

# Awake!

November 22, 1991



## The Bible Fought Disease Before Science Did





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# The Bible Fought Disease Before Science Did

Whenever the Bible is mentioned today, many uninformed people automatically dismiss it as not worth their attention. They refuse to open their minds to discover that it stated thousands of years ago what modern man has only recently learned or has yet to learn. This is true relative to world events, government, astronomy, environment, natural history, physiology, and psychology. It is also true of disease.

**T**HE Bible is a book of life. No other text or collection of literature has such broad application to so many aspects of life. Good health and life are related, so it should not be surprising that the Bible contains many principles that bear directly on health. The Bible mentions numerous diseases, such as leprosy, piles (hemorrhoids), dropsy (edema), and stomach sickness.—Deuteronomy 24:8; 28:27; Luke 14:2; 1 Timothy 5:23.

The Bible was not written primarily to instruct us about physical disease. What information it does supply, however, is scientifically accurate and beneficial for review. The human body was awe-inspiring to the psalmist of old, and concerning it he wrote: “For you [Jehovah] produced my kidneys; you kept me screened off in the belly of my mother. I shall laud you because in a fear-inspiring way I am wonderfully made. Your works are wonderful, as my soul is very well aware. My bones were not hidden from you when I was made in secret, when I was woven in the lowest parts of the earth. Your eyes saw even the embryo of me, and in your book all its parts

were down in writing, as regards the days when they were formed and there was not yet one among them.”—Psalm 139:13-16.

Even though the embryo is screened off in the darkness of the womb, Jehovah sees it forming and the bones growing. With him “the darkness might just as well be the light.” (Verse 12) There is no hiding from Jehovah. Medically speaking, the embryo is shielded off from the mother by the placenta and thereby escapes rejection as a foreign body. However, the truth expressed by this psalm is not medical but spiritual, namely, Jehovah sees all, even in the darkness of the womb.

From the moment of conception, ‘all our body parts are down in the writing’ of the genetic code in the fertilized egg cell in the mother’s womb. Also, the timing ‘as regards the days when they were to be formed,’ each one in its proper order, is determined by the many biological clocks that are programmed into the genes.

The psalmist David did not know all this scientific detail, but Jehovah, who inspired him to write the psalm, did, for He had created man in the first place. Higher critics deny



**"My bones were not hidden from you when I was made in secret"**

along with your implements, and it must occur that when you squat outside, you must also dig a hole with it and turn and cover your excrement." This law on the burying of fecal waste was a profoundly advanced preventive measure for protecting against fly-borne salmonellosis, shigellosis, typhoid, and a host of other dysenteries that still claim thousands of lives today in areas where that principle is not adhered to.

Leviticus chapter 11 establishes in principle that disease can be spread by insect, by rodent, and, most important, by contaminated water. This latter silently attests to the principle that disease is

caused by microorganisms, showing the Bible to be millenniums ahead of Leeuwenhoek (1683) or Pasteur (19th century). The same could be said of quarantining, mandated in Leviticus chapter 13 in cases of leprosy.

Dietary prohibitions recorded at Leviticus 11:13-20 included predators, such as eagles, ospreys, and owls, and scavengers, such as the raven and the vulture. Located as they are at the top of the food chain, they concentrate large quantities of toxins. Animals lower

David's writership, but even they have to assign the time of the psalm's writing to centuries before Christ.

### The Bible Focuses on Prevention

Reviewing God's laws given to Israel through Moses 15 centuries before Christ, it is seen that the primary emphasis of that Law as regards health was clearly focused on prevention. For example, at Deuteronomy 23:13, it says: "And a peg should be at your service

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

**Would you welcome more information? Write Watch Tower at the appropriate address on page 5.  
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down in the food chain ingest these toxins in amounts that are insignificant in themselves, whereas those animals at the top of the food chain accumulate them in concentrated doses. The Mosaic Law allowed the eating of some animals that were vegetarians and were not in a food chain that concentrated toxins. Certain forbidden meats harbored encysted parasites such as those causing trichinosis.

The Bible's prohibition against misuse of blood, embodied in the Mosaic Law in several places, is now after 3,500 years proving to be medically sound. (Genesis 9:4; Leviticus 3:17; 7:26; 17:10-16; 19:26; Deuteronomy 12:16; 15:23) The restriction is repeated in the Christian Greek Scriptures at Acts 15:20, 29 and 21:25. Medical practice is attempting to minimize or entirely eliminate use of donor blood in kidney dialysis, heart-lung pumps, and surgery in general. Hepatitis in its many forms, AIDS, cytomegalovirus infection, and myriad other blood-borne maladies stand as gruesome reminders to the worldly wise who ignore God's laws.

Exercise is vital for good health, and the Bible acknowledges its benefits. Active exercise three times a week for as little as 20 minutes a session can lower risks to the heart and the circulatory system. It increases the protective HDL form of cholesterol, improves your energy level, and adds to your flexibility and sense of well-being. The Bible, while recognizing the value of exercise, puts it secondary to the more important development of spiritual-

ity: "Bodily training is beneficial for a little; but godly devotion is beneficial for all things, as it holds promise of the life now and that which is to come."—1 Timothy 4:8.

The moral laws of the Bible serve as the primary protection against sexually transmitted diseases, which were no doubt present but as yet unidentified or perhaps even unsuspected by scholars for centuries.—Exodus 20:14; Romans 1:26, 27; 1 Corinthians 6:9, 18; Galatians 5:19.

### **"A Very Accurate Scientific Book"**

Hippocrates was a Greek physician of the fifth and fourth centuries B.C.E. who has become known as "the father of medicine," but much that the Bible says about diseases was written by Moses, about a thousand years before then. Yet, significantly, *The AMA News* published a letter from a doctor that said: "The best informed medical researchers now doing the best work are arriving at the conclusion that the Bible is a very accurate scientific book. . . . The facts of life, diagnosis, treatment, and preventive medicine as given in the Bible are far more advanced and reliable than the theories of Hippocrates, many still unproven, and some found to be grossly inaccurate."

Dr. A. Rendle Short in his book *The Bible and Modern Medicine*, after pointing out that sanitary laws among the nations surrounding ancient Israel were very elementary if they existed at all, said: "It is the more surprising

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therefore that in a book like the Bible, alleged to be unscientific, there should be a sanitary code at all, and equally surprising that a nation just escaped from slavery, frequently overrun by enemies and carried away into captivity from time to time, should have on its statute books so wise and reasonable a code of rules of health."

### **Psychosomatic Problems**

The Bible has proved to be medically advanced in its recognition of the psychosomatic association of some health disorders long before such was commonly accepted in the medical field. Moreover, the Bible's explanation of the role of the mind in the manifestation of physical disease remains a model of clear understanding. Proverbs 17:22 states: "A heart that is joyful does good as a curer, but a spirit that is stricken makes the bones dry." Note that there is nothing judgmental here, only the statement of fact. There is no admonition to tell the overwhelmed person to snap out of it, as if it were that simple.

A positive attitude is helpful; worry is negative and detrimental. "Anxious care in the heart of a man is what will cause it to bow down, but the good word is what makes it rejoice." (Proverbs 12:25) Chapter 18, verse 14, of Proverbs is worthy of pondering: "The spirit of a man can put up with a malady; but as for a stricken spirit, who can bear it?" This scripture suggests that one's ability to withstand a given degree of physical sickness (malady) may be enhanced by drawing on one's spiritual forces.

James T. Fisher, a psychiatrist, had this to say about the psychological value in Jesus' Sermon on the Mount: "If you were to take the sum total of all the authoritative articles ever written by the most qualified of psychologists and psychiatrists on the subject of mental hygiene—if you were to combine them, and refine them, and cleave out the excess verbiage—if you were to take the whole of the

meat and none of the parsley, and if you were to have these unadulterated bits of pure scientific knowledge concisely expressed by the most capable of living poets, you would have an awkward and incomplete summation of the Sermon on the Mount. And it would suffer immeasurably through comparison."—*A Few Buttons Missing*, page 273.

Psychosomatic feelings can influence our physical condition, but this in itself does not mean there is no actual physical illness. It is therefore important first to try to assist with the physical needs and at the very least recognize the ailment, while at the same time encouraging a positive frame of mind and spirit, which will help a person to endure. This is especially important when there may be no definitive treatment available in this present system of things.

After Adam's sin, death became a foregone genetic reality for all mankind. (Romans 5:12) Hence, it is usually not appropriate to attribute an individual's specific disease to his spiritual status. This is important to keep in mind when dealing with problems of individuals who are in an emotionally weakened state.

### **The Physician's Role**

How should Christians relate to physicians and the modern practice of medicine? In examining the Bible, we find no Scriptural basis for putting physicians on a pedestal or for looking to medical technology as the ultimate hope for good health. Rather, there is evidence to the contrary. Mark tells us of "a woman subject to a flow of blood" for many years 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." (Mark 5:25-29) Though this common disorder is often successfully treated today, many diseases remain untreatable, and a host of new untreatable diseases are constantly being discovered.

However, the Bible does not support the opposite extreme taken by some who view the traditional practice of medicine as having little or no value. Some take the doctor off the pedestal and replace him with themselves or some other nonmedical approach that may be the fad of the moment. At Colossians 4:14, the description of Luke as "the beloved" physician no doubt referred to his spiritual qualifications rather than his medical abilities. However, the privilege he enjoyed in writing part of the Holy Scriptures under inspiration would not likely have been bestowed upon one whose medical practice was unethical or unscriptural.

There is evidence to suggest that Luke practiced medicine that was modern for his time, using terminology and medical description that suggest the influence of Hippocrates. Though Hippocrates was not always accurate, he did attempt to introduce logic into the practice and denounced superstition and pseudoreligious theories of medicine. Also, Jesus' simple illustration at Luke 5:31, "Those who are healthy do not need a physician, but those who are ailing do," would have little meaning if it was not accepted that those with medical experience could be of some value in dealing with sicknesses.

There is no Scriptural basis for taking an extreme view to condemn the use of antibiotics, antiseptics, or analgesics when the need for their use is indicated. Jeremiah 46:11 and 51:8 describe a balsam in Gilead that may well have had soothing analgesic properties as well as antiseptic value. There is no Scriptural or doctrinal position against taking medicines internally.

Massive quantities of antibiotics, however, have not been able to keep up with the continual exposure to contagious disease carried by flies, mosquitoes, and snails—the number one cause of death worldwide. Health workers

have had to go back and begin with the basic Bible principles of safe sewage disposal, protection of the water supply, control of insect carriers, and precautions in person-to-person and hand-to-mouth contact. As recently as the 1970's, nurses and doctors were repeatedly reminded by signs posted over hospital sinks and over beds of patients that read: "Wash Hands"—the number one way to prevent spread of disease.

### A Precautionary Word

Those giving health advice—whether a physician, a chiropractor, a homeopath, or a well-meaning but possibly uninformed friend—take on a *major responsibility* whenever they counsel someone in ill health. This is particularly the case if the advice they give is harmful or diverts, biases against, or delays assistance that has often been effective. There are ample warnings in the Bible to health practitioners as well as clients to guard against quackery and spiritism in what may be a desperate personal search for assistance. Remember Proverbs 14:15: "Anyone inexperienced puts faith in every word, but the shrewd one considers his steps."

Are the principles outlined in the Holy Scriptures practical for maintaining health today? Just as the primary focus of the Mosaic Law was prevention, so today, the preventive approach to health care has proved to be of far greater value than those based primarily on treatment. The modern lesson of the World Health Organization in trying to implement modern health treatment in underdeveloped countries is this: "An ounce of prevention is worth a pound of cure."

In conclusion, a Christian should have a respectful, long-range view of health with the goal of using good health to the glory of God in furthering the joyous Kingdom work. And under that Kingdom rule, the promise is: "No resident will say: 'I am sick.'"—Isaiah 33:24.

# PIONEERING BLOODLESS SURGERY WITH JEHOVAH'S WITNESSES

JEHOVAH'S WITNESSES have frequently made the headlines in recent years because they do not accept blood transfusions. Though the reason for their refusal is Scriptural, there are also recognized physical dangers. (Genesis 9:3, 4; Leviticus 17:10-12; Acts 15:28, 29) Their stand has resulted in confrontations with doctors, hospitals, and the courts.

Adult Witnesses have been denied surgical procedures because they have refused transfusions; their children have been forced to submit by court order.

There is now some shifting of positions on blood transfusions. Blood supplies are often contaminated. Diseases, some of them lethal, are transmitted by transfusions. Greed has become a factor as blood has become big business and its routine use is encouraged—adding further unnecessary risk to surgery.\* For these and other reasons, many besides Jehovah's Witnesses are reconsidering the acceptance of routine blood transfusions.

Jehovah's Witnesses have played a role in all of this. Thousands of them have had oper-



ations and in many cases have recovered even faster than people who received transfusions. The experience of the Witnesses shows that surgeons can perform surgery with much less loss of blood and that in some cases blood counts can go much lower than was previously thought to be safe. Moreover, their cases have demonstrated that

many alternative approaches are now available, thus cutting the expense and removing the risk of transfusions. Their court victories have also returned to patients their right to accept or refuse certain medical procedures.

Jehovah's Witnesses have accomplished much of this by dealing cooperatively with doctors and hospitals. In recent years they have established at their world headquarters a department called Hospital Information Services (HIS). Representatives of this department have toured countries in many parts of the world, conducting seminars at some of the Watch Tower Society's branch offices and forming Hospital Liaison Committees that contact hospitals and doctors as the need arises. While with larger branch offices, HIS representatives also establish a Hospital

\* For details, see *Awake!* of October 22, 1990, pages 2-15.

Information Services desk to carry on the work after their departure.

The seminars train these committees to talk with doctors and hospital personnel, discussing suitable alternatives to blood transfusion and explaining that meticulous surgical skills can drastically reduce blood loss. Finally, the visiting members of HIS give on-the-job training to the new liaison committees by taking them to talk with doctors and hospital administrators.

As a start, 18 seminars were conducted in the United States. After that, four were conducted in the Pacific area, one each in Australia, Japan, the Philippines, and Hawaii, serving eight of the Watch Tower Society's branches in those areas.\* In November and December 1990, three members of HIS conducted ten additional seminars in Europe, Latin America, and the Caribbean. The following is a report on the results of those seminars.

Five were held in Europe—one each in England, Sweden, France, Germany, and Spain. These five seminars served 20 of the Watch Tower Society's branches and trained more than 1,700 elders for Hospital Liaison Committee work.

One French surgeon acknowledged that Jehovah's Witnesses, by their firm stand on blood, have helped the medical profession to make progress in the field of bloodless surgery. He said that no other religion has gone to such lengths to help its people cope with difficult issues.

The most advanced hospital in Madrid, Spain, had been quite hostile to Witnesses on this issue. One Witness needing spinal surgery was denied treatment because she refused a blood transfusion. When she declined to leave the hospital, they forced her out by

\* For a report on these countries, see *Awake!* of November 22, 1990, the article entitled "Bridging the Gap Between Doctors and Witness Patients."

denying her food and drink. The HIS members, however, got an appointment and had a two-hour meeting with the medical director and the chief of surgery. The result? They agreed to perform the surgery and phoned the ousted Witness to come back for the operation.

Witnesses in Italy returned from the seminar and were immediately confronted with an attempt to force a blood transfusion on a premature baby. As they put it: "With the information we got from the seminar, we were able to defuse the situation, and the child was successfully treated without blood."

### **On to Latin America and the Caribbean**

The next five seminars were held in Mexico, Argentina, Brazil, Ecuador, and Puerto Rico. Thirty-two branches of the Watch Tower Society were served by these five seminars.

The director of the Mexico City blood bank said that Jehovah's Witnesses had spearheaded bloodless surgery and that now there was sufficient expertise in the field so that others can benefit from those pioneering efforts. He looked over the HIS sheet that lists alternative procedures in treating cases of hemorrhage.\* Then he said: 'I want to make copies of this for the bulletin boards of every hospital in Mexico City. I will ask doctors to copy it for their information. Then, in the future, when they call this blood bank for blood, we will first ask them to get out this sheet, and then we will ask them, "Did you use this? Did you try that?" If they have not tried these alternatives first, they will not get blood from us until they do!'

The director of the blood bank in northern Argentina was also helpful. In that area, there is a policy that anyone who comes to a State-run hospital must arrange for relatives or friends to donate at least two units of blood

\* This sheet is reproduced on page 10 of this magazine.

# Preventing and Controlling Hemorrhage Without Blood Transfusion

## 1. Surgical Devices:

- a. Electrocautery
- b. Laser surgery
- c. Argon beam coagulator
- d. Gamma knife radiosurgery

## 2. Techniques and Devices to Locate and Arrest Internal Bleeding:

- a. Endoscopy to identify location of internal bleeding
- b. Flexible suction coagulator electrode (Papp, J. P., *JAMA*, November 1, 1976, pages 2076-9)
- c. Arterial embolization (*JAMA*, November 18, 1974, pages 952-3)
- d. Controlled hypotension (until bleeding can be stopped)
- e. Tissue adhesives (Dr. S. E. Silvas, *MWN*, September 5, 1977)

## 3. Operative and Anesthetic Techniques:

- a. Hypotensive anesthesia (lowering the blood pressure)
- b. Hypothermia (lowering body temperature)
- c. Intraoperative hemodilution
- d. Intraoperative blood salvage machines, e.g., "cell-saver"
- e. Meticulous hemostasis and operative technique
- f. Increased members in surgical team to reduce operative time

## 4. Monitoring Devices:

- a. Transcutaneous oxygen monitor
- b. Oximeter

## 5. Volume Expanders:

- a. Crystalloids
  - (1) Ringer's lactate (Eichner, E. R., *Surgery Annual*, January 1982, pages 85-99)
  - (2) Normal saline
- b. Colloids
  - (1) Dextran
  - (2) Gelatin (Howell, P. J., *Anaesthesia*, January 1987, pages 44-8)
  - (3) Hetastarch

## 6. Chemical Hemostats:

- a. Avitene
- b. Gelfoam
- c. Oxycel
- d. Surgicel
- e. Many others

## 7. Therapeutics for Low Hemoglobin:

- a. Oxygen
- b. Hyperbaric oxygen chamber (Hart, G. B., *JAMA*, May 20, 1974, pages 1028-9)
- c. Iron dextran (Dudrick, S. J., *Archives of Surgery*, June 1985, pages 721-7)
- d. Folic acid
- e. Erythropoietin—stimulates bone marrow to produce blood
- f. Anabolic steroids, e.g., Decadurabolin or synthetic growth hormone
- g. Vitamin B-12 intramuscular injection
- h. Vitamin C
- i. Vitamin E (especially in newborn)

## 8. External Measures:

- a. For bleeding:
  - (1) Applied direct pressure
  - (2) Ice packs
  - (3) Positioning of body (e.g., raising injured limb to slow bleeding)
- b. For shock:
  - (1) Apply pressure cuffs to legs
  - (2) Antishock trousers
  - (3) Raising both legs to maintain blood pressure

## 9. Drugs for Patients With Blood Problems:

- a. DDAVP, desmopressin (Kobrinsky, N. L., *Lancet*, May 26, 1984, pages 1145-8)
- b. E-aminocaproic acid (Schwartz, S. I., *Contemporary Surgery*, May 1977, pages 37-40)
- c. Vitamin K
- d. Bioflavonoids (*Physician's Desk Reference*)
- e. Carbazochrome salicylate
- f. Tranexamic acid (*Transfusion Medicine Topic Update*, May 1989)
- g. Danazol

## 10. Other Points:

- a. A moderate fall in blood pressure to about 90-100 mm of Hg may help bleeding to stop by natural clotting in a cut artery
- b. Rule of minimum 10 g hemoglobin for surgery has no valid scientific support
- c. Surgical patients have survived with hemoglobin as low as 1.8 (*Anaesthesia*, 1987, Volume 42, pages 44-8)
- d. Lower hemoglobin results in lower blood viscosity, in turn reducing the load on the heart and improving tissue perfusion and oxygenation

in advance or he is denied treatment. Witnesses could not comply and were refused surgery. After we explained our sincere convictions about the use of blood, the director arranged for a change in this policy when next rewritten. In the meantime, Witnesses who show their Advance Medical Directive card when admitted to a hospital will be exempt from the requirement to donate blood.

In Ecuador there is a prominent and influential surgeon who has performed more than 2,500 surgical procedures on Witnesses and non-Witnesses without using blood. He said that he plans to start a campaign to encourage bloodless surgery in that land because of the many dangers to the patient from the blood supply.

Following the seminar in Ecuador, a surgeon who attended the presentation said: "If these people are capable of this caliber of research in medicine, it says something about their study of the Bible and makes me feel that their religion is worthy of investigation."

A welcome change in attitude was found in Puerto Rico. In the past, adult Witnesses were at times strapped down and had blood forced on them; some of them later died. HIS representatives met with both the vice president and the legal counsel for the Puerto Rico Hospital Association; the latter gentleman was also a hospital administrator. Immediately after formal introductions and before the HIS presentation began, the lawyer said he had something to say. To the surprise of the Witnesses, he began a description of a plan for improving patients' rights in the island's hospitals, and it covered the main points of the presentation! He also asked permission to copy some of the information that was left with him; he wanted to include it in an article being prepared for the hospital association magazine.

### **Results Obtained in the United States**

One doctor—James J. Riley, chairman of the department of surgery at his hospital—made a significant statement to the local liaison committee: "You men, as I perceive it, are on the cutting edge of medical and legal information on blood use."

At a large hospital in the Washington, D.C., area, the Hospital Liaison Committee met with a group of administrative and medical personnel who pledged their support and especially expressed their appreciation for "the Watchtower's commitment to help its own people in a time of need with a support arrangement such as this."

The head of a patient-care department at a hospital in Wisconsin stated how misinformed she had been about Jehovah's Witnesses. She encouraged the Hospital Liaison Committee to "press on to get this message to all medical providers."

One feature of the work of HIS is to mail out medical and legal items to designated doctors, hospitals, and hospital and medical associations. A response from a risk manager at a hospital in Baltimore, Maryland, said: "Thank you for the extensive material forwarded to my attention regarding blood transfusions and Jehovah's Witnesses. This information will be most helpful in assisting our hospital to revise our policies regarding the treatment of Jehovah's Witnesses."

In the United States alone, nearly 10,000 doctors are on the list of those willing to perform bloodless surgery on Jehovah's Witnesses.

Thus far, by means of the 32 seminars held to date, liaison committees have been set up in 62 branch offices to meet the needs of Jehovah's Witnesses in various parts of the world. These are now ready to look after millions of Jehovah's Witnesses. The results indicate that Jehovah is indeed blessing the efforts of HIS.

# Shenanigans in the Halls of Science

IT ISN'T supposed to happen. Not in the hallowed halls of science. Not where dispassionate, objective pursuers of truth labor tirelessly in their laboratories. Not where dedicated researchers, committed to finding truth regardless of where the search may lead, seek to unravel the secrets of nature. It is not supposed to happen in a united body of men and women fighting shoulder to shoulder to turn back the ravages of disease for the blessing of mankind.

Who would suspect that dedicated scientists such as these would manipulate their data to back their contentions? Or select what supports their theory and discard what doesn't? Or record experiments they have never performed and falsify data to buttress conclusions they could not prove? Or report studies they had never made and claim authorship of articles they had never worked on or even seen? Who would ever suspect such shenanigans in the halls of science?

It isn't supposed to happen, but it does.\* Last year a science magazine reported: "Kickbacks, fraud and misconduct are rife among American medical researchers, according to a scathing critique published by a US Congressional committee this week. The report says that the National Institutes of Health has 'endangered public health' by failing to police the scientists it supports."—*New Scientist*, September 15, 1990.

Most of the cases consist of shenanigans called misconduct, but others are outright fraud. So it was labeled in the case of Dr. Thereza Imanishi-Kari and her five coauthors of a paper that "described the indirect insertion of a foreign gene into the immune cells of mice. The authors claimed that the mouse's natural gene then began to mimic the inserted gene, producing a special antibody." (*Science News*, May 11, 1991) This would have been an important step in immune research, except for the fact that it apparently never happened.

\* See *Awake!* of January 22, 1990, "Fraud in Science," pages 2-15.

The report was published in April 1986 in *Cell*, a scientific journal. Shortly afterward, Dr. Margot O'Toole, a junior researcher in molecular biology in Imanishi-Kari's lab, said that the paper made claims that the data did

## "Kickbacks, fraud and misconduct are rife among American medical researchers"

not support. She went to Dr. David A. Baltimore, a Nobel laureate who was a coauthor of the research paper, with 17 pages of data from Imanishi-Kari's notebooks. These pages showed that the experiment did not work, while the published paper said that it did. Dr. Baltimore, however, found no reason to doubt the data and dismissed O'Toole as a "disgruntled postdoctoral fellow."—*The New York Times*, March 22, 1991.

That same year two universities reviewed the *Cell* article. One was M.I.T. (Massachusetts Institute of Technology), where the work was done; the other was Tufts University, where Imanishi-Kari was being considered for an important position. Their reviews found some problems but nothing serious. There the case rested for two years.

Then Representative John D. Dingell, chairman of the House Subcommittee on Oversight and Investigations, took up the case. The government supports scientific research and, through NIH (National Institutes of Health), grants \$8,000,000,000 a year to individual scientists and their institutions for research projects. Dingell's subcommittee is interested in how effectively the people's money is spent, and it investigates abuses.

Dr. Baltimore was very unhappy. He charged that the subcommittee, by taking up

this case, "wishes to do away with the standard criteria and substitute a whole new standard for judging science. They have chosen a prosecutorial style. The message is that you do your science with an eye towards facing prosecution. If the hearing here today represents the Congressional view of how science should be done, then American science as we have known it is in trouble."

Dr. Baltimore obtained support from sympathetic colleagues by sending a letter to 400 scientists warning that Congressional intervention could "cripple American science." He called the inquiry a harbinger of threats to scientific communication and scientific freedom. Many from the scientific community rallied behind Baltimore, one of its brightest stars, calling the hearings a "witch hunt" and Dingell a "new McCarthy."

Supporters of Dr. Baltimore and his defense of the article responded with attacks on Congress," *The New York Times*, March 26, 1991, reported. "They criticized Mr. Dingell

## \$8,000,000,000 of taxpayers' money goes to scientists and their institutions every year for research projects

for prying into the notebooks of science, describing his panel with phrases like the 'science police.' Virtually every letter and article said there was no question of fraud, only of interpretation. 'We were buried in letters from scientists expressing great concern with what we were doing,' said one staff member of the Dingell subcommittee. 'But in a large number of them, maybe half or more, there was a disclaimer saying they didn't know what

the facts of the case were. That is a little bizarre.”

When emotions run high, facts may become irrelevant and fade into the background. The flood of letters in support of Dr. Baltimore and Dr. Imanishi-Kari criticized Congress in strong, emotional language. Dr. Stephen J. Gould of Harvard wrote: “In the light of recent developments in Washington, I’m not so sure that Galileo might not be in more trouble today.” Dr. Phillip A. Sharp of M.I.T. urged scientists to write their representatives in Congress protesting the action of this subcommittee. He asserted that it had “repeatedly rejected the judgment of qualified scientists” that no fraud was involved. Further, he claimed that it had embarked on “a vendetta against honest scientists” that would “cost our society dearly.” As it turned out, if a vendetta was involved, it was not against the honest scientists but against Dr. Margot O’Toole, whose honesty cost her dearly.

“As long as science proceeds relatively smoothly, it appears to be driven purely by reason and the answers given by nature in experiments. But when things go wrong, the human actors shed their masks of professional impassivity, and the emotional undercurrents

## A Congressional subcommittee is interested in how the people’s money is spent

of the scientific enterprise may suddenly emerge.” (*The New York Times*, March 26, 1991) And when they do, forces outside science must also emerge to curtail the shenanigans and rectify the wrongs done to the whistle-blowers.

That is what was necessary in this case. Many in the scientific community, who never even bothered to examine the evidence, automatically sided with Dr. Baltimore and Dr. Imanishi-Kari and against Dr. O’Toole. Moreover, they vilified the government agency that had to step in to right the wrongs. It is reminiscent of the Bible proverb that says: “When anyone is replying to a matter before he hears it, that is foolishness on his part and a humiliation.”—Proverbs 18:13.

It was only after lengthy investigations by the Dingell subcommittee, the Secret Service, and the Office of Scientific Integrity at NIH that O’Toole’s charges were finally substantiated. *New Scientist*, March 30, 1991, reported: “Investigators at the National Institutes of Health have concluded that a co-author of Nobel laureate David Baltimore fabricated entire sets of data from 1986 to 1988 to support a paper published in the journal *Cell* in 1986. Baltimore, who earlier attacked a Congressional investigation into the affair as a threat to scientific freedom, has now asked *Cell* to retract the paper.” He apologized to Dr. O’Toole for his failure to investigate her doubts more fully.

The investigations revealed that data were concocted by Dr. Imanishi-Kari and an experiment reported by her was never done, and as the noose tightened, she attempted a cover-up. “Once O’Toole and outside investigators began to ask questions about the paper,” *New Scientist* said, Imanishi-Kari “began systematically fabricating data to support it, according to the NIH report. Some of these falsified data were published in *Cell* in 1988 as corrections to the original paper.” On April 6, 1991, *New Scientist* commented: “Scientists also need to recognise that self-regulation only works if it is based on public trust. Dismissing whistle-blowers as troublemakers does little to help that.” Weeks after all this evidence was

in, however, Dr. Imanishi-Kari was still calling it all a "witch hunt."

An editorial in *The New York Times*, March 26, 1991, questioned it under the title "A Scientific Watergate?" It said: "The most damning indictment should be lodged against

## **The writers got promotions, the whistle-blower lost her job**

the scientific community's weak-kneed mechanisms for investigating fraud. Faced with stonewalling by Dr. Baltimore, one of the nation's most prominent scientists, several investigative panels seemed more intent on smothering bad publicity than digging out the truth." Yet, it is this same scientific community that says it should investigate itself rather than be investigated by outsiders.

The editorial continued: "The initial investigations of Dr. O'Toole's complaints smacked of an old-boy network drawing up the wagons to protect scientific reputations. Investigations at Tufts University and M.I.T. found no fraud or even major error. The National Institutes of Health appointed an investigating panel with close ties to Dr. Baltimore. Even after the panel was reconstituted to mollify critics, it produced a pussy-footing report, finding no evidence of misconduct despite the fact that an experiment had been reported that was never actually performed. Only after Congress became involved did the N.I.H. begin to display some backbone. Its new Office of Scientific [Integrity] produced the gritty and damning report that finally calls a fabrication a fabrication. Dr. Baltimore has, from the start, seemed more intent on squelching inquiry than getting to the bottom of the

charges. Although he has not himself been accused of fraud, he signed two documents—the original paper and a follow-up correction—containing data now deemed to have been fabricated by Dr. Imanishi-Kari."

Scientists are unhappy if anyone outside the scientific community passes judgment on their activities. They are adamant that they, not outsiders and certainly not government agencies, are the ones who should judge their own cases where misconduct or fraud is charged. But anyone within the scientific community who dares to raise questions against prominent members may fare badly, as did Margot O'Toole.

The fortunes of the principals involved in this case prove the point. Dr. Baltimore became president of Rockefeller University. Dr. Imanishi-Kari got the prestigious position she sought at Tufts University. Dr. O'Toole lost her job in the laboratory at Tufts, lost her house, could get no other employment in science for years, and had to take work answering telephones at her brother's moving company.

Dr. Baltimore reportedly told subcommittee chairman Dingell that disputes such as the Imanishi-Kari matter were part of "a process of self-purification that goes on continuously" in science. In this case the "purification" consisted of the elimination of honest scientist Dr. Margot O'Toole from even working in the field of science. Fortunately, however, this "purification" in her case was not permanent. Four years later, in 1990, after her vindication, she did get a job in science when she was hired by Genetics Institute, a company founded by one of her few supporters, Mark Ptashne of Harvard.

Most people agree that such shenanigans should not happen in the halls of science, yet it was a science magazine itself that carried the report that such shenanigans "are rife among American medical researchers."



## **"Don't Do Anything Stupid, or I'll Kill You"**

*The muzzle of a gun stuck through the opening of the car window and pointed at my head.*

*A voice said:*

"Don't look at me, Lady. Unlock the door. Move into the passenger seat." I did as I was told. The man slid in behind the wheel, the gun still pointed at me.

"Do you have a key to the bank?"

"I don't have a key. Someone will be here any minute to open up."

"Don't do anything stupid," he warned, "or I'll kill you." He started my car and drove off.

This was becoming a habit. I was a teller in a branch of the Trust Company Bank. Last April a woman pointed her purse at me and said: "There's a gun in here. Hand over the money." I did so.

A few weeks later, a man came to my window. His gun was in plain view. "Give me the money." I pushed a stack of bills toward him.

I'd had enough. I asked to be transferred to another branch. My request was granted. So now, on this morning of Thursday, May 23, I am sitting in my car in the parking lot of the new branch, the Peachtree Mall branch in Columbus, Georgia. I'm waiting for it to open. It is 8:25. I usually come to work a few minutes early and read the

Bible text for the day. On this particular morning, it was Matthew 6:13, which says: "Deliver us from the wicked one." I didn't realize it then, but that text was to become very important to me for the next two days.

## **"Do your praying silently. I don't want to hear it"**

I'd worked at this new branch only two weeks and had not yet been given a key. My car window was rolled down a little, and I was reflecting on the text, which I had just read, when the gun's muzzle appeared in the window. Twice before, robbers had absconded with bank money. This time it was with me.

As he drove off, I started praying out loud: "O Jehovah, please help me!"

"Who's Jehovah?" my abductor demanded.

"He's the God I worship."

"Don't look at me! You keep looking out your window! Jehovah . . . that's the Watchtower, Jehovah's Witnesses, isn't it?"

"Yes."

"I knew them when I lived in New York City. I'm Catholic myself. Anyway, you do your praying silently. I don't want to hear it." But he added: "Look, I'm not going to hurt you. I'm after money, not you. Don't do anything stupid, and you won't get hurt."

All the while we were driving, he was asking me about the bank. Who was going to be there to open up? At what time did it open to the public? How much money was in it? Lots of questions about the bank. I was answering them to the best of my ability and at the same time praying silently. I was begging Jehovah to help me get through this safely.

After about ten minutes, he took a dirt

road into some woods. Apparently he expected to meet someone, for he started mumbling to himself: "Where is he? Where is he?" He stopped the car and got out and made me slide across the seat and out the driver's side, my back toward him all the time. With the gun sticking in my side, he led me deeper into the woods, my eyes always on the ground so I couldn't see him. It was hard going through the heavy brush in my dress and high heels. He led me to a tree, made me face the trunk, and put heavy duct tape over my eyes and mouth. He taped my hands together behind my back and then fastened me to the tree with tape encircling me and the tree trunk.

By this time I was shaking violently. He ordered me to stop it. I mumbled through the tape that I couldn't. "Well, just be still. Someone is watching you, and if you struggle to get loose, he'll kill you." With that he left me. I was remembering the daily text that said, "Deliver us from the wicked one," and thinking how appropriate it was for me at this time.

He returned shortly but in a different car—I would have recognized mine by the sound of the engine. He may have exchanged it for his own. He took the tape from around my waist and the tree trunk but left it over my

## **He opened the trunk, bundled me into it, slammed the lid shut, and drove off**

eyes and mouth, and my wrists were still taped behind my back. He led me back through the brush to the car. He opened the trunk, bundled me into it, slammed the lid shut, and took off.

I started praying again. I was praying most of the day and asking Jehovah for the

strength that I needed to endure whatever lay ahead. We drove probably 15 or 20 minutes before he stopped and opened the trunk, took the tape off my mouth, and asked me what the phone number was at the bank. I gave it

## I was bouncing off the floor, my head was banging against the sides of the trunk

to him. He asked me who was my boss. I told him, and he put the tape back over my mouth. That's when he called the bank and demanded the money—\$150,000, I learned later.

He told George—that was the name of the officer at the bank that day—to be in a particular telephone booth south of Atlanta by two in the afternoon with the money, when he would get further instructions. He acquainted me with these developments and assured me that I would be freed soon. Two o'clock, however, was a long way off, and I was still cramped and trussed up in this trunk and getting hotter all the time. The hours dragged. Once or twice he looked in on me to see how I was doing. "Your God Jehovah is looking after you," he commented. So he remembered my prayer to Jehovah from the morning.

I wondered about my family. Did they even know I was missing? If they did, how were they reacting? I worried about them even more than about myself. I thought about different scriptures. The one about Jehovah's name being 'a strong tower and the righteous running into it and being safe.' Also 'if you call on the name of Jehovah, you will be saved.' And I was certainly applying the apostle Paul's counsel to "pray incessantly." (Proverbs 18:10; Romans 10:13; 1 Thessalonians

5:17) In addition to Bible texts, the words and melodies of Kingdom songs kept going through my mind, ones like 'Jehovah, my rock, my strength, and my might' and 'Jehovah is my refuge.'

From experiences I had read in *The Watchtower*, I recalled that Jehovah had helped others endure special trials. One from the *Awake!* that stuck out in my mind was about a Witness who was held hostage in a bank robbery.\* She was held tightly around the neck while the robber brandished a hand grenade and threatened her. Her ordeal went on for hours; she and the robber were holed up inside, with the police outside. She had also endured her ordeal by praying to Jehovah and recalling scriptures, and her courage was rewarded by her being returned safely to her family.

Eventually the car stopped, and the driver got out. I could not see my watch, since it was on my wrist and taped behind my back, but I assumed, correctly, that it was two o'clock and he had gone to make contact with George from the bank. I had hopes that my release might come soon. But it did not work out that way. Obviously, his plans had not gone smoothly, and we were driving again.

Suddenly the engine raced, and the car was gunned ahead at full speed! He was not only driving at very high speed but also swerving in and out as though dodging traffic. I was being thrown all over the trunk. My body was bouncing off the floor, my head was banging against the sides of the trunk. With my hands and arms restrained behind my back, I was powerless to brace myself or fend off the blows, as I was being flung every which way. It continued for maybe ten minutes, but it seemed much longer than that.

Soon after this the car stopped, and he

\* See *Awake!* of December 8, 1990, pages 17-19.

opened the trunk to see how I was. Obviously, I was badly shaken and in distress from the beating I had taken. My heart was pounding and breathing came very hard. I was covered with perspiration and helpless to wipe it away with my hands tied behind me. Breathing came especially hard with only my nose showing between the tape over my eyes and the one over my mouth. He did take the tape off my mouth briefly so that I could breathe easier and talk if I wanted to.

He told me that the police had spotted his car, probably from their stakeout, and had given chase. That's why he was going so fast and dodging to avoid hitting other cars. He did succeed in eluding the police. He explained that he had not got the money yet, but he was going to try something else, that it would be a little longer, but for me not to worry. He assured me again that he was not going to hurt me physically, that it was not his intention. He needed money, and I was the key to his getting it. When he said this, it put my mind at ease, since I had prayed that if he started to hurt me, Jehovah would help me react in the right way.

The hours dragged on. He stopped a couple of times, maybe for more phone calls or attempts to get the money. Once when he stopped, I heard him filling the tank with gas. I was so cramped I tried to shift around as best I could and made some noise. He immediately opened the trunk and warned me about making any noise. I wondered what time it was. He never told me specifically, except the first time, when it was two o'clock. I did know that we were still in the Atlanta area because I could hear the airplanes taking off and landing at the airport.

After that, he would open the trunk and say, 'It's going to be another hour. Another hour and you'll be free.' He said that several

times. I no longer believed him. I just hoped. It was not an extremely hot day outside, but in the trunk it was close and stuffy and getting hotter. I was perspiring heavily, and it was becoming harder for me to breathe. I began to pray about the resurrection because I was not sure how much longer I was going to be able to breathe.

If I did die, I hoped that Jehovah would help my family deal with it. I was concerned about my family as well as myself. I knew that if I did die, Jehovah would bring me back in the resurrection, and I would be reunited with my family in his promised new world of righteousness. (John 5:28, 29; 2 Peter 3:13) My thoughts of Jehovah and his promises were what sustained me.

The driver opened the trunk again. It was dark—it had been dark for hours. He had made more phone calls. None of his efforts to collect the ransom had worked out. He said he was tired of trying and was going to take me back to Columbus and let me go. By the time we got back, I was completely exhausted. I just lay in the trunk wishing everything would end. But I rallied myself and thought,

## I just lay in the trunk wishing everything would end

'No, I've got to keep alert. I have to make myself stay awake. It's all going to be over soon. He's given up, and he's taking me home.'

He was going to let me out at my car, but it wasn't where he thought it would be. He took me to a Kingdom Hall of Jehovah's Witnesses, but lights were on in the apartment where one of our traveling representatives stayed. "I'm not letting you out where people

are!" He did, however, let me out of the trunk for the first time. I was still blindfolded, my hands were still taped behind my back, but he did take the tape off of my mouth. I felt light-headed and could hardly walk—my legs were

## **When I came to, three hours later, I was lying in the grass and mud**

so numb. He put me back in the trunk, took me down the road a way, left me at the back of a Baptist church, and drove off. It was 1:30 Friday morning.

I felt really light-headed, sat down, and passed out. The last thing I remember was hearing his car drive off. When I came to, three hours later, I was lying in the grass and mud. I worked the tape off my wrists and took it off my eyes. I looked at my watch. It was 15 minutes till 5. I'd been in the trunk 17 hours and unconscious on the ground for 3

hours. On legs shaky and numb, I walked down the road. A man was backing out of his driveway in his truck. I told him that I had been kidnapped and needed to call my family and the police. The police were there in ten minutes. It was over.

I was taken to the medical center to be checked over. For 20 hours I'd had nothing to drink or eat and no bathroom facilities, and I'd slept only the last three hours. My body was bruised, my dress muddy, my hair a mess, my face dirty and disfigured by tape marks. But none of this marred my reunion with my husband, Brad, and my mother, Glenda, as well as with the many other dear relatives and friends that had gathered there to welcome me back. Their ordeal of waiting and worrying was different from mine but in a way perhaps even more excruciating.

From the medical center, I went to the police station to answer questions and give a statement. As reported in the *Columbus Ledger-Enquirer*, May 25, 1991, the police said that the kidnapper, who had now been apprehended, would also "be charged with a rape and aggravated sodomy that occurred last weekend," which was just prior to my being abducted by him. Also reported in this press release was Police Chief Wetherington's explanation of his request for a media black-out: "We were really concerned about Lisa's life." All of this made me even more convinced that it was my reliance on Jehovah that preserved me.

I went home to the best hot bath of my life, to sweet restorative sleep, and to this heart-warming thought as I drifted off into deep slumber: The day's text of Matthew 6:13 was still a comfort to me, and in keeping with Psalm 146:7, I had experienced 'a releasing after having been bound.'—*As told by Lisa Davenport.*



**Young  
People  
Ask...**



## What About Hobbies?

**H**OBBIES bring pleasure. They have been defined as "almost anything a person likes to do in his spare time." Some youths spend their free time swimming, playing football, or running. Less athletically inclined youths may prefer listening to music, taking long walks, or just sitting at home reading. Yet others like to cultivate talents or collect things. Natalie's hobby is playing the flute. Her younger sister, Nikki, collects dolls.

Hobbies offer a balance between work and play, preventing boredom during leisure time. They can help you relax. And proper relaxation results in better mental and physical health. Canadian doctor Sir William Osler claimed: "No man is really happy or safe

without a hobby," adding: "It makes precious little difference what the outside interest may be . . . Anything will do so long as he straddles a hobby and rides it hard." But just as a good rider controls his steed, you should control your hobby rather than allowing your hobby to control you. How?

First of all, you should make sure you have given priority to the more important things in life, such as attending Christian meetings, caring for your household duties, and doing your homework. (Philippians 1:10) Now you can determine how much of your spare time can be hobby time.

### **Worthwhile Hobbies**

Some hobbies help you develop valuable skills, such as needlework, dressmaking, or the pursuit of the culinary arts. True, these hobbies particularly appeal to girls. Nevertheless, there is nothing unmanly about cooking. (Compare John 21:9-12.) You may not reach gourmet standards, but experimenting a bit with cooking can help you develop abilities that may prove invaluable if you must ever fend for yourself. Girls, on the other hand, may benefit from trying their hand at auto mechanics or household repairs.

Another worthwhile pastime is the learning of a language. Young James, for example, currently studies Russian. Perhaps a second language will enable you some day to teach Bible truths to others in a foreign land! Indeed, hobbies can often serve as a means of helping other people.

For example, is gardening your hobby? Why not hone your horticultural skills on a garden that belongs to your grandparents or to some other elderly ones who find it hard to care for it properly? Do you enjoy do-it-yourself work? Then why not offer to help an elderly person or a widow with home repairs? When cooking is your hobby and you have a favorite recipe, why not prepare the dish to

present as a gift to someone in need? Remember, "there is more happiness," Jesus said, "in giving than there is in receiving."—Acts 20:35.

A hobby can even help you to advance spiritually. If you like to make models, for example, might not building a miniature ark deepen your appreciation of the strength of Noah's faith? (See box.) Constructing a model tabernacle or temple may likewise improve your knowledge of the way God's servants worshiped long ago. In Bible times the shepherd boy David played the harp in his spare time. Later he composed beautiful songs to Jehovah's praise. Could you learn to play a musical instrument yourself? If so, why not use your talent to praise God by learning some of the melodies in the songbook *Sing*

*Praises to Jehovah?*\* As you play the music, ponder over the sentiments the lyrics convey. Are you a collector? Then gather items that relate to the Bible. Or try filling a scrapbook with pictures of Bible lands.

### Count the Cost

However worthwhile a hobby may be, it is often wise to ask yourself, What will it cost? (Luke 14:28) Is the hobby within your budget? This can be especially challenging if collecting is your pastime, whether it be postage stamps, antiques, or even dolls!

Remember, how you use your resources can even affect your prospects of gaining everlasting life. Jesus said: "Make friends for

\* Published by the Watchtower Bible and Tract Society of New York, Inc.

## I Built Noah's Ark!

I enjoy working with my hands. And when one day I had the urge to learn more about Noah's ark, I decided to make a scale model of it.

I began by carefully studying the Bible account at Genesis 6:14-16 with the help of research aids published by the Watch Tower Society. I soon realized that the ark was not at all like a modern-day ocean liner. Rather, it was just a huge box: 300 by 50 by 30 cubits. That converts to 437 feet 6 inches long, 72 feet 11 inches wide, and 43 feet 9 inches high. The ark was thus 146 yards long—almost half again as long as a U.S. football field. Even such a colossal structure could not accommodate the over one *million* species of animals scientists say exist. However, I learned that some investigators believe that just 43 "kinds" of mammals, 74 "kinds" of birds, and 10 "kinds" of reptiles could have produced the great variety of species that exist today.

My research also helped me appreciate the enormity of Noah's task: cutting down trees without power saws, hauling logs to the con-

struction site without tractors, lifting heavy roof beams without cranes. My job was simple compared to Noah's! To obtain "wood," I simply broke off some bundles of dry weed stems. My "animals" were made out of clay. As for the layout of the interior, I had to do some guesswork. I figured that Noah and his family would probably have chosen to live on the top story, where they would have enjoyed the most light and ventilation. I put the animals on the lower stories of the ark.

After many hours of labor, my model was finished. As impressive as some have said it looks, the real ark was a hundred times longer, wider, and higher than my model. In other words, it would take a *million* of my models to equal the capacity of the original ark. Not surprisingly, then, my project has whetted my appetite to find out more about the real ark. And if I am privileged to live to see God's new world and witness the resurrection of the dead, perhaps I'll be able to solicit Noah's help in making a new model—one that will be correct in every detail.—Contributed.



**Does your hobby give pleasure to both you and others?**

yourselves by means of the unrighteous riches [your money], so that, when such fail, they [Jehovah God and Jesus Christ] may receive you into the everlasting dwelling places.” (Luke 16:9) Will a hobby cost you so much money that you won’t have any left over to “honor Jehovah with your valuable things”? (Proverbs 3:9) Will financing a hobby require you to take on part-time work, perhaps at the expense of spiritual activities?

### **Keep Your Balance!**

At times serious hobbyists crave to be with others who enjoy the same pursuit. This can pose a number of dangers, however. Ask yourself: Will such association be upbuilding? Could their standards of dress and grooming, their choice of entertainment, or their conversation have a bad influence on you? Might you find yourself drawn more to their company than to that of your own family or Christian associates? In any event, do you allow mutual interests to lead you into

**Collecting pictures of Bible lands can help you visualize Scriptural events**



unwholesome friendships? Remember, “bad associations spoil useful habits.”—1 Corinthians 15:33.

Another point of concern: What kind of attitude does your hobby encourage? Does it stir up an unhealthy spirit of competition? Does it involve extreme health risks? If so, perhaps it would be well for you to keep in mind the words of the apostle Paul: “For bodily training is beneficial for a little; but godly devotion is beneficial for all things.”—1 Timothy 4:8; Galatians 5:26.

On the other hand, Solomon said: “For everything there is an appointed time, even a time for every affair under the heavens.” And that includes “a time to laugh.” Yes, hobbies and recreation have their place. Be sure, though, that a hobby does not so absorb your interest that you neglect Solomon’s further words: “Fear the true God and keep his commandments. For *this* is the whole obligation of man.”—Ecclesiastes 3:1, 4; 12:13.

# OKAVANGO

## Africa's Desert Paradise

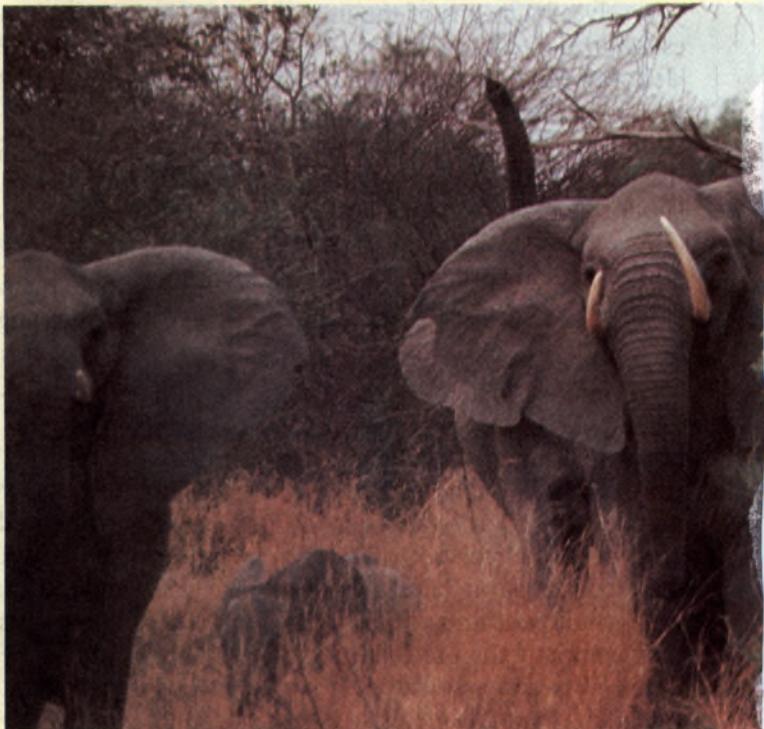
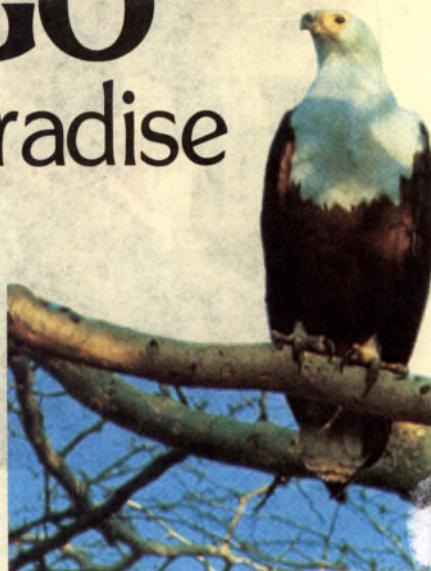
By Awake! correspondent in South Africa

THE circle of light cast by the gasoline lamp was small comfort as the herd of elephants moved quietly in the darkness around us. Their deep sighs and the rustle of the branches gave them away. As the still African night fell, we knew that more than one pair of eyes was watching us.

### The Desert

We were stuck in the Okavango Delta—a unique watery world that begins as suddenly as it ends, on the vast sands of the Kalahari Desert in northern Botswana. Although the size of Northern Ireland, the delta is lost on the 100,000 square miles of trackless, undisturbed Kalahari. After leaving the border of South Africa, we had plowed through 400 miles of thorn-scrub, grassland, and salt pan at a steady 12 miles per hour. Only a shimmering mirage danced deceitfully on the horizon.

On the fourth day, a noticeable feature made its encouraging appearance. The sky started to take on an aqua-blue bright-





ness. Somewhere ahead there was water. Lots of it! A marshland that reaches out like the fingers of a giant hand to turn a parched desert into a verdant garden. Rising in the highlands of central Angola, the Okavango River meanders through a thousand miles of Africa, searching for an ocean. But in vain, for the river dies on the empty expanse of the Kalahari. However, before it expires completely, the aging river gives birth to a unique ecosystem.

### The Delta

In disorder, the water spills over the sandy floor to form braided channels, crescent-shaped lakes, and papyrus-bordered waterways. Trees and plants capture our attention in a riot of shapes and colors. Ivory palm, wild fig, ebony, and sausage trees fringe the delta. Tall buffalo grass, water lilies, and fallen magenta flowers diffuse the filtered light of a winter's morning. But this is still Africa, and before long the stinging heat of the day is felt. Welcome relief is found in the rustic patchwork of tall mopani forests. These very trees make the traverse of this wilderness possible, for the swaying, creaking log bridges are all that link us to the outside world.

### Delta Dwellers

The splendid variety of delta dwellers lures us on. After the sterile desert, there seems to be a carefree spirit in the air as all creatures

cavort and wallow with no thought of tomorrow. Bloated with easy living, 30 hippos stare at us with rheumy eyes. Their short, deep snorts warn us not to intrude into their Epicurean life-styles. A herd of more than a hundred elephants has just kicked up so much dust that the dancing shafts of light play tricks with our eyes.

For sheer number of animals, the Okavango Delta is astounding. Twenty thousand buffalo, in herds numbering up to 200, graze contentedly along the grassy verge. Occasionally the tranquillity is disturbed by the predators—lion, leopard, hyena, and wild dog. The disruption is usually short-lived, and early in the morning, only a spiraling column of vultures tells of the night's carnage.

Large ant colonies push the delta soil into heaps that grow in size. When the waters of the Okavango rise, these anthills become fertile islands. Antelope in great variety find a haven of peaceful security on these scattered islands of the delta—sassaby, wildebeest, kudu, lechwe, roan, and the rare sitatunga. This shy buck lives in the seclusion of the reeds and seldom ventures into the open. Any hint of danger and down into the water he goes, with only his nose sticking out for air.

Water—life-giving water! The Okavango Delta is anything but a tepid swamp. Explorer and missionary-doctor David Livingstone,

who came across these parts in 1849, exclaimed: "We came to a large stream . . . I enquired whence it came. 'Oh, from a country full of rivers . . .' We found the water to be so clear, cold and soft . . . that the idea of melting snow was suggested to our minds"! Tilapia and tiger fish are plentiful and provide food for the African delta dwellers.

Little has changed over the years, and it appears that the tsetse fly and the mosquito have succeeded in keeping the hand of modern man from ravaging this wildlife paradise. The river Bushmen were once true masters of the Okavango. Later they were joined by the baYei people. Today you may still be fortunate enough to see these expert boatmen poling their *mekoro* (canoes) at sunset. There is an old proverb among them: "He who pushes his pole too deep stays with it"! When you look again, they have disappeared along secret channels cut through the reeds.

The Okavango is also a bird lover's paradise. Hundreds of species make the delta their home for at least part of the year. At night a sharp wail may lead you to the rare Pel's fishing owl, which fishes by night. During the day the penetrating, clarion cry of the fish eagle blends with the silly twitter of the hornbills. There are pygmy geese, Goliath herons, sacred ibis, and neatly dressed lily trotters. The variety is endless. From lofty vantage points, sanctimonious-looking marabou storks in

their undertaker suits seem to glare disapprovingly at the frivolous goings-on.

The setting African sun reflects liquid fire, gently bringing another day in this desert paradise to rest. From somewhere over the lagoons, the lilting music of a *kalimba* (African hand piano) wafts on the breeze. Zebra, giraffe, and elephant come from the grasslands to slake their thirst side by side.

### How Long Will It Last?

Dust and sweat ran in rivulets of mud down our bodies as we struggled to replace the axle of our Land-Rover. Sand as fine as talcum powder had sucked the wheels down to the rims. It was then that the axle had snapped. With a satisfying clink, the new axle slid into place.

Because of the urgency of the task, the surrounding elephants had not perturbed us, nor did they seem afraid. It made us think of the time when man and beast will again exist in perfect harmony. (Genesis 2:19; Isaiah 11:6-9) Our only regret was that soon we would have to start the long, dusty trek home.

However, as with other beauty spots on earth, there is growing concern about the impact of man and his modern hunting methods. "Every year," writes Creina Bond in the book *Okavango—Sea of Land, Land of Water*, "8 000 animals are killed in the Delta by 1 300 tribal and 200 recreational hunters." In addition, other men dream of diverting the Okavango's waters for human use.

Whatever man does, we felt reassured that the Creator of this marvel will fulfill his purpose for the whole earth to be made a paradise. Then, its attraction will be even greater, for "the desert plain will be joyful and blossom as the saffron. And the heat-parched ground will have become as a reedy pool, and the thirsty ground as springs of water."—Isaiah 35:1, 7.

### In Our Next Issue

#### Pearl Harbor and Hiroshima —Will Old Wounds Ever Heal?

#### Why Christmas Is Not for Christians

#### How Can I Avoid the Hurt of Flirting?

# Praising Jehovah in a United Chorus

THE singing was something that sent thrills up the spine and brought tears to the eyes—it was so beautiful. No musical instruments were needed, and what seemed to be complicated part-singing was handled with wonderful ease. The harmony was exquisite.'

This expression was made by former president of the Watch Tower Society, Nathan H. Knorr, after attending an assembly of Jehovah's Witnesses in Zambia. It well describes the stirring sound of hundreds of African voices raised in harmonious song.

Singing is a part of African culture. In a typical African village, it is not rare to see the women hoeing to the rhythm of traditional songs, youths humming their favorite melodies as they milk the cows, and men chanting repetitive tunes as if to encourage their oxen to pull their heavy load. There is a song for just about every activity in the village.

In many African schools, children are taught to sing by means of the tonic sol-fa system. What is tonic sol-fa? Basically, it is the "do, re, mi" approach that was popularized by a famous film musical some years back. Do, re, mi, fa, sol, la, ti, do correspond to the eight notes of a scale played on Western musical instruments. This letter-notation system uses colons, dashes, commas, and rules to indicate the number of beats in a bar and the duration of the notes. The four voices (soprano, alto, tenor, and bass) are set out one below the other, and it is this blending of the voices that produces such soul-stirring music. Many agree that this method is far easier to learn



and sing by than the more widely used staff notation.

Hence, the melodies in the songbook used by Jehovah's Witnesses, *Sing Praises to Jehovah*, were transcribed into tonic sol-fa for all the African editions. First, many hours were spent at a piano to adapt the melodies to conventional four-part harmony. Then, each of the voices in turn was changed into the letter-notation of tonic sol-fa. Next, someone familiar with the sol-fa system was assigned to sing through each voice of every song to check the accuracy of each note. Computers were then used to line up the tonic sol-fa with the words of each song. At last it was possible to prepare for printing the easily readable music you see reproduced on this page.

The result? Jehovah's Witnesses in Africa can blend their voices in joyous praise to Jehovah. The words of one of the songs express their feelings well: "We shout in triumph, clap our hands. So much has God done for us! Our voices swell in joyful praise in a united chorus."

d . t, : t, . d : r . m	m : s, : —	s, . l, : t, . d : m . r	r : — : —
l, . s, : s, . l, : s, . s,	s, : m, : r,	s, . s, : s, . s, : fe, . fe,	f, : — : —
f . f : f . f : t, . t,	d : d : t,	d . d : d . d : d . d	d : t : —
s, . s, : s, . s, : s, . s,	d, : d, : t,	m, . m, : m, . m, : r, . r,	s, : — : —

1. U-mlo - bo - ka - zi ka - Kri - stu,
2. Pha-ka - thi kwa - ba - ntu bo - nke,
3. Ku-na - ba-nга - ne be - nsa - li
4. Ba-ning' a - ba - Iwel' i - Nko - si,

- Nje-nga - ma - zo - lo mu - hie.
- Ba - fa - na na - ma - zo - lo.
- A - ba - si - za - na na - yo.
- Ba - Iwel' u - du - mo lwa - yo.

## Watching the World

### Cold War Aftermath

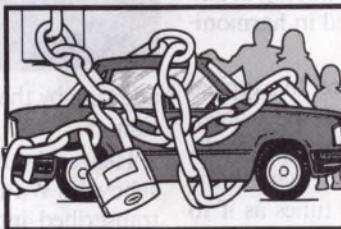
Despite the end of the Cold War, global military spending in 1990 still exceeded \$900 billion and in real terms was more than 60 percent above the average annual outlays of the 1970's, according to a new study by World Priorities, a research group in Washington, D.C. The annual report *World Military and Social Expenditures 1991* also found that worldwide among the fatalities of war, the proportion of civilian deaths jumped to 74 percent in the 1980's and to as much as 90 percent in 1990. The author of the report, Ruth Leger Sivard, an economist, attributed this leap in civilian deaths to increasingly lethal weaponry. "Today's so-called conventional weapons now approach small nuclear weapons in their destructive power," she said. The study also found that the world's armed forces are the single largest polluter on earth; in the United States they produce more toxins annually than the five largest chemical companies combined.

### Death by Abortion

"Up to 10,000 women die of abortions every year and 200,000 [are] hospitalised for complications in Nigeria," reported Nigeria's *Sunday Concord*. Perhaps as many as 20 percent of these cases involve teenagers. Dr. Uche Azie, a director of Family Planning International Assistance, was reported as stating that "many attempt abortion by themselves." He pointed out that ignorance about sexual matters is largely responsible for pregnancies leading to abortion.

### One Month Without a Car

In response to a request by sociologists, six families in Bremen, Germany, volunteered to do without their cars for one month. Traveling by other means, they recorded their daily experiences. "The car isolates the user from the environment" explained project leader Professor Krämer-Badoni in the *Süddeutsche Zeitung*. "You



just want to get somewhere as quickly as possible." But when traveling by bus or bicycle or on foot, one becomes more aware of the surroundings, taking note of attractive buildings or starting up conversations. "The journeys become important in themselves," said the professor. Following the experiment, five of the families disposed of their cars.

### Volcano Addiction

When Mount Unzen volcano in southern Japan erupted earlier this year, over 30 people died. Among them were three volcanologists. Colleagues were especially perplexed over the death of American Harry Glicken, since he had been issuing warnings to the media in the days up to his death. With him was a daring husband-and-wife team, Maurice and Katia Kraft of France, who gained fame during the past 25 years for

their research, books, and videos on the world's most active and dangerous volcanoes, warning of their danger. The *Asahi Evening News* quoted Maurice Kraft as having said earlier: "If one day I have to die, I want it to be at the edge of a volcano." The couple had likened their passion for volcanoes to "addiction" and stated: "Once you've seen an erupting volcano up close, you can't live without it."

### Blood Transfusion Not "Gift of Life"

Are blood transfusions really lifesaving? An increasing number of medical authorities have doubts. The director of hematology at Australia's Sydney Royal North Shore Hospital discusses concerns over blood transfusion safety in the *Medical Journal of Australia*. He believes that links exist between cancer, infection, and blood transfusion. The Brisbane *Courier-Mail* quotes this leading doctor as saying: "A blood transfusion was previously seen as a gift of life, but the tables have been turned and the general perception now is that bloodless surgery and the avoiding of transfusion may be the gift of life. New data suggesting that blood transfusion at the time of surgery may be a risk factor for cancer recurrence and post-operative infection are a matter of concern."

### Campus Violence in Nigeria

Secret cults are prowling the campuses of universities in Nigeria and "have unleashed crushing fear and horror," reports *The Observer* of Nigeria. Cult members

are said to be armed with firearms, guns, axes, knives, and acid. They have reportedly attacked even some faculty members and have raped and tortured fellow students. Clashes between rival cult gangs have resulted in the deaths of at least four students. These campus cults consist mainly of students from affluent families, says *The Observer*. The minister of education has instructed university authorities to expel members of the secret cults and has threatened to close down institutions that fail to do so.

### For One Hour's Labor

A recent study compared the earning power of workers in 159 different professions from 49 various social levels around the world, reports the French newspaper *Le Monde*. The study, conducted by the International Labor Organization, shows just how disproportionate the workers' buying power can be from place to place. For example, a weaver in Sudan, a waiter in Sri Lanka, a spinner in Yugoslavia, a bus driver in Bangladesh, and a baker in the Central African Republic must work more than three hours to buy just two pounds of rice. In contrast, an office worker in French Polynesia or a carpenter in Sweden can buy at least 20 pounds of rice with the wages of just one hour's work.

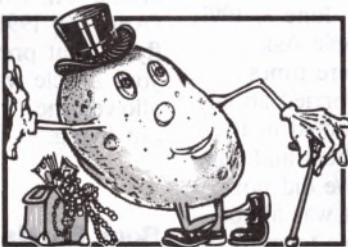
### Teddy-Bear Alarms

Sudden infant death syndrome is a real fear of many parents. Now, by means of hi-tech teddy bears, designed by Dr. Jan Heunis of Aerospace Research Laboratories in South Africa, infants can be monitored 24 hours a day. The cuddly toy monitors the infant's

vital signs. Reporting on the device, *The Star*, a newspaper published in Johannesburg, South Africa, says that should there be irregularities in the child's vital signs, such as "temperature abnormalities, slow heart rate or increased pulse rate," an alarm is sounded to alert the parents to the possible danger. The "Medi-teddy," as the new product has been called, costs about \$250, U.S.

### Worth of the Humble Potato

"When the European conquerors arrived in America, they came with the idea that the riches were metals and precious stones. Three centuries had to pass before the economic value of the potato was 'discovered.'" So states Eduardo H. Rapoport, of the Regional University Center of Bariloche, Argentina, in the Brazilian



magazine *Ciencia Hoy*. Potatoes are one of the most important and nutritious foods and contain many vitamins. Hence, they are valued in the billions of dollars annually. Rapoport adds: "The value of the world harvest of potatoes, in a year, is far superior to all the gold and silver that Spain extracted from America."

### Worldwide Illiteracy Drops

"For the first time ever, the number of illiterate people in the world declined slightly in recent

years," states *The New York Times*. "The report, issued by the United Nations Educational, Scientific and Cultural Organization, estimated the number of illiterate people in 1990 to be 948 million, a decrease from the 1985 estimate of 950 million." About 26.6 percent of the world's population are illiterate, and if current trends continue, that will decrease to 21.8 percent, or 935 million, by the year 2000. Coincidentally, last year was named International Literacy Year. Besides a greater willingness on the part of the poorer nations to improve literacy, there was also an increased awareness of functional illiteracy in the industrialized nations, now estimated at between 10 and 20 percent.

### AIDS—"Rampant for Decades"

"As the AIDS epidemic begins its second decade, researchers and advocates for people with the ailment have each painfully abandoned their once keen hopes of bringing the scourge quickly under control," states *The New York Times*. "These hopes evaporated as the search for effective drugs proved far more difficult than had been thought, and efforts to devise a vaccine were continually frustrated by the virus's subtle defenses. Medical experts now say they think the AIDS virus will be rampant for decades." It has been calculated that by the year 2000, some 40 million people will be infected with the AIDS virus. Although researchers have isolated the virus, have studied its proteins and cloned its genes, and have devised drugs to relieve some of the suffering of AIDS patients, the disease is as deadly as ever.

## From Our Readers

**Gossip** Thank you for your timely articles on gossip. (June 8, 1991) I was recently the object of malicious gossip, and by applying the Scriptural principle at Matthew 18:15-17, I was able to work things out with the offender.

B. C., Australia

I thought the articles were informative and well written. I was amazed, though, at the photographs you used. Four of them depict women gossiping. The unspoken message is that gossiping is a characteristic of women.

H. W., United States

*We did not intend to label either women or men in a negative way. Two of the photos involved gossiping men. Another photo depicted two women engaged in an upbuilding conversation. A woman was also shown refusing even to listen to gossip.—ED.*

**Gangs** I have just received my June 8, 1991, issue with the article "Young People Ask . . . Should I Join a Gang?" There were times when my husband and I really worried about our youngest child, who was attracted to the gangs. She started to dress like them and copied their makeup and hairstyle. We did not notice what was going on until it was almost too late. Fortunately, we were able to move her away from the bad influence. I hope your article does some good. Do you plan to bring out more on this subject?

D. N., United States

*See our July 22, 1991, issue.—ED.*

**Lungs** I just have to thank you for the article "The Lungs—A Marvel of Design." (June 8, 1991) It aroused in me feelings of wonder toward Jehovah God's marvelous work. The article was masterfully written and helped me in an incredibly simple way to comprehend things that are highly complex.

B. T. A., Brazil

**Lottery Fever** Your articles on 'Lottery Fever' (May 8, 1991) reminded me of how before becoming a Christian, I had friends who gambled. One was sent to prison for forgery because of gambling. Another was beaten up by loan sharks and left paralyzed for not paying a loan. Gambling does indeed ruin people's lives.

R. B., United States

**Cameras** I recently purchased a camera that allowed for adjusting the aperture and changing shutter speeds, but I had difficulty understanding the operating manual. Your article "Memories—At the Touch of a Button" (July 8, 1991) answered my questions. Thank you for explaining technical matters in an easy-to-understand way.

S. H., Japan

**Japanese Hospitality** I enjoyed the article "An Evening in a Japanese Home." (April 22, 1991) I have a tremendous fear of flying that prevents me from traveling. But your article was so real and enjoyable that it allowed me to travel in my mind's eye—with-out flying.

K. R., United States

**Rock Bands** This is regarding your article "Obscenity Set to Music." (March 8, 1991) The first sentence of the article speaks of 'the sacred mission of rock bands—to offend parents.' I can think of many popular rock bands that produce good, positive music. Maybe you should have spoken of "certain" rock bands.

L. H., United States

*We were not condemning all modern music. The sentence in question was a direct quote from the magazine "U.S. News & World Report." Later on the article stated that the particular bands under discussion were "far from the mainstream." We also said that "some" of today's music—not all—is objectionable.—ED.*



## The Pont du Gard Withstands the Test of Time

"LONG after the Roman Empire had died, her aqueducts remained to be used and admired and to serve as an inspiration for builders of subsequent ages," *The New Encyclopædia Britannica* explains. The Pont du Gard is not an exception to the rule. It is probably the most famous Roman vestige in France.

Roman aqueducts were not generally built for irrigating fields but to transport water to towns. These towns had public fountains, thermal baths, swimming pools, and water basins; and some of the larger cities even had sewage systems. Yes, Roman towns and colonies needed water—and plenty of it.

Rising nearly 160 feet above the river Gard, the Pont du Gard is a bridgelike structure, the highest built by the Romans that supports a water channel. Although 902 feet long, it is still only a small section of the complete aqueduct. The entire length of the water conduit was in fact 30 miles. It was used to supply water for the Roman town of Nîmes. Like some other Roman structures of the same period, the aqueduct has largely withstood the centuries and testifies to the high-quality work standards of the Romans and to the expertise of their engineers. Huge blocks

of limestone, some weighing as much as six tons, were cut and shaped in a nearby quarry at Vers. Interestingly, no mortar was used to join the blocks.

Building tiers of arches was necessary for several reasons. As soon as a structure reaches a certain height, it has to be made lighter, and the shape of the arches is designed to achieve this. But the Pont du Gard also had to bridge a river. In order to resist strong currents, the builders designed the bridge with a slight curve.

Although not appreciated by all the bridge's admirers, some structural changes were nevertheless later undertaken. Its thick piers were cut into to permit horse-drawn carts to cross, and in the 18th century, the structure of the first floor was widened. A century later, Emperor Napoleon III, a conservationist before his time and interested in the site's preservation, undertook the necessary work to restore the bridge.

Over two million people visit it every year. This tremendous interest has endangered the Pont du Gard, and various projects are under way to preserve the site. Whatever lies in store for it, this bridge demonstrates that a well-done job can withstand the test of time.

## The Road to Gold Time to fast and christen

of limestone, some a glinting tan rock, others  
white like sand, some in layers, draped in folds,  
others like lava on which new grass or ferns  
grow.

Building is to continue as necessary for a cer-

tain period. It is part of our duty to make

space for the trees that will grow in the  
years to come.

A program for developing the hillside has

been drawn up, some sections being left un-

tilled, others partially cleared, others com-

pletely cleared, the intention being to have

wide open spaces, a few trees here and there,

and a few paths leading through the trees.

On the way down the hillside we pass

through numerous streams, some of them

quite large, some very small, all of them

emptying into the river below.

"LOGS will be taken along the trail  
independently of the road and carried  
to sea so as to prevent loss of lumber  
due to fire. The road on Gold is not an express  
line, it is a supply line from Ronan

across the lake.

Road work will be done for economy first, for

the saving will not be lost in time.

It is expected that the work will be done to

standard road width and cost about \$100 per

acre to lay.

The log teams will be used to haul logs, the

log on Gold is a valuable timber product.

At first the horses will be used to haul

logs, but as soon as the roads are good, the

horses will be replaced by mules.

There will be no horses on the road, as

they are not allowed to travel on the