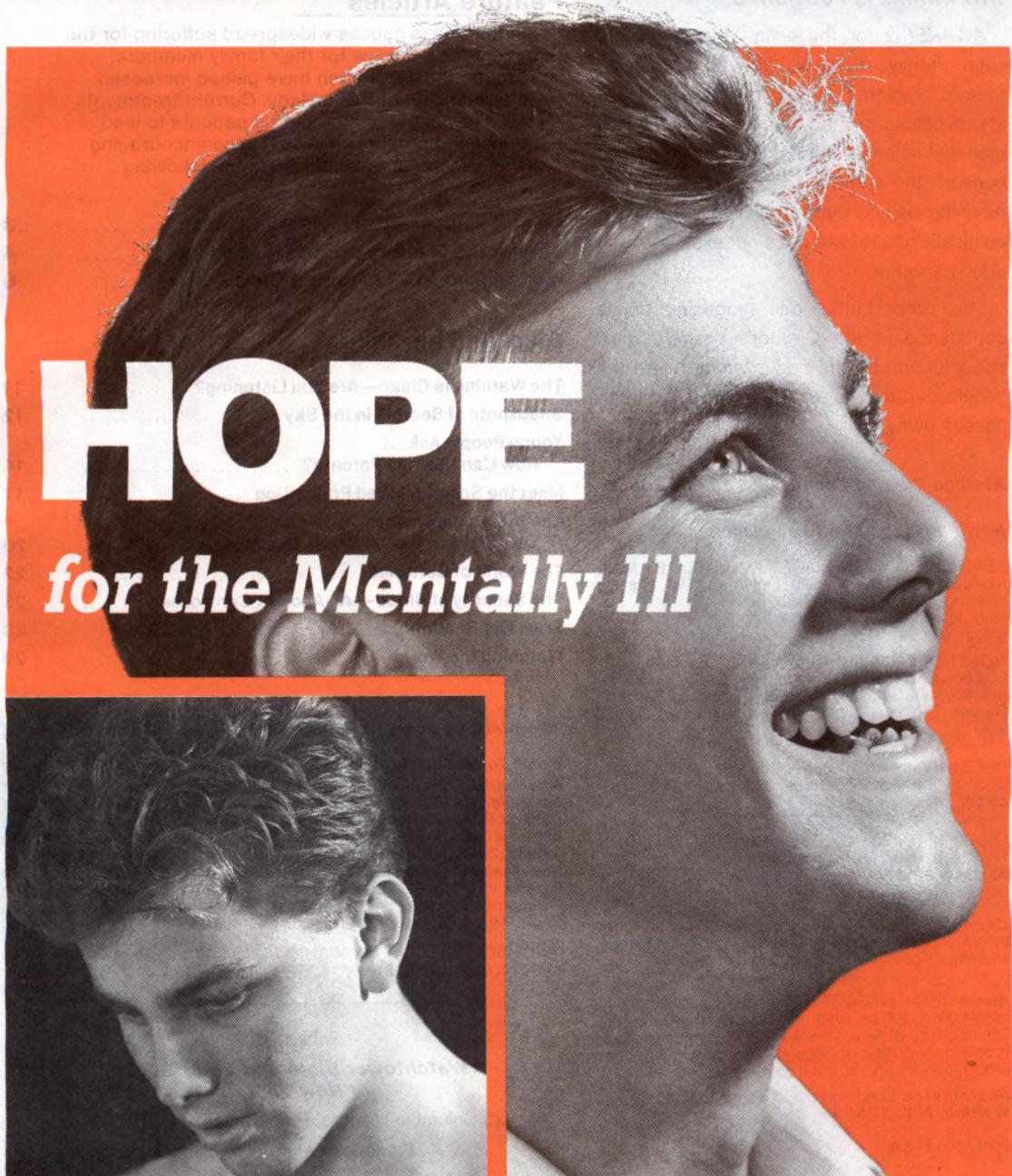


Awake!

SEPTEMBER 8, 1986



HOPE

for the Mentally Ill

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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

Mental illness causes widespread suffering for the patients and sorrow for their family members. Through the years, men have gained increased understanding of this malady. Current treatments now allow many former mental patients to lead normal and productive lives. These encouraging developments are discussed in the following articles

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Frederick W. Franz, President

Mental Illness —The Mystery Disease

Irene has no idea what went wrong. "I was 30 years old," she recalls, "a working mother with two children to look after. And yes, I had some problems. But nothing unusual," that is, until the first signs of her illness appeared.

"One day I approached a perfect stranger and insisted that she was my dead sister. I was certain that she looked and sounded like my sister. That was my first departure from reality."

"Some time later, I was walking home from the beauty shop and started crying. I just knew that my husband had left and taken the children away from me! But I got home, and they were still there. My husband could see that something was wrong and took me to the home of one of my sisters. I was convinced, however, that she wanted to kill me! My husband decided to check me into a hospital."

So began Irene's odyssey of hospitalization, psychoanalysis, shock therapy, and medication—a search for a cure of the mysterious malady that had turned her life upside down.

MENTAL illness exacts a staggering toll in human misery. The U.S. National Institute of Mental Health claims that roughly one in five adult Americans is afflicted with a mental disorder. "The World Health Organization (WHO 1975a) reports an estimate of 40 million untreated cases of mental illness in world developing regions; perhaps 200 million suffer from less-severe disorders."—*Third World Challenge to Psychiatry*.

Mere numbers, though, cannot measure the pain of mental illness. "Can you imagine how it feels," asks the mother of a mentally ill man, "to sit in the doctor's office with a son who most of his life gave of himself to others and know that he is no longer that

same person?" Too, mental illness is often a badge of shame, a malady draped with the language of contempt (nuts, crazy). It is often little more understood by friends and family than it was in medieval times—when the insane were declared 'possessed by the Devil.'

Nevertheless, mental illness has begun to lower its veil of mystery. Recent breakthroughs have brought about a new understanding of the malady. New treatments now allow many former mental patients—like Irene—to lead normal and productive lives. The following articles will focus both on these encouraging developments and on Irene's heartfelt hopes for a permanent cure in the near future.

Taking the Mystery out of Mental Illness

I was terrified at the thought of mental illness!" recalls Irene. "Words like 'schizophrenia' or 'depression' just weren't in my vocabulary. Mental illness bore a stigma. It meant 'going crazy' or being 'put away' in a mental ward! Some of my friends even thought I was demonized!"

MADNESS, insanity, lunacy. The very words evoke fear and images of padded cells and straitjackets. However, not everyone with a mental disorder is a raving maniac. Nor is everyone with an odd personality or an idiosyncrasy mentally ill.

Each mental disorder involves a cluster of specific symptoms. *Manic-depression*, for example, is an emotional seesaw, oscillating between exhilarating highs and devastating lows. In *major depression*, however, the patient often suffers "a severe, paralyzing, and unrelenting sadness."* *Anxiety disorders*, such as phobias, may virtually paralyze victims with irrational fears.

In this and the following article, however, we will focus on a disease that embodies the very essence of mental illness.

Schizophrenia—The Darkest Side of Mental Illness

While in the hospital, Irene had more instances of mistaken identity—embracing doctors and nurses as long-lost relatives. She imagined that she could smell

odors that were imperceptible to others. She became convinced that the hospital staff was out to kill her! "They had to strap me into my bed once," she admits.

The diagnosis? Schizophrenia, a disease that will eventually afflict at least one out of every hundred people. Over a hundred thousand new cases a year are diagnosed in the United States alone.*

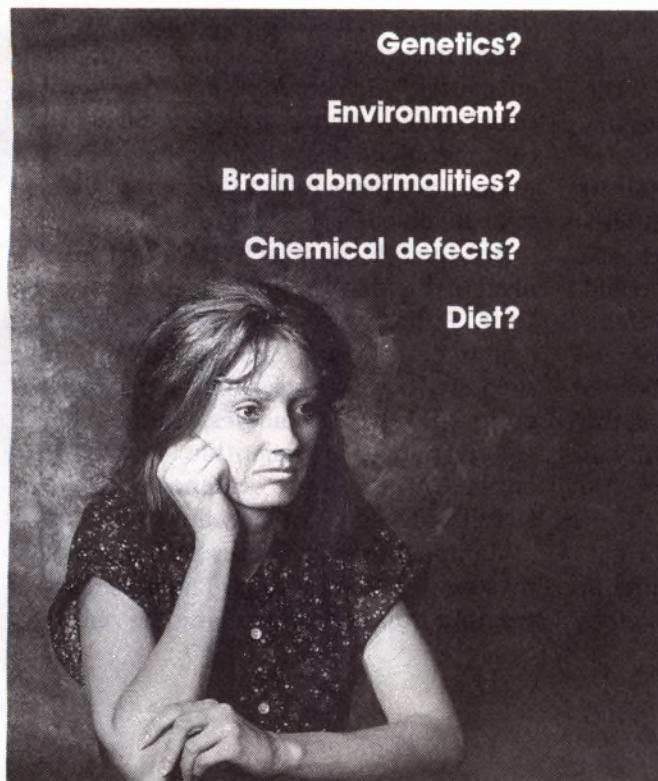
The schizophrenic does not have a split personality in the sense of a dual or multiple personality (a different and rare disorder) but has a damaged personality. Consider, for example, a young man named Jerry, described by his doctor as a 'textbook case' of schizophrenia. His eyes are vacant one moment and menacingly hostile the next. His speech is a disjointed mixture of fear ("People have called me here to electrocute me") and delusion ("That picture's got a headache"). Inner voices terrorize him. His is a brain running amok.

Schizophrenia produces a wide range of bizarre symptoms: hallucinations, inner voices, disordered thinking, irrational fears, and emotions that seem out of tune with reality. What causes it? A mere decade ago doctors accused parents of driving their children crazy. Now some feel that it is more the other way around. Parents suffer enormous stresses and strains when a child is schizophrenic.

So most doctors now say that parent-

* See *Awake!* of September 8, 1981, "You Can Fight Depression!"

* The schizophrenia ratio is high in Sweden, Norway, western Ireland, northern Yugoslavia, and in most developing nations.



A number of factors may be involved in the onset of mental illness

blaming was a mistake. Of course, the Bible urges parents not to exasperate their children. (Colossians 3:21) But even if they do, it seems unlikely that this alone will make their children schizophrenic. Factors quite beyond the control of parents are involved.

The Genetic Component

Nick and Herbert (pseudonyms) were identical twins. Separated at birth, Nick was reared by loving foster parents, Herbert by an apathetic grandmother. At an early age the seeds of insanity began to blossom in both. Nick set fires and stole. Herbert, too, had an affinity for fire—and for torturing dogs. Full-blown schizo-

phrenia followed and both ended up in mental hospitals.

Coincidence? Or do genes carry schizophrenia? There are 14 known sets of separately raised twins in which one twin developed schizophrenia. Nine of the siblings also developed the malady. Evidently the genes play a role in schizophrenia. Curiously, though, when two schizophrenics marry, there is only a 46-percent chance that their children will also develop schizophrenia. "If schizophrenia were actually the result of a dominant gene, 75% of the children should develop schizophrenia," according to the book *Schizophrenia: The Epigenetic Puzzle*.

More than genes must be involved. The authors of *Mind, Mood, and Medicine* surmise: "It is well known that psychological experience—for example, battle stress—can profoundly affect the chemical, hormonal, and

physiological functioning of the body. In psychiatric illnesses, a psychological experience can frequently be identified as the precipitating factor in a vulnerable person." And where might the genes fit in? Continue Drs. Wender and Klein: "Our overall view is that genetic factors may make an individual vulnerable to certain forms of psychological experience." So while schizophrenia itself may not be inheritable, the predisposition to it may very well be.

Abnormal Brains

Schizophrenia Bulletin presents yet another piece of the puzzle: "The evidence presented suggests that the brains of

schizophrenic patients frequently contain abnormalities."

Dr. Arnold Scheibel claims that in the section of the brain called the hippocampus, nerve cells in normal patients are aligned "almost like little soldiers." But in the brains of some schizophrenic patients "the nerve cells and their processes are completely awry." This, he believes, could account for the hallucinations and delusions of the schizophrenic. Other schizophrenics have been found to have enlarged brain cavities. Most intriguing of all is the discovery that the brains of the mentally ill may contain biochemical defects! (See the following article.)

To date, though, no single brain abnormality or biochemical defect has been found to be common to all schizophrenics. Doctors

thus believe that schizophrenia may well be "many disorders, with a multitude of different causes." (*Schizophrenia: Is There an Answer?*) A slow-acting virus, vitamin deficiencies, metabolic disturbances, food allergies —these are just a few of the factors claimed to be involved in schizophrenia.

But though the exact cause and mechanism of the disease elude medical science, Dr. E. Fuller Torrey says: "Schizophrenia is a brain disease, now definitely known to be such. It is a real scientific and biological entity as clearly as diabetes, multiple sclerosis, and cancer are scientific and biological entities." There is also evidence that depressive disorders are similarly linked to biology.

Mental illness has thus lost its aura of mystery—and its stigma. The possibility of treating it has become a tangible reality.

Mental Illness —Is There a Cure?

"They took me to the hospital," recalls Irene. "I enjoyed talking matters out with the psychiatrists, but it didn't help much. Then they gave me electroshock therapy. I was terribly frightened. But again, it didn't help much.

"My husband then talked me into getting into a car with him. I thought I was going home. But we pulled up in front of this big complex of very old brick buildings. 'What is this?' I asked my husband. 'I want you to go in there and talk to someone,' he said. Then I realized it was a mental institution . . ."

IRENE'S illness erupted in the year 1955 —right in the midst of a mental-health revolution. New medications were being developed to reduce surgical trauma. Doctors discovered that when mental patients were treated with these same drugs, "patients who formerly required treatment in isolation rooms or straitjackets now were capable of being left unattended. . . . The drugs totally eliminated certain kinds of psychoses." (*The Brain*, by Dr. Richard M. Restak) The revolutionary effects of these medicines on the mental-health field can again be illustrated by schizophrenia.

Irene's doctors tried a new antipsychotic drug. Where talk therapy and electroshock had failed, medication succeeded. Irene and thousands like her were able to leave mental hospitals and go home.

Chemical Control

Physicians did not know how the drugs worked. But it appeared that they blocked the brain's receptors that normally take up a chemical called dopamine. When the activity of dopamine was thus inhibited, some patients improved. When drugs were given that enhanced the action of dopamine in the brain, patients often became worse. A window was thus opened into the chemistry of mental illness. (See box.)

Much is still unknown about schizophrenia. But antipsychotic medications have become well established as effective treatments. Unfortunately, doctors say that about a third of schizophrenic patients do not respond to the drugs—or to any sort of treatment. And, at best, the medications help to control—not cure—schizophrenia, toning down or eliminating the wilder, acute symptoms of the illness. Still, they are a giant leap from surgery or straitjackets.

Why, then, look upon patients who use these medications as weak-minded or as drug addicts? Antipsychotic drugs are not addictive, do not make patients high, and are not taken for pleasure. Dr. E. Fuller Torrey compares antipsychotic medications to "insulin for diabetes." And Dr. Jerrold S. Maxmen concludes: "People who take such drugs are not 'running away from their problems,' but facing them."

Irene, though, soon found that there is also a dark side to these medications.

Problems due to Side Effects

"I felt like a zombie," recalls Irene. "I couldn't function. I remember sleeping

The Chemistry of Schizophrenia

Our brain is an incredibly complex communications network, connecting billions of neurons, or nerve cells. Yet the neurons are not physically connected to one another. A gap measuring a mere millionth of an inch (0.000003 cm) separates their tentaclelike extensions, or dendrites. For nerve impulses to flow smoothly, nerve signals must jump this gap. To do so, the cell releases a battalion of chemical "messengers" called neurotransmitters. These "swim" across the gap and latch onto special receptors, each designed to accept a specific chemical.

In a normal brain, all this activity goes on in a smooth and orderly manner. In schizophrenics, however, neurotransmission seems to get out of control. Some feel an excess of dopamine overstimulates the neurons and causes them to "misfire." Disjointed thoughts may result. Curiously, though, not all schizophrenics have high levels of dopamine in their brains. Could it be that certain brains are just supersensitive to dopamine? Or are there different types of schizophrenia? Or could it be that some other chemical abnormality combines with dopamine?

No one really knows. Nor does anyone really know whether bad chemistry causes schizophrenia or vice versa. Chemistry is just one piece of the schizophrenia puzzle.

sometimes as much as 16 hours a day." Irene's life deteriorated. She tried coming off the medication—only to end up in the mental hospital again.*

Some patients indeed suffer adverse

* As many as 80 percent of schizophrenics who stop taking their medication are rehospitalized.

Shock Therapy—Controversial

Perhaps the most controversial therapy of all is shock therapy. Doctors, however, often refer to it by a more benign-sounding name: electroconvulsive therapy, or ECT. Scary portrayals of the procedure in films, such as *One Flew Over the Cuckoo's Nest*, have made the public generally fearful of ECT. Yet, each year in the United States alone, an estimated one hundred thousand patients receive ECT. A survey of psychiatrists revealed that ECT is "overwhelmingly used only when medication, usually in large dosages and often in combination with psychotherapy, has been ineffective."

ECT has been greatly modified, so it is not the gruesome procedure most imagine it to be. When properly administered, the patient does not feel a thing. He is anesthetized and given a muscle relaxant (to protect against skeletal injury). Electrodes are placed on his head and small amounts of electricity are passed through his brain, causing a brief seizure.

reactions ranging from restlessness, dizziness, and drowsiness to jaundice, shock, and weight gain. One of the undesirable reactions is tardive dyskinesia, which afflicts 10 to 20 percent of patients who undergo long-term treatment with anti-psychotic drugs. It involves involuntary twitching of the face and the mouth.

Since doctors cannot predict how a patient will react to a drug, prescribing medication involves a measure of trial and error. One clinical psychologist told *Awake!*: "Doctors may wade through three or four different medications before they find an effective one with the fewest side effects."

Fortunately, most side-effect problems can be controlled. In Irene's case, simply changing medications did the trick. Her drowsiness disappeared and so did her delusions.

John Bonnage, information officer for the APA (American Psychiatric Association) refers to an APA task-force study that concluded that ECT was "one of the most effective ways of treating depression." Bonnage informed *Awake!*: "ECT is rarely used anymore in treating schizophrenia, however, unless severe depression accompanies it."

Doctors really do not know how or why ECT works. Opponents have thus called it "the psychiatric equivalent of kicking a TV set when the picture begins to fail." There is some evidence, though, that ECT may affect neurotransmission in a way similar to psychiatric drugs. Critics call ECT dangerous and brain disabling, pointing to the risk of memory loss and even fatalities. Proponents, though, say that modified procedures have greatly reduced these risks. They further argue that the high danger of suicide that accompanies severe depression may make the benefits of ECT far outweigh any risks.

Irene's case is a good example of the success of medication. She left the mental hospital and began leading a normal life again! For nearly 30 years she stayed on an even keel—until she tried going off the drug. She says: "I thought I was well. But after a year my thinking went off again. My doctor said, 'Go back on the medication.'" A small price to pay for getting her life back on track.

Not all respond to drugs so successfully, and the medications often work at a snail's pace. Too, some patients intensely dislike their medication. But when their symptoms are so severe that they cannot function, it may be a choice between medication and the mental hospital.

Alternative Treatments

Interestingly, sugar, wheat, milk, and lead, as well as vitamin deficiencies, have all

-to eat of
it, neither
smoked nor
drank. But

-to eat of
it, neither
smoked nor
drank. But



The effect of medication is often dramatic

been implicated as perpetrators of emotional disturbances. This raises the possibility of a nutritional treatment for schizophrenia. Such an approach has already had a measure of success in the treatment of depression. And some researchers—including Nobel prize laureate Linus Pauling—claim that large doses of vitamins have dramatically reduced the symptoms of schizophrenia in some patients. This is called orthomolecular psychiatry.

The idea—at least in principle—seems sound to many. Orthomolecular psychiatrists point out that a disease named pellagra, caused by vitamin-B deficiency, produces psychotic symptoms. The cure? Large doses of the vitamin niacin. But does a similar treatment work for schizophrenia? Up till now, orthomolecular psychiatrists have been unable to convince their more orthodox peers.

A NIMH (National Institute of Mental Health) report cautioned: "Although it

would appear that the theory of orthomolecular psychiatry has presented a potential area for research and investigation, the current claims of therapeutic efficacy can find little, if any, support from [scientific] studies." Needless to say, a balanced, nutritious diet makes good sense. A doctor, though, can likely best determine if a severe vitamin deficiency exists.

Dr. David Shore of the Schizophrenia Research Branch of

NIMH seemed to sum up the attitude of mainstream medicine when he told *Awake!*: "Everybody would like an easy answer to schizophrenia—like vitamins or dialysis.* But it just isn't that simple. We wish it were."

A person should nevertheless approach all medical treatments with due caution, being wary of sensational claims. "Anyone inexperienced puts faith in every word, but the shrewd one considers his steps." (Proverbs 14:15) Do not accept *any* treatment blindly. If medication is prescribed, take the time to familiarize yourself with the possible reactions and side effects.

Comfort for the Mentally Ill

Because we live in "critical times hard to deal with," people today are subjected to considerable stress. (2 Timothy 3:1; Luke

* This reference is to the highly publicized method of using hemodialysis to filter out toxins in the blood that allegedly cause schizophrenia. The treatment has thus far failed under scientific scrutiny.

Freudian "Insight" Therapies —Help or Hindrance?

Dr. David Shore of the Schizophrenia Research Branch of NIMH told *Awake!*: "There's a lot less psychoanalysis, and the like, going on these days in psychiatry." The reason? For one thing, mounting evidence that Freudian analysis and related insight therapies simply do not cure schizophrenia. Freudian therapies hinge on the unproved premise that mental illnesses are a reaction to experiences in life, to childhood traumas buried in the unconscious mind. The analyst thus tries to probe the unconscious mind via questions and "free association" to help the patient gain insight into the source of his problems.

Schizophrenics, though, already have difficulty communicating. To expose such ones to the probings of insight therapy is, according to Dr. E. Fuller Torrey, like "directing a flood into a town already ravaged by a tornado."

There are the dangers of "transference," whereby a patient can develop overly strong feelings for the therapist. Some claim that patients have become "addicted" to their therapists, unable to curtail the treatment. Too, sharing intimacies with a member of the opposite sex may invite moral problems.

Mainstream psychiatrists thus lean toward biological treatments and view classical psychoanalysis as obsolete for treating schizophrenia. Some forms of talk therapy, though, may be used effectively in connection with drug therapy to provide a patient with support, help him understand his illness, and reinforce the need to take medicine. And at times a doctor uses probing questions to help him diagnose an illness. This, however, is not the same as psychoanalysis.

21:26) And since all are subject to the debilitating effects of sin and imperfection, it is no surprise that even some God-fearing people have succumbed to mental illness.
—Romans 5:12.

But knowing that mental illness is a disease helps one to have a balanced view of it. Irene, for example, feared that her illness was caused by an attack by the demons. While it is possible that in some cases demonic forces are involved, the Bible does not teach that all illnesses are caused by the demons. (Ephesians 6:12; compare Matthew 4:24; Mark 1:32-34; Acts 5:16.) More often than not, when a person hears voices or manifests bizarre behavior, an illness such as schizophrenia may be involved.

Irene was greatly relieved to learn that her illness was not of demonic origin. She sought medical help and found some relief. Recall, though, that the Bible tells of an ill woman who "had been put to many pains by many physicians and had spent all her resources and had not been benefited but, rather, had got worse." Only Jesus Christ was able to heal her. (Mark 5:25-29) Medical science today is likewise limited. True, one can take reasonable steps to attain a measure of relief. But rather than getting trapped on a treadmill of searching for an elusive cure, some may simply have to learn to live with and endure the problem.

Knowing that God deeply cares for us, however, can ease much anxiety. (1 Peter 5:6, 7) "Jehovah has sustained me through this and many other trials," says Irene. She also has the hope of a coming new system under Jesus Christ in which "no resident will say: 'I am sick.'" (Isaiah 33:24; 2 Peter 3:13) "Keeping my eyes fixed on the prize of living forever in Paradise, now so near, has helped me to remain steadfast." Her faith helps more than any medication doctors have to offer.

The Warning Is Clear —Are You Listening?

"CAUTION: Cigarette Smoking May Be Hazardous to Your Health." The U.S. government decreed in 1965 that cigarette manufacturers must display these words on their packages. Five years later, this caution gave way to, "Warning: The Surgeon General Has Determined That Cigarette Smoking Is Dangerous to Your Health." Now the law requires that four separate, more specific warnings appear on a quarterly rotational basis. Is this justified? Consider reports from around the world and decide for yourself.

"Surgeon General's Warning: Smoking Causes Lung Cancer, Heart Disease, Emphysema, and May Complicate Pregnancy":

"Cancer studies by the Ministry of Health and Welfare have shown that . . . in Japan . . . half or more of the lung cancer cases can be traced to smoking."—*Asahi Evening News*.

"Scientific statistics are proving that there is a close relationship between smoking and lung and blood vessel diseases, a chest surgeon with the University of Zimbabwe's department of surgery, Dr Douglas Thompson, has said."—*The Herald*.

"Around 2 per cent of emphysemics inherit the disease and a tiny proportion develop it as a complication of other problems . . . But for the majority [of victims in Britain], . . . the disease is caused by smoking."—*The Times*.

"Surgeon General's Warning: Cigarette Smoke Contains Carbon Monoxide":

"A less noticeable but perhaps more dangerous effect of cigarette smoking . . . is the production of carbon monoxide . . . Researchers . . . found that as carbon monoxide increased, driver ability to judge time and distance and to determine a change

in the rate of speed of a car in front on the road were adversely affected. There were also slight changes in normal driving."—*The Scientific Case Against Smoking*.

"Surgeon General's Warning: Quitting Smoking Now Greatly Reduces Serious Risks to Your Health":

"When a person stops smoking, the benefits to the heart and circulatory system begin right away. The risk of heart attack, stroke, and other circulatory diseases drops. . . . The risk of smoking-related cancer begins to decline and within a decade the risk is reduced to that of the nonsmoker."—*U.S. Department of Health and Human Services*.

"Surgeon General's Warning: Smoking by Pregnant Women May Result in Fetal Injury, Premature Birth and Low Birth Weight":

"Virtually all of the more than 50 studies published, involving more than half a million births from many countries and ethnic groups, have been consistent in demonstrating that maternal smoking has an adverse effect on birthweight. . . . The risk of spontaneous abortion is 30 to 70 percent higher among pregnant smokers than among nonsmokers and increases with the number of cigarettes smoked. . . . Children of women who smoke during and after pregnancy experience higher rates of morbidity and mortality up to the age of 5 years."—*The Health Consequences of Smoking: The Changing Cigarette—A Report of the Surgeon General*.

Governments and the medical profession do well in issuing warnings. But the final result depends on the individual. As the Bible says: "The way of the foolish one is right in his own eyes, but the one listening to counsel is wise." (Proverbs 12:15) Are you listening?

Snapshots of Secrets in the Sky

By "Awake!" correspondent in Germany

ON A bitterly cold European night last November, I dragged the telescope onto the balcony and scanned the sky in search of the Seven Sisters, or Pleiades. Then, peering at one pinpoint in the sky after another, I really wondered which one might be Halley's comet and whether I would ever manage to see it.* Did you see it? Well, even if you and I didn't spot the right dot, something did happen during this visit of Halley's comet that has never occurred before. Do you know what that was?

Since our planet Earth was not in a good position this time for us to get a spectacular view of the visitor in the sky, professional astronomers planned some time ago to send spacecraft to meet the comet and take photographs of it. And that is why this tour of Halley's comet proved to be different from all previous ones. Just like a bride prepared for the occasion with veil and bridesmaids, Halley's comet came, attracting a train of curious onlookers.

Several nations sent research capsules into space to get nearer to the comet. The United States, Japan, and the Soviet Union all succeeded in adding to our knowledge of the makeup of the orbiter. But the most daring of all was an enterprise called Giotto.

Giotto

"Giotto," said Sir Bernard Lovell, "is one

* For further details, see *Awake!* of November 8, 1985, page 12.

of the few visionary and exciting space projects of this decade." What is Giotto?

For some years ESA (European Space Agency) had been working on plans to launch a space capsule especially to investigate Halley at close quarters. Named Giotto after the Italian painter who included a comet in one of his well-known works of art, the vehicle was shaped like an oil drum with a dish and tripod on top, standing nearly 3 meters (10 ft) high and with a diameter of 1.8 meters (6 ft). Giotto was rocketed into space from its launchpad at Kourou in French Guiana in July 1985 to begin a seven hundred million kilometer (430,000,000 mi) marathon to its rendezvous with Halley in March 1986. That's like flying to the moon and back over nine hundred times!

As the months went by, Giotto rushed on its way toward the encounter, which was planned for March 13/14, 1986. Just how fast was the spacecraft traveling? At approximately 69 kilometers per second (43 mi/sec). What does that really mean? Well, suppose you wanted to fly across the Atlantic, say, from Paris to Washington, D.C. That is a distance of some 6,170 kilometers (3,830 mi). Normal flying time is between seven and eight hours. Concorde (the supersonic airliner) takes less than four hours. But flying with Giotto would get you there in about 90 seconds!

The aim was to send the craft through the coma (that is, the veil around the comet's head) in front of the nucleus. But how would all the information get back to



European Space Agency photo

The spacecraft Giotto encounters Halley's comet

earth? Giotto was designed to transmit everything to the Space Operations Centre in Darmstadt, Federal Republic of Germany, by way of radio-telescope and communications installations in Australia and an orbiting satellite. Just imagine, each signal from Giotto would take more than eight minutes to cover the 150 million kilometers (93,000,000 mi) to earth! The big question on everyone's mind was: Will we find out anything new about Halley?

The Encounter

With help from the Soviet Union and the United States, Darmstadt was able to fine-tune the capsule's course in the days leading up to the climax. Full of anticipation, hundreds of scientists and astronomers gathered at the center on that night. Millions of other people in 36 countries were able to see the encounter as it happened, thanks to live TV coverage. As Giotto raced into the gigantic cloud of gas and dust that was speeding along with Halley, it succeeded in signaling pictures to earth for about

16 minutes. Then, at a distance of less than a thousand kilometers (620 mi) from the actual nucleus, particles of dust emitted from the comet at tremendous speed interfered with some of the instruments on board. Giotto surged onward but with its "eyes" closed.

Secrets Revealed

Thus came to an end man's first reconnoiter of a comet. Scientists now have to pause and reflect on information gleaned, then revise some current theories.

This process will take months or even years. Nevertheless, ESA announced that the analysis of data received from Giotto had already revealed "remarkable scientific results." For instance, the nucleus, previously thought by most to be roughly spherical, is actually elongated and shaped like a peanut. And although the presence of ice is no surprise, the fact that it appears to be enclosed in an outer crust of a black, carbonlike substance is new. The dust and gases radiating out of the nucleus seem to flow out of several holes in this crust and not, as was formerly believed, uniformly from the surface of the nucleus.

This "bride" didn't stand still, even to be photographed. Now Halley's comet is already out of our neighborhood, having revealed to us more of its secrets on this trip than ever before. Will we learn still more next time around, about 2060-61 C.E.? Let's hope that at least there will be a better view of the procession in the sky, and perhaps someone will be able to take a few snapshots.

Young People Ask...

How Can I Tell My Parents?

young people ask...

"When I come home with a bad mark on a test, I want to tell my parents, but I can't because if I tell them, they'll yell at me."—13-year-old Benita.

SAYS writer Ruth Bell: "It's part of the teenage experience to do things without being too cautious. But sometimes you end up getting yourself in trouble, and that's when you might want your parents to come through for you." Yet, whether it is sagging grades, a youthful scheme gone awry, a failure to carry out some parental instruction, or a serious moral problem, the task of telling your parents is not a pleasant one to contemplate.

You may dread bearing bad tidings to your folks—especially when it involves some failure on your part. The thought of being cross-examined may make you queasy. Said 18-year-old Willa: "They never stop asking questions if I tell them something. It's like opening up Pandora's Box." You may also wish you could avoid the inevitable—and perhaps embarrassing—discipline. But worst of all is the thought of disappointing your parents. As young Vince put it: "I always sensed that my parents had a lot of trust in me and that made it difficult for me to approach them because I didn't want to hurt them."

Nevertheless, bad news travels fast. And your folks probably know you so well that they can often figure out that something is wrong even when you are doing your best

to conceal it. So not telling your parents thus merely postpones the inevitable. (Compare Proverbs 28:13.) The question is, *How do you tell them?*

Nobody's Perfect

First, remember what the Bible says about mistakes: "All have sinned and fall short of the glory of God." (Romans 3:23; 5:12) Some mistakes result from not knowing, others because of not caring. And, admittedly, at times a person does what he knows to be wrong. Nevertheless, mistakes are a part of life.

How, though, do you feel about someone who is incapable of admitting a mistake? In the long run, wouldn't your opinion of him go up if one day he came right out and said, "I'm sorry—I can see that I was wrong"? Similarly, your parents may be upset over your shortcoming. But the fact that you were humble enough to admit your error may work to temper their anger.

The Right Time

Often the response of your parents will also be greatly affected by how and when you tell them. The Bible speaks of "a word spoken at the right time for it." (Proverbs 25:11; compare Ecclesiastes 3:1, 7.) True, you do not want to procrastinate. Said young Vince: "I found that waiting only made things worse." However, if possible, find a time to talk to your folks when they

are more likely to be in a receptive frame of mind. Latia, age 16, puts it this way: "I never talk to Mom about such things when she's busy because she'll either block me out or get upset." Advises 15-year-old Kelly: "Wait for a time when your parents' problems seem smallest so you aren't just adding to them."

When might that be? Eighteen-year-old Chris says: "I wait until suppertime and then tell Dad that I need to talk to him." The son of a single parent tried yet another time: "I would usually talk to Mom right before bedtime; she'd be more relaxed then. When she came home from work, she was all wound up."

When the time is right, approach your parents. Perhaps you might say something like, "Mom and Dad, something is troubling me." And what if the right moment doesn't come or if your parents seem too busy to care? Be understanding. The fact

that they are too busy to notice that you have a problem doesn't mean that they do not care. You may say something like, "I know you're busy, but something is really troubling me. Can we talk?" When you have their attention, you might ask: "Did you ever do something that you were too ashamed to talk about?" This tells your parents: (1) You take this matter seriously, (2) it is a difficult matter for you to discuss, and (3) you sincerely regret what has occurred.

"Speak Truth"

Now comes the hard part: telling your parents about the wrong itself. A parable of Jesus teaches us much about doing this. In Luke 15:11-32, we read about a certain man's son who one day left home to enjoy independence. However, the wasteful youth squandered his resources and fell into an immoral life-style. Having reached

rock bottom, he came to his senses and decided to return to his father in hopes of being accepted back. But how? Would he cleverly try to hide his wrongdoing from his father or water down the seriousness of his



Choose a time when your parents might be in a more receptive frame of mind

sin? On the contrary, his opening words to his father were: "Father, I have sinned against heaven and against you. I am no longer worthy of being called your son." Yes, he spoke with humility and without pretense. He did not ask to be spared discipline; he asked only to be forgiven.

How did the father react? To the youth's surprise, the expected reprimand did not come. Evidently the father was so convinced of his son's sincere repentance that no further discipline seemed necessary! A humble and honest approach may likewise help your parents to see that you have learned from your mistake. Now this does not necessarily mean that you will escape discipline. In some cases severe punishment will be well deserved! "The rod and reproof are what give wisdom," says the Bible. (Proverbs 29:15) So have the right attitude toward discipline: "True, no discipline seems for the present to be joyous, but grievous; yet afterward to those who have been trained by it it yields peaceable fruit, namely, righteousness."—Hebrews 12:11.

The Bible further exhorts us to "speak truth." (Ephesians 4:25) So while you may be tempted to withhold some of the more unpleasant details, give your folks the whole picture. Use words your folks will understand, not expressions that carry a special meaning only to young people. Show your folks that you trust them. No doubt your earnestness about setting matters straight will make a deep impression on them.—Compare 2 Corinthians 7:11.

'How Could You Do This to Us?'

Of course, not all youths are blessed with Christian parents. But even when parents have cultivated the fruits of the spirit, such as "mildness" and "self-control," you may

still get quite a strong initial reaction to your confession. (Galatians 5:22, 23) They may rightfully feel hurt and disappointed, especially if the wrong is a serious one. So don't be surprised or indignant if you are hit with an emotion-packed volley of words! No doubt if you had heeded their earlier warnings, you wouldn't be in this situation. Interestingly, 21-year-old Nathan reflected: "Your parents' display of emotion may be an indicator of how much they care for you."

Whatever the case, stay calm. (Proverbs 17:27) Listen to your folks and answer their questions, regardless of how they ask them. Accept whatever discipline they deem necessary, remembering that the psalmist David said: "Should the righteous one strike me, it would be a loving-kindness." (Psalm 141:5) Be determined that this is one mistake you'll *never* repeat again!

Nevertheless, this will not be the last time you will need your parents' help and mature advice. Get in the habit of confiding in them about small problems so that when the big problems come along, you won't fear approaching them and telling them what's on your mind.

In Our Next Issue

- *From the Cradle to the Grave, Our Greatest Need Is Love*
 - *Scientific Dates for Prehistoric Times*
 - *What Has Happened to Our Soil?*
-

Meet the Social-Minded Prairie Dog

By "Awake!" correspondent in Canada

YOU could have seen them by the dozens across North America's western prairies in the 1930's. Those little creatures were scurrying toward their burrows in response to sharp, warning barks of a lookout signaling your approach. At the entrances to their underground homes, they would stand upright on their hind legs, looking like little sentinels. Sometimes they even rose up on their toes as if to get a better view of you. Not until you were quite close would they quickly dive into the entrances, only to pop up from time to time to see if an all clear should be sounded. These were the prairie dogs.

Prairie Dogs

Sixty years ago the tablelands of Canada and the United States literally swarmed with this small rodent, commonly called a gopher. Farmers and cattle-men preferred to call it a prairie dog, a name associated with the shrill bark it emits when danger threatens. Not really a dog, the little creature has been described as "a plump, oversized ground squirrel, with a short, stubby tail"



that it excitedly flips up and down. In some species this tail is black tipped, in others white tipped.

The prairie dog's coarse fur has a gray or reddish tinge, the underparts, throat, and lower face shading off from buff to white. Tiny, round ears are set close to the animal's head. Orange-colored lenses give its eyes an unusual appearance but serve to screen them from the sun.

The tiny, half-ounce (14 gm) pups are born in early spring and are suckled for about seven weeks in underground nurseries. The mothers pamper the babies by lining the nest with prairie grass or other soft material. In one amusing case some years ago, the bathroom tissue in a rural school's outhouse disappeared at an abnormally fast rate. The culprits were discovered when a long strip of tissue was seen vanishing down the entrance of a gopher hole. Imagine the cozy den those pups enjoyed!

Since prairie dogs have voracious appetites, they grow rapidly. In fact, after 15 months the pups are scarcely distinguishable from their parents by weight alone. Mealtimes are early and late in the day. Time is taken for a siesta in their burrows at midday, or hours are spent sunning, grooming one another, and generally enjoying life. Full of fun, the youngsters share in rollicking games.

Besides their sharp bark, prairie dogs make a variety of vocal sounds. When in pain or hindered from

escaping a dangerous situation, they emit a high-pitched scream. Sometimes they chatter by striking their teeth together like their relatives the squirrels. A rough, grating sound may signal a readiness to attack. And a female may start a sort of twittering when arguing with her mate. Surely, 'gopher talk' would be most interesting—if we could understand it!

Although the prairie dog is not a true hibernator, in some areas a great part of its winter is spent sleeping underground. Then it lives off extra fat acquired during summer and autumn. Hence, only occasionally does it feed above ground in winter—and then only when the weather is good. A water supply is not of concern, for the prairie dog finds all the needed moisture in grasses and other foods.

Since the social-minded prairie dog prefers urban life, how fine that it has a natural talent for town planning! Close-knit groups called coteries share a network of burrows and underground runways. A large number of coteries live together in "towns" that may cover as much as 160 acres (65 ha). One of these in Texas, U.S.A., became a megacity, reportedly covering an astounding 25,000 square miles (65,000 sq km), with an estimated 400 million inhabitants! And just imagine—a century ago these prairie dog towns stretched from southern Alberta and Saskatchewan down into Mexico!

Coterie citizens get along well, grooming one another, greeting as if with a kiss, sharing local gossip (it would appear), and even passing grain from one mouth to another. But adjoining coteries are expected to observe strict boundary rules, especially in fall and winter. Dominant males then challenge intruders. When insults fail to discourage an outsider, stronger measures may be needed. So the male may execute a "jump-yip"—stretching his body upward and uttering a loud "Yip!" Sometimes, with his loyal mate standing nearby and loudly voicing her support, he will kick dirt in the intruder's face. At other times a real fight will ensue, with wrestling and rolling on the ground. Some claim that real miscreants may even be "lynched," then buried by prairie dogs that appear to be enforcing town law. In spring and summer, boundaries are relaxed, again allowing friendly contact with neighbors.

Tunnel Engineers

The prairie dog is rated among the best of animal engineers when it comes to tunnel building. The amazing entrance to his burrow is an almost vertical chute extending sharply downward for some 8 to 16 feet (2.5 to 5 m). Just think! Without winches, buckets, or augers, he somehow manages to bring large amounts of soil up this nearly vertical shaft! The method of doing so remains a mystery to naturalists. Using the excavated earth, the



prairie dog builds a rampart as much as two feet (0.6 m) high around the entrance to his home. Using his flat nose as a tamping instrument, he packs it into a solid mound that looks like a volcanic crater. Besides serving as his viewing platform, or lookout, it helps to keep his burrow dry.

At the base of the shaft is a horizontal prairie-dog subway some 40 feet (12 m) long, with secondary tunnels and rooms branching off on either side. Gradually it inclines toward a dead end, close enough to the surface to be used as an escape hatch in times of danger. Should a flood occur, the prairie dog retreats to the farthest end of the tunnel. The incoming water pushes air ahead of it, creating an air pocket where he can safely wait until the water subsides. He thus also outsmarts any schoolboy seeking to drown him with a mere bucket of water.

His Enemies

Many predators at one time looked upon this plump rodent as a really tasty meal. Among them were coyotes, bobcats, weasels, badgers, snakes, eagles, and hawks. Most deadly was the black-footed ferret, for it was able to enter the burrows without difficulty.

As long as these enemies remained in natural balance, the gopher fitted well into the ecological pattern of the prairies. However, with the coming of the white man, wholesale slaughter of gopher enemies began. The result? A population explosion of these little "dogs." They became pests. After all, with their large appetites, didn't they destroy the ranges? Then, too, their clever escape hatches were booby traps in which running livestock could break their legs. The die was cast. The prairie dog must be exterminated!

Man now became the prairie dog's most dangerous enemy, and the campaign of

slaughter continued for over a century. Since bounties were paid for the tails, even schoolboys attempted to drown, trap, and snare the animals. Grain poisoned with strychnine and potassium cyanide was planted in their burrows. Even .22-caliber rifles were included in the arsenal. By 1957 the area covered by prairie-dog towns had shrunk to a mere 57,000 acres (23,000 ha) in all of western North America.

Pest or Useful Worker?

Recently, the case against the prairie dog has been reopened, and it is recognized that in many ways the little creature was unfairly charged. The ranges were depleted mostly because of overgrazing by livestock, whereas such weeds as Russian thistle, knotweed, and locoweed—unsuitable and sometimes poisonous for cattle—were the "dog's" favorite fare! Even destructive cutworms and grasshoppers have been found to be in his diet. Accordingly, it is now conceded that his feeding habits actually speeded recovery of the deteriorated pasture grounds. His burrowing and turning over of soil aerates it and provides drainage for it. If the prairie dog had not multiplied out of control because of human intervention, doubtless he would never have had to be branded a pest.

Today only a few isolated pockets of prairie dogs remain. Perhaps you have seen prairie dogs in protected areas or in a zoo. These animals are sure to attract and entertain you with their many lively antics. Hopefully, growing knowledge about this fascinating little creature's instinctive wisdom, unique society, enjoyment of life, and place in the earth's ecology will teach us not to be quick about judging such animals as unworthy of life. Rather, may we see in them a reflection of a far greater wisdom that operates for the common good.

The "Right to Die"—Whose Decision?

'DON'T keep me going like a vegetable!' cried 88-year-old Clara from her hospital bed. After being resuscitated three times in one week, she just wanted her life to end in peace. So it goes with many terminally ill patients; they plead to die. For doctors and judges this is a debatable question—for relatives a painful choice. But whose decision is it?

Why the Dilemma?

Sometimes, according to the book *Awareness of Dying*, there is "a senseless prolonging of life within hospital walls by medical technology run wild." When imminent death can be postponed by extraordinary medical procedures, questions arise concerning the right to die with dignity. May not patients have some choice in what kind of death—agonizing or peaceful? As *The New Encyclopædia Britannica* explains: "A widely discussed moral dilemma is presented by the patient who is artificially kept alive by a machine. The question then may be whether the machine should be switched off." A surgeon from a large U.S. medical center asks: "Is turning off the respirator murder? Is there any moral or ethical difference in not starting the respirator, as compared to stopping it once it is started?"

The dilemma grows because there is no uniform definition of terms such as "alive" and "dead," and no guarantee of premises such as "incurable," "terminally ill," or "dying." What is "extraordinary" varies accord-

ing to place, time, and specialist's skills. And conflicts can arise between the interests of patients, relatives, and medical staff. Furthermore, at a workshop on medical ethics conducted in 1982 by The College of Medicine, University of Lagos, Nigeria, Dr. Oladapo Ashiru admitted that "the awareness of death is difficult to study objectively."

These problems challenge the conscience of doctors who feel obligated to observe moral, ethical, and religious convictions. Dr. Ashiru concluded: "A considerable amount of attention, respect, medical judgment and restraint as well as firmness is required in dealing with each situation."

What the Bible Says

Life is a sacred gift from our Creator. (Psalm 36:9) It is to be treasured. Out of respect for God's view of life, out of regard for secular law, and in order to hold a good conscience, a Christian would never intentionally cause anyone's death.—Exodus 20:13; Romans 13:1, 5.

Doctors admit that "intensive efforts to maintain life can, in reality, become prolongation of dying, rather than prolongation of living." So, what if doctors say the best they could do would be to stretch out the dying process by mechanical devices? Where death is clearly imminent or unavoidable, the Bible does not require the artificial lengthening of the dying process. Allowing death to take its course under such circumstances would not violate any law of God.



What is being prolonged—living or dying?

Who Decides?

A common question is: 'Whose life is it, anyway?' The decision is primarily the patient's because he is the custodian of the Creator's gift of life. (Acts 17:28) However, if a patient becomes incompetent, the next of kin or an appointed agent may serve as a substitute decision maker. In either case the surrogate should honor and assert the patient's rights, not his own. Similarly, in the case of minor children, parents have the God-given duty and legal right to decide for their offspring.—Psalm 127:3.

On the other hand, as stated in the *Columbia Law Review*, "there is widespread recognition that a courtroom is not the proper forum for making treatment choices. . . Courts are ill-equipped to assume the role of substitute decision maker." As for the physician, would it not be unethical for him to force his own religious convictions upon the patient? He should act within the dictates of the patient's religion or withdraw from the case if his religious beliefs produce a serious conflict of conscience. Often the team approach is best, with physician, minister, and family cooperating with the patient for a decision in his best interests.

Whatever the outcome of the decision, Christians can rely on the Creator's promise of a time when no one will say, "I am sick." (Isaiah 33:24) For the terminally ill, there is God's marvelous promise of a resurrection to a paradise of health and life under God's Kingdom. (Acts 24:15; Revelation 21:1-4) That time is near when, through Jesus Christ, Jehovah God will grant to obedient humans the right to live, eternally!—John 3:36.

A Christian would find it helpful to reflect on these Bible accounts: Both Job and Hezekiah appeared to be terminally ill, but they recovered. (Job 7:5, 6; 42:16; 2 Kings 20:1-11) Therefore, do not be too quick to conclude that someone is dying. The outcome was different, though, in the case of Ben-Hadad. (2 Kings 8:7-15) The armor-bearer of Saul refused the king's request to help him to 'die with dignity,' and David executed as bloodguilty another man who claimed to have done that 'mercy killing.' (1 Samuel 31:4; 2 Samuel 1:6-16) Therefore, the Bible does not approve the hastening of death.

These examples illustrate the need for caution in dealing with cases today. Each one has its own peculiarities and should be decided prayerfully with due regard for God's view of the preciousness of life. In this, we have a fine example in Rebekah, who, when anxious about her life, "went to inquire of Jehovah."—Genesis 25:22.

The World of Batteries

ABATTERY is a battery, right? Wrong! Depending on application and size requirements, there is a world of difference in the world of batteries.

Basically, a battery is a device that converts chemical energy into electrical energy. The two major types are called *primary* and *secondary* (or storage) batteries. The difference is that the latter can be recharged, which means that the chemical reaction producing electricity can be reversed, thereby restoring the battery's electricity-making capabilities and greatly extending its period of usefulness. Because of the greater expense, buying a rechargeable battery is practical only if it is to be used often, as in a radio used daily, in contrast with a flashlight used only occasionally. One should not overlook, moreover, what is involved in recharging.

The more common primary household batteries include the following four:

Regular: The oldest and cheapest form. It has a short life and deteriorates particularly fast in extreme heat or cold. It is also susceptible to leakage.

Heavy-duty: Generally considered an improved version of the regular battery. It therefore costs more.

Alkaline: Performs better in

extreme temperatures, lasts longer, is not as susceptible to leakage, and is the most expensive of the three types.

Miniature (button): Used in devices requiring small amounts of power (hearing aids, watches). It has long life but is expensive.



Battery Buyers, Beware of the Following:

Buying batteries solely on the basis of price. If your power drain is moderate to heavy and fairly constant, it will pay to buy a more expensive battery (alkaline), which will last much longer. For things used only occasionally (flashlights, seldom-used radios), a cheaper battery will suffice.

Buying batteries that have lost strength by long storage on store shelves. To ensure getting fresh batteries, look for a shop with rapid turnover of stock.

Storing unused batteries

where it is warm or wet. Batteries keep best in a cool, dry place, for example, sealed in plastic bags in a refrigerator. Before removal from the plastic, however, let them come to room temperature, so as to avoid having the terminals rust from condensation.

Thinking that the staying power of all batteries is the same. Standard or heavy-duty batteries will run an appliance (portable TV set, video camera, cassette player) well when fresh, but since alkaline batteries maintain a more constant voltage, they will offer good service right up to the end, rather than slowly tapering off.

Mixing new and old or mixing different types of batteries. The mix will last only as long as the weakest battery.

Forgetting to remove worn-out batteries promptly to prevent leakage. Batteries should also be removed when devices are not in use, or are to be powered by household current over a long period of time.

Putting button-type batteries in your mouth or allowing children to play with them. If swallowed accidentally, internal burning can result in serious injury or even death.

So the next time you need to buy batteries for your portable radio, clock, calculator, tape recorder, or some other appliance, remember that in the world of batteries, there is a world of difference.

The Sanctity of Blood —An Ancient Controversy

JEHOVAH'S WITNESSES are well known for their refusal to accept blood transfusions. Why do they take such a stand? Because the Bible clearly shows that blood represents a creature's life, or soul, and is thus sacred. When Noah was given permission to eat animal flesh after the Flood, he was strictly warned: "Only flesh with its soul—its blood—you must not eat." (Genesis 9:4) This prohibition was specifically repeated in the Law that God gave to the nation of Israel. (Leviticus 17:10) Later, Christians, too, were required by holy spirit and the apostles to "keep abstaining from things sacrificed to idols *and from blood* and from things strangled and from fornication."—Acts 15:28, 29.

Jehovah's Witnesses are one of the few groups that still observe the divine prohibition against eating blood. Are they unreasonable in this? Moreover, it seems that today they are alone in concluding that this prohibition applies also to blood transfusions. Are they the only Bible students ever to have done so?

Eating Blood—God's View and Man's

To discuss the first question first: The fact is, respect for the sanctity of blood has long distinguished God's servants from the nations in general. Throughout history, blood has been used freely as nourishment, even as a poison, as well as to inspire prophetesses, to bind conspirators together, to seal treaties. On the other hand, God's view of the matter was well described by Bi-

ble scholar Joseph Benson: "It ought to be observed, that this prohibition of eating blood, given to Noah and all his posterity, and repeated to the Israelites, in a most

Respect for the sanctity of blood has long distinguished God's servants from the nations in general

solemn manner, under the Mosaic dispensation, has never been revoked, but, on the contrary, has been confirmed under the New Testament, Acts xv.; and thereby made of perpetual obligation."*

* *The Holy Bible, Containing the Old and New Testaments*, by Joseph Benson, New York, 1839, Volume I, page 43.



Depiction of a proposed blood transfusion from a dog, 1693

We have such a shrinking from human blood that at our meals we avoid the blood of animals used for food."—Minucius Felix

Throughout the centuries, many have tried to abide faithfully by this divine law. For example, in 177 C.E., when religious enemies falsely accused Christians of eating children, a woman named Biblis protested: "How would such men eat children, when they are not allowed to eat the blood even of irrational animals?"^{*} Tertullian (about 160-230 C.E.) confirmed that Christians of his day refused to eat blood. And Minucius Felix, a Roman lawyer who lived until about 250 C.E., asserted: "We have such a shrinking from human blood that at our meals we avoid the blood of animals used for food."^{**}

A few centuries later, during the Trullan council held at Constantinople in 692 C.E., the following rule was set forth: "The eating of the blood of animals is forbidden in Holy Scripture. A cleric who partakes of blood is to be punished by deposition, a layman with excommunication."[△]

Then, about 200 years later, Regino, the abbot of Prüm in what is now Germany, showed that the Biblical prohibition of eating blood was still respected in his day. He wrote: "The apostles' letter sent from Jerusalem advises that these things must necessarily be observed. (Acts 15) Also [Christians must abstain from eating] something

* *The Ecclesiastical History*, by Eusebius, V. i. 26, Loeb Classical Library, Cambridge and London, 1980, page 419.

** See also *Octavius*, by Minucius Felix, chapter 30, Loeb Classical Library, Cambridge and London, 1977, page 409.

△ *A History of the Councils of the Church, From the Original Documents*, by Charles Joseph Hefele, Edinburgh, 1896, page 232.

caught by a beast, for that too is likewise strangled; and from blood, that is, it must not be eaten with blood. . . .

"At the same time, this must also be considered: that a thing strangled, and blood, are viewed in the same way as idolatry and fornication. Wherefore, it should be proclaimed to all what a grievous sin it is to eat blood, since it is placed together with idols and fornication. If anyone shall violate these commands of the Lord and the apostles, let him be suspended from the communion of the church until he should appropriately repent."[†]

In the 12th century, blood was still widely viewed as sacred. For example, clergyman Joseph Priestley (1733-1804) wrote: "In A.D. 1125, Otho, bishop of Bamberg, was instrumental in converting the Pomeranians . . . It deserves to be noticed, that, among the instructions given to these people relating to their new religion, they were forbidden to eat blood, or animals that had been strangled; from which it appears that at this time, in Europe as well as in all other parts of the Christian world, such food was thought to be unlawful."[‡]

The 17th-century theologian Étienne de Courcelles (1586-1659) was equally convinced that Christians should not eat blood. He explains Acts 15:28, 29 in these words:

"The apostles did not intend here to trans-

* *Libri duo de ecclesiasticis disciplinis et religione Christiana* (Two Books Concerning the Ecclesiastical Teachings and the Christian Religion), by Regino; see Migne's *Patrologia Latina*, Volume 132, Paris, 1853, columns 354, 355.

** *The Theological and Miscellaneous Works*, by Joseph Priestley, Volume IX (1818), page 366.

A cleric who partakes of blood is to be punished by deposition, a layman with excommunication"

mit injunctions about avoiding things from which nature would shrink back, and which were prohibited by the laws of the Gentiles, but only about things which at that time generally held sway, and in which the recently-converted Gentiles would not have thought themselves sinning, unless admonished. For just as it is granted that they knew that they must avoid every form of idol worship, yet they did not immediately grasp that things sacrificed to idols were to be shunned; in the same way, although they would reckon it a crime to shed human blood, yet they did not think the same about eating animal [blood]. The apostles, by their decree, wished to remedy the ignorance of these persons; whereby relieving them of the yoke of circumcision and other legal precepts, they nonetheless advised that those things must be retained that were already observed from antiquity by the foreigners remaining among the Israelites, [things] such as were transmitted to Noah and his sons."*

During the 18th century, the renowned scientist and Bible student Sir Isaac Newton expressed his interest in the sanctity of blood. He declared: "This law [of abstaining from blood] was ancienter than the days of Moses, being given to Noah and his sons, long before the days of Abraham: and therefore when the Apostles and Elders in the Council at Jerusalem declared that the Gentiles were not obliged to be circumcised and keep the law of Moses, they excepted this law of abstaining from blood, and things strangled, as being an earlier law of God, imposed not on the sons of Abraham only, but on all nations."**

* *Diatriba de esu sanguinis inter Christianos* (Discourse Concerning the Eating of Blood Among Christians), by Étienne de Courcelles; see *Opera theologica* (Theological Works), Amsterdam, 1675, page 971.

** *The Chronology of Antient Kingdoms Amended*, by Sir Isaac Newton, Dublin, 1728, page 184.

"It should be proclaimed to all what a grievous sin it is to eat blood, since it is placed together with idols and fornication"

Even today the prohibition of eating blood is still recognized in some quarters. For example, the *Encyclopedia of Bible Difficulties*, published in 1982, states: "The implication seems very clear that we are still to respect the sanctity of the blood, since God has appointed it to be a symbol of the atoning blood of Jesus Christ. Therefore it is not to be consumed by any believer who wishes to be obedient to Scripture."

Hence, many have held—and some still do—that the prohibition of eating blood should be observed by believers. Jehovah's Witnesses agree with them. Surely, the fact that most "Christians" today do not follow this Scriptural law does not make the Witnesses unreasonable. Rather, it is another indication of how far Christendom has strayed from true Christianity.

But what about blood in transfusions? Even orthodox Jews, who scrupulously avoid the eating of blood, appear to have no objection to this practice. For example, the work *Jewish Medical Ethics* says: "Blood donations have been invariably permitted, even if given for temporary storage in blood banks, or for payment." Is it, then, only Jehovah's Witnesses who have felt that the command to abstain from blood applies to blood transfusions?

The Medical Use of Blood

First, how would the early Christians have viewed the medical use of blood in general? Hundreds of years before the apostles, a physician wrote to King Esar-haddon about the treatment he was giving to the king's son. He reported:

'The one who employs blood transfusion would appear to oppose God who extends clemency.'

—17th-century doctor

"Shamash-shumu-ukin is doing much better; the king, my lord, can be happy. Starting with the 22nd day I give (him) blood to drink, he will drink (it) for 3 days. For 3 more days I shall give (him blood) for internal application."* Would any faithful Jew of that day, or any true Christian later, have approved of such treatment?

The second-century physician Aretaeus of Cappadocia describes how blood was used in his day to treat epilepsy: "I have seen persons holding a cup below the wound of a man recently slaughtered, and drinking a draught of the blood!"^a The first-century naturalist Pliny also reports that human blood was used to treat epilepsy. In fact, blood continued to be used for medical purposes well into our Common Era. Historian Reay Tannahill gives an example: "In 1483, for example, Louis XI of France was dying. 'Every day he grew worse, and the medicines profited him nothing, though of a strange character; for he vehemently hoped to recover by the human blood which he took and swallowed from certain children.'"^b

Yes, the medical use of whole blood has a long history. Doubtless, many believed in its healing power—although Aretaeus had

* *Letters From Assyrian Scholars to the Kings Esar-haddon and Assurbanipal*, Part I: Texts, by Simo Parpolo, Neukirchen-Vluyn, 1970, page 201.

^a *The Extant Works of Aretaeus, the Cappadocian*, edited and translated by Francis Adams, London, 1856, page 471.

^b *Flesh and Blood, A History of the Cannibal Complex*, by Reay Tannahill, New York (1975), pages 63, 64.



Patient receiving transfusion of lamb's blood, 1874

his doubts. Nevertheless, the Scriptures allow no exceptions to the command to 'abstain from blood.' But, it may be objected, these "treatments" involved taking blood in through the mouth—drinking it. What about the medical use of blood by transfusion?

Transfusion and the Apostolic Decree

The first blood transfusion on record is considered to have taken place in 1492 and was performed on Pope Innocent VIII. Here is a contemporary account: "Meanwhile, in the city [of Rome] tribulations and deaths have never ceased; for, first of all, three ten-year-old boys, from whose veins a certain Jewish physician (who had promised that the pope would be restored to health) extracted blood, died without delay. For, in fact, the Jew had told them he wanted to heal the pontiff, if only he could have a certain quantity of human blood and indeed young; which, therefore, he ordered to be extracted from three boys, to whom after

the blood-letting he gave a ducat for each; and shortly thereafter they died. The Jew indeed fled, and the pope was not healed.”*

In the second half of the 17th century, there were further experiments with blood transfusions. The Italian physician Bartolomeo Santinelli doubted their medical value. But he opposed them for another reason too. Here is what he wrote:

“Let it be allowed to cross the boundaries of medicine for a little while, and in order to satisfy abundantly the curious reader, since the unsuitableness of transfusion has already been proved by medical reasons, let it be permitted to confirm that further by monuments of the sacred pages, for thus its repugnance will become known not only to physicians but to all sorts of learned men. . . . Although indeed the prohibition of the use of blood would have in view only that man should not eat it, for which reason it would seem to pertain less to our cause, nonetheless the purpose of that injunction is contrary to today’s transfusion [practice], so that the one who employs it [blood transfusion] would appear to oppose God who extends clemency.”**

Yes, to Santinelli, blood transfusions were against God’s law. Danish scholar Thomas Bartholin was of the same opinion. In 1673, he wrote: “Transfusion surgery by novices has exceeded limits in recent years, since it has infused through an opened vein into the heart of a sick man not only invigorating liquids, but

* *Diario della Città di Roma di Stefano Infessura* (Diary of the City of Rome), edited by Oreste Tommasini, Rome, 1890, pages 275, 276.

** *Confusio transfusionis, sive confutatio operationis transfundentis sanguinem de individuo ad individuum* (A Confounding of Transfusion, or a Refutation of the Operation of Transfusing Blood From Individual to Individual), by Bartolomeo Santinelli, Rome, 1668, pages 130, 131.

warm blood of animals or [blood] from one man into another . . . Indeed the learned man Elsholtz (in chap. 7 of the *New Clyster*) pleads as an excuse that the Apostolic decree must in fact be understood with regard to the eating of blood done through the mouth, not at all with regard to infusion by the veins, but either manner of taking [blood] accords with one and the same purpose, that by this

‘Taking blood through the mouth or through the veins has one and the same purpose, that by this blood a sick body be nourished or restored to health.’—17th-century scholar

blood a sick body be nourished or restored [to health].”*

Clearly, then, the question of whether blood should be used as food or for transfusions is not a uniquely modern problem. It is an ancient controversy. Those earlier blood transfusions were not successful medically, but what especially concerned certain scholars was the fact that they violated God’s law.

Modern blood transfusions have been more successful in terms of patients surviving the treatment. Nevertheless, like sincere Bible students before them, Jehovah’s Witnesses today cannot agree with the widespread medical use of a substance in ways prohibited by God. However misunderstood their stand may be, the Witnesses are determined for their part to obey the apostolic decree, “Keep abstaining from . . . blood.”—Acts 15:29; 5:29.

* *De sanguine vetito disquisitio medica* (A Medical Disquisition Concerning the Prohibition of Blood), by Thomas Bartholin, Frankfurt, 1673, page 11.

From Our Readers

The Terrifying Inquisition

As an educator and father, I find your articles interesting and informative. When I came to the articles "The Terrifying Inquisition" and "How Was It Possible?" (April 22, 1986), I read with the exclusive purpose of finding inexactitudes and morbid attacks on the Catholic Church (to which I belong). I did not find any fact that contradicted the historical truth, and to back me up I had my academic studies in the Pontifical Bolivar University of Medellin, the *Universal Encyclopaedia* by César Cántu, and *The History of the Catholic Church* by Lasallista Eugenio León.

F. J. V., Colombia

No Divorce?

I disagree with your view that the Bible allows the innocent mate to remarry. (January 8, 1986, page 12, footnote) Whoever separates from the other should remain single or else be reconciled. (1 Corinthians 7:10, 11) One should be prepared to forgive the mate.

O. A. F., Nigeria

Forgiveness is proper when the guilty party truly repents. However, at Matthew 19:9 Jesus stated: "I say to you that whoever divorces his wife, except on the ground of fornication, and marries another commits adultery." This indicates that if the innocent party gains a divorce on the grounds of fornication, he is free to marry another without that being considered adultery. At 1 Corinthians 7, Paul is referring to a separation rather than a Scriptural divorce.—ED.

Conventions in Poland

We enjoyed the article on the Polish conventions, but you seem to highlight the tremendous filth of the stadiums in Poland. We have also seen such in the United

States, but your article gave the impression that such conditions are found only in Poland.

A Group of Poles, United States

The statements pertaining to the change in the conditions of the stadiums were all made by the news media, a stadium administrator, and a tour guide. Such statements were not used to cast a reflection on Poland but to show the improvement that can take place in a stadium when a group of people all work together. This has been seen in connection with conventions of Jehovah's Witnesses all over the world.—ED.

Hockey and Immorality

Just because Tom Edur gave up hockey for Jehovah's Witnesses doesn't mean that you have to malign the whole sport. All hockey is not riddled with excessive drinking and adultery, and it certainly is more drug free than any other sport.

N. L., United States

Tom Edur did not malign hockey as a sport, even saying: "I enjoyed playing very much and still play on occasion for recreation." Yet he did find that many professional players, in the environment to which they were exposed, drank excessively and engaged in adultery, and he began to be seriously influenced by all of this. Youths today look up to sports stars as their heroes, and it is really sad that increasing numbers of these stars are bad examples when it comes to use of tobacco, excessive use of alcohol, misuse of drugs, and immoral conduct. Even if the situation in the sports world is not any worse than in other segments of society, it is the example of sports stars that has a great impact on youths. We hope to alert youths and others to the moral dangers involved in pursuing a career in professional sports.—ED.

Watching the World



Widespread Malnutrition

According to the latest World Bank study, the number of acutely undernourished people increased by 14 percent during the decade from 1970 to 1980. Some 340 million people in 87 developing nations of Africa, Latin America, and Asia—excluding China for lack of data—were found to be acutely malnourished, subsisting on a diet that seriously jeopardizes their health and stunts their growth. An additional 390 million people lacked sufficient food to lead active working lives. The problem, says the Bank, is not global food shortage, rising prices, or population outstripping production. "The growth of global food production has been faster than the unprecedented population growth of the past 40 years. Prices of cereals on world markets have even been falling." Then why do these countries and their people not share in this abundance? Because they are too poor to purchase the needed food, and "because of the widely held misperception that food shortages are the root of the problem," says the Bank.

Longest-Reigning Monarch

Japan's Emperor Hirohito, now 85 years old, is the world's longest-ruling and oldest sover-

ign. This year, birthday ceremonies were combined with government-sponsored celebrations marking the 60 years of Hirohito's reign. "The worst memories for me over the past 60 years are events related to the second world war," said the emperor, who prior to the war was regarded as a god. A record crowd estimated to number 56,000 poured into the Imperial Palace grounds to congratulate the emperor. Security precautions were tight, as there has been an upsurge of violence in Japan in recent years.

Endometriosis and Exercise

Strenuous exercise appears to reduce the risk to women of con-



tracting a disease that can cause infertility and tumor growth—endometriosis. In the United States an estimated 10 to 15 percent of premenopausal women are affected by this disorder, which causes abnormal growth of uterine-lining tissue and is

usually associated with agonizing premenstrual cramps. Rigorous exercise has "been recommended by a number of doctors," Dr. Cramer of the Harvard Medical School said in *The New York Times*. "You don't have to be a professional athlete to get a benefit from it, just a few hours a week can have a protective effect."

Mapping by Satellite

By use of radar from orbiting satellites, scientists are now making precise, detailed maps of the ocean's floor. Actually, it is the ocean's surface that is measured. Although not discerned by humans on ships, the surface of the sea is not even. Because of gravity, the water is pulled into depressions or piled up on top of mountains and can vary by 50 feet (15 m) or more. "The latest computations," says *U.S. News & World Report*, "are so precise that differences in water surface as small as 10 centimeters [4 in.] can be traced to specific features on the sea floor." Even greater detail is expected to be provided by future satellites. "From the topography of the ocean floor, geophysicists can study how so-called tectonic plates in the earth's crust interact to produce earthquakes and other subterranean stresses," says the article.

Distinction Made

"Technology in 1986 seems to have suffered a devastating one-two punch," says *The New York Times*. "The first blow was to rocketry as a space shuttle blew up, followed by reverberating explosions of an Air Force Titan rocket and a Delta carrying a weather satellite; the second blow was to nuclear power, as a reactor failed catastrophically in the Ukraine." How have people reacted to these incidents? The shuttle accident was accepted as one of the risks of living in a modern technological society. In similar situations in the past, demands were made to redesign and make things safer, but basic changes were not sought. "Though manifestly imperfect, the technologies have been accepted because their benefits seem to have outweighed the risks," says the *Times*. But in regard to the nuclear-power-reactor failure in the Ukraine, "public response worldwide seems to have been significantly different. The level of intensity and emotion suggests that this is one technology that provokes more doubt and fear than acceptability."

New Identification Method

Identifying lost or kidnapped children, disoriented elderly persons, injured individuals, or even the retarded can now be made easier. Identification numbers, such as Social Security numbers, are put on a microdisk and bonded to a rear molar. The numbers are filed in a computer registry, along with identifying information and a medical history of the individual. The service is offered by six different firms at present.

"To avoid confusion, the American Dental Association is now working on one centralized system," notes *American Health* magazine.

Cash at the Dump

One Friday evening a German bank cashier in Saarlouis was unable to explain the loss of DM20,000 (\$9,000, U.S.). The following Monday, a garbage-man at the city dump made a discovery that was embarrassing to the bank. Among empty tin cans, wastepaper, and eggshells, he found several bank notes. A team searched through the piles



of rubbish and found more than DM7,000. What had happened? "Balancing the month-end accounts last Friday, January 31, kept us terribly rushed," explained a bank spokesman in the German newspaper *Kölner Stadt-Anzeiger*. "The bundles of bank notes must have accidentally slipped from a cashbox into the wastepaper basket," going from the wastebasket to the central dump.

Superior Load-Bearers

Many African women transport heavy loads, such as buckets of water, bundles of firewood, bags of cement, and suitcases, on their heads. According to scientific studies measuring energy costs, an African woman carrying

a load of 70 percent of her body weight increased her intake of oxygen by 50 percent. Army recruits, carrying similar loads in backpacks, registered an increase of 100 percent in oxygen consumption. With smaller loads of up to 20 percent of body weight, the African women registered no increase in energy consumption. "The army recruits," reports the journal *Nature*, "were not able to carry small loads without metabolic cost." Scientists suggest that this phenomenon is the result of early training and involves posture and gait. Walking requires energy mostly because of up-and-down body movements. "African women put all their energy into moving forward," states *Discover* magazine. "While most people bounce along like wagons on egg-shaped wheels, African women move like wagons on round wheels."

Still Extinct

Called the largest animal that ever flew, the giant pterodactyl has long been extinct. The fossilized remains of one found in Texas in 1972 disclosed a 36-foot (11 m) wingspan, an estimated weight of 150 pounds (68 kg), and a possible standing height of 12 feet (3.7 m). A plan to build a full-scale replica was scrapped in favor of a half-size working model with an 18-foot (5.5 m) wingspan. With computers controlling its flapping wings, the \$700,000 model actually flew for short periods earlier in the year, reacting to air currents on its own. The successful acrobatic flights were filmed by the Smithsonian Institution for a movie on natural and mechanical flight. But the

model had to be propelled into the air, as the movement of the feet could not be duplicated, and because of the weight, it could not ascend. There were disappointments and successes, but at its final showing, a public demonstration near Washington, D.C., it quickly plunged to the ground and severed its head. "Now we know why pterosaurs are extinct," said its builder, Paul MacCready.

"World's Heaviest"

"Albert Pernitsch, an Austrian citizen, claims to be the world's heaviest person," states *Japan Air Lines Newsletter*. "A big eater and drinker, Pernitsch reportedly once downed 80 mugs of beer, more than eight quarts [7.6 L]

of wine and 14 chickens in one sitting." He weighed over 13 pounds (5.9 kg) at birth, 400 pounds (180 kg) at age 15, and now the 29-year-old man tops the scales at 876 pounds (397 kg). He was taken to Japan by the airline "to exhibit his girth at a Tokyo fair." Six seats in the first-class cabin of the 747 plane had to be removed and a special seat and safety belt installed to accommodate him, along with reinforced flooring and a larger bathroom. He was placed aboard the aircraft in a cushioned cargo container.

Upgrading Brooklyn Bridge

The Brooklyn Bridge's 1,088 vertical suspender cables that support its roadway and the 400

diagonal stays are going to be replaced. "The restrung of the bridge is a key part of a 15-year, \$153 million rehabilitation that engineers believe will take the bridge through its second century," says *The New York Times*. The bridge opened in 1883. The original wire-rope supplier delivered defective wire that had been rejected by city inspectors at his factory. However, the bridge had been designed to compensate for such, and the rope held up well. Replacement is now being made because of age. Two cables snapped in 1981, one killing a pedestrian on the bridge walkway. After the cables are replaced, their tension will be adjusted by engineers to equalize the stress. The four main cables of the bridge will not be replaced.

disability rate, says the group, is the result of the welfare system's "soft" rules to help people to a job if it is available. It also claims that the \$12.5 million reduction in the state's permanent population will take place through attrition in the second quarter of 1987, says the state. The state's permanent population declined by 1,000 in 1986, while the state's permanent population increased by 1,000 in 1985.

The state's permanent population declined by 1,000 in 1986, while the state's permanent population increased by 1,000 in 1985.

to write and had 14 children in one family. He weighed over 175 pounds (80 kg) at birth. A 400-pound (180 kg) at age 15 was now the 75-kilogram (165 lb) he was before he lost his sight. "It's difficult to bring up the Tokyo taxi," says Scott in his first-class cabin on the SAS flight back to Copenhagen. "With a sighted passenger it's like a dream come true," he says. "It's a complete change from being blind."

He is currently writing a book about his life, "A Different Way of Seeing." He has been invited to speak at the United Nations in New York City and to the World Health Organization in Geneva, Switzerland, and to the European Parliament in Brussels, Belgium.

World • Newsweek

After being hospitalized in New York City, he is due to leave for London next week. "I'm looking forward to meeting new people and experiencing new cultures," says the 40-year-old MacLennan.

Upgrading Brooklyn Bridge

The Brooklyn Bridge, 70 years after its completion, stands today as a symbol of the long-term commitment of the city to its future.

