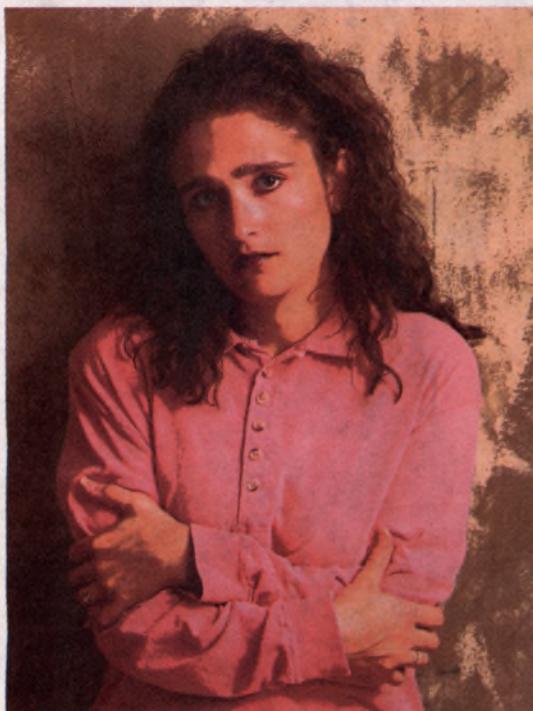


Awake!

March 8, 1993



RAPE
A Woman's Nightmare



RAPE A Woman's Nightmare 3-11

What motivates a rapist? What can women do to avoid rape?

What will keep men from becoming rapists? These and other questions will be answered in the opening series.



Should I Go to the Prom? 20

In some countries, high school graduation includes partying and dancing. It often leads to loose conduct and worse. How should a conscientious Christian view the prom?



The Biggest Man-Made Hole in the World 23

Visit earth's biggest man-made hole, the huge copper-mine excavation in Bingham Canyon, Utah.

Photo courtesy Kennecott Utah Copper

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The Reality of Rape

IN THE time it takes you to read to the end of this page, a woman will be raped somewhere in the United States. She will be alone and will be terrorized by an act of violence and degradation by someone she probably knows. She may be beaten. She may resist. She will undoubtedly fear for her life.

Rape is the fastest growing violent crime in the United States, which already has one of the highest rates of rape in the world. According to police reports, 16 rapes are attempted, and 10 women are raped every hour. Add to that the fact that unreported rapes may be ten times higher!

The United States does not stand alone with these grim statistics. In France the number of victims who reported being raped rose 62 percent between 1985 and 1990. By 1990, Canada saw reports of sexual assaults double to 27,000 in just six years. Germany reported one sexual assault on women every seven minutes.

Rape hurts innocent men as well.* Men "suffer from living in a society where half the population has reason to be resentful, suspicious, and scared," said psychologist Elizabeth Powell. They may also be victimized by having to live in fear for their wives, mothers, sisters, daughters, and friends, or they have to cope with feelings of guilt and pain when someone they love becomes a rape victim.

Why the Increase?

Rape flourishes in societies that tolerate violence and sexual manipulation. In a number of countries, men and women are bombarded from childhood with destructive messages and misinformation about sex, through the

media, the family, and their peers. They learn the poisonous concepts that sex and violence are linked and that women exist to provide sexual satisfaction to men, regardless of women's wishes.

Note the attitude of Jay, a 23-year-old file clerk. "Society says that you have to have a lot of sex with a lot of different women to be a real man," he said. "Well, what happens if you don't? Then what are you?" Because of that pressure, if a woman made him angry or frustrated, he might rape her.

Such violent and aggressive attitudes toward women are common in rape-prone cultures, believes researcher Linda Ledray. "To a great extent the rapist is only acting out the broader social script," she said. Movies and television contribute to that destructive social script. Rape is a common theme in pornography, but pornography is not the only culprit. Studies have shown that violent films with no

In the United States, 1 out of every 4 women may be a victim of rape or attempted rape

sexual content result in more aggressive attitudes toward women than films that have explicit sex but no violence. Television is implicated as well when it "portrays some of the most manipulative sex to be found anywhere," Powell said. The message from the media? "When angry, hurt somebody."

That message is translated into day-to-day relationships, with tragic results. In an increasingly permissive world, men often feel

* About 1 out of 10 rape victims is male.

Rape flourishes in societies that tolerate violence and sexual manipulation

that women owe them sex, especially if the man spends money on the woman or she initially seemed receptive to his advances.

"When it comes to sexual relations, saying 'no' is often meaningless when the words are spoken by a female," said journalist Robin Warshaw. And all too often, rape is the result.

"The Second Rape"

Kathi was 15 years old when she was raped by three members of her high school hockey team. When her family pressed charges, she was ostracized and harassed by friends, neighbors, and strangers. "Boys will be boys," the family was told. At school Kathi was called obscene names, and threatening messages were left on her locker. Her rapists were punished with probation and community service and went on to become athletic heroes for the school. Kathi was punished with months of harassment. Eventually she took her life.

Kathi's case is a tragic example of how rape victims are often assaulted first physically by the rapist, then emotionally by others. Many women find that attitudes and misconceptions about rape result in the victim's being blamed for the crime. Friends, family, police,

doctors, judges, and juries—those who should be helping the victim—may share those misconceptions and hurt the victim nearly as deeply as did the rapist. The problem of blame is so severe that some have termed it "the second rape."

Rape myths create a false sense of security. In other words, if you can find some fault in the victim's behavior—she dressed in tight clothing or she went out alone at night or she really wanted to have sexual relations—you or your loved ones will be safe if that conduct is avoided; therefore you will never be raped. The alternative, that rape is a senseless act of violence that can happen to anybody, regardless of how she is dressed, is too terrifying to accept.

One woman, raped by someone she thought of as "nice, respectable," pleads: "The worst possible thing you can do is believe it won't happen to you."

Rape Myths and Realities

The following are some of the long-held misconceptions about rape that serve to blame the victim and to perpetuate attitudes that encourage the perpetrators:

Myth: Rape happens only when a woman is attacked by a stranger.

Fact: The majority of women who are raped are assaulted by someone they know and had trusted. One study found that 84 percent of victims knew their attackers and that 57 percent of the rapes happened on dates.

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.

**Would you welcome more information? Write Watch Tower at the appropriate address on page 5.
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One out of 7 married women will be raped by her own husband.* Rapes are violent and emotionally traumatic whether the attacker is a stranger, a spouse, or a date.

Myth: It's rape only if a woman afterward shows evidence of resistance, such as bruises.

Fact: Whether they physically resisted or not, few women show visible evidence, such as bruises or cuts.

Myth: A rape victim bears part of the blame unless she actively resists.

Fact: Rape by definition takes place when force or the threat of force is used to gain sexual penetration, of any kind whatsoever, against a person's will. It is the rapist's use of force against an unwilling victim that makes him a rapist. Thus, a rape victim is not guilty of fornication. Like an incest victim, she may be forced to submit to an act she doesn't want because of the perceived power held over her by another person. When a woman is forced to submit to a rapist out of terror or disorientation, it does not mean that she consents to the act. Consent is based on choice without threat and is active, not passive.

Myth: Rape is an act of passion.

* Marital rape occurs when a husband overpowers his wife and forces himself on her sexually. Some husbands may believe that the "authority" the apostle Paul says a man has over his wife's body is absolute. However, Paul also stated that "husbands ought to be loving their wives as their own bodies." The apostle Peter states that husbands should assign wives "honor as to a weaker vessel, the feminine one." That leaves no room for violence or forced sex.—1 Corinthians 7:3-5; Ephesians 5:25, 28, 29; 1 Peter 3:7; Colossians 3:5, 6; 1 Thessalonians 4:3-7.

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Fact: Rape is an act of violence. Men rape, not solely for sex, but to feel power over another person.*

Myth: A woman can tease or lead a man on to the point that he can no longer control his sexual urges.

Fact: Men who rape do not have a stronger sex drive than other men have. Rather, one third of all rapists were unable to complete the sex act. In most cases rapes are planned acts, not spontaneous urges. Both stranger and acquaintance rapists usually set up their victims—the stranger by stalking the victim until she is alone, the acquaintance by arranging a situation where she is isolated.

Myth: Women lie about rape to get revenge on a man or because they feel guilty about having sex.

Fact: False reports of rape occur at the same rate as for any other violent crime: 2 percent. On the other hand, researchers agree that rape is grossly underreported.

Myth: A woman can "ask" to be raped by wearing provocative clothing, drinking alcohol, letting a man pay her way, or going to his home.

Fact: Using bad judgment, being naive or ignorant, does not mean that a woman deserves to be raped. Rapists bear sole responsibility for the rape.

* "The crime is not about the act of 'sex' but rather the sexual act is the tool that the perpetrator uses to commit a violent crime."—Wanda Keyes-Robinson, division chief, Sexual Offense Unit, Baltimore City, Maryland.

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How to Prevent Rape

Eric was tall and good-looking, and from a wealthy family. Lori was 19 and had been invited on a double date with Eric and his roommate. She arrived at the barbecue at Eric's home, but unknown to her, the other couple had canceled out. Soon, the rest of the guests started leaving the party.

"I began to think, 'Something is wrong, something is going on,' but I ignored it," she said.

Once he had Lori alone, Eric raped her. Lori never reported the rape to police, and later she moved 150 miles away to avoid seeing Eric again.

One year later, she was still afraid to date.

RAPE is a growing threat, and a woman's best defense is to be aware and prepared. Not every rape situation can be anticipated, but knowing how rapists think and plan their attack may help you recognize warning signs.* States an ancient proverb: "Sensible people will see trouble coming and avoid it, but an unthinking person will walk right into it and regret it later."—Proverbs 27:12, *Today's English Version*.

The best way to avoid a rape situation is to avoid rapists. You should be aware of a pattern of behavior in a man—even one you know well—that may identify him as a potential rapist. (See box, page 7.) Some men will use a woman's style of dress or her willingness to be alone with him as an excuse to rape her. While a woman isn't responsible if a man holds such warped views, she would be wise to recognize such attitudes.

Don't allow yourself to be isolated with a man you don't know well. (Even with one you know well, use discretion.) A stranger rapist may come to your home pretending to be a repairman. Check his credentials. An ac-

* No two situations are alike, and no prevention advice is foolproof. Even rape experts disagree on how much and what kind of resistance a victim should put up during an attack.

quaintance rapist often gets victims alone by inventing errands that require a stop by his home or by lying about there being a group of people at a meeting place. Don't fall for it.

To avoid problems in dating situations, date in groups or with a chaperon. Know your date well, and set firm limits on the amount of physical intimacy, if any, you will allow. Be cautious about drinking any alcohol! You can't be alert to danger if your thinking is impaired. (Compare Proverbs 23:29-35.) Trust your instincts. If you feel uncomfortable around someone, don't give him the benefit of the doubt. Get away.

Parents of teenagers especially need to discuss rape prevention with their children, being specific about dangerous situations because the majority of rapists and rape victims are young.

Act Quickly

Not all rape situations can be anticipated. Unwittingly, you may find yourself alone and facing a man who is stronger than you and who is intent on forcing you into sex. What then?

Act quickly, and remember your goal: escape. A rapist often tests his victim before deciding to attack, so it is important to derail

Women who have successfully resisted rapists usually did so actively and tried more than one tactic

his plans as soon as possible before he gains enough confidence to act. Rape experts offer two courses of action: passive resistance or active resistance. You can try passive resistance first and, if failing, move to active resistance.

Passive resistance may involve anything from buying time by talking to the rapist to pretending you have a sexually transmitted disease to vomiting on your assailant. (Compare 1 Samuel 21:12, 13.) "Tactics are limited only by one's imagination," wrote Gerard Whittemore in his book *Street Wisdom for Women: A Handbook for Urban Survival*.

Passive tactics—which include everything but physically fighting the rapist—require cool thinking and should be designed to distract or calm the attacker. If your resistance is making your attacker more angry and violent, try something else. However, don't allow yourself to be forced into a more isolated area while you're thinking. And remember one of the most effective forms of passive resistance—screaming.—Compare Deuteronomy 22:23-27.

Another option is to react negatively and forcefully. Tell your attacker in no uncertain terms that you will not submit to his wishes. In a date rape situation, you may try the shock tactic of calling the attack what it is. Shouting, "This is rape! I'm calling the police!" may make your would-be rapist think twice about pushing you further.

Fight Back

If talking doesn't work, don't be afraid to move to active resistance. That doesn't mean you're more likely to be harmed or killed, nor does submission guarantee your safety. Therefore, most rape experts advise putting up a struggle.



Profile of a Potential Rapist

- Emotionally abuses you by insulting you, ignoring your views, or getting angry or annoyed when you make a suggestion.
- Tries to control elements of your life, such as how you dress and who your friends are. Wants to make all the decisions on a date, such as where to eat or what movie to see.
- Gets jealous for no reason.
- Talks down about women in general.
- Gets drunk or "high" and tries to get you to do the same.
- Pressures you to be alone with him or to have sex.
- Won't let you share expenses on a date and gets angry if you offer to pay.
- Is physically violent even in subtle ways, such as grabbing or pushing.
- Intimidates you by sitting too close, blocking your way, touching when you've said not to, or talking as if he knows you better than he actually does.
- Can't handle frustration without getting angry.
- Doesn't view you as an equal.
- Enjoys weapons and likes being cruel to animals, children, or people he can bully.

From *I Never Called It Rape*, by Robin Warshaw.

Fighting back can be difficult for women because they have been conditioned for a lifetime to be polite, passive, and submissive even when threatened by physical force. Therefore, you need to decide ahead of time that you will resist so that you won't lose precious time by hesitating during an attack.

You need to feel outraged that anyone would threaten or pressure you. You need to realize that this attack is premeditated, and the rapist is counting on you to submit. Get angry, not afraid. "Your fear is an attacker's most powerful weapon," said researcher Linda Ledray. Don't worry that you are over-reacting or that you may look foolish. "Better

rude than raped," as one expert put it. Women who have successfully resisted rapists usually did so actively and tried more than one tactic, including biting, kicking, and screaming.

If you are unable to fend off the rape, concentrate on being able to identify your assailant later. If possible, scratching him or tearing his clothing will leave blood and fabric evidence with you. But at this point, you may simply be unable to fight any longer. In that case, "do not berate yourself that you 'let' him rape you," said Robin Warshaw in *I Never Called It Rape*. "You do not need to sustain injury or death to 'prove' you were raped."

How to Cope With Rape

Thirty-three years ago Mary was raped at knife point. Today, Mary's heart pounds and her palms sweat when she tries to describe it. "It's the most degrading thing a woman can go through," she says, almost in tears. "It's an ugly, horrible thing."

RAPE can be one of the most devastating emotional events in a person's life, and the effects can last for a lifetime. In one study, almost one third of rape survivors interviewed had considered suicide, and the vast majority said that the experience had permanently changed them.

The effects can be particularly traumatizing if the woman knew her attacker. An acquaintance rape victim is less likely to receive support from others because either she tells no one what happened or she tells and no one believes it was rape. Since she was hurt by someone she trusted, she is also more likely to blame herself and to doubt her ability to judge others.

Accept Help

Many rape survivors initially react with shock and denial. One woman was raped

shortly before an important college exam. She put the rape aside in her mind until after she took the test. Another rape survivor said: "I could not allow myself to remember any of it because my trusted acquaintance became my attacker right in front of my eyes. I didn't know you could be raped by someone you knew. It may sound silly, but that belief left me with no hope. I felt so alone."

Some women continue to deny what happened by telling no one about their rape. They repress the attack for years, which delays the healing process and causes other emotional problems that the survivor may not realize are stemming from the rape.

Recovery doesn't usually begin until you talk to others. A trusted friend can help you to see that what happened to you was indeed rape and was not your fault. An old proverb

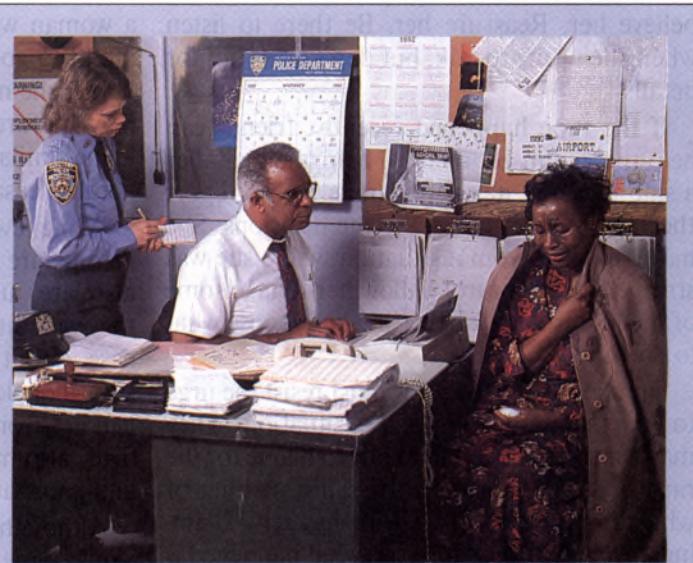
states: "A true companion is loving all the time, and is a brother that is born for when there is distress." (Proverbs 17:17) Also, spiritual shepherds can "prove to be like a hiding place from the wind and a place of concealment from the rainstorm." (Isaiah 32:2; 1 Thessalonians 5:14) For some victims, contacting a rape-crisis center or a professional counselor may be needed to help them sort out their feelings.

Survivors are often afraid to talk about their rape because of feelings of guilt, especially if they were sexually aroused during the attack. They may feel soiled and useless and blame themselves for the rape—even though no one but the rapist deserves blame.

"Having a good friend to talk to made a difference," said Mary, who confided in a fellow Christian. "I could talk to her and not feel dirty and not feel a stigma about having been raped."

Give Her Support

On the other hand, it would be improper and unloving for friends of the victim to second-guess her or take it upon themselves to decide if she "was really raped." Never suggest that she enjoyed it or was immoral. The most important thing a friend can do when asked for help is to



If You Are Raped

- Seek medical attention.
- If you wish, ask that a rape-victim counselor accompany you through medical and legal procedures if one is available.
- Call the police as soon as you are able to. Counselors recommend reporting for your safety and for the safety of other women. Reporting is not the same as prosecuting, but if you choose to prosecute later, your case will be weakened by a delayed report.
- Preserve evidence. Do not bathe, change clothing, wash or comb hair, or destroy fingerprints or footprints.
- Medical personnel will collect evidence and will test for sexually transmitted diseases and pregnancy. If they offer pregnancy prevention drugs, otherwise known as a morning-after pill, Christians should be aware that such drugs can cause the body to abort a fertilized egg.
- Do what you have to in order to feel safe—change locks, stay with a friend, block your door—whether it seems that you're overreacting or not.
- Above all, look to the Scriptures for comfort, praying to Jehovah, even calling aloud his name, during and after the assault. Lean on the elders and other close associates in the congregation for support. Attend meetings if at all possible, and seek companionship with fellow Christians in the ministry.

believe her. Reassure her. Be there to listen when she wants to talk, but don't press her for details.

If the rape happened recently, friends can help the victim get medical help and can offer a safe place to stay. Encourage her to report the rape, but let her make the decisions. She has just come from a situation where she was stripped of all control. Allow her to take some of that control back by letting her choose what to do next.

Families of rape victims must resist the urge to react emotionally to the situation. They may want to look for someone to blame for the rape or seek revenge on the rapist, neither of which helps the victim. (Romans 12:19) Blaming anyone but the rapist for what happened is futile, and seeking revenge is dangerous. It will cause the survivor to worry about the safety of her loved ones instead of focusing on her recovery.

Families should also be aware that many survivors view sexual relations differently after a rape. In their minds, sex has become a weapon, and they may have difficulty with sexual relations for a time, even with someone they love and trust. For that reason, a husband should not push his wife to resume sexual activity until she is ready. (1 Peter 3:7) Families can help by building a young woman's self-esteem and showing her that she is still loved and respected regardless of what happened to her. Continued support will be needed as the survivor goes through what are sometimes lengthy steps to emotional recovery.

Coping With Fear and Depression

Women who have been raped say that their most overwhelming reaction is fear. Most rape victims didn't expect to survive the attack. Later they may fear being raped again or may even fear seeing the rapist accidentally.

The fear felt during the rape can be reawakened by similar sounds, smells, and places. If

a woman was raped in an alley, she may be afraid to go into an alley. If she was raped at home, she may never feel safe there again and may be forced to move. Even smelling a cologne similar to what the rapist wore can trigger unpleasant memories.

While few rapes result in pregnancy, many victims are terrified of the possibility. Many also are justifiably worried about whether they've contracted a sexually transmitted disease. About half experience feelings of depression, hopelessness, and worthlessness, which can last from several weeks to several months. They also may struggle with anxiety, phobias, and panic attacks.

Although women may not be able to prevent a rape, in time they can take control of their thoughts, feelings, and reactions to the attack. They can learn to replace negative thoughts with positive views of themselves.

"Instead of telling yourself how weak, useless, or helpless you are, learn to tell yourself how well you are doing and how far you have come since the turmoil immediately following the assault," said Linda Ledray in *Recovering From Rape*. "Each day that you feel less overwhelmed by negative thoughts and feelings, tell yourself, 'I'm learning to take back control.'"

Fear also can be dealt with by learning to identify exactly what is causing it. When the victim identifies the trigger, she can ask herself, How realistic is that fear? For example, if she sees someone who looks like the rapist, she can remind herself that he is not the rapist and he is not going to hurt her.

Another method recommended for dealing with fear is systematic desensitization. The woman makes a list of activities or situations she is afraid of, ranking them from the least frightening to the most. She then imagines herself in the least stressful situation until it no longer seems frightening. She moves down

the list until she is comfortable when thinking about all the situations.

With the help of a friend, she can then progress to carrying out the activities in real life, such as going out of the house at night or being alone. She can eventually control her fear so that it no longer affects her daily routine. However, fear of some activities—such as going down a dark alley at night—is normal, and there would be no point in trying to overcome uneasiness in those situations.

Redirecting Anger

Rape survivors also experience feelings of anger, which may at first be directed toward all men but, as time goes by, usually become focused on the rapist. Angry people often strike out blindly. Others may react by burying their feelings. However, anger can be constructively channeled, and the way a person deals with her anger can help her recovery. The Scriptures say: “Be wrathful [angry], and yet do not sin.”—Ephesians 4:26.

First, survivors do not need to be afraid to express anger. They can talk about it to others. Becoming involved in the legal process or keeping a record can be an outlet. They can also work off their anger with physical activities, such as tennis, racquetball, handball, walking, jogging, bike riding, or swimming, which have the added benefit of helping to combat depression.

You can take back control of your life.

What Will Stop Rape?

Stopping rape is more than a matter of women hiding from rapists or fighting them off. “It is men who rape and men who collectively have the power to end rape,” said author Timothy Beneke in his book *Men on Rape*.

Rape will not end until men stop treating women as mere objects and learn that successful relationships do not depend on violent domination. On an individual level, mature men can speak up and influence other men.

Both men and women can refuse to go along with sexist jokes, to watch movies featuring sexual aggression, or to support advertisers who exploit sex to sell products. The Bible counsels: “Let fornication and uncleanness of every sort or greediness not even be mentioned among you, just as it befits holy people; neither shameful conduct nor foolish talking nor obscene jesting, things which are not becoming, but rather the giving of thanks.”—Ephesians 5:3, 4.

Parents can teach respect for women by example. They can teach their sons to view women as Jehovah God does. God is not partial. (Acts 10:34) Parents can teach their sons to be friends with women and feel at ease around them, as Jesus did. They can teach their sons that sexual intercourse is a tender act of love reserved for one’s marriage mate only. Parents can clearly indicate that violence will not be tolerated, nor dominance of others be valued. (Psalm 11:5) They can encourage their children to discuss sexual matters openly with them and to stand up to sexual pressure.

A Problem Soon to End

However, rape won’t end without revolutionary changes in world society. “Rape is not only an individual problem [but] is also a family problem, a social problem, and a national problem,” said researcher Linda Ledray.

The Bible promises an earth-wide society free of violence, where man will no longer ‘dominate man to his injury.’ (Ecclesiastes 8:9; Isaiah 60:18) The time will soon come when Jehovah God will not tolerate any further abuse of power, including rape.—Psalm 37:9, 20.

In that new world society, all persons will be educated to be peaceable and will love one another regardless of gender, race, or nationality. (Isaiah 54:13) And at that time, meek persons will live without fear of friends or strangers and will “find their exquisite delight in the abundance of peace.”—Psalm 37:11.

Workhorse of the Skies

By Awake! correspondent in South Africa

WE HAD been flying for about two hours. Suddenly the engine revs started to drop—the first sign of engine trouble.* I immediately started to climb, using the remaining revs to gain as much altitude as possible before the engine stopped. As we reached the top of the climb, the clutch housing disintegrated, scattering fragments into the air all around us.

"Immediately I put the helicopter into a steep descent, keeping the forward speed constant at about 55 miles per hour. I had already checked out the terrain, and we were now heading for a small clearing within easy gliding distance.

"I flared out at 50 feet above ground level so as to slow the aircraft down, and then we landed, skidding to a halt about 5 feet from the edge of a donga [dry riverbed]."

All of this took barely a minute. True, helicopters have crashed in the final stages of an emergency landing, but as can be seen from this true experience, all is not lost if the engine fails. This pilot successfully completed a glide involving autorotation—practiced many times during training for just such an emergency.

Yet, as safe and as versatile as the helicopter

* revs = revolutions

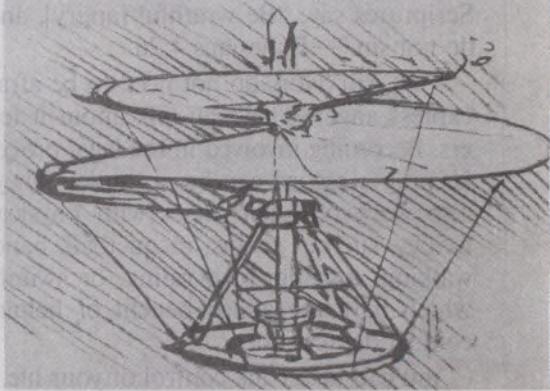
is, many have still never ridden in one. Perhaps even you would be disinclined to take a short helicopter hop. You may, however, be interested in learning about these unusual flying machines.

Where Did It Start?

Leonardo da Vinci, in 1483, was the first to design a vertical flight machine, using an air-screw for lift. But, alas, aeronautical engineers say that the device he sketched is unflyable! Nevertheless, vertical flight has continued to fascinate inventors. Only relatively recently has this been successfully achieved.

It was in 1923 that the Spaniard Juan de la Cierva, at 27 years of age, successfully flew his autogiro at Getafe, Spain. The system he designed did much to advance helicopter theory.

Bibliothèque de l'Institut de France, Paris



Leonardo da Vinci's design for a vertical flight machine

Airport commuter flight



Later, a Russian-born designer, Igor Sikorsky, during the period from 1939 to 1941, made major advances toward the helicopter as we know it today. But what was the secret of getting the machine off the ground?

How Does It Fly?

A standard fixed-wing aircraft gets into the air by first accelerating down a runway. When it reaches the right speed, the air passing over the wing produces sufficient force to overcome the weight of the aircraft and lift the plane into the air. On a helicopter, however, the lift is generated by rotating the rotor blades, which are comparable to wings. Thus, a helicopter can obtain lift without forward movement. In order to do this, the blades must slice into the air at an angle, called the angle of attack, to produce any appreciable lifting force. And the pilot can

vary the angle of attack, or pitch, of the blades by means of a control called the collective pitch lever. When the lift generated by the blades exceeds the weight of the helicopter, that is, overcomes the force of gravity, the helicopter will rise. A decrease in lift causes the machine to descend.

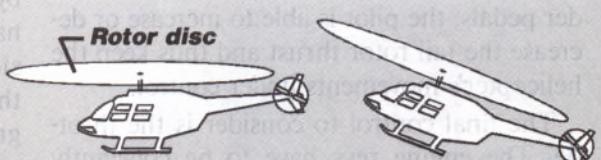
The helicopter can be made to go forward from the hovering position by tilting the rotor disc. This disc is the imaginary surface swept by the blades during their rotation. With the rotor disc tilted forward, air is forced not only downward to lift the helicopter but also slightly backward to push it forward. (See diagram below.) Thus, the helicopter can move in any direction, sideways, even backward, merely by tilting the rotor disc in the desired direction. The control that does this is held in the pilot's

Courtesy of the Ministry of Defense, London



Air sea rescue by the RAF

Police often use helicopters



Helicopter hovering

Backward flight

The control column controls the angle of the rotor disc, which in turn determines the direction of flight



Forward flight



right hand and is called the control column, or cyclic stick.

There is another problem that must be solved before we get off the ground—the torque reaction caused by the main rotor. What is "torque reaction"? Imagine yourself trying to tighten an overhead bolt with a large wrench while standing on roller skates. As you turn the wrench in one direction, your body will tend to turn in the opposite direction. This is according to a scientific law of motion that to every action there is an equal and opposite reaction. In the case of the helicopter, as the engine drives the rotor in one direction, the aircraft itself tends to rotate in the opposite direction. The most widely used method to compensate for this is an antitorque rotor, or small propeller, mounted on the tail. By means of two rudder pedals, the pilot is able to increase or decrease the tail rotor thrust and thus keep the helicopter's movements under control.

The final control to consider is the throttle. The engine revs have to be constantly monitored by the pilot whenever he is using the controls, necessitating throttle adjustments. It was this constant monitoring of the rev counter that warned the pilot described at the outset of possible engine failure even before the engine had completely failed. In modern gas-turbine helicopters, much of this work has been reduced by the introduction of an engine speed governing system.

Saving Time—And Lives!

Helicopters have appropriately been called workhorses of the skies. In August 1979, for example, a violent storm disrupted the English Fastnet yachting race. Fifteen men were killed in what was described as "the worst disaster in the history of yachting." This figure would have been worse had it not been for the work of helicopter crews. During one rescue,

the pilot had to watch the surrounding waves and keep his aircraft moving up and down to avoid being hit by them. One news report described this as playing a "life-or-death leap-frog between the crests of 13m [40 ft] rogue waves."

Huge oil tankers sailing around the Cape of Good Hope of southern Africa can receive fresh supplies, spare parts, and even a change of crew by helicopter, without calling into port. But it is a very tricky maneuver. The pilot brings the copter into a hover above the deck by matching the tanker's reduced forward speed. Then he must match the roll of the ship so as to land as gently as possible.

What's It Like Flying in a Helicopter?

For those who love flying, the helicopter's maneuverability provides a thrill unmatched by other forms of powered flight. It is a fascinating experience to be able to hover, move slowly backward or sideways or rotate through 360 degrees at about two feet off the ground. The absence of forward movement at takeoff makes the helicopter feel much safer to fly, and in flight, one soon becomes absorbed in the countryside, especially when skimming along close to the ground.

The student pilot, however, will at first find the helicopter difficult to fly, since the controls are very sensitive and it is less stable than fixed-wing aircraft. Once mastered, it is fun to fly and easier, perhaps, than an airplane because of the simpler takeoff and landing techniques.

Today the helicopter is a highly developed machine—a real workhorse of the skies. True, compared with some of Jehovah's flying creations, such as the dragonfly and the hummingbird, it may seem clumsy. Still, it is a rather marvelous machine. And now that you know a bit more about it, perhaps you'd like to take a ride in one!

Raising Sheep Is Our Business



HAVE you ever worn a woolen garment or bought a skein of wool? Did you ever stop to think where the wool came from? Or what is involved in raising the sheep who supply your wool? Maybe we can help you. Why? Because, with my wife, Barbara, I run a sheep farm way down in the South Island of New Zealand.

Sheep are interesting creatures—docile, timid, and often plain stupid. And yet I remember one ewe who controlled her lambs better than any other mother in the flock. Others would lose track of their little ones, but not this ewe. What was special about her? She was blind. But she compensated for her blindness with her acute senses of smell and hearing. She knew exactly where to find her lambs. It was a joy to watch them suckling, their tails wagging as if about to drop off!

I have lived with sheep most of my life here in the South Island. My father has been a

sheep farmer for 60 years. Now why do I say “sheep farmer” and not “shepherd”? The popular concept of a shepherd is that of a person who tends a migrant flock of sheep. In our case, we have sheep farms. Our sheep are tended on a fixed piece of land and just moved from one field, or paddock, to another. Instead of dozens or hundreds of sheep, we have thousands. And yet, by New Zealand standards, ours is a small farm. Nevertheless, our work is on an industrial scale. So what does it entail to raise so many sheep?

Multiply and Be Many

Whereas some sheep farmers breed just for the meat, we breed for the wool as well as the meat. Visitors are often surprised to find that New Zealand has some 70 million sheep, mainly from 19 different breeds. Sheep are not native to our country but were introduced from other lands. The big merino sheep, originally from Extremadura, Spain, and the

Agrodome Rams on Stage



Nineteen different breeds on display at Agrodome, Rotorua

Romney, Leicester, and other English breeds were usually brought in via Australia.

Our sheep are Romney, tending to be tall and big bodied, giving good wool. But getting to that final product involves a lot of hard work and planning. First of all, we have to raise a productive flock, and that means good breeding stock. I buy quality rams each year to bring my total to about 35, and in April they are sent out to inseminate, or tup, as we say, the ewes. Over a period of three weeks, the rams will have tupped anywhere from 60 to 80 ewes each. Lambing time is in September, and that is the period that Barbara and I enjoy the most. But how do we keep ourselves busy until September?

Winter Feeding

Here in the Southern Hemisphere, our winter is from May onward. The pasture growth then is not good, so we have to take feed out to the flock. And I say "we" because Barbara is kept busy helping me. We divide our fields, or paddocks, with electrified wire into blocks of about one and a half acres each. Just setting up the electric fences is a big job in itself. Now why do we need to do this? Because the sheep are going to have to be moved each day from one block of pasture to another, and we have to cart the hay and other feed out to them. "Other feed" can mean barley and nuts, especially just prior to lambing when the ewes need extra nourishment.



We also feed swedes (rutabagas) to the hoggets, year-old sheep. And where do we get the swedes? We have to grow them, which means we are also into agriculture, not just sheep farming. But let's get back to the happy work, the lambing.

Acting as Midwives

Come September, Barbara and I are running around the pastures on our motorbikes. No, this is not a race. It's our means of transport for getting to all the ewes giving birth. We try to visit the ewes about to give birth four or five times a day in order to assist any having difficulty. Most give birth without any complications, but we still have to mark the twin lambs so that if one gets mislaid, we can put it back with its twin.

Some of the ewes have a hard time, and that is where the motorbikes mean swift aid when needed. For example, if a lamb is coming out headfirst without the feet protruding, it could get choked. Then, we move in as midwives and help nature to take its proper course. For anyone not used to it, it can seem a messy business, but to us, witnessing new life coming forth is a yearly miracle.

Most ewes give birth to twins. Eventually we put a colored ear tag on about 500 female lambs that are kept for breeding. This distinguishes their age. After three or four months, the males and the surplus females are sent to the freezer

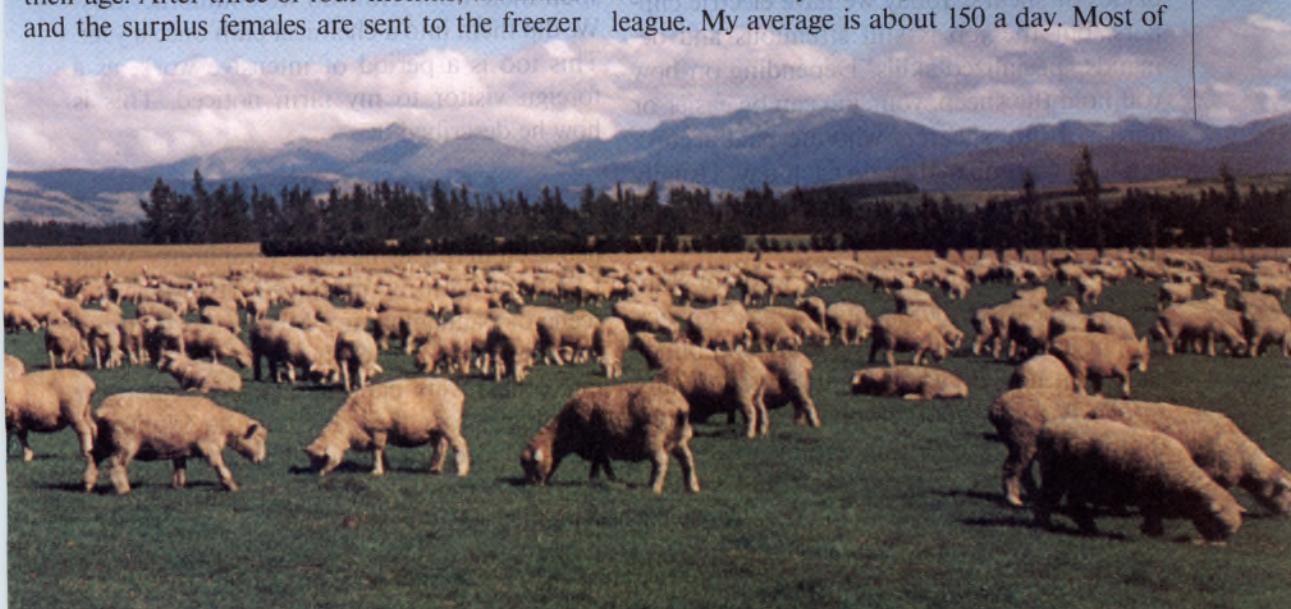


factory for meat. By the way, we have special terminology to distinguish ages. A one-year-old sheep is called a hogget and a two-year-old is called a two-tooth. You see, sheep grow only eight teeth, two per year. When a ewe is a two-tooth, she is ready to breed.

Let's not forget the main reason we are raising all these sheep—for their valuable coats, their wool—which brings us to an intensive period of really hard work.

Sharing the Shearing

Although a good shearer can turn out about 300 to 400 sheep in a day, I'm not in the same league. My average is about 150 a day. Most of





Above: Sheep going into the dip

**Bottom right: Sheep shearing
is a backbreaking job**

the sheep are sheared once a year, but some get done twice a year, as hoggets in October and as two-tooths in March. To make shearing later a little easier, we dock the lambs' tails, which helps to keep their rear end clean.

In the old days, shearing was done with blades or shears. Today we have electric clippers, but the job is still strenuous and demands specialized skills. Depending on how you hold the sheep, your job can be easier or harder. I hire shearers who are paid according to the number they do each day. Usually we get from 10 to 12 pounds of wool from each ewe.

The next job is preparing the wool for shipment to the wool merchants. We have to pack it tight in bales that weigh about 400 pounds each. But how do we guarantee good quality wool? There is another phase of our work that is essential to getting good wool.

Taking a Dip

Sheep pick up ticks or lice from one another, and these parasites cause them to itch. The next thing you know, the sheep are spending their time rubbing themselves against fences instead of eating. So they lose weight and spoil their wool. How do we counteract this? We dip them into a chemical bath once a year. This too is a period of intensive work, as a foreign visitor to my farm noticed. This is how he described it.

A City Man's Viewpoint

"When I arrived at the scene, the dipping had been in full swing for several hours. What I first saw with my untrained city eyes was a scene of pandemonium. Men were shouting; dogs were barking. Some sheep were coughing; others were panting. Dogs were literally jumping across the backs of the frightened sheep in order to head to the front of the

group to break up a bottleneck. Soon I saw the logic behind what was going on.

"Hundreds of sheep were in holding paddocks, waiting their turn to be guided, about a dozen at a time, into a narrow chute area. There one of the sheep farmers was waiting beside a small pool of a chemical mixture that was shielded from the sheep's view by loose sacking. As soon as each animal reached the waiting man, he pushed it unceremoniously with his knees through the sacking and, splish! into the murky liquid. The animal's first reaction was to try to get out, and it started to swim toward the narrow exit. On each side, however, were other farmhands waiting with long poles to push the sheep under the dip and thus make sure that all the wool, from head to toe, got soaked. As the animals climbed up and out of the filthy mix, they coughed and spluttered and shook themselves vigorously, sending spray into the air. When some were ready for release from the exit pen, they were allowed to return to the field, which most seemed to do with relief and alacrity!"

The Fight Against Ticks and Worms

It is interesting for me to hear an outsider's description of what we do. You might wonder what chemical solution we use in the dip. It is called Grenade, and its active ingredient is Pyrethroid, with 5 percent Cyhalothrin, which kills the ticks or lice. These parasites are not the only natural enemy that sheep have. They also get intestinal and lung worms, which means we have to drench the sheep on a regular basis. This involves bringing the sheep home to the yards. We put them into a narrow race, about four feet wide, that holds some 50 sheep. Then they are drenched by forcing down their gullets a chemical mixture that kills off the worms. We wear a backpack containing the liquid and use a tube and nozzle to squirt it down their throats. At times we also have to administer penicillin to act against blood poisoning.

Do our sheep ever get foot-and-mouth disease? No, thanks to the stringent controls by the immigration and agricultural authorities at New Zealand's ports and airports. Many foreigners are disconcerted when they arrive at our airports and find that the plane cabin must be sprayed before they can get off. But that is one reason we do not have some of the diseases here that afflict animals in other countries.

The Indispensable Dogs

My story would not be complete without some reference to our sheepdogs. We have half a dozen at our farm and use two kinds of mixed-breed dogs that have collie in them. We have what we call the huntaway, or barking, dog. They will bark and maneuver the sheep by running across their backs to get to a strategic position. The other type is what we call an eyedog, or heading dog. It will go right up to a sheep and look it in the eye, intimidating by looking rather than by barking. There is no way we could do our work without these faithful animals. They will work until they drop from exhaustion.

That, briefly, is a rundown on our life here in Mossburn, New Zealand, caring for sheep. So the next time you buy a nice woolen garment, spare a thought for the sheep farmers around the world who have carefully nurtured the animals that provided that wool.—*As told by Bruce Cournane*

In Our Next Issue

The World's End—How Near?

How Can I Keep Music in Its Place?

African Toys for Free

Young People Ask...



Should I Go to the Prom?

"Prom night's also usually the first time your parents say to you, 'Honey, enjoy yourself. We'll see you in the morning.'"

"I remember going to a school dance where there were only two chaperons, and they weren't even paying attention to the kids."

YOUR classmates have been talking about it for months. After all, the senior prom* is a once-in-a-lifetime event. And since you will be saying good-bye to classmates you have known for years, you might naturally want to be there. "Ever since junior high school," says

* A formal dance held for a high-school or college class typically at or near the end of the academic year. [Short for PROMENADE.]—The American Heritage Dictionary of the English Language.

one 18-year-old girl, "I've wanted to attend the prom."

In some lands the senior prom—a formal dance preceding graduation from high (secondary) school—is a real milestone for youths. More than simply a gala social event, the prom is a time-honored ritual marking the passage into adulthood. Says *Seventeen* magazine: "Prom night's also usually the first time your parents say to you, 'Honey, enjoy yourself. We'll see you in the morning.' Staying out all night is not only okay—it's what you're supposed to do."

Not that all youths plan an all-night session of dubious conduct. Rather, many simply look forward to a beautifully romantic experience—the chance to be a modern-day Cinderella or Prince Charming! "It's like a fantasy," says 19-year-old Darcey. "They step out of their rented limousine, take pictures, and show off in front of their friends. It's their moment in the spotlight."

Less glamorous in style, but also popular, are school dances. "Every now and then, you need a gathering just to have a good time," says 15-year-old Jamey. But whether the appeal is the dancing, the dinner, or the dressing up, most youths feel that going to such affairs is a virtual obligation. Their only concerns are who they will go with, what they will wear, and how they will get the money to pay for the evening. But there are some other things you may need to consider.

Looking Beyond the Glitter

Jesus Christ himself was one who attended respectable social gatherings. (Compare Luke 5:29; John 2:1, 2.) But "revelries," or "wild parties," are condemned in the Bible. (Galatians 5:21; *Byington*) In the first century, wild orgies in which pagans would openly engage in "deeds of loose conduct, lusts, excesses with wine, revelries, drinking matches, and illegal idolatries" were common. Christians were therefore warned against attending these unruly affairs.—1 Peter 4:3, 4.

What about proms and school dances? Some may be well organized and supervised, thus relatively tame events. Rowdy behavior may be discouraged and dealt with swiftly if it occurs. But behind the glitter and glamor of many—if not most—proms, there often lurks the spirit of revelry.* “There’s a lot of sexual immorality and drinking,” one teenager told *Awake!* Alcoholic beverages may officially be off-limits. But a lot of drinking may go on in rest rooms, stairwells, and parking lots.

The Bible warns: “Wine is a ridiculer, intoxicating liquor is boisterous.” (Proverbs 20:1) Add now some wild or sensuous music, unrestrained dancing, dimmed lighting, and a crowd of youths who may have little appreciation for Bible principles, and you have the ingredients for revelry. Can you count on the chaperons to keep things under control? Not always. A teenager named Charles says bluntly: “Chaperons do nothing.” Unfair? Not according to young Darcey, who says: “I remember going to a school dance where there were only two chaperons, and they weren’t even paying attention to the kids.”

It must be admitted that even the most conscientious of chaperons may find it next to impossible in a darkened ballroom or gymnasium to control a crowd of youths who are bent on having a ‘good time.’ As a result, the dream of an evening of romance can quickly turn into a nightmare. “There are a lot of fights,” says one teenage girl.

* “Revelry” is defined as boisterous partying or merrymaking.

Chaperons find it nearly impossible to control the conduct of all in attendance

Compromising Situations

Granted, not all proms or school dances erupt into violence. Still, there is the very real danger that you may be thrust into a potentially compromising situation. Recalls one young woman: “When you’re dancing cheek to cheek with boys, their hands start wandering all over you. They expect you to accept it!” Could you not avoid such a problem simply by keeping to yourself? Perhaps. But that is often easier said than done.

Suppose you go unescorted or go with a group of friends. One teenager reminds us: “Some boys are there by themselves, and they try to go after as many girls as they can.” There may also be a fair number of aggressive girls there. A youth who goes alone can easily become the target of unwanted attention.

On the other hand, having a fellow believer as an escort can create yet other complications.



After all, dating is taken seriously by Jehovah's Witnesses today.* And even if you feel sure that your escort has no romantic interest in you, to what extent can he or she really serve as a protection? Notes 19-year-old Lora: "What's going to prevent others from cutting in as you dance—or asking you to go out with them? What happens then?" A tense, awkward situation can easily develop.

Not to be overlooked, either, is the danger of letting your guard down and getting caught up in the spirit of the occasion yourself. Bad associations *do* "spoil useful habits." (1 Corinthians 15:33) Admits an 18-year-old named Nick: "Even if two of Jehovah's Witnesses went together, they could easily be prompted to do what everybody else is doing."

When the Party's Over

Oftentimes, though, the real problems arise *after* the party. "Some go to a hotel or to somebody's house," says young Tanya. Adds Yolanda: "You're supposed to stay there all night. That's part of the tradition." Drugs, alcohol, and sex can also be part of the prom tradition. The morning after, however, can leave a youth with a stricken conscience, diminished self-respect, and the very real fear of pregnancy—or AIDS.

All too often, then, proms and school dances fail to live up to their promise of romance and wholesome fun and degenerate into wild parties, revelries. We are reminded that the prophet Isaiah in his day expressed God's disapproval of gatherings that lasted "till late in the evening darkness." The parties were complete with alcoholic beverages and music—"harp and stringed instrument, tambourine and flute." Fun? No doubt. But Isaiah said of the partygoers: "The activity of Jehovah they do not look at, and the work of his hands they have not seen."—Isaiah 5:11, 12.

* See chapter 30 of the book *Questions Young People Ask—Answers That Work*, published by the Watchtower Bible and Tract Society of New York, Inc.

Yes, getting into a party environment with youths who do not appreciate the Bible's view can pose serious risks. True, not all such affairs turn into revelries, and circumstances vary throughout the world. So you and your parents must decide whether it is appropriate for you to attend. "It's hard," admitted one young girl, "because the prom is glamorous, and it's such a temptation. It's in front of you all year!"

But talking matters over with your parents or a mature Christian can help clarify things. Consider: Who will be attending the dance? What type of supervision will there be? Will alcoholic drinks be served? What kind of music will be played? Have there been problems in past years? How would being a part of such an affair be viewed by others—especially fellow Christians? Could attending put a stumbling block before some?—1 Corinthians 10:23, 24, 32.

In view of all the problems associated with proms and school dances, Christian youths would consult with their parents and likely decide not to attend. But is not your graduation an accomplishment to be proud of? Of course! Likely, though, you can find a safer way to celebrate, perhaps by sharing your joy with fellow Witnesses. For example, your family may decide to arrange for a modest gathering or a dinner party. When such gatherings are kept to a reasonable size and are well organized, serious problems rarely develop.*

Such a gathering may lack the glitter and glamour of a formal school prom. But it can still be a happy occasion—free of the pitfalls a prom or school dance may present. Best of all, you will be in harmony with Paul's words at 1 Corinthians 10:31: "Whether you are eating or drinking or doing anything else, do all things for God's glory."

* See the article "Social Entertainment—Enjoy the Benefits, Avoid the Snares" in the August 15, 1992, issue of *The Watchtower*.

The Biggest Man-Made Hole in the World

AFRIEND had said to me: "If you go to Salt Lake City, be sure to visit the Kennecott copper mine at Bingham Canyon. You will be surprised at what you see." My wife and I had that opportunity in August 1992. We discovered that our friend was not exaggerating.

We took a leisurely 26-mile drive southwest out of Salt Lake City, in the blazing, dry heat of Utah. As we headed for the nearby Oquirrh mountain range, we soon saw our destination—a huge slash of pale yellow ochre on the horizon, contrasting with the darker color of the surrounding mountains. It was the massive diggings and terraces of the Kennecott copper mine. But even that view did not prepare us for what we were about to see.

We began to wind our way up a steep mountainside. On the way, we passed huge dump trucks, as big as a small house, the largest of which can carry up to 240 tons of rock on each trip. They are so big that their 12-foot-diameter wheels tower above the tallest person. Eventually we reached the public observation area. And there it was—the biggest man-made hole we had ever seen!

As we looked over the edge to the bottom of the pit, those massive trucks seemed like dinky



toys. We were staring into an excavation more than half a mile deep and with a diameter of two and a half miles. The pit bottom is over 5,000 feet above sea level, and the upper edges of the pit reach 7,800 feet. It is so deep that the world's tallest building, the Sears Tower in Chicago, at 1,454 feet, would reach only half way up the side of the mine. The company aims to go down another 850 feet, which they calculate will give them work at least until the year 2020.

The mine looked like a giant amphitheater, with 50-foot-high terraces, known as benches, stepping down to the depths of the abyss. We were told that this copper mine can be seen from the space shuttle. Yet, all of this had a very simple beginning 130 years ago, when the mountain was still over 8,000 feet high.

Ridiculed for Mining

Mining first started in 1863, when Colonel Patrick Connor from Fort Douglas staked claims. However, it was small-scale mining and was unprofitable. The Bingham Canyon mine as such was first started in 1906 when Daniel Jackling's Utah Copper Company and a rival company began hauling ore that contained only 2 percent copper. An official brochure explains that "they were ridiculed by mining men



Photos (above and page 25 top): courtesy Kennecott Utah Copper

Above: The pit is over half a mile deep and two and a half miles across

Top right: Smelter featuring one of the world's tallest chimneys

Inset: A 330-pound copper cathode, marked to indicate how copper is used by percentage

Bottom right: A diesel truck that carries up to 240 tons of ore

of the era who thought they could never make a profit mining such low-grade ore." What would they say today, when the percentage of copper to ore is only 0.6 percent? Why, "more copper has been produced by Bingham Canyon than any mine in history. Five billion tons of rock have been moved since the open pit was first started."

Copper is not the only product—gold, silver, and molybdenum (a metal used to strengthen steel) are also produced, as much as 500,000 ounces of gold and over 4,000,000 ounces of silver as by-products in one year! Little wonder this mine has been called the richest hole on earth.



And if you are wondering why copper is so important, imagine what would happen if all the copper was stripped out of all electrical wiring, out of all generators, transformers, and other current-carrying devices. The list could go on to include refrigerators, airplanes, cars, and so forth. Copper is fundamental to the processes of modern life, even as it was in ancient times. Copper is mentioned 166 times in the Bible.—Genesis 4:22; Exodus 27:1, 2.

Copper Extraction—No Easy Process

What we saw in that huge pit is only the beginning of the process that results in valuable copper. The mine is where the drilling, blasting, loading, and hauling take place. The ore is then taken to

an in-pit ore crusher, from which a conveyor system transports the crushed ore to a concentrator and flotation plant five miles away. The concentration system increases the copper content of the ore from 0.6 percent to 28 percent by removing unwanted materials.

Next comes the smelting process, which gets rid of impurities, such as iron and sulfur, yielding molten copper that is now 98 percent pure. This is poured into rectangular forms called anodes and then cooled. The last step is the refining process. A brochure explains: “The anodes are subjected to an electrolytic process where the copper is refined to a purity of 99.98%.” It is during this process that gold and silver are recovered as by-products. This transformation turns the copper into large cathodes, 330-pound plates of copper that are then sold to the manufacturers of copper, brass, and bronze products.

All of this sounds rather simple. But in fact, the whole operation is very complicated and occupies a lot of space. After all, it takes a ton of ore to produce just 11 pounds of copper. So the next time you see copper wiring or a copper pan or kettle, remember it may have come from the biggest hole that man has ever made.—Contributed.

Surrogate Motherhood Is It for Christians?

THE ancient Roman poet Horace knew nothing of surrogate motherhood when he wrote: "It is of no consequence of what parents a man is born, so he be a man of merit." The 17th-century French writer's maxim, "Birth is nothing where virtue is not," was also penned long before the concept of surrogate birth became a legal quagmire. But, as Mary Thom reported in *Ms.* magazine, with new reproductive technology, "the functions of producer of the egg, incubator of the fetus-becoming-baby, and caretaker of the baby once born" may be divided among two or three "mothers." The question of "virtue" and "consequence" has become both ambiguous and complex.

The practice of using surrogate mothers burst onto the world scene during the mid-1970's, raising social, moral, and legal problems not faced before. Some infertile couples were eager to take advantage of this nontraditional mode of reproduction. On the other hand, doctors, lawyers, and legislators have struggled to keep up with the expanding fertility technology in an effort to set guidelines that address the ethical and moral questions raised.

What Is Surrogate Motherhood?

Surrogate, or contract, motherhood is having an artificially inseminated woman bear a child for another woman. So-called traditional surrogacy occurs when the surrogate mother is impregnated through artificial insemination with the sperm of the husband from the couple who have contracted with her. The surrogate is thus the genetic mother of the baby. Gestational surrogacy means that the wife's egg and the husband's sperm are united outside the womb in a process known as in-vitro (test-tube) fertilization, and the resulting embryo is placed in the surrogate's uterus for gestation.

Why the rise in surrogate motherhood? For one thing, high-tech science has discovered several ways to help women have babies. Couples may desperately want a child, yet because of infertility, inconvenience, or too few healthy babies for adoption, they cannot have one. So they rent another person's body to have a baby. Since large sums of money are involved, surrogacy has been described in unflattering terms, such as "involuntary servitude and slavery" and "stripping the fertility of the poor."

Pastel by Mary Cassatt. The Metropolitan Museum of Art.
Gift of Mrs. Ralph J. Hines, 1960. (60.181)



In the United States, the New Jersey Supreme Court recognized the potential for the rich to exploit the poor and in a surrogacy case stated: "There are, in short, values that society deems more important than granting to wealth whatever it can buy, be it labor, love, or life." The Supreme Court of France stated that surrogate motherhood violates a woman's body and that "the human body is not lent out, is not rented out, is not sold."

Problems With Surrogacy

Surrogacy brings a number of problems. One is the potential for ugly legal battles if the woman who gives birth wants to keep the baby. Whose baby is it, the woman who gives birth or the woman who provides the egg? So the birth of a child, usually a time of joy, sometimes leads to a courtroom battle. Another problem: Some women who agree to become surrogate mothers find their feelings changing with the development and birth of the contracted child. The contract laid out some months earlier becomes harder and harder to accept. A powerful bonding relationship is being formed between the mother and the baby inside her. One surrogate mother, not anticipating this bonding, explains her feelings about giving up the baby: "It was as if somebody had died. My body was crying out for my daughter."

Also, what long-term effects might such a birth have on the surrogate's other children, the family that accepts the baby, and the child itself? Or what will happen if a child born by a surrogate mother has a birth defect? Is the father obliged to take the baby? If not, who pays for the child's support? And an even more important question, What is God's view of surrogate motherhood?

Does Surrogate Motherhood Honor Marriage?

God's Word tells us that he looks upon marriage as something sacred. For example,

Hebrews 13:4 states: "Let marriage be honorable among all, and the marriage bed be without defilement, for God will judge fornicators and adulterers."^{*} God expects all Christians to consider marriage honorable and to keep it that way. What defiles marriage? Fornication, which can dishonor marriage in advance, and adultery, which dishonors marriage after it has been entered into.

Does surrogate motherhood honor marriage and keep the marriage bed undefiled? Simply put, no. Traditional surrogacy requires the insemination of the woman by donor sperm. The Bible's view may be found at Leviticus 18:20, which says: "You must not give your emission as semen to the wife of your associate to become unclean by it." There is no Biblical basis for making a distinction between insemination by intercourse and insemination artificially by donor implantation. Therefore, in either case, fornication or adultery is committed when insemination is accomplished by a male other than the woman's legal husband.

What about gestational surrogacy? This too defiles the marriage bed. True, the fertilized egg would be a union of the husband and his wife, but it is thereafter placed in the womb of another woman and, in fact, makes her pregnant. This pregnancy is not the result of sexual relations between the surrogate woman and her own husband. Thus, her reproductive organs are now being used by someone other than her own mate. This is inconsistent with the Bible's moral principles that a woman bear a child for her own husband. (Compare Deuteronomy 23:2.) It would not be proper for a man other than the surrogate's own husband to make use of her reproductive organs. It is an improper use of the marriage bed. Thus, surrogate motherhood is not for Christians.

* The reference work *New Testament Word Studies* shows that "the marriage bed" of Hebrews 13:4 means that not only the state but also the use of marriage should not be defiled.

Watching the World

Blasphemous Tires?

A major rubber company in Yokohama, Japan, stopped producing a line of automobile tires because Muslims were offended by them. Muslims complained that the tread pattern resembled the Arabic word for "Allah." *Asahi Evening News* said that the company has issued an apology for its lack of knowledge of Islam and explained that a computer designed the tread for maximum driving safety. No offense or blasphemy of Allah was meant. The company is recalling or replacing the tires in Islamic countries.

"New" Evangelization by Catholics

The Roman Catholic Church is putting new emphasis on evangelization, reports *New York Newsday*. Church officials are worried over the loss of large numbers of immigrant Catholics to other religious groups. Hence, Pope John Paul II has called for "the new evangelization" and has created an organization, Evangelization 2000, just for that purpose. "These strategies even include door-to-door evangelization, a method normally associated with Jehovah's Witnesses and other Christian groups," reports *Newsday*.

Australia's Expensive Crime

The total yearly cost of crime in Australia has been estimated at A\$1,600 for every man, woman, and child in the country, according to the Australian Institute of Criminology. The total annual cost is A\$27 billion, which represents 2.7 percent of the nation's gross domestic product. How is this astonishing amount calculated? *The Australian* newspaper quotes figures from the institute's report. Fraudulent insurance claims on motor vehicles are increasing, and the total cost of all types of fraud is now put as high as A\$13 billion a

year; the cost of nonfatal assaults is about A\$300 million a year. The annual cost of law enforcement has reached A\$2.5 billion, and the cost to keep just one prisoner in jail for one year has now risen to A\$50,000.

"City of No Flies"

Residents of Beijing, China, have declared all-out war on houseflies, reports the *International Herald Tribune*. "Our goal is to create a city of no flies," stated a senior health official. "But we won't just kill flies. We want to create clean cities." In a campaign to "mobilize the masses," citizens posted banners and distributed two million pamphlets announcing the campaign. During a



special "attack week" that followed, the city distributed about 15 tons of pesticides and 200,000 flyswatters. In another attack week in the following month, 1,000 teams of elderly people and young children warred against flies with 17,600 pounds of poison. In June some areas of Beijing seethed with a fly population as high as 33 per room. The goal is to bring the density level down to two flies per 100 rooms.

A European Community of the Poor?

With 18 percent of the world's total revenue distributed among Europe's 6 percent of the world's population, the European Community would appear to be a haven of peace and prosperity. Yet, *Le Monde*

Diplomatique, a Paris newspaper, reports that within the 12 nations of the European Community, there are now some 53 million persons living below the poverty level. In Greece, Ireland, Portugal, and Spain, the poor make up from 20 to 25 percent of the population, and their numbers are rapidly increasing in Great Britain, Italy, and the Netherlands. Worsening unemployment has become the biggest factor in the growing number of poor people. Among the 13 million unemployed within the Community, more than half are considered long-term unemployed.

Dark Side of United Church

"Most of us come from a rather naive assumption that such things as sex abuse would not occur in the church and would never be committed by clergy," said United Church minister Sylvia Hamilton. However, Hamilton suggests that "it is a major problem." According to Canada's *Toronto Star*, sexual abuse "ranging from jokes to forced sexual activities—is as prevalent, if not more prevalent, in the church as in society as a whole." Peter Lougheed, a United Church task-group member, confessed that "the church is a less safe place for the parishioner and for women than the secular workplace." The *Star* report adds: "After years of denial and cover-up, the problem is only now percolating to the surface like bubbles in a swamp."

Lead Worth Its Weight in Gold

A cargo of lead ingots found in the wreck of a Roman ship that sank off the Sardinian coast two thousand years ago is "worth its weight in gold," states the Italian newspaper *Il Messaggero*. In ancient Rome, thought to have been the load's original destination, the metal would have been valuable to "make pipes,

solder conduits, and cast weights." But scientists consider the discovery even more precious. Since the ingots lay on the seabed, protected from the effects of cosmic rays by a "heavy mantle of sand," time has canceled every trace of radioactivity. Such pure lead, which is impossible to find elsewhere, is of inestimable value to research physicists for protective shields that will have no effect on the delicate measurements carried out in their laboratories.

Christian Unity?

In August 1992, the WCC (World Council of Churches) elected Dr. Konrad Raiser as its new secretary-general. Dr. Raiser replaced Emilio Castro, who had served as head of the organization since 1984. The WCC, made up of over 300 Protestant, Anglican, and Eastern Orthodox churches, was formed in 1948 in an effort to bring about greater unity among the churches. Commenting on its failure to bring about such unity, the Paris newspaper *Le Monde* said: "Doctrinal dialogue has stagnated, and political involvement has divided the WCC. Its involvement in South Africa against the apartheid government, the trafficking of arms, and its [position in favor of] liberation theology have not brought about harmony . . . and have damaged its credibility. Swallowed up by more and more bureaucracy, the WCC arouses, at the most, polite curiosity or, worse, indifference."

Child Labor

"The '80's were not favorable for Brazilian children and adolescents, concluded the Foundation of the Brazilian Institute of Geography and Statistics," reports *Jornal da Tarde*. Of the 59.7 million children, the study revealed 32 million belonged to families whose per capita yearly income was less than half the minimum wage of about \$40. Rather than going to school, 17.2 percent of Brazilian children between the

ages of 10 and 14—about ten million—work secularly to help their suffering families. The result? Sociologist Rosa Ribeiro said: "It is reproduction and perpetuation of poverty. Without adequate schooling, the child has no chance of changing his social condition."

Drugs in Ancient Egypt

"Scientists at the Universities of Munich and Ulm [in Germany] have detected traces of hashish, cocaine, and nicotine in Egyptian mummies," reports the *Frankfurter Allgemeine Zeitung*. Researchers examined samples of bone, hair, and tissue taken from several mummies



dated at between 1070 B.C.E. and 395 C.E. What do these scientific discoveries tell us about life in ancient Egypt? "Egyptians clearly used drugs even to soothe crying children," the newspaper says. How do scientists know? A papyrus describes a mixture of fly excreta and poppy seeds as a potent sedative.

Bloodstained Barber Poles

Red-and-white spiral-striped poles have come to identify barbershops. Why? Because during the Middle Ages, barbers not only cut hair and trimmed beards but also pulled teeth and performed bloodletting as a cure-all. "During a bloodletting," reports *The Toronto Star*, "it was customary for the patient to squeeze a pole tightly in one hand, so that the veins would swell and the blood gush freely." To minimize the appearance of bloodstains on the pole, it was painted red. "When not in use, it hung outside the shop as an

advertisement, wrapped round with the white gauze used to bandage bloodlet arms," said the *Star*. Barbers inherited the pole trademark when the profession was divided between surgeons and barbers during the reign of Henry VIII, king of England in the 16th century.

A Single Sky for Europe?

"Within the next eight years, air travel in Europe will arrive at the point of complete paralysis," asserts *La Repubblica*. In the last two years, the volume of traffic has increased by 8 percent. Yet, delays caused by air traffic control problems have "leapt by 62 per cent," and almost a quarter of all flights arrive 24 minutes late. The absence of a centralized European airspace control network is blamed for the congestion, says the president of the Association of European Airlines, Giovanni Bisignani. At present, there are 54 control centers, which use 31 different systems. Unless a solution is found, punctuality will be no more than just "a dream."

Effect of Violent Movies

In an interview by the Brazilian magazine *Véja*, film director Steven Spielberg was asked about the effect that violence in entertainment may have on viewers. Said Spielberg: "Watching violence in movies or in TV programs stimulates the spectators to imitate what they see much more than if seen live or on TV news. In movies, violence is filmed with perfect illumination, spectacular scenery, and in slow motion, making it even romantic. However, in the news, the public has a much better perception of how horrible violence can be, and it is used with objectives that do not exist in the movies." Spielberg adds that so far he has not permitted his young son to watch some of his well-known movies (*Jaws*, the *Indiana Jones* series) because of the amount of blood and violence shown.

From Our Readers

Disciplining Children I really appreciated the article "The Bible's Viewpoint . . . 'The Rod of Discipline'—Is It Out-of-Date?" (September 8, 1992) With so much child abuse and brutality in the world around us, we need an article like this to help us stay balanced. I know children who were treated with excessive harshness from infancy. Today they are young teens with deep emotional problems. We need such information to help us to guide and teach our children in a loving way.

M. B., United States

Designer Clothing Thank you for the article "Young People Ask . . . Designer Clothing—Is It for Me?" (September 8, 1992) When I left my job a year ago to become a full-time evangelizer, I could no longer afford designer clothing. This upset me for a time. However, now I can see that the choice I made was good and that status-symbol clothing did nothing for me.

M. J. C., Brazil

Aral Sea Tragedy Many thanks for the article "The Aral Sea Tragedy." (August 22, 1992) Ever since my school days, this inland sea, as well as the neighboring Caspian Sea, has held a fascination for me. Over the years, I have been able to gather material about the larger of the two seas, but until your article, details about the Aral Sea were few and far between.

D. H., Germany

Grandparents Although we are no longer youths, my wife and I have greatly appreciated the "Young People Ask . . ." articles on living with grandparents. (July 8 and July 22, 1992) We recently moved in with my wife's grandmother, and this has posed real challenges for us. Your sound Bible-based advice and wise insight into elderly persons were just what we needed. Two family studies based on those ar-

ticles and practical application of the advice definitely improved our situation.

J. L., United States

Death Metal Your article "Death Metal—What's the Message?" (July 8, 1992) struck a chord with me. I've had a constant battle with this music. Your article gave me the strength and courage to get rid of this satanic music. I've still got a long battle, but with Jehovah's help I'll be able to win.

M. D., United States

AIDS Your article on "AIDS in Africa" (August 8, 1992) was very responsible! The advice to young ones contemplating marriage could even be lifesaving. I am a newly baptized Christian, and because of my past lifestyle, I had myself tested for the HIV infection. My test was negative. I wonder why some who should be tested hesitate to do so. Many married ones whose mates have been unfaithful simply hope for the best. But it is getting too dangerous just to sit and hope that this deadly disease has not been transmitted.

L. J., United States

We appreciate these candid comments. According to the U.S. Centers for Disease Control, it can take from three to six months after infection for the body to produce enough antibodies to be detected by an HIV test. Retesting may therefore be advisable if the test is taken soon after possible exposure to the AIDS virus.—ED.

I just wanted to express appreciation for the article "AIDS—Health-Care Workers Take Precautions!" (June 22, 1992) I work in an urgent care center. Shortly after reading this article, we had a staff meeting during which these same precautions were discussed in detail. I was able to tell others that I had read about this first in *Awake!*

T. M., United States



The Silent Swooper

**Great horned owl
—keen-eyed,
acute of ear, and
silent on the wing**

IF YOU have ever walked in the woods at night, you may have heard the plaintive hooting of the silent swoopers—the owls. Since there are at least 145 species of owls worldwide, most people could get within earshot of an owl. You can find the common barn owl throughout the Americas, Europe, Africa, and many parts of Asia, as well as in Tasmania and other areas of Australia. What makes the owl distinctive?

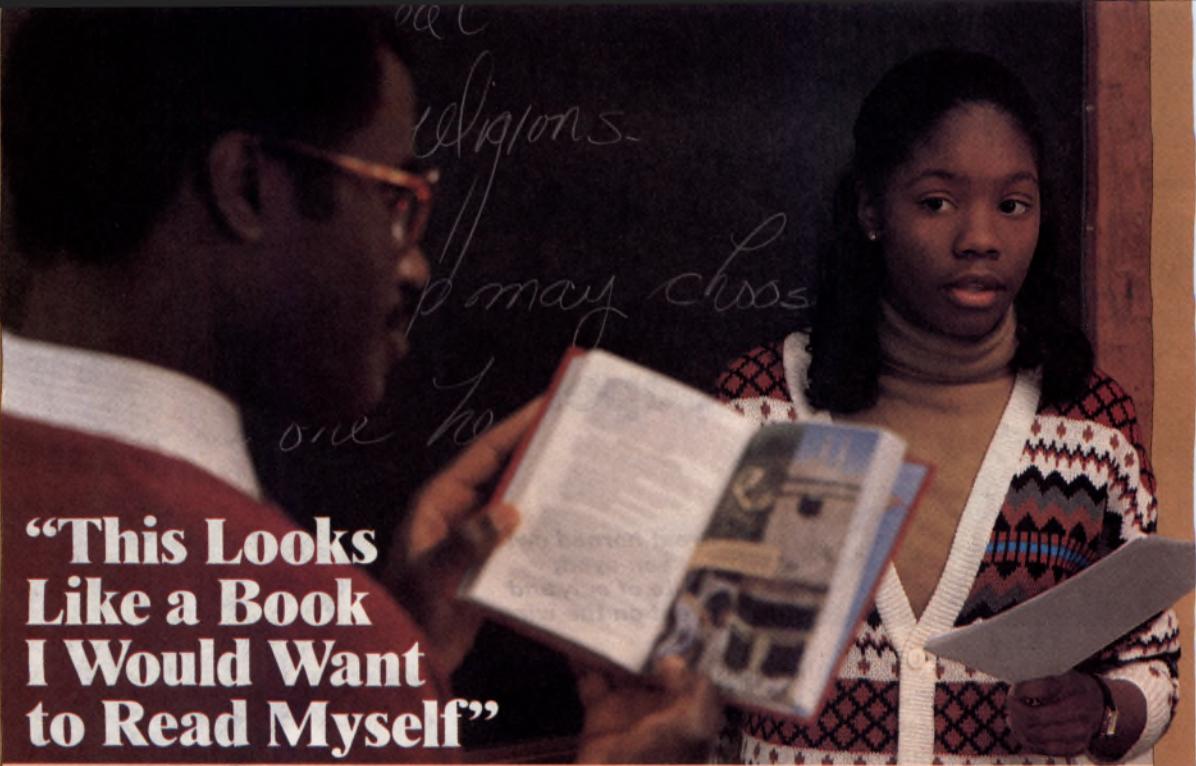
First of all, its face and eyes. The facial design varies from species to species, but it usually has a "large, broad head with a saucer-shaped ruff of feathers around the eyes. . . . It serves to reflect sound to the owl's ear openings." (*The World Book Encyclopedia*) Unlike the eyes of most birds, the owl's eyes face forward; it cannot move them in their sockets. Thus, owls must move their heads to follow moving objects. And they can turn their heads through almost a complete circle!

Another distinctive feature of these nocturnal swoopers is their feather design that allows them virtually soundless flight. Locating their prey by sight or by acute hearing, they can swoop down silently for their next meal. They are said to be "among the most useful birds to farmers" because they destroy rodents that often damage crops.

The Book of North American Birds states: "Owls around the world . . . have been perceived in all cultures as birds of ill omen and harbingers of death." The 14th-century English poet Geoffrey Chaucer called the barn owl the "prophet of woe and mischance." The Bible speaks of owls in seven verses, including Isaiah's reference to Babylon's ruined houses, "filled with eagle owls."—Isaiah 13:21.

The great horned owl has an enormous appetite. One source says: "On rare occasions, the bird has even been known to swoop in and attack people wearing fur hats, apparently mistaking the pelts for living prey"! Although declared an unclean bird under the Mosaic Law, the owl's unique design bespeaks a unique Creator.—Leviticus 11:16, 17.





"This Looks Like a Book I Would Want to Read Myself"

Jessica, a 16-year-old student at a New York City high school, wrote to *Awake!*: "I have a history teacher that nobody, I mean *nobody*, likes. He assigned the class group projects on 'The Great Religions.' My group got Islam. I was not worried because I knew I would be well equipped with the book *Mankind's Search for God*. I mustered up the best report that I could.

"The day came when our group had to give our oral report. The teacher was interrupting and yelling at the students, so I was a little nervous. When it was my turn, I told the class about the unique features of Islam. I passed the *Search* book around, instructing the students to look at the pictures on pages 286 and 289. When the teacher looked through the book, he interrupted me saying, 'Excuse me, is this your book? Can I hold on to it?' I answered, 'I can get you your own copy if you'd like.' His face lit up, and he said: 'That would be excellent. This looks like a book I would want to read myself.' My heart was beating so hard with excitement and surprise, I just stumbled through the rest of my report.

"He gave me one of the highest grades in the class (95) on that report. I thank Jehovah God and you brothers for giving us such a valuable tool as *Mankind's Search for God*."

MANKIND'S
SEARCH
FOR GOD