fact that many species are in danger of becoming extinct. Ecologist Stuart Pimm observes: "The controversy

* An extinct species is defined as one that has not been seen in the wild for 50 years, whereas an endangered species refers to those in danger of extinction if there is no change in their current circumstances.

about how fast we are losing [species] is fundamentally a debate about our future." He adds: "Over the past centuries, we have accelerated the rate of extinction of species far beyond the natural rate. Our future is poorer as a consequence."

Our planet, Earth, is like a house. Some people who care about endangered species study ecology, a term coined in the latter part of the 19th century from the Greek word *oikos*, "a house." This field of interest focuses on relationships between living things and their environment. The 19th century saw a growing interest in conservation, heightened no doubt by reports of extinctions. In the United States, this led to the establishment of national parks and protected areas that offer creatures sanctuary. Presently, there

are an estimated 8,000 internationally recognized wildlife protection areas worldwide. Together with a further 40,000 sites that help maintain habitat, they constitute nearly 10 percent of the world's land area.

Many concerned people now espouse so-called green causes, either through movements that publicize the threats of extinction or those that simply educate people about the interdependency of life. And since the 1992 Rio Earth Summit, a greater awareness of environmental issues generally characterizes government thinking.

The problem of endangered species is global and growing. But why? Are any attempts to prevent the extinction of species currently successful? And what of the future? How are you involved? Our next articles offer answers.

WHY SPECIES ARE IN DANGER

SPECIES become extinct for various reasons. Consider three main causes.

Humans are indirectly responsible for two of them and directly responsible for the other.



Habitat Destruction

Destruction of habitat contributes much to a species' decline. *The Atlas of Endangered Species* labels this "the most significant threat" but also "the most difficult to

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prevent." The world's booming population growth forces humans to encroach more and more on land that was formerly home to wildlife. A striking example of this comes from the world's rain forests.

'Within 40 years there will be no rain forests left' is the dire estimate that focuses attention on what many regard as a regrettable loss of valuable resources. In fact, nearly a quarter of all medicines known to the Western world have come from tropical rain forest plants. Although rain forests cover only an estimated 7 percent of the planet's land surface, they are home to four fifths of the world's terrestrial vegetation.

Logging operations and shifting patterns of agriculture rob the West African rain forests of their rich heritage of trees. Loss of timber on the Indian subcontinent has changed even the weather, reducing the rainfall in some areas but causing floods elsewhere.

As man fells trees to clear the ground for agriculture, the plants, animals, birds, reptiles, and insects die off. Harvard professor Edward Wilson estimates that the loss of forest amounts to 1 percent a year, and this dooms thousands of species to eventual extinction. It is feared that many species will vanish before they are even assigned a scientific name.

The situation is similar in the world's wetlands, another threatened habitat. Developers drain these areas so that they can build

houses, or farmers convert them into arable land they can cultivate. In the last 100 years, as much as 90 percent of Europe's dry grassland has been taken over for agriculture. The loss of pasture in Britain over the last 20 years has prompted a 64-percent decline in the number of song thrushes.

Although *Time* magazine calls the island of Madagascar "a geological Noah's ark," its abundant variety of wildlife is in danger. When the population rises and international indebtedness grows, pressure on the island's inhabitants to turn forests into rice paddies increases. Because three quarters of the golden bamboo lemur's habitat has disappeared in the last 20 years, only 400 of these animals remain.

Man's radical change of land use certainly undermines regional wildlife. For another example, consider the Polynesians, who arrived in Hawaii 1,600 years ago. As a result of their activity, 35 species of birds became extinct.

Early settlers who came to Australia and New Zealand imported domestic cats, some of which became wild. According to *New Scientist* magazine, these feral cats now prey on 64 species of native Australian mammals. Together with imported European red foxes, they attack remnant populations of threatened species.

Direct Attack

Hunting is no new phenomenon. The Bible account in Genesis describes the rebel

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Nimrod, a hunter who lived more than 4,000 years ago. Although there is no mention of his wiping out a whole species, he was nevertheless a formidable exponent of the hunt.—Genesis 10:9.

Through the centuries hunters have exterminated lions from Greece and Mesopotamia, hippopotamuses from Nubia, elephants from North Africa, bears and beavers from Britain, and wild oxen from Eastern Europe. "During the 1870s and 1880s, hunters killed a quarter of a million elephants in East Africa alone," reports the BBC listings magazine, *Radio Times*. "For half a century, Africa rang to the rapid fire of people of fame, fortune and rank, blasting away at elephants, rhinos, giraffes, big cats and whatever else caught their aim. . . . What seems quite shocking today was entirely acceptable behaviour then."

Return to the situation of the majestic tiger. Censuses in the 1980's indicated that

**Plants, animals, birds, reptiles,
and insects die off as man fells trees**



conservation efforts had met with success. "Nonetheless, things were not as they seemed," notes the *1995 Britannica Book of the Year*. "More careful counts revealed that previous censuses had been inflated by officials who either were in connivance with poachers or were merely eager to impress their superiors. . . . The underground trade in tiger parts flourished as the dwindling supplies pushed prices ever higher." Thus, in 1995, estimates of a Siberian tiger's value ranged from \$9,400 to \$24,000—no, not just for its prized skin but also for its bones, eyes, whiskers, teeth, internal organs, and sexual organs, all prized in traditional Oriental medicine.

Trade in elephant ivory, rhino horn, tiger skins, and other animal parts is now a multibillion-dollar black-market business, second only to drug smuggling, notes *Time*. And it is not limited to large mammals. In 1994 traditional Chinese medicine consumed a staggering 20 million sea horses, causing catches to fall by a reported 60 percent in two years in some areas of Southeast Asia.

It is not difficult to identify who is to blame when a species is hunted out of existence. Then, what about collectors? An endangered macaw, the golden conure, fetches a black-market trader in Brazil a reported \$500. But when he sells it abroad, he gains more than three and a half times that sum.

Wars and their by-products, growing crowds of refugees, together with a spiraling birthrate, increased pollution, and even tourism, threaten endangered species. Sightseers in powerboats injure the dolphins they flock to see, and underwater noise from the boats can interfere with the dolphins' delicate echo-location system.

After this sorry catalog of human mayhem, you may well wonder, 'What are conservationists doing to preserve threatened species, and how successful are they?'

CONSERVATION VERSUS EXTINCTION



THE battle between conservation and extinction rages on. Many charitable organizations pressure governments to adopt stricter conservation laws in order to protect endangered species.

Recently, for example, various groups met with Chinese officials and won their cooperation in efforts to eliminate the trapping of Asian black bears. These animals had been taken for their bile and gallbladders, which are used in traditional Oriental medicine.

International Help

To protect a species in one country but hunt it out of existence elsewhere does not bode well for its preservation. Consequently, international agreements have proved timely—and there are many. The Convention on Biological Diversity, the Rio Treaty, came into force at the end of 1993, closely followed by an Agreement on the Conservation of Bats in Europe. The International Whaling Commission added the Southern Ocean whale sanctuary to that of the Indian Ocean in an attempt to protect great and minke whales. But perhaps the most powerful agreement is the Convention on International Trade in Endangered Species.—See box.

Man still has much to learn about the relationships of creatures, one to another. East African fishermen who introduced the Nile perch into Lake Victoria to build up food stocks triggered what zoologist Colin

Tudge called "the greatest ecological disaster of this century." Some 200 of the lake's 300 native fish species went into oblivion. Although recent evidence blames soil erosion for upsetting the balance of species, the governments of the three countries that border the lake have now established an organization to determine which species of fish can be introduced without endangering the native ones.

Human Intervention

One area that reports success is the captive breeding program that many zoos run. "If all the world's zoos truly put their weight behind captive breeding, and if the public put their weight behind the zoos, then they could between them save all vertebrate species that are likely to need captive breeding

An International Weapon

The Convention on International Trade in Endangered Species is a powerful weapon in the fight against illicit trafficking in endangered species. Leopard pelts, elephant ivory, tiger bones, rhino horns, and turtles are among currently banned commodities. The agreement extends to include endangered timber and fish stocks.

However, *Time* warned: "Unless the member nations can find a way to make the rules stick, . . . they may find that the animals they're trying to protect no longer exist."

in the foreseeable future."—*Last Animals at the Zoo*.

The zoo on the tiny British island of Jersey breeds rare animals with a view to their subsequent reintroduction into the wild. In 1975, only 100 St. Lucian parrots remained in their Caribbean home. Seven of these birds were dispatched to Jersey. By 1989 the zoo had bred 14 more and had returned some of these to St. Lucia. Now reportedly upwards of 300 grace that island.

Similar schemes elsewhere have proved successful. *National Geographic* reports that the 17 red wolves remaining in North America bred so well in captivity that more than 60 have now been returned to the wild.

Too Successful?

Animals in danger are not always necessarily threatened with extinction. According to the book *Endangered Species—Elephants*,

between 1979 and 1989, the number of African elephants declined from 1,300,000 to 609,000—some of this the result of ivory poaching. Then public pressure to outlaw the ivory trade mounted. Yet, opposition to the ban on ivory became vociferous. Why?

In both Zimbabwe and South Africa, conservation policies proved so successful that their national parks and wildlife preserves housed too many elephants. *New Scientist* reported that Zimbabwe needed to have 5,000 elephants removed from Hwange National Park. Pressure groups recommended relocation. Park officials put the surplus elephants up for sale and suggested that Western agencies that oppose culling "put their money where their mouth is and move them."

Doubtful Prospects

Failures occur, nevertheless. Many express concern over the plight of species reintroduced into the wild. The Siberian tiger survives well in captivity, but in the wild it needs some 100 square miles of forest, free of poachers. Moreover, "put a zoo-raised tiger straight back into this environment," notes *The Independent on Sunday*, "and it will almost certainly starve." A gloomy prospect indeed!

Realistically, not every species has its own specialized team of helpers. And it is not simply a lack of manpower that compounds the problem. No matter how dedicated conservationists are, when faced with official corruption, greed, and indifference as well as war and even the threat of death, what hope have they of success? What, then, is the solution to the problem of endangered species? And how are you involved?

Have some
conservation
efforts been too
successful?

Courtesy of Clive Kihm

ENDANGERED SPECIES HOW YOU ARE INVOLVED



TIGERS, turtles, rhino, butterflies—why, the list of threatened species seems endless! You will no doubt agree that man must bear much of the blame. But how does this concern you?

In view of the world's economic plight, is it reasonable to expect people worried about their own welfare to support conservation schemes, however noble they may be? "It's certainly not easy being green in most of sub-Saharan Africa, where millions of people face political upheaval, tribal warfare, famine and epidemic disease," comments *Time*. The same is true elsewhere.

Radical changes are necessary if the problem of endangered species is to be solved. According to *The Atlas of Endangered Species*, these changes are "of such magnitude that they can only be made by governments." It then recommends: "Where governments are elected, it is the responsibility of each individual to ensure that by the year 2000 only politicians sensitive to the environment are elected."

Is this a realistic prospect? Judging by the testimony of history, we must conclude that "man has dominated man to his injury"—and wildlife as well. (*Ecclesiastes 8:9*) Indeed, many conservationists believe that earth's flora and fauna serve as environmental indicators. When these are endangered, so are we humans. But this is not the first time in human history that all earth's life has been threatened with extinction.

The most ancient of history books records the words: "Here I am bringing the deluge of waters upon the earth to bring to ruin all flesh in which the force of life is active from under the heavens. Everything that is in the earth will expire." (*Genesis 6:17*) Nevertheless, neither every human nor every other form of life died, for God arranged a means of survival.

An Ark for Survival

Scientists believe that the best solution to the problem of today's endangered species involves preserving their habitats. Interestingly, *New Scientist* reports on this and refers to conservationists' use of "the metaphor of Noah's Ark." Noah's ark was the very means by which humans and animals survived the Deluge of Noah's day.

God furnished Noah with the design for the ark, an enormous wooden chest, which was to float on the surface of the floodwaters. This preserved the lives of Noah, his wife, their three sons, and the sons' wives, together with representatives of different kinds of animals, both wild and domestic—indeed, "every sort of flesh in which the force of life was active." (*Genesis 7:15*) The multiplicity of life forms that exist today proves how well that ark served its purpose.

Notice, though, that survival did not depend solely on human efforts. Noah and his family had to obey God, who had the power

to preserve them alive. It was God who put an end to the wrangling, violence, and greed characteristic of that pre-Flood world.—2 Peter 3:5, 6.

Animals in the New World

Jehovah God has promised that obedience to his laws can change humans from being like wild, voracious predators to resembling meek, gentle animals. (Isaiah 11:6-9; 65:25) Even now, evidence of this abounds. Attend the meetings at the Kingdom Hall of Jehovah's Witnesses near you, and see for yourself. If Jehovah can accomplish such radical changes among humans, can he not also arrange for the animal kingdom to live together in peace and security, even if this means changing their present-day characteristics? In fact, he promises: "I shall certainly conclude a covenant in that day in connection with the wild beast of the field and with the fly-

ing creature of the heavens and the creeping thing of the ground, . . . and I will make them lie down in security."—Hosea 2:18.

The apostle Peter wrote of a future "day of judgment and of destruction of the ungodly men." (2 Peter 3:7) God's controlled intervention will destroy only the ungodly men. God will "bring to ruin those ruining the earth."—Revelation 11:18.

Imagine what a joy it will be to live in a world where creatures are no longer under threat. How much there will be to learn from the wildlife that will then surround us! Yes, tigers, lions, elephants, will roam undisturbed. Marine life will abound, as will reptiles, insects, and a variety of birds, including macaws—all in proper balance. With obedient mankind restored to human perfection under the Messianic Kingdom, a perfect ecosystem will reign.



OVERCOMING THE FRUSTRATION OF DYSLEXIA

BY AWAKE! CORRESPONDENT IN BRITAIN

“WHAT is your telephone number?” asks Julie. The caller replies. But the figures Julie jots down bear little relation to the number given.

‘My teacher tore up the picture I painted,’ laments Vanessa, adding, ‘I could never remember what she was saying.’

David, in his 70’s, struggles to read simple words that he mastered more than six decades earlier.

Julie, Vanessa, and David have a learning difficulty—a frustrating one. It is dyslexia. What causes this condition? How can dyslexics overcome the frustration it provokes?

What Is Dyslexia?

One dictionary defines dyslexia as “a disturbance of the ability to read.” Though often viewed as a reading disorder, dyslexia can involve much more.*

The English word’s roots come from the Greek *dys*, meaning “difficulty with,” and *lexis*, “word.” Dyslexia includes difficulties with words or language. It even involves problems with placing things in their right order, like the days of the week and the letters in a word. Dyslexia, according to Dr. H. T. Chasty of Britain’s Dyslexia Institute, “is an organising disability which im-

pairs short term memory, perception and hand skills.” Little wonder that those who have dyslexia find it frustrating!

Take the case of David. How did this formerly avid and fluent reader come to need his wife’s help to learn to read all over again? A stroke damaged an area of David’s brain linked to the use of language, and this made his progress in reading agonizingly slow. Yet, longer words gave him less of a problem than shorter ones. Despite his *acquired* dyslexia, David’s conversational ability and his sharp intellect never suffered. So complex is the human brain that researchers have yet to comprehend all that is involved in processing the sounds and visual signals it receives.

Julie and Vanessa, on the other hand, had *developmental* dyslexia, which became apparent as they grew. Researchers generally accept that children who by the age of seven or eight exhibit normal intelligence but display uncharacteristic difficulty in learning to read, write, and spell may be dyslexic. Often, dyslexic youngsters write a mirror image of the letter they are trying to copy. Imagine the frustration Julie and Vanessa felt when schoolteachers mistakenly labeled them stupid, slow, and lazy!

In Britain, 1 person in 10 suffers from dyslexia. Failure on the part of others to recognize the problems they face simply adds to their frustration.—See box on page 14.

* Some authorities employ the term “dysgraphia” to describe learning difficulties associated with writing and “dyscalculia” for those that relate to arithmetic.

What Causes Dyslexia?

Poor eyesight frequently causes learning difficulties. Correct the vision defect, and the dyslexia disappears. A small proportion of those who have difficulty learning to read find that they can focus better on the words when they place a thin sheet of colored plastic over the text. Others find this to be of no help.

Some, noting that the condition runs in families, offer a genetic explanation. Indeed, *New Scientist* magazine recently reported research "exploiting the known association between the genes involved in autoimmune diseases such as migraine and asthma, and those responsible for dyslexia." Because dyslexics and their relatives are more likely to suffer from autoimmune diseases, scientists believe the genes for dyslexia occur in the region of the genome that houses these disease genes. But, as behavioral scientist Robert Plomin notes, researchers "have only identified a chromosomal region, not a gene for reading disability."

The part of the brain that controls posture, balance, and coordination is called the cerebellum. Some scientists claim that it also plays a part in our thinking and language processing. Interestingly, researchers at Sheffield University in England have developed a dyslexia test that involves balance and coordination. They reason that faults in the cerebellum prompt healthy areas of the brain to compensate. Children generally find little difficulty in maintaining their balance when asked to stand still, one foot in front of the other with arms outstretched. But blindfold them, and the dyslexic children wobble far more, since they rely heavily on sight to help them balance.

Still other researchers point out that the brains of dyslexic children show anatomic differences. Normally, the rear portion of

the left side of the brain is slightly larger than the corresponding portion of the right side, whereas in the brain of a dyslexic, the left and right halves appear equally developed. Then others claim to have found a distortion of the arrangement of nerve cells in parts of the brain that deal with language.

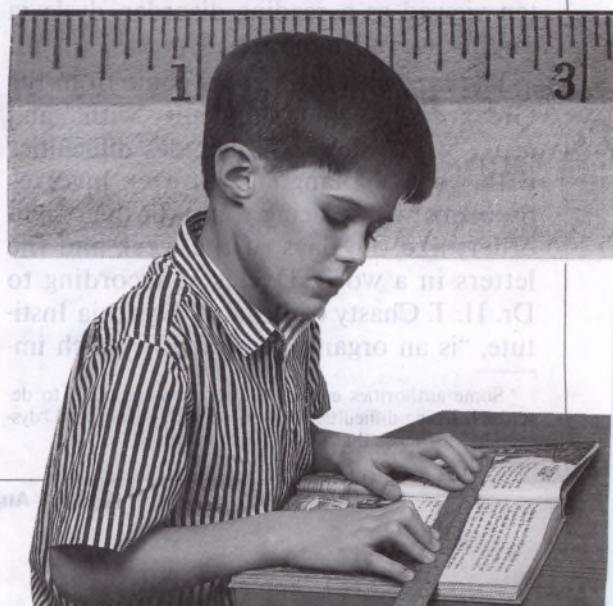
But regardless of the physical cause of their dyslexia, how can those who have the problem best be helped?

Help From Parents

Some who are parents of a dyslexic child feel guilty and blame themselves for their offspring's plight. If you feel this way, dispel the gloom by recognizing that none of us are perfect and we are all different. Start by recognizing that just as a color-blind child needs help to live with his defect, so does your dyslexic child. You as a parent have a definite role to play in the education of your child.

Although dyslexia cannot presently be prevented or cured, it can be alleviated. How? Professor T. R. Miles, author of *Understanding Dyslexia*, advises parents to discover first of all exactly what the dyslexic child finds dif-

To help focus attention,
hold a marker under the line to be read



Tips for Self-Organization

Make use of the following:

- a personal notice board
- a planner calendar
 - an in-tray
 - a personal file
 - a diary
- an address book

ficult. Then they will be able to make a realistic appraisal of their child's limitations and what can be expected. "The child should be asked to do as well as he is able," advises *Reading and the Dyslexic Child*, "but not better than that." By being sympathetic and encouraging, and in particular by arranging for suitable teaching, parents can minimize the effects of dyslexia and, at the same time, lessen the strain the dyslexic child feels.

Help From Teachers

Remember, dyslexia is a *learning* difficulty. So teachers need to spend time with the dyslexic children in their classes and make an effort to help them. Limit the children's frustration by being realistic in what you expect of them. After all, a dyslexic child may well grow into an adult who still finds reading out loud a problem.

Do not become a defeatist. Instead, commend the children for any progress they make—and certainly for all their effort. Then, too, avoid indiscriminate praise. Professor Miles recommends that when teachers note some progress, they say to a dyslexic pupil: "Yes, I agree you have made some mistakes. But I still say you have done well; it is an improvement on last week and, in view of your disability, it is a satisfactory result." But when there is no improvement, he advises saying: "Yes, such-and-such still seem to be causing you difficulty; let us see if we can explore some different way of helping you."

Beware of making disparaging remarks

about the dyslexic child's reading. Strive to make books and reading enjoyable for him. How? Both parents and teachers can suggest that the child hold a marker, perhaps a small ruler, under the line he is reading, as a very slow reader often allows his attention to slip. If the problem surfaces in reading the letters of the word in the wrong order, kindly ask, "Which is the first letter?"

Imagine how discouraging it is for the dyslexic child to be frequently told by his math teacher that his answers are wrong. How much better to give him slightly easier problems so that the frustration failure brings is replaced by the satisfaction of solving them correctly.

"The key for dyslexics is," according to one specialist teacher "learning through all the senses." Combine sight, hearing, and touch to help the child read and spell words correctly. "The pupil needs to *look* carefully, to *listen* carefully, to pay attention to his hand movements as he *writes*, and to pay attention to his mouth movements as he *speaks*," Professor Miles explains. By doing this, the dyslexic child will equate the written form of a letter with both its sound and the hand movements he makes to write it. To help the child distinguish between letters that confuse him, teach him to begin writing each of the letters at a different point on the letter. "Ideally," recommends *Reading and the Dyslexic Child*, "each [dyslexic] child ought to have an hour a day of tutoring on a one-teacher-to-one-pupil basis." Sadly, circumstances rarely permit this. Nevertheless, dyslexics can help themselves.

Self-Help

If you are dyslexic, aim to do the bulk of your reading when you are at your freshest. Researchers have noted that dyslexic students achieve good results if they continue reading for about an hour and a half but that

How to Recognize Dyslexia in Children

If you answer yes to three or four of the questions below for each age group, it is possible that the children concerned are dyslexic to some extent.

Children ages 8 or less:

Were they late in learning to speak?

Do they still have particular difficulty with reading or spelling? Does this surprise you?

Do you have the impression that in matters not connected with reading and spelling, they are alert and bright?

Do they write letters and figures the wrong way around?

When doing calculations, have they needed the help of blocks, fingers, or marks on paper for longer than others of their age? Do they have unusual difficulty remembering multiplication tables?

Do they have difficulty in telling left from right?

Are they unusually clumsy? (Not all dyslexic children are clumsy.)

—Awareness Information, published by the British Dyslexia Association, and *Dyslexia*, produced by Broadcasting Support Services, Channel 4 Television, London, England.

thereafter their work deteriorates. "Regular but limited amounts of study each day are likely to be more beneficial than occasional days of intense effort," notes *Dyslexia at College*. True, it is going to take you longer to read and spell well. But persevere.

Make use of a portable typewriter or, better still, a word processor with a program that helps you check the spelling of what you enter. Couple this with learning how to organize and manipulate information.—See box on page 13.

Enjoy books by listening to those recorded on audiocassettes. Indeed, this magazine and its companion, *The Watchtower*, now appear regularly on cassette in many languages, as does the whole Bible.

If after reading the box you believe you are

Children ages 8 to 12:

Do they make unusual spelling errors? Do they sometimes omit letters from words or put them in the wrong order?

Do they make apparently careless mistakes in reading?

Does reading comprehension seem slower than expected for children of their age?

Do they have difficulty copying from the blackboard at school?

When reading aloud, do they leave out words or a line altogether, or do they read the same line twice? Do they dislike reading aloud?

Do they still find multiplication tables difficult to remember?

Do they have a poor sense of direction, confusing left and right?

Do they lack self-confidence and have low self-respect?

dyslexic, do not hide the problem. Accept it, and take account of it. For example, you may be preparing for a job interview. Like many people, you may find that the pressure of the situation makes it difficult to express yourself clearly and concisely. Why not try some practice interviews beforehand?

The difficulties dyslexia causes are not easily remedied. But the brain, being the marvelous organ it is, compensates for the problem. Permanent unhappiness is therefore unlikely. Julie, Vanessa, and David have all worked hard at overcoming their frustration. You can do the same. Recognize that your specific difficulty need not stop you from learning. Persevere in trying to read, write, and spell properly. Doing so will help you to overcome the frustration of dyslexia.

CROSSWORD PUZZLE

Clues Across

2. Although he had previously told his disciples not to carry one, Jesus now told them to do so [2 words] (Luke 22:35, 36)
6. The prohibition against eating this was given only to the nation of Israel (Leviticus 3:17)
8. Suitable (Jeremiah 13:7)
10. The place where Jehovah's angel commissioned Gideon to be a savior of Israel (Judges 6:11-14)
11. One of Jeduthun's six sons, all of whom were temple musicians (1 Chronicles 25:3)
12. The only prophet, out of some 400, who spoke the truth to King Ahab regarding his upcoming military campaign against the Syrians (1 Kings 22:13)
13. "Jehovah is — name" (Amos 9:6)
14. The Hebrew dry measure of manna allotted each Israelite daily during their 40-year trek in the wilderness (Exodus 16:16)
19. What the mighty city Nineveh was prophesied to become [2 words] (Zephaniah 2:13)
20. The mountain upon which Moses died after viewing the Promised Land (Deuteronomy 32:49, 50)
22. Peter compared Christians who revert to their former course of life to this animal that returns to its wallow after being bathed (2 Peter 2:22)
24. The work of a sculptor (Ezekiel 8:10)
27. One of the sheiks of Esau (Genesis 36:43)
28. A type of building mentioned in the Bible only in the books of 1 Chronicles, Nehemiah, Esther, and Daniel (Daniel 8:2)
30. What a prostitute is likened to (Proverbs 23:27)
31. "Whoever —, more will be given him" (Luke 8:18)
32. Title that Festus used in referring to Caesar Nero [2 words] (Acts 25:21)

Clues Down

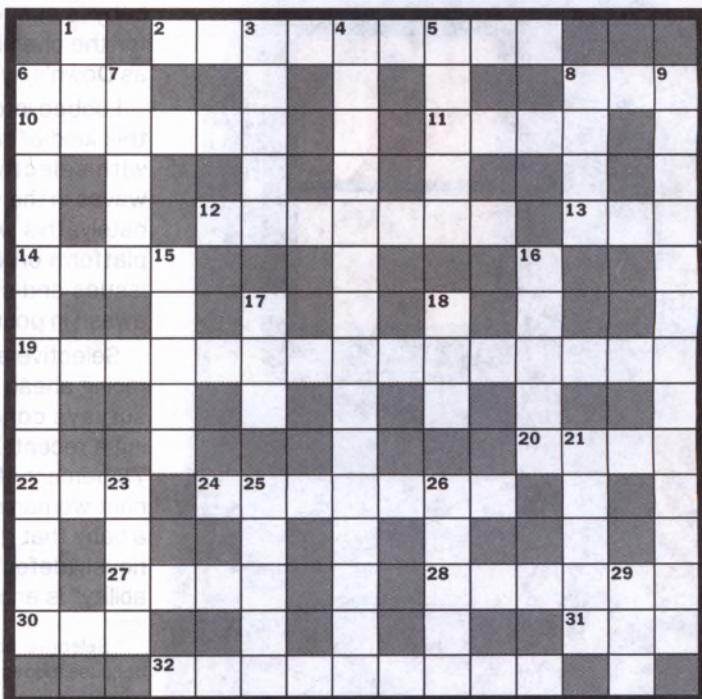
1. To make a survey (Joshua 18:8)
3. One of Shemaiah's sons who was appointed as a Levite gatekeeper before the sanctuary (1 Chronicles 26:7)
4. Two traveling overseers who were with Timothy in Corinth when

greetings and encouragement were sent to the congregation in Thessalonica [3 words] (1 Thessalonians 1:1)

5. One of the mighty men in David's military forces (1 Chronicles 11:44)
6. James mentions that God accepts this as "clean and undefiled" only if one keeps "without spot from the world" [3 words] (James 1:27)
7. The number of times each year that all Israelite males were to "appear before Jehovah" in Jerusalem (Deuteronomy 16:16)
8. What Jesus ate to prove to his apostles that they were not seeing a spirit when he appeared to them after his resurrection (Luke 24:36-43)
9. What you should not do, as men are not the source of salvation [3 words] (Psalm 146:3)
15. The kind of plants among which the baby Moses was hidden in an effort to keep him from being killed by Pharaoh (Exodus 2:3)

16. The Philistine god that was humiliated before the sacred ark of Jehovah (1 Samuel 5:2-7)
17. Because David was now this, he could say with certainty that God never forsakes the righteous (Psalm 37:25)
18. Proclamation (Ezra 1:1)
21. What God calls his "footstool" (Acts 7:49)
23. To look forward expectantly (Titus 2:13)
25. Timbers of this rare and precious tree were used in the construction of both the temple and musical instruments (1 Kings 10:12, *King James Version*)
26. This Egyptian pharaoh spoke words "from the mouth of God" to King Josiah, who did not listen and was killed (2 Chronicles 35:22)
29. What a woman is freed from upon the death of her husband (Romans 7:3)

Crossword Solutions Page 21



A Window on the WOMB

BY AWAKE! CORRESPONDENT IN AUSTRALIA

ADVANCED prenatal tests make it possible nowadays for doctors to diagnose with increasing accuracy many impairments, physical or mental, an unborn child may have. Ultrasound and amniocentesis are among the more popular tools used.

Ultrasound is a noninvasive procedure that uses inaudible high-frequency sound waves to form a computerized image of the baby in the womb. Amniocentesis involves taking by syringe a sample of amniotic fluid, the fluid in which the baby is suspended in the womb, and testing it for the chemical markers of fetal defects, such as Down's syndrome.

Lobbed into society like a boulder into a pond, this kind of medical technology, in conjunction with selective abortion, is causing some big waves in the waters of medical ethics.* Unfortunately, this world's value system is not a stable platform on which to resolve moral and ethical issues and seems more like a disoriented raft awash in pounding surf.

Selective abortion, abetted by technology, is racing ahead of law reform in some lands. In 13 surveys conducted in the United States during a recent 15-year period, a consistent 75 to 78 percent of respondents believed that a pregnant woman should have the legal right to abort a baby that gives strong indications of being seriously defective. In some lands "predicted disability" is enough in itself to allow abortion.

* Selective abortion is the practice of aborting a baby because it does not have the characteristics the parent (or parents) want.



In Australia recently, a mother successfully sued her doctor for damages because early in her pregnancy, he had failed to diagnose rubella (German measles). This sickness, when contracted early in pregnancy, can lead to serious deformities in the unborn. The mother claimed that her doctor's failure robbed her of the opportunity to abort her baby.

In commenting on the legal and ethical ramifications of this case, legal researcher Jennifer Fitzgerald, in an article in the *Queensland Law Society Journal* of April 1995, said: "Not only does she [the pregnant woman] need to decide, 'Do I want to have a child?', she must also decide, 'What kind of child do I want?'" But what disability, Fitzgerald asks, provides sufficient grounds for legal abortion? "A hare lip, a cleft palate, a turned eye, Down's syndrome, spina bifida?" In some parts of the world, it is the child's sex, especially if it is female!

"Untouchables" in the Womb?

As the human genome unfolds before scientists and the window on the womb becomes, in effect, a microscope on the womb, how will the unborn fare? Will those with lesser defects be singled out for elimination? Indeed, the trend in recent decades is moving toward more abortions, not fewer. Confronted by this towering swell and the froth of litigation in its wake—such as the case mentioned earlier—doctors are concerned. Understandably, this could drive them to an even more defensive approach to medicine, such as calling for certain tests not so much for the sake of mother and baby but to protect themselves. Fitzgerald writes that as a consequence, "the number of pre-natal tests is likely to increase and, therefore, the number of selective abortions." This, she adds, would introduce "a quasi-caste system in which the 'untouchables' become the 'expendables.'"

And what if a mother gives birth to a disabled child when she was given every opportunity—and was maybe even encouraged—to abort it? "Perhaps a time will come," says Fitzgerald, "when parents will be told that they cannot expect support in meeting the needs of their children with disability because they chose to have the child when they could have had it aborted."

Not to be overlooked is the message selective abortion conveys to disabled persons in our communities. When a society does away with the unborn because of defects, will it make disabled persons feel like more of a burden on others? Will it make it harder for them to cope with the negative image they may already have of themselves?

That modern society would discard unborn children as workers discard defective parts on a production line fits the personality profile the Bible paints of people living in "the last days" of this wicked world. It foretold that on a grand scale, people would lack "natural affection." (2 Timothy 3:1-5) The Greek word *a'stor-goi*, translated "having no natural affection," refers to the natural bond family members have for one another, such as the love a mother has for her children.

"Tossed about as by waves and carried hither and thither by every wind of teaching," the rudderless people of this world certainly present a sharp contrast to those who follow the sure Word of God. (Ephesians 4:14) Like an anchor for the soul, the Bible holds us morally firm and steady in stormy seas. (Compare Hebrews 6:19.) Thus, while Christians recognize that a woman might spontaneously expel a severely malformed embryo or fetus, the very thought of peering into the womb to see if a baby is healthy enough to keep is utterly repugnant to them.* —Compare Exodus 21:22, 23.

Cementing a Christian's resolve to keep integrity is God's promise of a time when "no resident will say: 'I am sick.'" (Isaiah 33:24; 35:5, 6) Yes, in spite of present difficulties for the disabled and the sacrifices made by those caring for them, "it will turn out well with those fearing the true God."—Ecclesiastes 8:12.

* This, of course, does not mean it would be improper for a Christian to undergo tests to determine the health of an unborn baby. There may be a number of Scripturally acceptable medical reasons why a physician would recommend such a course. Nevertheless, some tests could involve risks to the baby, so it would be wise to talk to the doctor about these. Subsequent to such tests, if the child is found to have serious defects, Christian parents may in some lands be subjected to pressure to abort the baby. It would be wise to be prepared to stand by Bible principles.

Should You Fear the Dead?

BRING up the subject of the dead, and many people shrink from speaking any further about it. Some, however, are not just uncomfortable with the subject; they are stricken with fear. So it is not unusual to find customs and rites related to fear of the dead in cultures throughout the world. For example, let us look at the customs found in sub-Saharan Africa.

One woman in a West African city vividly remembers what happened after a member of her family died. She relates: "A relative would regularly prepare a plate of food for the deceased and carefully place it in his bedroom. When she was not around, I would go and help myself to the food. When the relative returned, she was so happy! She believed the dead one had received the goodies. This went on for some time until I fell sick. I lost my appetite and could not eat any food. This created a panic in me! Many of my relatives concluded that my illness was caused by our dead relative. He must be angry at someone in the family, they thought."

In that same city, if a family has twins and one dies, no one may speak of the deceased in the home. If someone asks about the twin who died, the family will customarily reply:

"He, or she, went out to buy salt." They strongly believe that the surviving twin's life will be taken if the truth is spoken.

Next, picture this scene: A man who had three wives has died. The day after the funeral, special white clothing is made for the wives. At the same time, a special place made of wood and thatch is built near the home, where these women will bathe and dress in the white apparel. No one is to enter that place except them and a woman designated to assist them. Upon emerging from this special washroom, the women's faces are veiled. The women also wear a *sebe*, a rope necklace for "protection." This ceremonial washing is done each Friday and Monday for 100 days. During this period they cannot take anything directly from a male. If a man wants to give them something, he must first place it on the ground or on a table. The woman will then pick it up. No one is allowed to sit on or sleep in the bed of these women. Whenever they leave the home, they each must carry a special stick. They think that possession of this stick will prevent their deceased husband from attacking them. If the above instructions are not followed, they feel



that the dead husband could become vexed and harm them.

Such experiences are common in that part of the world. However, these types of customs are not unique to Africa.

Fear of the Dead Widespread

One encyclopedia, *Encarta*, states the following about the way many peoples view their dead ancestors: "Deceased relatives . . . are believed to have become powerful spiritual beings or, less frequently, to have attained the status of gods. [This concept] is based on the belief that ancestors are active members of society, still interested in the affairs of their living relatives. It has been extensively documented in West African societies . . . , in Polynesia and Melanesia (the Dobu and the Manus), among several Indo-European peoples (the ancient Scandinavians and Germans), and especially in China and Japan. In general, ancestors are believed to wield great authority, having special powers to influence the course of events or to control the well-being of their living relatives. Protection of the family is one of their main concerns. They are considered intermediaries between the supreme god, or the gods, and the people, and can communicate with the living through dreams and by possession. The attitude toward them is one of mixed fear and reverence. If neglected, the ancestors may cause disease and other misfortunes. Propitiation, supplication, prayer, and sacrifice are various ways in which the living can communicate with their ancestors."

Indeed, a family's income can be sapped because of fear of the dead. Often, elaborate ceremonies requiring food and drink, live animals for sacrifice, and expensive garb are demanded by those who strongly believe the dead should be feared.

But are dead relatives or ancestors really in a state that demands fear and reverence? What does God's Word, the Bible, say?

Can the Dead Harm You?

You may be interested to know that the Bible acknowledges such beliefs. In the book of Deuteronomy, practices related to fear of the dead are mentioned. It states: "There should not be found in you anyone 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.

Notice that Jehovah God condemned such rites. Why? Because they are based on a lie. The foremost lie concerning the dead is that the soul lives on. For example, the magazine *The Straight Path* said this about what happens to the dead: "Death is nothing other than the departure of the soul. . . . The grave is a reservoir for the body only, not the soul."

The Bible does not agree. Read for yourself Ezekiel 18:4: "Behold, all souls are mine; as the soul of the father, so also the soul of the son is mine: the soul that sinneth, it shall die." (*King James Version*) Also, the condition of the dead was spelled out clearly in God's Word at Ecclesiastes 9:5: "The living are conscious that they will die; but as for the dead, they are conscious of nothing at all." This explains why food left for the dead does not get consumed unless it is eaten by someone living.

The Bible, however, does not leave us without hope for those who are in the grave. They can live again! The Bible speaks of a "resurrection." (John 5:28, 29; 11:25; Acts 24:15) This will take place at God's due time. Meanwhile, the dead lie unconscious in the grave, 'sleeping,' until God's time for them to "awaken."—John 11:11-14; Psalm 13:3.

People generally fear the unknown. Accurate knowledge can set a person free from unfounded superstitions. The Bible gives us the truth about the condition of those in the grave. Put simply, you need not fear the dead! —John 8:32.

"There Is SILVER in Potosí!"

BY AWAKE! CORRESPONDENT IN BOLIVIA

The year was 1545, just 12 years after Francisco Pizarro conquered the vast Inca Empire. The Spaniards discovered a young Indian surreptitiously extracting silver ore from a secret location in the Andes Mountains of what is now Bolivia. The place was called Potosí. Suddenly, the word was out: "There is silver in Potosí!" Despite the approaching winter, men rushed to establish claims in the area. The ore was unbelievably rich—50 percent pure silver!

Within 18 months 14,000 people were living in Potosí.

THE ore deposit was on the side of a mountain that rises 15,380 feet above sea level. It was a hostile place, almost devoid of vegetation, and well above the tree line. The ultrarich ore was smelted in portable ovens that made use of the wind to fan charcoal to the right temperature. A chronicler of the time described seeing 15,000 ovens operating at one time. At night they looked like a galaxy of stars.

The town at the foot of the mountain was built in chaos with narrow, winding streets to give some protection from the freezing winds. Historian R. C. Padden wrote: "There was neither planning nor regulation, largely, one suspects, because the silver was not expected to last." But last it did. The mountain, called Cerro Rico (Rich Mountain), turned out to contain one of the largest silver deposits ever found.

Enslavement

The Spaniards endured formidable discomforts in their quest for silver. Often, the food was scarce, the water contaminat-

ed, and the mines dangerous. The freezing weather presented a serious problem. Those who tried to warm themselves with charcoal sometimes suffered carbon monoxide poisoning.

Soon the Spanish found a way to minimize their inconvenience. As conquerors, they forced the native Indians into slavery. The *Bolivian Times* of La Paz stated: "It is said that eight million Indian slaves were consumed," died, in Potosí's mines during the colonial period. Cruelty, overwork, and disease caused a horrendous depopulation. No wonder that in 1550 a chronicler called Potosí "the mouth of hell"!

Babylon

By 1572, Potosí was larger than any city in Spain. By 1611, it was said to have 160,000 inhabitants and to be the same size as Paris and London. It was also one of the world's richest cities. The fashion was to wear silk trimmed with gold and silver lace. Any luxury, it seemed, could be bought for a price: silks from China, hats from England, hose

from Naples, perfume from Arabia. Residents adorned their homes with carpets from Persia, furniture from Flanders, paintings from Italy, glass from Venice.

But Potosí was as violent as it was wealthy. Bloody brawls were a daily spectacle in the plazas. Gambling houses and brothels abounded. Potosí came to be known as Babylon.

One of the principal aims of the Spanish conquerors was to establish their Catholic religion in the Americas. How, though, did these professed Christians justify their large-scale profiting from slavery? While some churchmen spoke out against the injustices, others rationalized slavery by claiming that the tyranny of the Spanish was less than the tyranny of the Incas. They claimed that the Indians were inferior and naturally inclined to vice—hence, better off working in the mines. Still others claimed that bringing the Indians to work the mines was a necessary step in converting them to Catholicism.

History shows, however, that the clergymen were among the richest people in Potosí. Historian Mariano Baptista says: "The Church as an institution, and its representatives individually, formed a privileged part of the circle of exploitation" of the Indians. This historian quotes a viceroy who in 1591 complained that the clergy "suck the blood of the Indians with more greed and ambition than laymen."

Squandered Treasure

Spain had been a poor country, but for a few decades, its riches made it the greatest power on earth. But such a privileged status did not last. Commenting on why its riches failed to give Spain lasting advantages, the book *Imperial Spain—1469-1716*, by J. H. Elliott, says: "The mines of Potosí brought to the country untold wealth; if money was short today, it would be abundant again to-

morrow when the treasure fleet reached Seville. Why plan, why save, why work?"

Potosí's treasure was squandered; the period was punctuated by royal bankruptcies. According to a saying of the time, the arrivals of treasure fleets were like light summer rains that wet the roof tiles for a moment and then evaporate. Appropriately, a 17th-century observer said of Spain's decline: "It is not rich, because of all its riches."

During the 18th century, Potosí declined as the silver ran out, but then it revived as tin became important. Now, tin is not as prominent, although Potosí is still an industrial center for manufacturing and mining. But many tourists visit Potosí to enjoy its colonial charm. They may also notice its highly ornate churches, many of them standing empty in testimony to the declining interest in Catholicism.

Today Potosí stands as a somber reminder of the immense human suffering caused by greed, political intrigue, and religious misguidedness, a reminder of a chapter in the history of Bolivia that started with the call: "There is silver in Potosí!"

CROSSWORD SOLUTIONS

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M	E	M	I	C	A	I	A	H	H	I	S
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R	S		L				N	E	B	O	
S	O	W	C	A	R	V	I	N	G	A	B
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Mustard A HOT SUBJECT

"IT'S absolutely outrageous for two English ladies, citizens of the greatest empire in the world, to be reduced to eating their roast without mustard!" The Danes, who are among the world's top mustard eaters, would sympathize with the frustration of the heroines of the French novel quoted above.*

The ancient Greeks called mustard *si'na-pi*, "that which troubles the eye." Perhaps they had in mind a diner who, having taken too much, finds his eyes awash with tears. The word "mustard" is derived from one of the condiment's ancient ingredients, *mustum* (unfermented grape juice). The word can refer to either the plant, its seeds, or the condiment that can bring a hot flush to your face.

Although inoffensive when dry, the seed releases an irritant called allyl isothiocyanate when ground with water. This pungent essential oil, responsible for the hot taste of mustard, irritates the mucous membranes, thus bringing tears to the eyes of both gourmet and mustardmaker. No doubt this explains why yperite, a chemical weapon used in World War I, came to be called mustard gas, though it contained no mustard at all.

A Mighty Mite

The innocent-looking yellow flower hid-

* *Le Roi des montagnes* (The King of the Mountains), by Edmond About.

ing this fiery temper can easily be mistaken for rapeseed, or colza. Mustard and rape-seed both belong to the family Cruciferae, said to contain up to 4,000 species, about 40 of which are mustards. The most widely used are white mustard (*Brassica hirta*), Indian or brown mustard (*Brassica juncea*), and black mustard (*Brassica nigra*), which gives off a particularly virulent essence capable of causing blisters on the skin.

When growing wild, black mustard thrives on stony ground and alongside paths and rivers in Africa, India, and Europe. It also flourishes on the green hillsides of the Sea of Galilee, in Israel. When properly cultivated, it matures rapidly and can grow to the point of attaining "in the Orient, and sometimes even in the south of France, the height of our fruit trees."—Vigouroux's *Dictionnaire de la Bible*.

Surprisingly, the black "mustard grain" itself is exceedingly small. In Jesus' day it was the tiniest of the seeds commonly sown in Israel. (Mark 4:31) It has a diameter of about one twentieth of an inch, justifying its use as the smallest unit of measure in the Talmud.—Berakhot 31a.

The striking contrast between the tiny mustard seed and the large full-grown plant added meaning to Christ's teaching about the growth of a "kingdom of the heavens" that came to provide lodging for the birds of the heavens. (Matthew 13:31, 32; Luke

13:19) Christ also used a stimulating illustration to highlight how far even a minute amount of faith will go, stating: "Truly I say to you, If you have faith the size of a mustard grain, . . . nothing will be impossible for you."—Matthew 17:20; Luke 17:6.

French Mustard Production

Even though the favored French black mustard was also cultivated in Alsace, eastern France, it was the city of Dijon, in Burgundy, that came to be known as France's mustard capital. Here, mustard was grown on soil regularly enriched by charcoal production. The resulting potash in the earth yielded mustard seeds with an extra-special bite.

After the second world war, in the face of changing agricultural methods and stiff

Mustard comes in many varieties

international competition, mustard cultivation eventually tapered off in Burgundy in favor of colza. Today, France imports 95 percent of the mustard seed it needs, and 80 percent of that comes from Canada. While the name Dijon mustard indicates a manufacturing process and not its place of origin, 70 percent of the French condiment industry is nevertheless still centered in Dijon. Recently an effort has been made to revive the cultivation of mustard in Burgundy.

A Long History

In powder form, like pepper, or as a condiment, mustard already whetted appetites in ancient times. The Romans used it to spice up fiery sauces, such as *garum* (mackerel intestines and heads in brine) and *muria*



(tuna in brine). Apicius, an extravagant Roman gourmet, concocted his own recipe consisting of mustard seeds, salt, vinegar, and honey, with almonds and pine kernels added for banquets.

From the Middle Ages down to the 19th century, homemade mustard gave way to a cottage industry. In France the corporation of the mustard-vinegar makers developed recipes, ensured proper hygiene, controlled the market, and fined offenders. Sold in liquid form or in pastilles to be dissolved in vinegar, mustard complemented fish just as often as meat. In the 19th century, Jeremiah Colman, an Englishman, virtually dusted the vast British Empire with his mustard powder, which was mixed at meal-times in water, milk, or beer.

In time, factory production replaced the cottage industry, increasing output considerably. In 1990, France, the top European producer, made about 70,000 tons of mustard and 2,000 tons of various other condiments.

Modern Production Methods

Mustard's bite depends as much on production methods as on ingredients. The seeds are sorted, washed, dried, and blended in proportions kept strictly secret. Sometimes the seeds are ground before being soaked in cider, vinegar, or verjuice (sour grape juice) for up to 24 hours. Black grape sediment is used to make violet mustards. All the ingredients are crushed—lightly for traditional mustards—and then separated in a centrifuge to remove the husks and to increase the concentration of volatile oil. Whether it turns out to be strong or mild depends on how thoroughly the paste is sieved.

Mixing takes out any air bubbles that might oxidize the paste, which then matures for 48 hours in a vat. Here it becomes spicier naturally, while losing its bitterness.

The addition of coloring, flour, or seasoning either tones down or intensifies its bite. Then a variety of aromatic flavors are added: traditional (Roquefort, tarragon), exotic (banana, curry), or sophisticated (cognac, champagne). Meaux mustard's pleasant aroma is the combination of no less than 11 fragrances.

Packaging is essential to complete the process, for air turns the paste brown and heat causes the evaporation of its volatile oil. So it is always best to store mustard in a cool, dark place. Plastic or glass mustard jars, often decorated with specially designed labels, have replaced the fine stoneware, earthenware, or porcelain pots of the past, which are now mainly to be found adorning the displays of museums and private collections. Craftsmen paid great attention to the outside appearance of their pots, aiming for original designs that "enabled them to be distinguished at a glance."

A Modest Plant of Many Uses

The imposing pots that once decorated pharmacies contained mustard powder for therapeutic use. In view of its properties in counteracting scurvy, no Dutch ship put to sea without some in its hold. Mustard was used in baths or as a poultice.

The leaves of the white mustard plant are eaten in salads and also still serve as silage. The edible oil extracted from the seeds does not easily turn rancid. In Asia it supplements industry with fuel for lighting and also flavors many a dish.

This humble country flower has found its way into several proverbs. In Nepal and India, to "see mustard flowers" means to be dazed after a shock. In France, to "get mustard up your nose" means to get angry. Whatever form it takes—flower, condiment, seed, oil, or powder—mustard can put spice into your life.



MY HOBBY IS ASTRONOMY

I LIVE on the North Island of New Zealand, in the South Pacific. Since I was a youth of 15, I have been interested in astronomy. It is a peaceful hobby that can be as simple or as complex as you wish. Be assured that you do not need to have a degree in physics or to be a mathematics whiz to enjoy astronomy.

Most hobbies require some equipment. So, what will you need? Mainly your eyes. When you first go out into the night from the lighted rooms of your house, it will take ten minutes or so for your eyes to adjust to the reduced light. If you are a city dweller, you may notice the intrusion of street and house lights. What can you do about it? For good results, station yourself in a position shielded from these sources of light.

You will enjoy the best viewing conditions on a dark, cloudless night *with no moon*. The moon imparts a soft glow to the atmosphere, causing many dimmer stars to disappear. How many stars can you see with the unaided eye? Usually between 2,000 and 4,000. The stars nearer the horizon are more difficult to see because you are looking through a thicker blanket of atmosphere, which results in greater dimming and distortion. It surprises some people that only a relatively small number of stars can be seen with the unaided eye, as there seem to be millions when we first look aloft.

A Star or a Planet?

Seeing a brighter point of light prompts the question, Is it a star or a planet? Stars are

light sources, great nuclear engines spewing out their electromagnetic signals into space. They are a great distance from the earth, the nearest—other than the sun—being 4.3 light-years away. Light travels at about 186,000 miles per second. Because the light from stars travels so far to reach us, it becomes rather feeble. It then must pass through the increasing density of earth's atmosphere, which bends the light rays this way and that. "Twinkle, twinkle, little star, how I wonder what you are," says the nursery rhyme, adding a touch of animation to the silent heavens. If it twinkles, it is a star.

Planets, however, only reflect light from the sun, just as the moon does. They are relatively close to us, being fellow members of the sun's family, the solar system. So planets that can be seen with the unaided eye reflect a light that is steady and unblinking.

Help Is Available

If you would like to venture further, let me tell you of some friends that make my hobby much more enjoyable. The first is a star atlas. My present copy is *Norton's Star Atlas, Revised Edition*. It has excellent maps of the heavens, plus information that acquaints the amateur with the vocabulary of astronomy.

My second friend is a planisphere, which consists of two plastic disks, one atop the other, that are attached at the center by a dome. The top disk, with a window in it, can be rotated about the lower one with the star chart printed on it and can be set to the required time and date. You are now able to determine which stars are observable from your vantage point at the hour and time of year and at *your latitude*. In New Zealand a *Philips' Planisphere* can readily be purchased or ordered from many bookshops. When buying a planisphere, you will need to know the latitude of your hometown, north or south of the equator.

Should you buy a telescope? If you pur-

sue this hobby, I suspect that ultimately you will. There are three types—refracting, reflecting, and refracting-reflecting. Visit your public library for books on astronomy and telescopes. It is surprisingly easy to make a reflector telescope yourself. Invest in an inexpensive book on how to make an astronomical telescope. You will find it an interesting project.

Binoculars present a wide-field view of the sky. You can see beautiful star clusters that hang like jewels in the black velvet sky. You can see wisps of clouds that prove to be nebulas, clouds of dust and gas, light-years away in deep space. The glowing band of the Milky Way can be seen from any point on Earth. Also, binoculars are best for sweeping the sky when searching for or observing comets, vagabonds that occasionally steal into our nearby space. Local newspapers may carry weekly articles designed to help you watch the night sky.

Do you own a personal computer? There are some programs on astronomy that a beginner would enjoy, plus some sophisticated ones. I use my computer to store all sorts of information dealing with my hobby. There are also popular magazines on astronomy. From time to time, *Awake!* prints articles on the subject.

Moon and Planets

Of course, no difficulty exists in locating the moon. When visible, it dominates the night sky. A full moon is indeed beautiful, seemingly sailing from east to west as the night passes toward dawn. Closer observation, with the stars as a guide, reveals that the moon is actually traveling in the same direction as we are, from west to east. Check this out over a period of one or two hours or on two consecutive nights, noting the position of the fixed stars relative to the moon. Because the earth is revolving on its axis faster than the moon is orbiting, we leave the moon behind.

A problem can confront the astronomer when the moon is fuller—too much light. I have always most enjoyed observing the moon when it is 4 to 7 days old or 22 to 24 days old, since the shadows of its mountains and crater rims are longer and sharper. As the moon is the only heavenly body close enough for us to see its permanent surface features with the naked eye, its surface appears different depending on whether you are north or south of the equator.

This holds true for the constellations, or star patterns, as well, thereby making it preferable for you to use maps printed for your hemisphere. Otherwise, they are both upside down and back to front—somewhat confusing, especially to an amateur. It must be mentioned also that an astronomical telescope presents the subject under view as upside down. But where are the planets? First, there are two things we need to know: What are the ecliptic and the zodiac?

The ecliptic is the apparent pathway of the sun on its yearly journey, with the stars as a backdrop. The ecliptic intersects the celestial equator at about 23.5 degrees. The zodiac, which means “circle of the animals,” is an imaginary band that follows the ecliptic some 8 degrees on either side. The sun, moon, and planets that can be seen with the unaided eye are always within the zodiac limits. Knowing you are looking at a planet is evidenced by successive nights’ viewing, as a planet will take up station in a different position in relation to the apparently fixed stars.

But which planet am I looking at? Mercury and Venus will always be to the west in the evening sky and to the east in the morning, never overhead. Venus is rivaled only by the Moon. You no doubt know it as the morning star or the evening star. The planets that orbit the Sun beyond the earth make their trail from east to west. Mars, Jupiter, Saturn, and Uranus are also visible to the naked eye. There will initially be a need to consult some

source of information about their position, as they hide among the stars.

The Stars

You will always find the stars to be fascinating points of light. Familiarizing yourself with the constellations can be the start of a new friendship with this awesome handiwork of the Creator.

Some stars are of particular interest to us. One is Sirius; it is the brightest star. It is also a double star, being two stars in orbit around a common center. The second brightest star is Canopus. Spacecraft have used this star to find their position in space and to turn their antennae toward earth to facilitate command communication.

Words of Warning

(1) Astronomy should be a hobby, not an obsession. An excellent rule is, “The Creator before the created.” (2) *Never, ever, look at the sun or search the sky anywhere near it with a telescope or binoculars; the penalty may be blindness.* (3) Do not believe all that you read. Old books may mislead you, as may unproven theories. (4) Be slow to spend money on equipment, as you may lose interest.

My hobby is an unending adventure of discovery and wonderment. Even living forever in God’s new world, we will not learn all the mysteries of the cosmos. (Ecclesiastes 3:11; 8:17) But it will then be forever fascinating to learn more and more about it.—Contributed.

IN OUR NEXT ISSUE

**The Refugee Crisis
—Will It Ever End?**

**Should I Play
Computer or Video Games?**

**Overcoming Tragedy
in Jehovah’s Strength**

WATCHING THE WORLD

TB—A “Global Emergency”

Every year tuberculosis (TB) kills more adults than AIDS, malaria, and tropical diseases combined, states the World Health Organization (WHO). Every second, someone somewhere is infected with TB. The TB bacillus can be transmitted by a cough or a sneeze. WHO expects that during the next ten years, 300 million people will become infected with TB and 30 million will die from it. Worse still, the emergence of drug-resistant strains of TB threatens to make the disease incurable. According to WHO, “only 5-10% of people who are infected with TB actually become sick or infectious themselves, because the immune system ‘walls off’ the TB organisms.” Nevertheless, the pandemic is so serious that WHO declared it to be a “global emergency”—the first such declaration in WHO history.

Digging for Sodom and Gomorrah

Swedish archaeologists claim to have found ancient Sodom and Gomorrah. In cooperation with the Amman Department of Antiquities, the scientists made their findings at El Lisan, east of the Dead Sea, in Jordan. The Swedish newspaper *Östgöta-Correspondenten* explains that finding the remains of buildings destroyed some 1,900 years before Christ is amazing. The archaeologists are convinced that they have found Sodom and Gomorrah. After analyzing pottery, walls, graves, and flint, their conclusion was that the cities were de-

stroyed by a natural disaster. However, the Bible shows that God himself brought the destruction because of the gross immorality of those cities.

The Danger of Loud Music

Rock concerts can cause permanent hearing loss, reports *New Scientist* magazine. French hearing specialist Christian Meyer-Bisch studied 1,364 people between the ages of 14



and 40 and discovered that a large percentage of regular concertgoers suffered from temporary hearing loss. Meyer-Bisch warns that because of the popularity of rock concerts, these damaging effects are “no longer a problem for the individual but one of public health.”

Increase in Bad Conduct Among Women

• The Brisbane *Sunday Mail* reports that in increasing numbers young women in Australia are using foul language. Professor Max Brandle, director of the Australian Institute of Modern Languages, explains: “You find that women now drink more, smoke more than they used to in comparison with men. They are also using profane language more. Unfortunately, one result is that some of the traditional courte-

sies between men and women have declined. When both sexes use profane language, the romantic spirit of the past rapidly disappears. The language of romance used by earlier generations has no place in society at the moment. I find that gutter language is very common among the young today.”

- In Brazil the rate of crimes committed by women doubled during 1995. According to police official Francisco Basile, more women are getting involved in assaults, robberies, and even drug dealing, reports the newspaper *O Estado de S. Paulo*. Many women begin their criminal life by smoking crack at parties where drug dealers give away the crack. The women not only develop a drug dependency but often become drug dealers themselves. According to the newspaper, chief of police Antônio Vilela explains: “It is amazing how the number of women selling drugs has increased . . . , and there is no specific age bracket.” Many are young women in their 20’s, but some are in their 50’s.

Some Nonchurchgoers Still Pray Privately

According to *The Sydney Morning Herald*, Australia is generally regarded as a secular society with church attendance dropping year by year to record lows. However, a recent study revealed that some Australians still pray regularly. The survey shows that 1 in 5 adults prays at least once a day and, further, that 11 percent pray at least once a week. In its report

on religion in the 1990's, the Christian Research Association explains that while church attendance is falling alarmingly, "many people have a continuing spiritual dimension to their lives," says *The Herald*.

The World's Second-Largest "Industry"

With an annual turnover exceeding \$400 billion (U.S.), the illegal drug trade is thriving, states *World Health*, the magazine of the World Health Organization. This makes it the fastest growing "industry" in the world. It is also the world's second-largest industry—second to the arms trade but ahead of oil. During the past 30 years, the availability of illegal drugs has increased sixfold. Abuse of legal substances, such as solvents, prescription medications, and alcohol, is increasing at a similar rate.

Baptism for Sale

For over 300 years, the Swedish Lutheran Church has enjoyed a Church-State relationship with the government. Recently, however, church officials announced that by January 1, 2000, this Church-State relationship will be virtually terminated. For centuries all Swedes have automatically been affiliated with the church at birth. However, since the beginning of 1996, church membership has been based on baptism. The newspaper *Dagens Industri* reports that the archbishop is announcing a tough marketing program, which will include house calls by clergymen 'selling baptism.' One female cleric in Stockholm is reported to be carrying on "an aggressive

sales campaign" in which "one of her best-sellers is baptism." The magazine *Mã Bra* reports that one parish will give each baby brought in for baptism a bankbook with a deposit of 100 Swedish kronor (\$15, U.S.).

Premature Motherhood

In Brazil in 1994, according to the Brazilian Institute of Geography and Statistics, 11,457 girls under the age of 15 gave birth. Such premature maternity has increased by 391 percent in the last 18 years, while the population growth has increased by only 42.5 percent during the same period. The number of girls between 15 and



19 years of age who gave birth increased by 60 percent. Dr. Ricardo Rego Barros of Rio de Janeiro's Federal University explains that "premature sexuality is induced by surroundings, television, books, and magazines," says *Veja* magazine. Another expert commented that parents and schools still find it difficult to educate children in such matters.

TV Standards Decline

Television viewers are more indulgent toward TV sex and nudity than they were ten years ago, reports London's *Independent* newspaper. According to a survey for the British Broadcasting Corporation, middle-aged women's tolerance for TV

sex and nudity has increased. About 41 percent of older women also now find this type of TV program unobjectionable. Among young people, about 75 percent tolerate bad language compared with 69 percent a decade ago. The greatest change in attitude has been toward homosexuality. Forty percent of women over 55 years of age, 56 percent of men ages 35 to 55, and 70 percent of young men 18 to 34 years old now find the display of the homosexual life-style on television inoffensive—a 20-percent increase in the last ten years.

Bishop Questions Bible Wisdom

Speaking at a seminar in India on "Laws Governing Marriage and Divorce Among Christians," Nestorian bishop Poulose Mar Poulose stated that one could not go to the Bible as a code of ethics. As reported in the *Indian Express*, he said that to insist that the Biblical teaching on divorce was irrevocable was to deny the progress modern man has made in his understanding of the relationship between husband and wife. According to the *Express*, the bishop quoted a Hindu scholar as saying that every scripture has two sides, one temporary and perishable, belonging to the ideas of people of the period and the country in which they were written, and the other eternal and imperishable and applicable to all ages and countries. "In the *Bible*," said the bishop, "we must distinguish the kernel from the shell. We should determine permanent truth and cultural bias . . . and decide the direction of our own life."

FROM OUR READERS

Rock Concerts I couldn't help thinking that the article "Young People Ask . . . Should I Attend Rock Concerts?" (December 22, 1995) was a little biased. I attended a rock concert with my mom. It was an older band, and the crowd was well behaved. But the article didn't highlight even the possibility of finding a decent concert.

S. A., United States

The article did focus on the potential dangers of rock concerts. However, we did not make a blanket condemnation of attending such events. We told readers: "If you should think of going to a concert, get the facts." Information was thus given to help youths and their parents make a balanced decision.—ED.

I want to thank you for the article. Just weeks before I received the magazine, a number of us went to a concert. It was wild, and many there were drunk; it was no place for Christians. I definitely learned my lesson and hope the others did too.

M. E., United States

Costa Rica I would like to make a clarification regarding the article "Costa Rica—Small Country, Abundant Variety." (July 8, 1995) You stated that "almost 27 percent of the land is protected, the largest proportion of any country in the world." However, according to the *World Almanac*, Ecuador has set aside almost 40 percent of its total land area for conservation.

M. E., Ecuador

Thanks for the clarification.—ED.

Mali I shed tears of joy when I read the article "A First for Mali." (December 22, 1995) The spirit of cooperation of your members in Mali is faith strengthening. I have contacted Jehovah's Witnesses to start teaching me the Bible. It is my determination to fellowship with your members in worshiping God.

D. C. A., Nigeria

Tourette Syndrome I want to express my gratitude for your article "The Challenge of Living With Tourette Syndrome." (December 22, 1995) My symptoms disappeared at the end of my adolescence. But not all have been so fortunate. This article will be a valuable help for such ones and their families.

Y. L., France

I know a boy who has it, and up till now I have avoided him because I was embarrassed to be in his company. I had never realized that he may feel more embarrassed about it than I do!

P. M., Italy

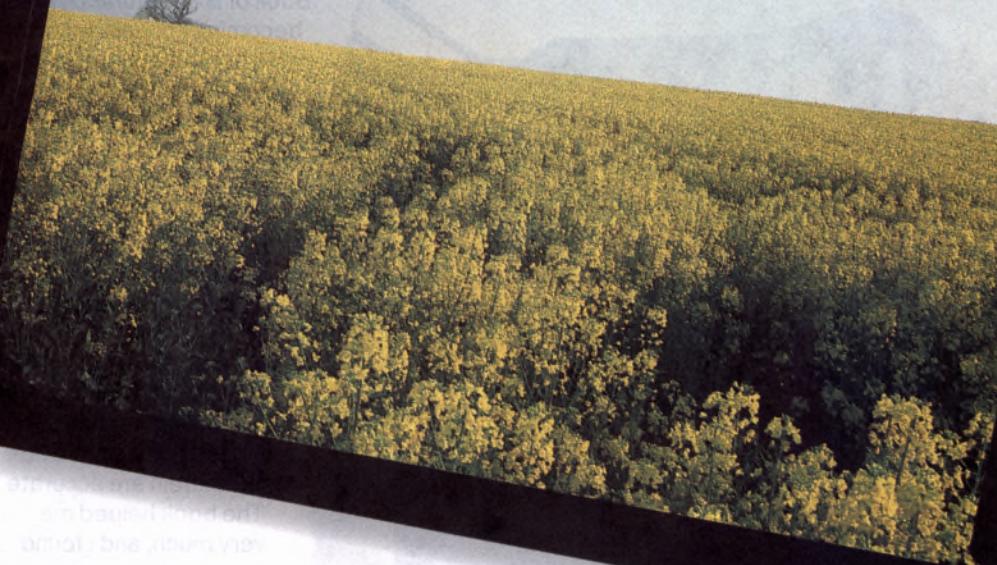
I have had this disorder since I was five, and it has made me very sad. I have muscular and vocal tics. Neither my parents nor I could understand why these tics happened; they worried that maybe there was something wrong in the way they brought me up. I have prayed to Jehovah to help me understand, and he has answered my prayer through this article. I was very encouraged to read the experiences of others among Jehovah's Witnesses who have the same disorder.

Y. K., Japan

I have lived with this condition nearly all my life, but it has only been since 1983 that I have known what it was. When I was a child, others would often make fun of me. But the brothers and sisters at the Kingdom Hall were always very loving and accepted it as part of me. Later on, I fell in love with a young Christian man. He was fully aware of my problem. Although my dad thought our marriage wouldn't last, I am happy to say that 30 years later we are still happily married. My husband always treats me like gold and has never let my problem bother or embarrass him.

F. H., Canada

A VERSATILE, COLORFUL CROP



-RDP

WHAT do diesel fuel, cattle feed, soap, and margarine have in common? In some lands all these items are produced with the help of the rape plant, with its vivid yellow flower.

This colorful relative of the mustard family, produced in parts of Europe, Asia, and North America, is especially valued for its oil-rich seeds. Up to 40 percent of rapeseed is oil, which can be put to a variety of uses.

Most rapeseed oil—perhaps as much as 90 percent—is used for production of food. It is employed in the making of margarine, biscuits, soups, ice cream, and confection-

aries. But rapeseed oil can also be used to produce a diesel fuel that pollutes less, thus limiting damage to the environment. When refined, the oil can also be used to lubricate delicate machinery, and after it is extracted, the bulk of the crop can be crushed into a cake that is rich in protein and useful as animal feed.

What a versatile crop! Truly, we can say as did the psalmist: "How many your works are, O Jehovah! All of them in wisdom you have made."—Psalm 104:24.

BIBLE LITERATURE APPRECIATED IN HUNGARY



A teacher in Balmazújváros wrote to the Watch Tower branch office in Hungary: "I have seen a book that attracted my attention. If possible, please send me a copy. The title is *My Book of Bible Stories*." After becoming acquainted with this book, a school principal in Budapest requested: "We would like to order 20 copies of *My Book of Bible Stories* for Elementary School No. 6."

A person from Balatonboglár who had read the book *Questions Young People Ask—Answers That Work* wrote: "The book was thought provoking, and the Bible-based answers provided therein are accurate. The book helped me very much, and I found answers to the questions I had. I would like to strengthen my faith even more. Therefore, if possible, please send me publications about the Bible."