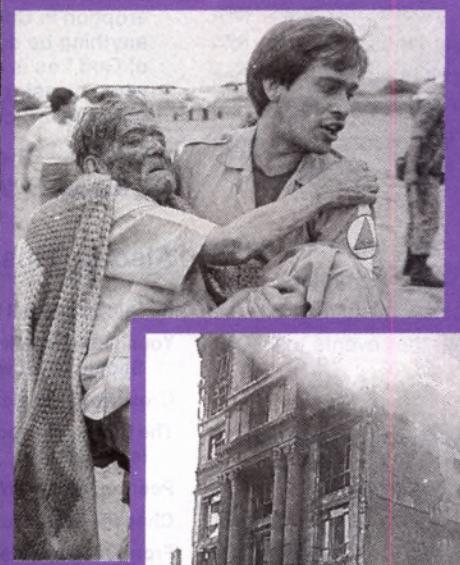


Awake!

AUGUST 8, 1986



Are Disasters “Acts of God”?

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 stays politically neutral and does not exalt one race above another.

Most importantly, this magazine builds confidence in the Creator's promise of a peaceful and secure new system before the generation that saw the events of 1914 passes away.

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Feature Articles

Disasters took a high toll in lives last year. Think of the plane crashes, fires, and natural disasters, such as the earthquake in Mexico and the volcano eruption in Colombia. Why do they happen? Can anything be done to prevent them? Are they "acts of God," as is often said? Will there ever be a time when disasters will not plague mankind? The following articles examine these questions

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Frederick W. Franz, President

disasters, but it was the British press that had "unanimously" blamed the disaster on the British government's decision to ban the British airways from flying south to Africa.

"**W**ORST year in history," headlined *The Times* of London regarding air crashes during 1985. The death toll of about 2,000 confirms that it was history's worst year for aviation fatalities.

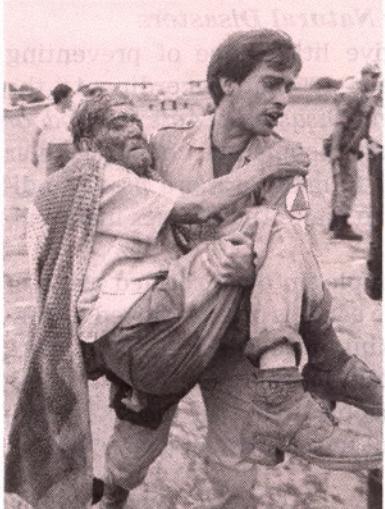
The worst fire ever in a British soccer stadium brought disaster to the English city of Bradford in May 1985. Flames raced through the wooden grandstand holding 3,000 spectators, leaving 55 dead and hundreds injured.

Elsewhere last year, natural catastrophes caused a tremendous loss of life. The September earthquake in Mexico City killed over 9,000 people. A few weeks later in Colombia, a huge mudslide resulting from the eruption of Nevado del Ruiz volcano virtually wiped out the town of Armero, killing over 20,000.

DISASTERS —*The Search for Their Causes*



Reuters/Bettmann Newsphotos



Geeting to Root Causes Once a disaster strikes, a thorough investigation into its cause begins and may take weeks or months. Was it negligence,

faulty machinery design, or even sabotage? Was adequate warning given? What were the safety procedures? Did someone shortcut them?

The claims of victims seeking compensation hinge on where the responsibility lies. In a gas leak at a pesticide plant in Bhopal, India, described as "the worst industrial accident in history," over 1,700 were officially listed as killed, with some 200,000 injured. There are claims reportedly amounting to more than the chemical company's Indian assets. With such interests at stake, establishing the cause and apportioning the blame is a painstaking business.

Today's large aircraft carry two flight recorders, or black boxes as they are called. One details dozens of

bits of information about the aircraft's performance every second. The other is a cockpit voice recorder that contains the crew's communications right up to the instant of the crash. These black boxes are so vital in helping to determine the cause of air accidents that enormous efforts are expended to recover them.

Investigators also question survivors in a search for clues to the cause of a crash. In Japan an off-duty flight attendant survived the world's worst single-plane air disaster. She was able to provide experts with important details of the jet's flight in their efforts to determine the cause of the tragedy that took 520 lives.

Valuable Lessons Learned

Once the cause is known, attention switches to preventing similar catastrophes. The soccer-stadium fire in Bradford was traced to rubbish under the stand, apparently ignited by a cigarette or a lighted match. As a result, officials formulated guidelines to improve safety at sports facilities.

At England's Manchester airport, a fire aborted a jet airliner's takeoff, killing 55 people. As a result, a critical eye was turned on evacuation procedures. Also, the fire-resistant furnishings used in aircraft cabins were carefully examined.

Thus, valuable lessons are learned from a thorough examination of what causes disasters. Negligence, poor workmanship, faulty design, and other factors show how the human element figures prominently in man-made calamities.

But what about natural disasters? What does the search into their causes reveal?

Predicting Natural Disasters

There has been considerable success in forecasting natural disasters such as may

be caused by hurricanes. In the Caribbean, "the probability of early warning" has increased to "almost 100%" says one report. It adds: "Most forecasts can give 24 hours warning of the expected arrival time and the force of the storm."

Advance warning of other types of disasters is much more difficult to achieve. But on one occasion, the Chinese achieved success in predicting an earthquake. By observing the peculiar behavior of animals in an area of Liaoning province, authorities were alerted to an impending catastrophe. They evacuated the city of Haicheng. Soon after, an earthquake struck, devastating 90 percent of the city. Because the warning was obeyed, there was minimal loss of life.

However, earthquake predictions are seldom precise enough for emergency evacuation. An example was the horrific death toll, officially put at 242,000, in the 1976 T'ang-shan quake in China. Scientists can locate many danger areas, but they cannot predict just when an earthquake will strike. Thus, while the 1985 earthquake in Mexico came as "no surprise to seismologists," as one report said, it still caused enormous devastation.

Preventing Natural Disasters

Experts give little hope of preventing such disasters. In fact, according to the book *Natural Disasters: Acts of God or Acts of Man?*, "people are changing their environment to make it more *prone* to disasters, and to make themselves more *vulnerable*."

As an example, in overcrowded areas of the world the earth is often stripped of vegetation, making droughts and floods more likely. In addition, there are countless examples of people living in disaster-prone areas who fail to act on official warnings.

Can anything be done to stop the natural forces that account for disasters? In connection with earthquakes, scientists noted that liquid pumped down a deep well caused a series of small tremors in the area. They hope by this means to release the tension of the earth's crust and minimize earthquakes. But so far they have had little success. As the book *Disaster!* concludes: "Not enough is known at present about the safety of the procedure . . . to justify its use in densely populated areas."

Other attempts to avert natural disasters have not proved to be any better. Consider what has been tried with hurricanes. For some 25 years, aircraft have flown into the

eye of hurricanes to "seed" them with chemicals to try to dissipate the force of the storm. Yet hurricanes continue to bring death and devastation.

Attributed to the Supernatural?

Since predictions are uncertain and prevention not really possible, many blame superhuman powers outside the physical realm. The book *Disaster!* comments: "In a culture that has tried to make everything predictable, nature's violence is the one variant, the one oddity, that no one can explain or prevent."

It is little wonder, then, that many attribute natural disasters to God. But is this proper? Are disasters really "acts of God"?

Are Disasters "Acts of God"?

WHEN an earthquake shook the ground beneath their feet, some ancient people believed that an underground creature had stirred. It was also thought by many that thunder, lightning, and storms were evidences of conflicts among their gods.

To try to avert disaster, such people practiced religions that they hoped would appease those gods. "For the greater part of history," says the book *Disaster! When Nature Strikes Back*, "man has tried to explain the natural catastrophes that he endured . . . through folklore, mythology, and religion."

In English-speaking countries today the phrase "act of God" is often used in a legal sense. Yet, one 19th-century jurist explained: "I have myself never had any doubt but that this phrase does not mean

act of God in the Biblical sense of the term . . . It means an extraordinary circumstance which could not be foreseen, and which could not be guarded against."

True Acts of God

To help clear up confusion over the meaning of the phrase "act of God," we first need to understand the criteria, or conditions, that an event must meet to be a true act of God.

The Bible clearly tells us that God is Almighty. (Exodus 6:3) But it also says: "Perfect is his activity, for all his ways are justice. A God of faithfulness, with whom there is no injustice; righteous and upright is he."—Deuteronomy 32:4.

Knowing that Jehovah is just, upright, and consistent helps to fix the criteria that enable us to determine when a catastrophe

is truly an act of God. Some key factors are: (1) It is always in harmony with God's purpose; (2) God gives advance warning before acting; (3) he gives instructions to obedient ones for survival.

With this in mind, consider two occasions when God did act to bring a disaster. One was during the time of Noah, over 4,300 years ago.

A True Act of God

What were the conditions on earth in Noah's day? "The badness of man was abundant in the earth and every inclination of the thoughts of his heart was only bad all the time. And the earth came to be ruined in the sight of the true God and the earth became filled with violence."—Genesis 6:5, 11.

Hence, God determined to wipe wicked humans off the earth by bringing a global disaster. The Creator, as "Landlord" of the planet, was fully justified in doing so because of mankind's depravity.

However, God took note of the outstanding integrity of Noah and his family. He promised them safety during the coming cataclysm if they obeyed his instructions. (Genesis 6:13-21) Did Noah and his family adhere to this arrangement? The Bible account says: "Noah proceeded to do according to all that God had commanded him. He did just so."—Genesis 6:22.

Was Noah's obedience worthwhile? Yes, for the apostle Peter relates that God "kept Noah, a preacher of righteousness, safe with seven others when he brought a deluge upon a world of ungodly people." (2 Pe-

ter 2:5) Truly, God cares for his servants, communicates with them, and sees to it that they are preserved when he acts. As the Bible states: "The Sovereign Lord Jehovah will not do a thing unless he has revealed his confidential matter to his servants the prophets."—Amos 3:7.

Another Act of God

Another act of God took place several centuries after the Flood. The cities of Sodom and Gomorrah faced destruction from God because of their gross immorality. Not even ten righteous persons could be found there, only three—Lot and his two daughters.

What was the attitude of the people in those cities? As an example, note the reaction of the men engaged to Lot's daughters when they were told to get out of the city because destruction from God was imminent: "In the eyes of his [prospective] sons-in-law he seemed like a man who was joking."—Genesis 19:14.

Earlier, when God's messengers stayed with Lot, the men of Sodom "surrounded the house, from boy to old man, all the people in one mob." Why? They kept calling out to Lot: "Where are the men who came in to you tonight? Bring them out to us that we may have intercourse with them." They wanted to inflict their homosexual perversions on God's agents! Thus, because of such immorality, divine destruction wiped out the cities.—Genesis 19:4, 5, 23-25.

That this was another act of God is made clear: "By reducing the cities Sodom

Factors That Are Present in an Act of God:

- (1) It is always in harmony with God's purpose.
- (2) God gives advance warning before he acts.
- (3) He gives clear instructions for survival.

The destruction of Sodom and Gomorrah was another act of God

and Gomorrah to ashes [God] condemned them, setting a pattern for ungodly persons of things to come; and he delivered righteous Lot, who was greatly distressed by the indulgence of the law-defying people in loose conduct.”—2 Peter 2:6, 7; Jude 7.



Disasters That Are Not “Acts of God”

A close scrutiny of catastrophes that some call “acts of God” reveals that, in fact, many are man-made. Others, of course, result from natural forces such as earthquakes and hurricanes.

Although the Bible foretells many man-made and natural calamities as part of the identifying marks of these “last days,” nowhere does it present instructions that guarantee immunity from them at this time. (2 Timothy 3:1-5; Matthew 24:3-12) Why not? Because such things are not acts of God. However, God’s Word does explain why good and bad people alike suffer from them.

When the first humans disobeyed God’s plainly stated instructions, they invited disaster. “You will positively die,” God had warned. (Genesis 2:17) The apostle Paul shows how far-reaching were the effects of their actions by saying: “Through one man . . . death spread to all men.”—Romans 5:12.

But more was involved. The first couple’s

disobedience meant rejecting God’s guidance and care. No longer did they want God to be Ruler over them and their home, planet Earth. By forfeiting God’s oversight, they also lost his protection from disasters.

What does all of this mean for us? It means that “time and unforeseen occurrence” befall all of us. It means that we cannot know what will occur that might make us victims of the unexpected. As fish caught in a net or birds taken in a trap, so, too, “the sons of men themselves are being ensnared at a calamitous time,” as, for example, “when [death] falls upon them suddenly.”—Ecclesiastes 9:11, 12.

So while law courts may consider natural catastrophes to be “acts of God” in a legal sense, in actuality they are definitely not God’s acts.

Another Act of God Nears

Describing the climax of the present system’s last days in which we have been living since the year 1914, Jesus warned:

"There will be great tribulation such as has not occurred since the world's beginning . . . , no, nor will occur again." (Matthew 24:21) That event will bring an end to the present unrighteous system of things. Its climax will be "the war of the great day of God the Almighty"—Armageddon. That will indeed be a calamity for all those who remain a "part of the world."—Revelation 16:14, 16; John 17:14; 2 Peter 3:3-13.

What kind of judgment will this be? It will be selective, removing only "those who do not [choose to] know God and those who do not obey the good news about our Lord Jesus." (2 Thessalonians 1:8-10) But it will not be a disaster to those who listen to God's warning and instructions, as did Noah and his family. This event will certainly be an act of God, since he will protect his servants. That makes it different from other disasters, which take the lives of good and bad alike.—See Isaiah 28:21.

How can we be sure that the coming "great tribulation" will be an act of God? We can be sure because it meets the criteria:

(1) *It is in harmony with God's declared purpose:* That purpose is to bring an end to this present ungodly system of things.—Jeremiah 25:31-33; Zephaniah 3:8; Revelation 16:14, 16; 19:11-21.

(2) *Advance Warning:* For almost seven decades now, Jehovah's Witnesses have sounded a clear warning of this system's end, and they have preached the good news of God's incoming Kingdom. Their work has grown in scope until there are now over three million Witnesses throughout the earth. (Matthew 24:14; Acts 20:20) We encourage you to ask them about their message the next time they call at your home. Do not be like those in Noah's day who, as Jesus said, "took no note" and perished in the Flood.—Matthew 24:37-39.

(3) *Instructions for Survival:* The Bible urges: "Fear the true God and keep his commandments." (Ecclesiastes 12:13) The key to survival is learning what God's instructions are and then following them. Jesus put it plainly: "This means everlasting life, their taking in knowledge of you, the only true God, and of the one whom you sent forth, Jesus Christ." (John 17:3) Jehovah's Witnesses will be happy to show you what God's instructions are.

God's Word also promises: "Hope in Jehovah and keep his way . . . When the wicked ones are cut off, you will see it." (Psalm 37:34) You can show that this is your hope by listening to Jehovah's instructions now and following them. That will identify you before God and man as one who is trying to do His will and thus come in line for survival. "The world is passing away . . . , but he that does the will of God remains forever."—1 John 2:15-17; Matthew 28:19, 20.

The prospects ahead are indeed encouraging for those who learn about the coming act of God and who take the necessary steps for survival, as they will be ushered into a new era under the rule of God's Kingdom. (Matthew 6:9, 10) But in that new system, what will be done to protect people from man-made or natural disasters?

Divine Disaster Prevention

With God's Kingdom in full control, what a time of peace and restoration that will be! The benefits of submitting to the rule of God's installed heavenly King, Christ Jesus, are marvelous to contemplate.

Consider what Jesus did when he was on earth that demonstrated what he will do in Kingdom rulership: He cured the sick, healed the crippled, opened the eyes of the blind, unstopped the ears of the deaf, made

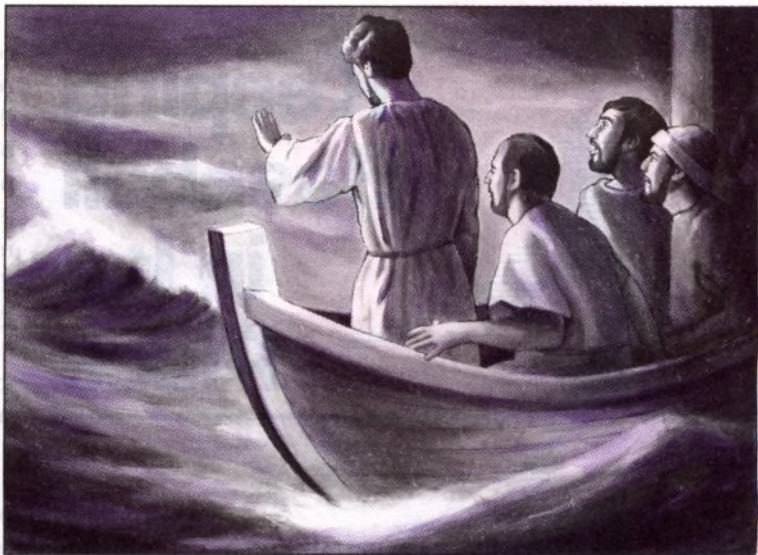
Jesus demonstrated his power over natural forces by calming a dangerous storm

dumb ones talk, and even raised the dead!
—Matthew 15:30, 31; Luke 7:11-17.

That is why the Bible assures us that under Kingdom rule God “will wipe out every tear from their eyes, and death will be no more, neither will mourning nor outcry nor pain be anymore. The former things have passed away.”—Revelation 21:4.

What Jesus did on earth exemplifies the help he will give to his subjects in the coming new system. And what of protection from natural disasters? Recall that on one occasion Jesus prevented a disaster by calming a windstorm. His disciples were awestruck and said to one another: “Who really is this, because even the wind and the sea obey him?” (Mark 4:37-41) Thus, with complete control over the elements, the powerful heavenly King of the new system will see to it that never again will natural disasters harm man.

Whatever damage man-made or natural disasters have already inflicted on our planet and its ecosystems, God’s Kingdom will be certain to remedy. The Bible’s promise is: “Even the wilderness and desert will rejoice in those days; the desert will blossom with flowers. Yes, there will be an abundance of flowers and singing and joy! . . . Springs will burst forth in the wilderness, and streams in the desert.” —Isaiah 35:1-7, *The Living Bible*.



A uniform educational program will teach all in the new system to work well and to care for their fellowman, as well as for the earth. “Righteousness is what the inhabitants of the productive land will certainly learn.” (Isaiah 26:9) With that earth-wide divine education, and mankind lifted up to perfection mentally and physically, faults attributable to imperfection will disappear. No more will selfish interests lead to shortcuts in work procedures that could lead to accidents.

Today, man-made and natural disasters affect all of us. But the disaster that we need to be concerned about most, the “great tribulation,” is the act of God that will bring this wicked system of things to its end. That act of God will open the way to a new era of righteousness for those who do not let the truth slip by them at this time. For them it will certainly be demonstrated that “the true God is for us a God of saving acts.” (Psalm 68:20) So those who display godly wisdom now will enter a new system where they will “reside in security and be undisturbed from dread of calamity.”—Proverbs 1:33.



Keeping Baseball in Its Place

SPORTS were always a big part of life in our family when I was growing up in Oregon. Baseball, football, track, and wrestling were some of the sports I engaged in during my school years.

In my early teens I became more interested in baseball when my father became a baseball coach. As my brother and I got older, my father would take us to see games in the higher baseball leagues. This helped to develop in me a great interest in that sport.

Interest in Umpiring Develops

Then, when I was just 15 years old, an opportunity arose that began my development in a career that I thought would always take first place in my life. Because of my interest in baseball and my knowledge of it, I was asked to umpire baseball games between teams made up of younger players. I was offered money to umpire those games. While I was happy to do the umpiring, at first I declined to accept payment because that would make me lose my amateur standing in sports. If that happened, then I could no longer compete in sports in school.

However, in time, I came to realize that this was what I really wanted to do with my life, and so I began to umpire baseball games on the semi-professional level, accepting payment. I would umpire as many as 15 games a week during summer, starting early in the morning on weekends and working 3 or 4 games a day, plus double-headers on weekdays.

Because of my love of sports, I realized that I could pursue a sports career on a professional basis as a baseball umpire. Since that is what I really wanted to do as my life's work, I left college after having attended three years and enrolled in a major-league umpiring school in Florida.

When I graduated from the school in 1957, I was just 21 years old. At that time I was one of the youngest to start umpiring professionally, although today that would not be considered all that young to start. Then I accepted a contract with the Georgia-Florida Baseball League and thus began my professional baseball umpiring career.

Another Need to Consider

That first year was quite a learning experience, and I really enjoyed my work. However, as time passed I also gradually came to appreciate that there must be more to life than just working, no matter how much I enjoyed the work I was doing. There must be a spiritual side to life, too, I felt.

I thought that the way to care for my spiritual need was just to attend a religious service on Sundays when my baseball schedule would allow. It didn't make

any difference to me which church I went to, but I will have to say that some people in the churches I attended made me feel unwelcome because I was a Northerner.

After the first season was over, I returned to Oregon to await the next one. It was while I was there that I came in contact with Jehovah's Witnesses and had some Bible studies with them. The more I studied, the more appealing I found the Bible's truths, especially its promise of a new system of righteousness that would shortly replace this decaying, unsatisfying old world.

I appreciated what I was learning, although I realized that I needed to know much more. Yet, what I did know about the



Not all the players agreed with my umpiring calls!

Bible's hope for the future, I was able to share with fellow bus passengers when I went South to attend another umpires' school as an instructor. That was in South Carolina in January 1958.

Later, during spring training in Georgia, I made arrangements to get baptized. That was about six months after coming in contact with the Witnesses. And at the end of spring training, I was baptized at an assembly of Jehovah's Witnesses in Florida. That symbolized my dedication to do God's will henceforth.

During the 1958 baseball season, my umpiring meant that I would be doing much traveling from city to city. As often as was possible, I contacted Jehovah's Witnesses in the city I was in and, if time allowed, attended the meetings at the local Kingdom Hall. I also made arrangements to go out in the preaching work along with other Witnesses.

A Problem That I Had to Solve

However, as the months passed, I saw a problem arising that needed to be solved. I knew that meeting with other Christians is not just something that it would be nice to do. God's Word commands at Hebrews 10: 24, 25: "Let us consider one another to incite to love and fine works, *not forsaking the gathering of ourselves together*, as some have the custom, but encouraging one another, and all the more so as you behold the day drawing near."

Yes, the day of God's judgment against this corrupt world is drawing near. Thus, the command 'not to forsake assembling together' with other fellow Christians is an urgent one. But how could I do that when the meetings often were at the time when I was required to umpire a baseball game? This struggle with my conscience continued all during the season.

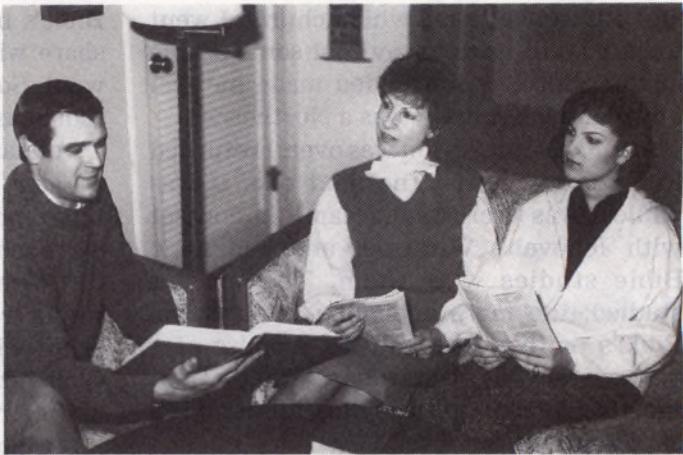
When the season ended, I returned home again. Now I was able to engage in all the Christian activities that I knew I should. Also, I informed my parents that I was now one of Jehovah's Witnesses. They were not happy about that, but they finally accepted it. They realized that it was becoming the most important thing in my life, yes, even more important than baseball.

During the next year, the 1959 season, I moved up to a higher league, the Northwest Baseball League. I arranged my schedule to attend more meetings and to share more in the preaching activity. My work took me to a different league city every few days, and when I arrived, I arranged to be in the preaching work with the local congregation of Jehovah's Witnesses. In this way, I had the privilege of being with many older, mature Christians. I learned a lot from them, and they were a great encouragement to me.

Still, I could not really concentrate on the spiritual part of my life. My constant traveling to baseball games was bound to interfere with my Christian activities, and it did. So I knew that as long as I had to travel so much, it would be very difficult for me to get established in a congregation and make more of a contribution to the preaching work.

Wanting to Do More

After the 1959 season, I decided to do more in the Christian ministry, and for two months I engaged in it full-time. Being young and single, I also began to wonder about the possibility of applying to serve at the world headquarters of Jehovah's Wit-



**Learning about the Bible with my wife
Joanne and daughter Elise**

nesses in New York. When I discussed this with an experienced Witness, I felt encouraged to apply.

Thus, in December I decided to turn in my application for full-time service at Bethel, as the world headquarters in New York is called. But right at that time, I received a new baseball contract! The league president promised me advancement to a higher league, the Pacific Coast League, if I would stay in baseball one more year. That was the kind of advancement I had wanted so much when I first started to umpire games.

What would I do? There was no doubt in my mind. I thanked the league president but walked out of professional baseball. There was much more to life than ball games. This was a critical time in world history, and there was something much more important to do with my life. Thus, early in 1960, my application to work at the headquarters of Jehovah's Witnesses was accepted, and I went there to take up my new way of life.

While I did enjoy being a part of baseball, I'll have to admit that there were aspects of

it that were not pleasant. For example, there were times when it got very tense, such as when players and managers—and fans—disagreed with some of my decisions. They let me know about it in no uncertain terms! Too, on more than one occasion, I had to receive medical attention for incidents on the ball field. Such aspects of the game I surely don't miss.

No Regrets

Have I ever had regrets that I gave up an umpiring career for the Christian ministry? Not at all. In fact, an incident that took place in 1963 reinforced my decision. In New York City, there is, of course, the famous Yankee Stadium, where the New York Yankee baseball team plays. While umpiring, it had been my dream to be in the big leagues some day and umpire a game at that stadium!

Indeed, in the summer of 1963, I went to Yankee Stadium—but not to umpire a baseball game! It was, instead, to attend a large international convention of Jehovah's Witnesses that was being held there. It was thrilling for me to be at the stadium along with tens of thousands of God's servants. In fact, I even participated in a part on the program, and the platform where I stood was not far from home plate! I thought to myself: 'How much better to be here on the Yankee Stadium ball field this way than to be umpiring a ball game!' I'll admit that this was a very satisfying occasion for me.

During my stay at Bethel, I met my wife, Joanne. She was in a local congregation of Jehovah's Witnesses in New York, engaged in the full-time ministry. Thus, in 1964, after four years of service at Bethel, I left to get married. For a number of years, my wife and I kept up the full-

time ministry. During those interesting years, we were privileged to assist congregations in Vermont as well as in Wyoming. And how strengthening it has been to have a wife who shares the same interests that I do.

However, in 1969 we had to return to Oregon to care for my father who was seriously ill. And the next year, our daughter Elise was born. Although I have to do more secular work now to support my family, we have continued to serve our Creator regularly in the ministry and are also training our daughter to respect his laws and purposes. Too, from time to time I have the opportunity to serve in various other capacities in the congregation.

In 1984 I even had the privilege of returning to Bethel in New York for two weeks. This was as one of many volunteer workers, often family men with trades, who come in temporarily to assist with the large construction projects in progress there. My wife gladly cooperated and accepted my absence. It was a privilege to have a share in working on the expanding factory, office, and housing facilities at Bethel. The huge complex with over 2,500 volunteers is used to support the activities of Jehovah's Witnesses all over the world and to direct the huge expansion now taking place among them. Those two weeks were very gratifying to me.

No, I have never regretted giving up my career in baseball—not for a minute! While I still enjoy baseball, I keep it in its place. I am more convinced than ever that I made the right decision and that there is something far more important in life than sports. And it is this: serving my Creator now, with the hope of serving him forever in his new system of righteousness soon to come.—*As told by Richard DeChaine.*

Young People Ask...

Should I Follow the Latest Fad?

REGARDING a recent fad known as break-dancing, several young persons commented: "They do it in school—in the gym and in the hallways." "I've seen them do it on tables and benches in school." New-wave clothing and haircuts, including punk, are likewise popular fads. Running shoes worn with business suits and video games have had their time in the spotlight as popular trends. Yes, ours is an age of fads. But why? Where do fads come from?

A fad is defined as a pursuit or interest that usually is followed with exaggerated zeal by some but is short-lived. Consider, for example, the short career of the toy known as the Hula Hoop. *Newsweek* of December 12, 1983, noted: "No toy has

Advertisements often portray young people as popular, successful, and happy because they follow a certain trend

quite created the mass mania inspired by the Hula Hoop. The \$2 plastic ring rolled onto the scene in 1958 and 30 million Americans quickly took it to their hearts and hips. But just as fast they tired of the three-foot hoop and by the end of the year the fad had died."

How do fads become so popular in the first place? In some cases, word of mouth

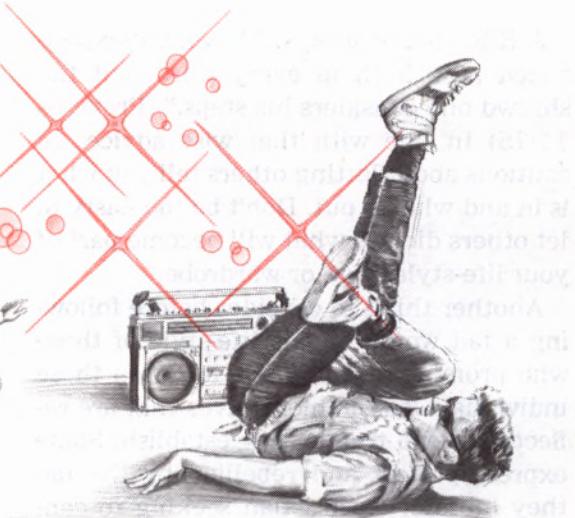
spreads them. Often, though, fads are promoted by musicians, stage and screen actors, athletes, manufacturers, racial groups, and others. Slick advertisements or TV commercials are especially designed to capture the attention of young people. But why do advertisers often aim for youths?

Why Do Youths Follow Fads?

It's only normal to want to be accepted by others, and particularly do youths feel such a need. Well aware of this, some advertisers capitalize on it as a means of furthering a fad. Advertisements often portray young people as popular, successful, and happy because they wear, use, or listen to this or that product. As a man interviewed by *U.S. News & World Report* put it: "Fads, no matter where they occur, create a certain kind of status.... Fads also appeal to people's desire to be part of something that is new."

Eighteen-year-old Neil agrees. "Everyone wants to be accepted," he says, explaining why so many young people go after fads. Gerald, who is also 18, likewise observes that youths may wear brand-name clothing to "get the respect of their friends." The power of such peer pressure was well summed up by 13-year-old Pam when she said: "Because you see your friends wearing them you want to have them also."

Do you remember the Hula Hoop?



What do you think about break-dancing?

You may know some young people who follow a trend not because it is especially appealing to them personally but because it is considered the in thing to do. Have you ever felt that way? Nevertheless, perhaps you have wondered . . .

Are All Fads Bad?

Not necessarily. For example, one activity that has become increasingly popular in recent years is running. Some who have followed this trend in moderation say that it has helped to improve their health.

But fads are not always so health inducing. Consider break-dancing. It has been described as "an energetic mix of acrobatics and robot-like moves," "a combination of such acceptable elements as acrobatics, pantomime and music." Of course, dancing can be clean and healthy fun.

But it should be noted that some forms of break-dancing are reportedly dangerous. It has been said that they can cause lower back pain and difficulty in bending, symptoms of what the *American Family Physician* calls the break-dance back syndrome.

Especially dangerous is head-spinning. According to *Asiaweek*, one youth in Malaysia broke his neck and died while break-dancing. No wonder that in Djakarta, Indonesia, the government banned head-spinning, though permitting other less dangerous forms of the dancing. Is it wise to pursue an activity that could jeopardize your health or even your life? —Compare 1 Chronicles 11:17-19.

Should I Follow That Fad?

Some allow others to decide for them what is in and what is out. In effect, they become little more than a slave. As Romans 6:16 says: "Do you not know that if you keep presenting yourselves to anyone as slaves to obey him, you are slaves of him because you obey him?" Interestingly, *McCall's* magazine noted: "Almost everything has become subject to fashion: food, hobbies, books, slang, furniture, pets, people, places." But is it wise to become a "slave" to others, letting them decide what you should eat, read, or buy, or where you should go?

A Bible proverb says: "Anyone inexperienced puts faith in every word, but the shrewd one considers his steps." (Proverbs 14:15) In line with that wise advice, be cautious about letting others tell you what is in and what is out. Don't be too hasty to let others dictate what will become part of your life-style, diet, or wardrobe.

Another thing to consider before following a fad would be the life-style of those who promote and practice it. Often these individuals lead immoral lives that are reflected in the trends they establish. Some express protest and rebellion by the fad they initiate. A Christian seeking to conform his or her life to Bible standards would want to consider how a particular fad measures up against what the Bible says at Philippians 4:8: "Whatever things are true, whatever things are of serious concern, whatever things are righteous, whatever things are chaste, whatever things are lovable, whatever things are well spoken of, whatever virtue there is and whatever praiseworthy thing there is, continue considering these things." If a fad does not measure up to that list, would it be wise to follow it?

Other matters to consider would be: (1) *How do your parents view it?* Before considering your parents to be old-fashioned or 'not with it,' remember the Bible's counsel at Proverbs 23:22: "Listen to your father who caused your birth, and do not despise your mother just because she has grown old."

(2) *How will it affect the view others have of you and what you represent?* Does it really matter what others think? The apostle Paul saw the need to reason with some first-century Christians regarding their responsibility to consider the viewpoint of fellow Christians. He went to the

point of saying: "Therefore, if food makes my brother stumble, I will never again eat flesh at all, that I may not make my brother stumble."—1 Corinthians 8:13.

(3) *How will it affect you physically and spiritually?* Before following a particular fad, ask yourself: Would following it reflect "soundness of mind"? (2 Timothy 1:7) Would it endanger my health, perhaps even my life? How much better to spend your time in pursuit of things that will not be damaging physically or undermine your spiritual progress.

So, while many youths rush to follow the latest fads and fashions, you can be different. You can learn to think for yourself and make wise decisions. "The scene of this world is changing," says the Bible. (1 Corinthians 7:31) You do not have to be caught up in the continual current of change that causes many to be anxious about what they should do, say, or wear. (Compare Matthew 6:31, 32.) Make the focus in your life the winning of God's approval. Developing the qualities that please God will also help you to gain genuine friends—friends who accept you not because you follow the latest fad but for what you are as a person.

In Our Next Issue

- *The Mystery Behind the Occult*

- *Paradise—Only a Fantasy?*

- *Why Does He Talk So Funny?*

crossword puzzle

Clues Across

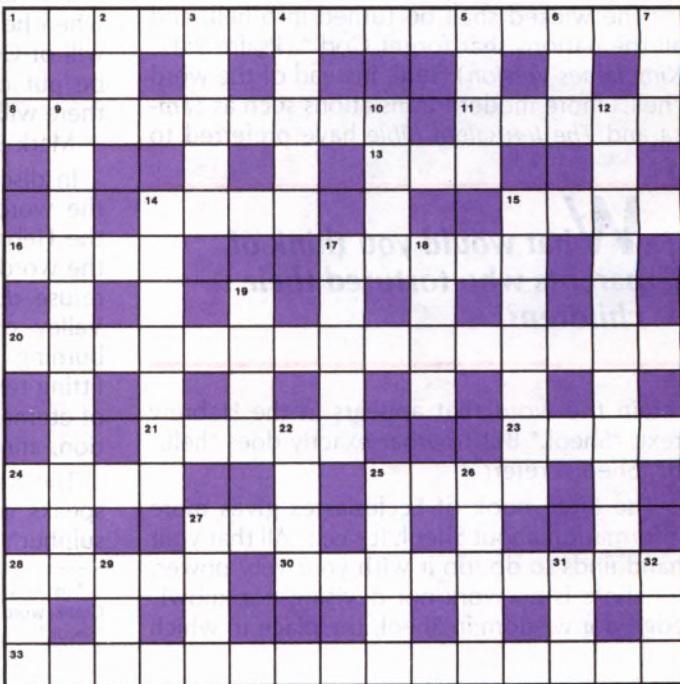
1. Jehovah classified animals into these two groups [3 words] (Leviticus 11:47; 20:25)
8. Permeated (Job 10:15)
11. Pound (Ezekiel 6:11)
13. Noted for its industriousness (Proverbs 6:6)
14. Animal enclosures (Numbers 32:24)
15. Corrosion (James 5:3)
16. Each differs from another in glory (1 Corinthians 15:41)
17. Hurry (Luke 2:16)
20. Wild, shaggy-haired creature [3 words with hyphen] (Isaiah 34:14)
21. Associated with honey (Psalm 19:10)
23. A Kohathite Levite ancestor of Samuel (1 Chronicles 6:33, 34, 38)
24. Raise (Luke 21:28)
25. Fishermen use them (Luke 5:4)
27. This Judean king's prayer resulted in victory (2 Chronicles 14:9-13)
28. Father of Edomite King Hadad (Genesis 36:31, 35)
30. His blood was avenged in Jesus' generation (Luke 11:47-51)
33. By means of this the spirit was given [4 words] (Acts 8:18)

Clues Down

1. Island along the route of Paul's third missionary journey (Acts 21:1)
2. Consume (Leviticus 3:17)
3. An angel touched this and

- made Jacob limp (Genesis 32:25, 31, 32)
4. Written reminders
 5. Thrown (Luke 12:28)
 6. Father of Shimei, a food deputy in Benjamin (1 Kings 4:7, 18)
 7. Squeeze tightly (Leviticus 5:8)
 9. One living in a certain priestly Benjamite city (1 Chronicles 27:12)
 10. One of Zerah's five sons (1 Chronicles 2:4, 6)
 12. Land between the Tigris and Euphrates rivers (Acts 7:2)
 14. Guard (Psalm 91:14)
 15. Angels rejoice when a sinner does this (Luke 15:10)
 17. 'Love ----- all things' (1 Corinthians 13:4, 7)
 18. You are either on that of
- Jesus or against him (Luke 11:23)
19. He was a hundred years old when he had his first son (Genesis 11:10)
 22. Name of the left-hand pillar in front of Solomon's temple (1 Kings 7:21)
 25. A Pharaoh (Jeremiah 46:2)
 26. Train (Psalm 143:10)
 27. Over 400 of his descendants returned from Babylonian exile with Zerubbabel (Ezra 2:1, 15)
 28. Month that Solomon completed the temple (1 Kings 6:38)
 29. Fundamental division of time (Genesis 1:5)
 31. The neighborly Samaritan brought the wounded man to one (Luke 10:33, 34)
 32. "Whoever ---, more will be given him" (Luke 8:18)

CROSSWORD SOLUTIONS PAGE 27



Is Hell Hot?

"MAN will burn, burn, burn!" In the darkened room, the speaker, his shirt aflame, stretches out his arms and takes a few steps toward his astonished listeners. Thankfully, the demonstration lasts only a few seconds. But with the help of his inflammable powder, the preacher has managed to make a big impression on his audience by his convincing evocation of hellfire.

Like him, many other religious teachers—especially in Christendom—say that God has this eternal fate in store for the wicked. But is that really what the Bible says?

Good and Wicked in Same Place

"The wicked shall be turned into hell, and all the nations that forget God." (Psalm 9:17, King James Version) Here, instead of the word "hell," more modern translations such as *Lamsa* and *The Jerusalem Bible* have preferred to

What would you think of parents who tortured their children?

retain the word that appears in the Hebrew text, "Sheol." But to what exactly does "hell," or "Sheol," refer?

The Bible book of Ecclesiastes gives more information about Sheol. It says: "All that your hand finds to do, do it with your very power, for there is no work nor devising nor knowledge nor wisdom in Sheol, the place to which

you are going." (Ecclesiastes 9:10) If those in hell, or Sheol, cannot think or know or act, surely they cannot be suffering.

It is not, then, surprising that even faithful servants of God went to Sheol. Jacob thought he would go there when he died, and Job hoped that God would hide him there and thus bring his sufferings to an end. (Genesis 42:38; Job 14:13) Would these two faithful servants have hoped—or even asked—to go to a burning, fiery hell along with the wicked? Certainly not!

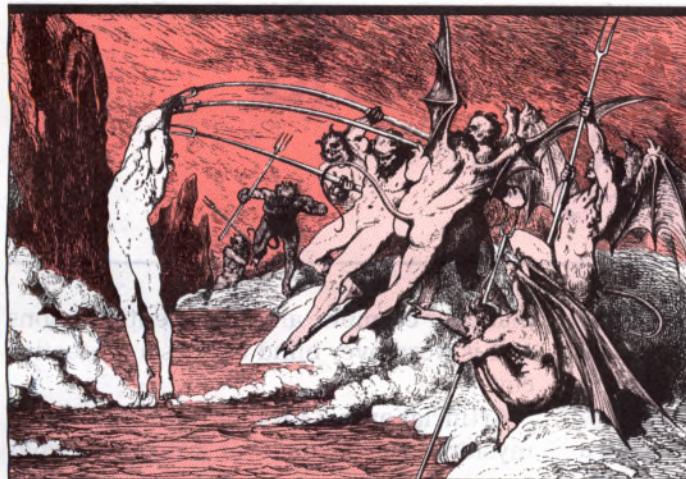
What Is the "Fire"?

But how do we understand Jesus' words when he said that those who do not do the will of God will go into "the fire that cannot be put out," or into 'a fiery furnace where there will be weeping and gnashing of teeth'?—Mark 9:43-48; Matthew 13:42.

In discussing this place, Jesus did not use the word "Hades," the Greek equivalent of the Hebrew word "Sheol."** Rather, he used the word "Gehenna." This word referred to a refuse dump close to Jerusalem, called the Valley of Hinnom, where a fire was kept burning to destroy the garbage. It was a fitting term to make Jesus' listeners think, not of eternal suffering, but of complete destruction, annihilation by fire.

The Revelation given to the apostle John speaks of a "lake that burns with fire and sulphur" into which are thrown all those who

* In Acts 2:31, in the quotation there of Psalm 16:10, the Greek word "Hades" is used to translate the Hebrew word "Sheol."



Is this the Bible's hell?

The fact that the true God is not like that is seen from the reproofs he addressed to the Israelites who had 'burned their sons and their daughters in the fire.' Jehovah insisted that this was 'a thing that he had not commanded and that had not come up into his heart.' (Jeremiah 7:31)

Since God had never thought of such things, how could we imagine that he would create a hellfire for his creatures?* Yes, if cruelty and torture disgust us, how much more must they disgust God, who is love?—1 John 4:8.

The doctrine of hellfire also goes against justice. In his letter to the Romans, the apostle Paul explains: "The wages sin pays is death." (Romans 6:23) Moreover, he tells us: "He who has died has been acquitted from his sin." If death completely removes a person's indebtedness, why should he then suffer eternally for only a lifetime of sin?—Romans 6:7.

Thus, the Bible shows that hellfire, as it is generally understood, does not exist. And this knowledge allows us to form a relationship with God that is based on love and not on terror. We suggest that you keep on examining the Bible and learn how to please him properly in order to be among those who will see that wonderful day when Hades, or Sheol, the common grave of mankind, will disappear forever.—1 John 4:16-18.

* Some may point to what Jesus said about the rich man and Lazarus at Luke 16:19-31 as proof of hellfire. But these words of Jesus are a parable and, therefore, are not to be taken literally. For more information, see the book *Is This Life All There Is?* published by the Watchtower Bible and Tract Society of New York, Inc.

practice bad things. (Revelation 21:8) If hell exists, this must be it, since the wicked go there. But this same Bible book tells us that death, inherited from Adam, and Hades will be thrown into this same lake of fire. Can these two abstract things suffer? No. But the fire here can and does represent their disappearance, which will take place once they have 'given up those dead in them,' that is, after the resurrection of the dead.—Revelation 20:13, 14.

These last examples show that fire is only a symbol for annihilation, or eternal destruction. So there is no suffering in the lake of fire, or Gehenna, any more than there is in Hades (or, Sheol), where faithful servants of God, as well as wicked people, go. But if we go a little deeper into the subject, we will better understand why we cannot believe both in the Bible and in the existence of a hellfire.

Incompatible With God's Personality

What would you think of parents who kept their children imprisoned day after day, or even tortured them? If you would be disgusted by such acts, should you not also be disgusted by a god who would cause his children to be tormented forever in fire?

Peering Into the World of Artificial Eyes

AS THE kite lifted into the air, it bobbed up and down like a small boat in the water. Suddenly, a gust of wind caught the kite! But rather than fling it across the sky, the gust forced it straight down—driving a wire on it right into the owner's eye. Triumph had turned into tragedy, and an eight-year-old boy was left blind in one eye.

A 20-year-old woman sat fighting fear and panic as she listened to her doctor quietly explain that one of her eyes was diseased, triggered by trauma, and that both eyes would go blind if the diseased one was not removed immediately.

A young girl was blind in one eye. She grew up shy and reserved. She was very much aware that her eyes didn't match each other like the eyes of most everyone else, and she was painfully aware that the other children knew it too.

When a "Window" Gets Shut

Eyes have been called our windows to the world. Shutting even one in blindness is a traumatic experience. But for many, it means actually losing the eye as well. In the United States alone hundreds of thousands of people wear an ocular prosthesis—an artificial eye.

Each of the above-mentioned individuals has an artificial eye. The first two each eventually lost one eye. The third individual, although still having both eyes, now wears a very thin prosthesis called a scleral shell. This type of prosthesis is specially

made for cosmetic and therapeutic reasons and is worn over blind eyes as a protective cover.

Artificial eyes—for most of us they are a mystery. Have you ever wondered what one looks like, or how it stays in and moves? Is seeing with one eye the same as seeing with two? For answers, let's peer into this seldom-discussed world of artificial eyes, beginning with when an eye is lost.

An Eyeball for an Eyeball

When an eye is removed, the volume, or space, it took up needs to be filled. So a small device called an implant is designed to do this. Today, the standard type of implant used is a round, solid plastic sphere. Once inserted into the empty socket, it is covered over with socket tissue. Thus the implant acts as a pseudo eyeball, filling the void left by the removal of the real eye. Later, the artificial eye will be placed over the implant like a contact lens over a sighted eye. And the normal functioning of eye and lid muscles will move the implant/eye.

However, implants are objects foreign to the human body and therefore can possibly be rejected. Suppose the body succeeds—maybe months or even years later—in forcing the implant out? Then what?

An Implant for an Implant

There are several options. You can try having another implant put in or leave the

socket empty altogether. Or you can receive an alternative type of surgery known as a dermal fat graft. In the United States, mostly subspecialists in the field of oculoplastic surgery are trained to do this procedure. *Awake!* asked one of them, Dr. Frank H. Christensen, to explain briefly more about this unusual operation.*

What is a dermal fat graft?

It is a round plug of skin (dermis) and includes the body fat that is directly attached to that skin. It is cup-shaped and about the size of a cork in a wine bottle. However, variations of this surgery use cartilage or bone instead of body fat.

Why is the dermal fat graft used in place of an implant?

If the body is rejecting a foreign material, it seems logical to replace it with a natural one that the body recognizes—its own living tissue. It's the more physiologic approach.

Can the dermal fat graft be rejected the same as an implant?

Implants tend to be rejected because they are foreign bodies. Normally, the dermal fat graft isn't rejected.

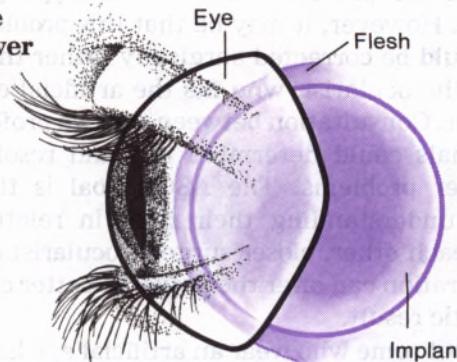
Why not initially use this procedure instead of the standard one?

Because we want to perform surgery that has been tested for 30 years and that works in the majority of cases. And the standard procedure does have at least an 80-percent history of doing well. Then save alternatives such as the dermal fat graft for the 20 percent that do not.

Whatever procedure is used, about four to six weeks after surgery, the patient is

* *Awake!* is not promoting any treatment or offering medical advice in this matter. Our aim is simply to report recognized professional approaches.

Artificial eye positioned over implant



ready for an artificial eye. So let's go to the eyemaker's office and watch him make . . .

"Eye-dentical" Twins

Ophthalmologist, optometrist, optician, oculist—these are terms you may be familiar with. But how about ocularist? An ocularist is a person who makes and fits customized ocular prostheses—artificial eyes.

In the United States his training is by apprenticeship, working five years with a master ocularist. But to qualify for certification by the National Examining Board of Ocularists, he must also follow the educational system of the ASO (American Society of Ocularists). This includes recertification every six years. At this writing, of the approximately 200 ocularists practicing in the United States, less than half are Board certified.

ASO education includes mandatory attendance at lectures given by ophthalmologists (those who specialize in the treatment of diseases of the eyes) and ocularists for the purpose of exchanging information on the latest techniques and procedures used by both professions. How does this benefit the patient?

Suppose a surgeon feels that the artificial eye will automatically correct certain

cosmetic problems, such as droopy eyelids. However, it may be that this problem should be corrected surgically rather than by the ocularist, who fits the artificial eye later. Consultation between the two professionals could determine this and resolve other problems. The ASO's goal is that by understanding their roles in relation to each other, closer surgeon/ocularist cooperation can offer the patient a better cosmetic result.

But some who wear an artificial eye have never been to an ocularist. How can that be? Some opticians (makes or sells optical products) and optometrists (tests eyes and prescribes lenses) can fit a person with a "stock" eye—a mass-produced, premade eye shell. They cannot make an eye but have had a limited course in fitting ready-made eyes.

Do you, like most people, think that all artificial eyes are made from glass? At one time that was true. They were all made from a special soft glass produced only in Lauscha/Thüringen, Germany. But during World War II, that glass supply was cut off. As a result, an alternative material for making eyes was developed—a plastic (methyl methacrylate). Acrylic plastic has proved so successful that today less than 1 percent of all patients wear glass eyes.

But you want to know how these "eye-dentical" twins are made. Join us as Mr. Edwin R. Johnston, a Board-certified ocularist, answers a few questions. (See also the box on page 23 for a brief description of how an artificial eye is made.)

What do you notice most about your patients when they first come?

Very often they're terrified. They think that they have to go through surgery again and that it's going to be painful. We show them what an artificial eye looks like and let them know they're not

going to get hurt. We try to impress on them that whatever has happened—the accident, the injury, the disease, the tumor—it's all over with now. We're going to bring them back to looking natural.

Is the loss of an eye considered a disability?

Losing one eye is a disability, but it's not a total disability. If the person really wants to, he can still do almost anything he did before.

Why is an artificial eye more easily noticed in some cases than in others?

First of all, it has to do with the reason for the removal of the eye. Was it because of an injury, and how severe was it? It could have to do with who the doctor was. It could be who the eye fitter or the ocularist was.

How do you know what size to make the eye?

In most cases an impression is taken of the eye socket with its implant and then a mold of that is prepared.

Is this similar to how a dentist takes an impression of your gums to make dentures?

Yes. And there are some skillful ways to take an impression so that you achieve more movement of the eye.

Thus with modern advances, the patient leaves the ocularist's office looking whole again. But he still has challenges to meet before he can function as before. So, then, what is it like seeing the world . . .

From a One-Sighted View?

In a word—flat. But why is that, since one eye can still see? Losing an eye also means losing depth perception—the ability to judge the size of objects and their distance from you. Depth perception is normally achieved by two eyes seeing the same object from two slightly different angles. In this way people see objects in three dimensions. A person with one eye still sees

the object but only in two dimensions. Thus, the book *A Singular View* aptly describes that the one-eyed person sees things as "a rather flattened-out scene, much like an ordinary photograph."

Three-dimensional vision can be regained, however. Depth perception can be created by slightly moving the seeing eye, the head, or the body position to view an object from two different angles. But this takes time, practice, and patience to learn.

In the case of the little boy mentioned at the outset, he was so young that he adjusted quickly and grew up never really knowing what it was like to have normal depth perception. And years later, learning to drive a car was no real problem for him.

But for the 20-year-old woman, loss of depth perception was a major challenge. For example, she had been driving a car for several years when suddenly she had to relearn this skill, using a whole new set of "rules."

Although learning to see with one eye can be

How an Artificial Eye Is Made

(Techniques may vary from one oculist to another)

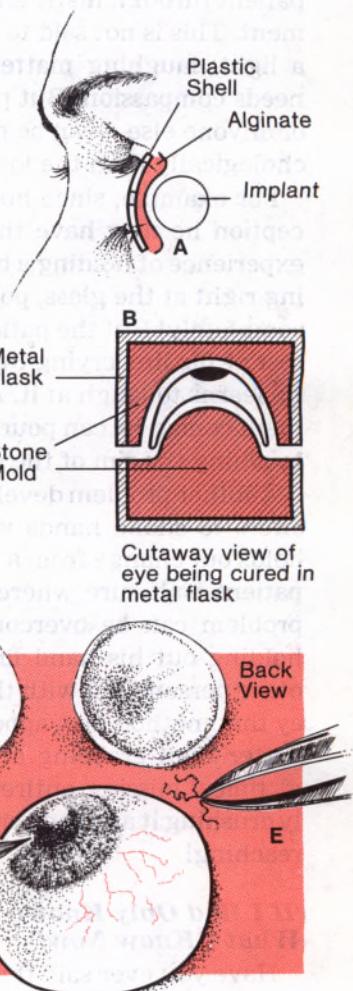
(1) An impression of the surface of the implant (or graft) is taken. First, a clear plastic shell like a big contact lens is inserted over the implant. Next, a white, pasty substance called alginate is injected behind the plastic shell, impressing the shape of the implant (A). A stone mold is made of this impression. Then a dark disk the size of the iris is placed on the center of the new eye, indicating the position of the iris. The mold and impression are enclosed in a metal flask and cured (heated under pressure) (B). The eye emerges as a white, concave plastic shell (C). With the patient sitting right there, the painting of the eye begins.

(2) The sclera, or white of the eye, is stained, since a real sclera tends toward blue or yellow. The iris is painted—including little flecks, marks, or any other details—to match the real eye (D).

(3) The "veins" are tiny, red silk threads. These are dropped onto the sclera and are squiggled around until there are about as many veins as in the real eye and the squiggles match (E).

(4) The pupil is a black dot cut from a sheet of polyvinyl chloride with an instrument similar to a paper punch. The size is determined by the patient's age and by how the real pupil reacts to light. The eye is then cured, polished, and fitted once more.

From impression to finish, the eye takes about eight hours to make. How does the eye stay in the socket? It is inserted, like a contact lens over an eye, and then "burped," or gently pushed in, to make it airtight. It is very secure when in place; physical activity will not jar it loose. Yet it can be easily and painlessly removed with two fingers.



successfully achieved in due course, how can that adjustment be made a little bit easier?

Laughter Can Be a Lifesaver

Being able to laugh at himself and not take himself too seriously will carry the patient through many an embarrassing moment. This is not said to make the problem a light, laughing matter. No, the patient needs compassion. But pity—from himself or anyone else—can be more disabling psychologically than the loss of the eye.

For example, since he has no depth perception he may have the very frustrating experience of holding a bottle of milk, looking right at the glass, pouring, and missing completely! But the patient can't spend the rest of his life 'crying over spilled milk,' so he learns to laugh at it. And until improvement comes, he can pour with the container touching the rim of the glass.

Another problem develops when someone offers to shake hands with the patient or holds out change from a purchase. The new patient isn't sure where the item is! This problem can be overcome by the patient holding out his hand first and letting the other person fill it with the item. With money that method may appear greedy, but it is better than grabbing at the money several times, missing entirely, and then finally crushing it and the person's hand by over-reaching!

'If I Had Only Known Then What I Know Now!'

Have you ever said that about something after you learned it the hard way? For the new one-eyed patient, there are many questions and fears. But who quiets those fears or explains how to relearn doing the everyday things of life? Very often, no one. Many patients learn the hard way.

In the case of the little boy we met earlier, he reacted to his situation one way. He recalls: "Since I was so young at the time, I didn't really think much about the future. I was only apprehensive about how well I would do."

By contrast, the 20-year-old woman remembers her fears. "Questions raced through my mind: 'What will I look like? Can I still drive a car? Will I still be able to be physically active? Will anyone notice that I wear an artificial eye? Will someone want to marry me?'"

In both cases, no one explained to them what to expect or how to cope. Encouragingly, though, the fears and adjustments of one-eyed patients are other areas that ASO has begun dealing with in recent years. Society members not only hear lectures on improving medical and cosmetic procedures but also receive practical information on their role in preparing the patient for the new situation.

When All the "Windows" Are Opened Again

Although wonderful strides have been made in improving life for the one-eyed patient, no one has eliminated blindness. Yet that is exactly what the Bible says will happen in the near future. It records accounts of blind people being healed. (Matthew 15:30, 31; John 9:1-7) Those accounts prove that Jehovah God's promise to restore sight to all blind eyes is credible. The facts are there to back up his words. (Isaiah 55:10, 11) Referring to that day when the "windows" will open again, Isaiah 35:5 says: "At that time the eyes of the blind ones will be opened."

"That time" has not come yet, so it takes 'eyes of faith' to see it now. But since God cannot lie, that "sight" is not based on blind faith.—Titus 1:2.



CHEESE

—Are You a Connoisseur?

By "Awake!"
correspondent in
France

"A LITTLE cheese before dessert?" inquires our hostess, presenting an appetizing, well-stocked cheese board. Yes, here in France, a meal "according to the rules" should always include cheese.

In France the average consumption of cheese is 18 kilograms (40 lb) per person per year—a world record. There are many varieties to choose from. In fact, some say that a person living in France could, theoretically, eat a different cheese every day of the year!

Have you ever wondered how such a variety of colors, aromas, and flavors can come from such a relatively neutral-tasting product as milk? There are three main steps: coagulating, draining, and curing. Let us talk first about coagulating.

From Milk to White Cheese

Did you ever leave a jug of milk outside the refrigerator, only to return later and find that it had become curds and whey? What happened? Raw milk contains a number of microorganisms, including lac-

tic bacteria that break down the lactose (milk sugar) into lactic acid. When a certain degree of acidity is reached, the chief protein in milk (called casein) coagulates into an insoluble curd. If you would like to see this actually happen, all you have to do is drop a few teaspoonsfuls of vinegar into half a glass of milk. Of course, you won't get cheese this way, but you will observe the curdling process.

However, it can be dangerous to make cheese using milk that has curdled on its own. It may contain disease-carrying bacteria, resulting from either unhygienic milking conditions or a sick cow. In order to kill unwanted bacteria, cheese makers pasteurize the milk and then may add selected bacteria to help promote coagulation.

A substance called rennet is also often used for coagulating. This contains rennin, an enzyme found in the stomach of a young, unweaned calf. Rennet causes coagulation when mixed with milk at a temperature of about 40 degrees Celsius (104° F.). Why? Because the function of the rennin in the unweaned calf's stomach is to curdle the mother's milk, which is its sole food. This process constitutes the first stage of the young animal's digestive process. Hence, in some ways it might be said that cheese is a form of predigested milk! But what next happens to our curd,



whether it was made with rennet, or lactic bacteria, or both?

Now it is time for the second stage, the draining. After coagulation the curd is generally drained, and the liquid whey (containing lactose, protein, and mineral salts) is separated and used for food products or cattle feed. The curd now forms an unripened, soft white cheese with a sourish taste. It may now be eaten—either plain or with salt, sugar, or mixed herbs. Cream is sometimes added to obtain a smoother consistency. Or the curd can be processed further to make other kinds of cheese.

Hardening and Flavoring

Matured, or cured, cheese has to undergo a ripening process. The curd is drained according to the type of cheese desired, and bacteria are added to break down the casein, fats, and lactose. This produces a variety of substances that help to develop the characteristic flavors and aromas of some cheeses. Choice of bacteria, appropriate curing time, and the temperature and humidity of the storerooms are all very important in developing such special varieties.

Sometimes the acidity in the curd must be neutralized to enable the cheese to ferment. This can be done in a variety of ways.

For Muenster cheese, which originated in Munster, a little town in eastern France, the ammonia in the storage-room air suffices. In Cendré (meaning "ash-covered") cheese, made near Orleans, France, acidity is neutralized by potash.

Soft cheeses have a very special place on the cheese board. World-famous Camembert, for instance, was originally made in the village of the same name in Normandy. Its white, cottonlike skin, or "flower," is produced by a mold called *Penicillium*, related to the well-known penicillin. Choosing a Camembert is no light matter! Even in a big supermarket, you can see the connoisseur opening the box and pressing gently in the middle of the wrapped cheese with his thumb. He will examine several before making his choice.

Maybe there will be a blue cheese among the variety on the cheese board. Some people prefer a piece of Auvergne bleu made from cow's milk, while others relish a slice of Roquefort made from ewe's milk. Both are made in the rugged Massif Central of south-central France. The blue and greenish-blue veins running through these cheeses come from a special mold that develops during the ripening process.

Hard cheeses, such as Gruyère and Em-

mentaler, are old favorites. To manufacture this type of cheese, the curd must be heated to about 55 degrees Celsius (130° F.). This dries the cheese and retains only those bacteria that develop at higher temperatures. During the curing process certain bacteria (called propionic-acid bacteria) produce carbon dioxide. This forms bubbles that make the familiar holes—small and few in Gruyère, large and numerous in Emmentaler.

Last, we come to Cantal, a pressed cheese similar to British Cheddar and named after a mountainous area in central France. For this, the curd must be pressed for eight to ten hours after draining in order to give the cheese its typical sharp tang.

High Food Value

Milk is a food that contains many of the elements the human body needs. But what about cheese? It is an excellent source of protein. For instance, a 35-gram (1.25 oz) portion of Saint-Paulin (a pressed cheese somewhat similar to Dutch Edam) contains as much protein as 50 grams (1.75 oz) of meat, a quarter of a liter (about a half pint) of milk, or one and a third eggs. Even after draining, cheese retains mineral salts and, above all, a generous proportion of calcium and phosphorus. Most of the calcium lost in a day by a nursing mother can be replaced by a 35-gram portion of Saint-Paulin cheese.

Cheese can also satisfy many of our needs as far as fats (or lipids) are concerned. However, when reading the label on the package, remember that the percentage of milk fat given on the label often relates to the dry matter in cheese, whereas cheese also contains water.

Does cheese contain any carbohydrates? Most of those present in milk, such as lactose (milk sugar), either disappear during

draining or are absorbed by the bacteria as they go about their curing work. However, this is probably a good thing, for many people in Africa, Asia, and Europe have difficulty in digesting milk because of its lactose content. Thus the well-known—albeit obsolete—portrait of a Frenchman with a stick of French bread and a chunk of Camembert illustrates complementary nutrition, the bread providing the carbohydrates lacking in cheese.

Hence, the next time you sit down to an appetizing meal that includes cheese, think of all the time and effort that went into producing that delicious food, from the day the cow was milked to the placing of the finished product before you. And do not forget those tireless little workers, the bacteria, without whose efforts cheese could never be made. It may be that you are not a connoisseur of cheese. But you can surely appreciate this tasty treat, and perhaps the information presented here will help you to enjoy it a little more.

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From Our Readers

Drinking and Driving

It is with much joy that I can write and say that the deputy sheriff in charge of traffic here requested 100 copies of your issue on "Drinking and Driving." (March 8, 1986)

He is currently involved in a project concerning the subject and was going to address an audience of bar and restaurant owners, emphasizing their responsibility in not allowing those who were going to drive to drink too much. Thank you for always being there with what we need, when we need it.

J. P., U.S.A.

Being Just Friends

You cannot imagine my surprise when I received your issue with the article "Young People Ask . . . 'Can't We Just Be Friends?'" (March 22, 1986) You see, at the moment, I have this very same problem. I am 20 years old, and a young man I have been working with feels he has fallen in love with me, but not I with him. Now I have the answer in the above-mentioned article.

M. W., Federal Republic of Germany

Handicapped Children

Your article "Thirty Years of Love and Devotion" (February 8, 1986) was very nice and encouraging for parents of Down's syndrome children, but I did not appreciate the sentence: "Outsiders often think that caring for a handicapped child must be a responsibility with little reward. How wrong they are!" As a parent of a severely handicapped daughter, I can honestly say that you may be wrong in putting all handicapped chil-

dren in one category. My child cannot walk, talk, see, feed herself, or go without diapers. Her teeth have to be brushed, and she has to be bathed every day. Feeding is an all-day event. Consultation with therapists, nutritionists, pediatricians, and others, takes up many hours, and it is a constant fight to get the proper help and services required. Parents of handicapped children love their children very much, but what I am trying to say is that if you just can't understand the situation, don't try to comfort or excuse the situation by saying: "Well, they get a lot of joy and happiness."

J. B., Canada

Through the years, we have published a number of first-person accounts about parents caring for a handicapped child. We have felt there was much valuable information that could benefit others in a similar situation and that publishing such articles would be encouraging to others. We surely do not want to add to the distress of families who have a very difficult problem. In her account, Anna Field acknowledges that every case is different and domestic circumstances vary. Although in their case there have also been trying times and sorrow, she sincerely feels that their handicapped daughter has brought them far more joy than sorrow. We are happy that is the case. At the same time, we realize that there can be far more difficult cases where a child is unable to respond in any way that would give its parents happiness. The parents of such a child surely deserve the sympathetic understanding of all as well as appropriate help from their close friends. Our heart truly goes out to all parents in this difficult situation.—ED.

Watching the World



Inquest on Kingdom Hall Bombing

After a three-day hearing last April, the Coroner's Court of Sydney, Australia, decided that there was "insufficient evidence" to commit the chief suspect to trial for the July 21, 1985, bombing of a Kingdom Hall of Jehovah's Witnesses near Sydney, according to the *Daily Telegraph* of Sydney. The blast leveled the building, killed one man, and injured scores of others, more than a dozen seriously. (See *Awake!* November 22, 1985.)

At the coroner's inquest into the death of the father of three children, police presented circumstantial evidence that linked a 39-year-old fireman with the Kingdom Hall bombing, two previous bombings of other buildings, one attempted car bombing, and three separate murders in recent years. Police stated that at the time of the Kingdom Hall bombing, the suspect was under surveillance. The coroner allowed the unusual police request to have the suspect's name released. The coroner said he believed public interest in such shocking crimes was more important than one man's possible embarrassment.

EXPO 86 Opens

"The largest number of international participants ever to appear at a specialized World Exposition,"

is how one news release described the 1986 World Exposition, which opened on May 2 at Vancouver, British Columbia, in Canada. More than 50 nations are registered, and some 14,000 live performances are part of the entertainment package. EXPO 86 will run until October 13, 1986.

"Ecological Disaster"

The introduction of Nile perch into East Africa's Lake Victoria some 25 years ago is "an experimental project that went tragically



wrong," says *The Times* of London. Why? Because instead of adding to the lake's protein resources, as originally intended, the large predator is wiping out the majority of the lake's 300 other species—including one that helped control the deadly disease bilharzia. This unwelcome result, along with the economic hardship of buying heavier equipment to cope with this "man-size" fish that may weigh 220 pounds (100 kg), or more, has brought disaster to many fishing communities in Kenya, Tanzania, and Uganda. Now

the IUCN (International Union for Conservation of Nature and Natural Resources) has expressed anxiety over similar plans for Lake Malawi and other African lakes.

Doomsday Prophetess

The leader of a small African sect prophesied that the end of the world would come at midnight, March 23, 1986. Some 200 men, women, and children, members of the sect, gathered naked at her home near Dennilton, South Africa, awaiting doomsday. They had already given away their belongings, even dumping furniture, clothing, and money into the streets. Why? In order to escape the wrath of the avenging angels, she told them. But the next day she met her doom at the hands of wrathful neighbors who hacked and burned her to death. For what reason? They believed her to be a witch.

North Pole by Dogsled

Last May a team made up of five men and one woman from the United States and Canada completed the first confirmed expedition to the North Pole by dogsled without resupply. During their nearly two-month arctic trek, they endured temperatures of 70 degrees below zero Fahrenheit (-57° C.), 60 mile-an-hour (97 km/hr) winds, and two severe blizzards. "There were times when

I almost think that what we were doing was impossible," Will Steger, head of the polar expedition told *The New York Times*. They began their quest as a team of eight with 49 dogs and five wooden sleds, each laden with half a ton of supplies. Two men and 28 exhausted dogs were evacuated by aircraft before the goal was reached. The remaining team reached the Pole with about ten pounds (5 kg) of food among them. "I was totally amazed at the power of faith and perseverance," Steger said.

Crimes Against Children

"Every day, every year millions of young lives are shattered by criminal acts," said United States Attorney General Edwin Meese earlier this year. An estimated 1.5 million cases of abused and neglected children were reported in 1983. From 1976-83, reported sexual abuse of children increased 900 percent. More than one million teenagers run away from home every year, often to escape abuse or other severe family problems. Every 19 seconds a teenager is victimized. Assistant Attorney General Lois Herrington said that a presidential group has been formed to clear up misconceptions about crimes against children. "For example," she said, "most missing children have not been kidnapped by a stranger, but have instead run away or been abducted by a parent."

Main Cause of Childhood Death

Respiratory diseases are now the number one cause of death among children under five years of age, new surveys and medical data show. Statistics reveal that respiratory infections, such as pneumo-

nia, croup caused by measles, and whooping cough, kill an estimated 6.5 million young children each year worldwide. Diarrheal diseases, once the leading cause of childhood death, kill an estimated five million children a year.

Israel's Nature Reserves

Although a small country, Israel has some 160 nature reserves that cover about 310 square miles (800 sq km). "This does not include the wide spaces of the Negev which in itself is like a big reserve," adds the wildlife magazine *Custos*. Israel's climate makes possible a great variety of animal and plant life. Of its 3,000 plant



species, 150 grow only in Israel. Rare animals, common in Bible times, are being preserved and can be seen in their natural settings. They include wild asses, ibex, addaxes, and various kinds of oryx with their beautifully shaped horns. The Eilat Coastal Reserve hosts a magnificent coral reef with diverse aquatic life, which can be seen by means of an underwater observation room. And for bird lovers, the Hula Reserve "is a bird-watchers' paradise," states *Custos*. "A special observation tower has been built here for watching the masses of birds migrating between Europe and Africa."

Man's Origin

A recent study of the slow changes that have taken place in

human DNA (the genetic blueprint of life) suggests that everyone alive today is the descendant of a single female ancestor, as the Bible clearly shows. Scientists from the University of California at Berkeley report that "calculations that might bring the entire human family tree back to one female are based on studies of DNA, or deoxyribonucleic acid, from the placentas of 147 humans from the United States, Europe, Africa, Australia and Asia," says *The New York Times*.

Lutheran Merger Stalled

Plans to merge three United States Lutheran denominations into one by 1988 have stalled. The snag occurred when bishops of the Lutheran Church in America—the largest of the three—saw philosophical and operational problems in the proposed constitution for the new church. One proposal that made the bishops unhappy was the possibility that under the new constitution they would receive a reduced pension.

Stubborn AIDS Virus

The deadly AIDS virus is more stubborn than many people had believed. A new three-month study reported in *The Journal of the American Medical Association* shows that this virus, which attacks the body's immune system, can survive up to 15 days outside the body in a water-based environment. Dried, the AIDS virus can live up to seven days. An author of the study, Dr. Lionel Resnick, says that casual contact with the virus—such as by touching an infected toilet seat—does not appear to spread the disease. Researchers say that common disinfectants and detergents can easily kill the AIDS virus within minutes outside the body.

Major Nuclear Accident

The April 26 explosion and blaze inside a nuclear reactor at a Soviet Union power plant in the Ukraine spewed radioactive material over the surrounding area and into the atmosphere. It thereby created a blanket of radioactivity that spread to distant points of the globe. Although the exact number of Soviet victims is still uncertain, Pripyat, a nearby city of 25,000, was evacuated and became a ghost town, reported the Soviet press agency Tass. Tens of thousands from other nearby areas were also evacuated. "An explosion destroyed structural elements of the building housing the reactor and a fire broke out," said the Soviet press release. "The firemen were fighting the blaze at a height of 30 meters [100 feet]. Their boots stuck in bitumen that

melted because of high temperature." The radioactive particles from the burning nuclear fuel attached themselves to soot and dust particles that were then lifted into the air currents and propelled around the globe.

Husband's Supportive Role

Does the husband's support of his wife influence how she treats her children? Yes, answer researchers from one Japanese and three American universities in the *Journal of Marriage and the Family*. Although there are differences between the style of Japanese and American family life, they report that in either culture "the more a mother perceives support from her husband, the more apt she is to become involved with the infant

when they are together, and the less she feels that she needs to be in the presence of the infant at all times."

World's Oldest Man Dies

The *Guinness Book of World Records* had listed Shigechiyo Izumi of Japan as the world's oldest man. At age 119, he was reported to be in "blooming health." He died at the age of 120, during an unusually cold spell this February, after being laid up with a lingering cold for about 80 days. He had become a tourist attraction and entertained thousands of visitors each year. Until shortly before his death, he enjoyed all types of food, which he chewed 20 to 30 times before swallowing, and he also took daily walks in his garden.

