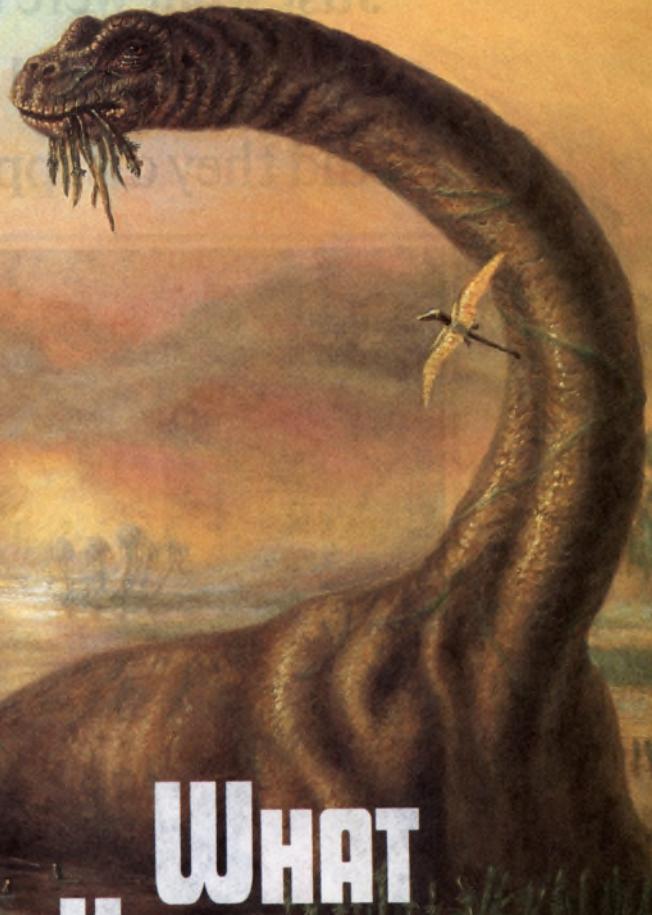


# Awake!

February 8, 1990



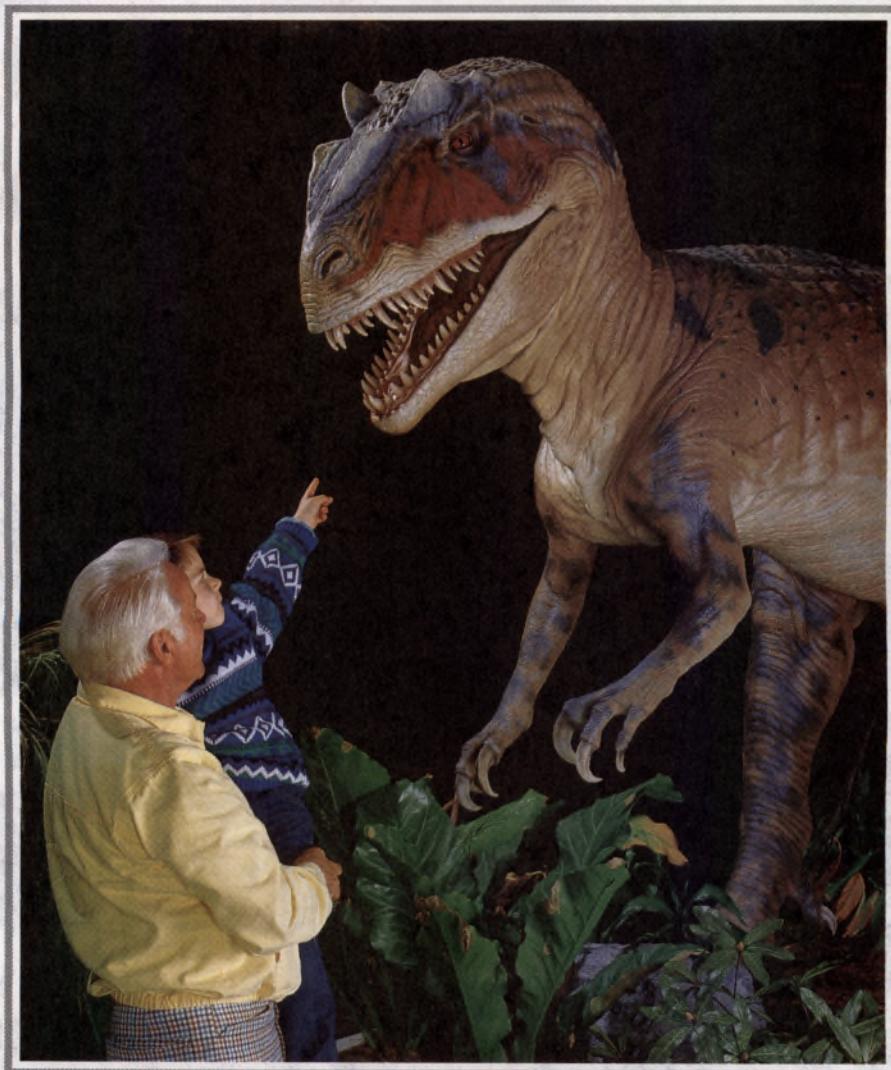
WHAT  
HAPPENED  
TO THE  
DINOSAURS?

Dinosaurs have long fascinated both  
young and old.

Just what were those animals?

When did they live?

Why did they disappear from the earth?



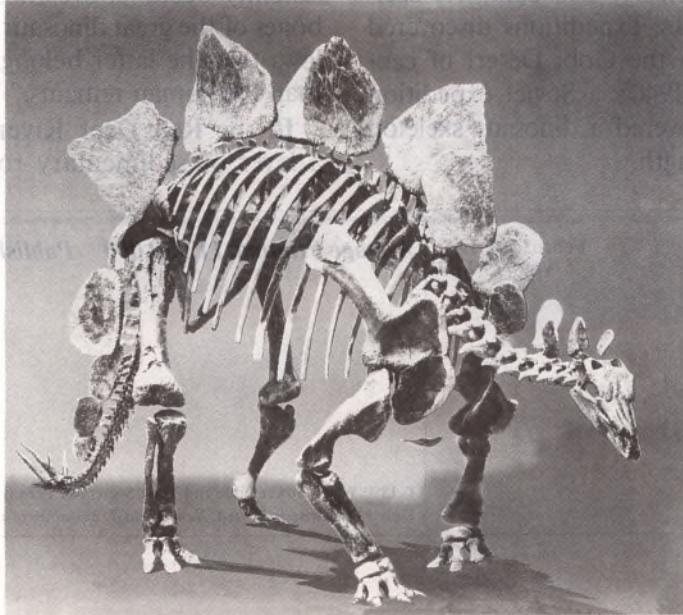
Dinamation International

# DISCOVERING 'THE GREAT REPTILES' OF THE PAST

**W**HEN you stand on the edge of the Red Deer River valley, just south of the town of Drumheller in Alberta, Canada, you stand on the edge of two different worlds. At eye level, in every direction, are the endless wheat fields of the Alberta prairies. But looking down the cliffs into the dry and barren valley, visitors can imagine another world far removed from their own—the world of the dinosaurs.

In this valley, with its steep canyons of multicolored sedimentary rock layers, hundreds of dinosaur bones have been unearthed. Some people in this area call the barren canyon "the badlands." But visitors, young and old alike, are filled with astonishment as they view the fossil legacy of some of the most amazing animals that ever lived on earth.

Smithsonian Institution, Washington, D.C.: Photo Number 43494



## **Discovering Dinosaurs**

Before 1824, dinosaurs were unknown to man. In that year the bones of several kinds of fossilized reptiles were unearthed in England. British paleontologist Richard Owen called these animals Dinosauria, from the two Greek words *deinos* and *sauros*, meaning "terrible lizard." The name remains in common use to this day, although while dinosaurs are reptiles, they are not lizards.

Since 1824, dinosaur fossils have been found on every continent. The fossil record, left in layers of sedimentary, or water-laid, rock, indicates that there was an extraordinary abundance and variety of dinosaur types at a time in earth's history called the Age of Dinosaurs. Some made their home on land, while others lived in swamps. Some perhaps even lived in water, much like the present-day hippopotamus.

Large quantities of dinosaur remains—including such nonskeletal evidence as tracks—have been unearthed in the Great Central Plain of North America. The prairies of central Alberta have yielded many dinosaur remains, including nearly 500 complete skeletons. In the 1920's, expeditions discovered dinosaur bones in the Gobi Desert of central Asia. In the 1940's a Soviet expedition in Mongolia discovered a dinosaur skeleton some 40 feet in length.

In 1986 Argentine scientists discovered the fossils of a plant-eating dinosaur in Antarctica. Until then, Antarctica had been the only major land area where dinosaur fossils had not been found. Just before that, an American researcher found dinosaur bones on the North Slope of Alaska. Throughout the last hundred years, deposits of dinosaur bones have been uncovered in so many places that it has become apparent that dinosaurs were widespread in the remote past.

## **When Did They Live?**

Dinosaurs played a dominant role in life on earth during their age. But then they came to an end. The rock layers containing human fossils consistently occur above those layers containing dinosaur fossils. Because of this, scientists generally conclude that humans came on the earthly scene later.

In this regard the book *Palaeontology*, by James Scott, states: "Even the earliest species of *Homo sapiens* (man) lived long after the disappearance of the dinosaurs . . . After tilting (through earth movement) has been allowed for, rocks containing fossil men consistently occur above those preserving the bones of the great dinosaur reptiles and it follows that the latter belong to an earlier age than the human remains."

In the Red Deer River valley, there is a layer of sedimentary rock that contains

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dinosaur bones. Just above this, there is a purplish-brown layer that follows the contour of the hillside. On top of the purplish-brown layer is a layer of brownish siltstone containing fossils of subtropical ferns, indicating a hot climate. Above this, there are several layers of coal. Farther up the hillside are coarser-grained layers of earth. There are no dinosaur bones in any of the higher layers.

The book *A Vanished World: The Dinosaurs of Western Canada* states that "all of the 11 major kinds of dinosaurs . . . ceased to exist in the western interior at about the same time." This, and the fact that human bones have not been found with dinosaur bones, is why most scientists conclude that the Age of Dinosaurs ended before humans came on the scene.

However, it should be noted that there are some who say that dinosaur bones and human bones are not found together because dinosaurs did not live in areas of human habitation. Such differing views demonstrate that the fossil record does not yield its secrets so easily and that no one on earth today really knows all the answers.

### **Characteristics**

Scientists have concluded that east of the North American Rocky Mountains, a great

shallow sea once existed. This sea was hundreds of miles wide, extending from the present Arctic Ocean to Mexico. Along the flat shoreline were lush, marshy forests. Fossils suggest that many types of dinosaurs flourished in this ecological setting. The edmontosaurus, a duck-billed dinosaur about 30 feet long, apparently browsed in herds in cow fashion through the swamp. Well-preserved three-toed footprints and the fossilized contents of the stomach led paleontologists to this conclusion.

Other evidence suggests that some dinosaurs displayed social habits. They likely herded together, perhaps in groups of hundreds or more. Discovery of successive layers of nests and eggs in the same place indicates that some dinosaurs returned to the same nesting sites year after year. Skeletal remains of infant dinosaurs near the nests, states *Scientific American*, 'strongly suggest sibling social behavior and also imply the possibility of parental attendance on the young after their hatching.'

The fossil evidence thus demonstrates that there were vast numbers and varieties of dinosaurs. But just what did they look like? Were they all fearsome, gigantic monsters—"terrible lizards"? Why did they seem to disappear so suddenly?

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

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# THE DIFFERENT SHAPES AND SIZES OF DINOSAURS

OF ALL the life-forms now extinct, dinosaurs have perhaps most stimulated the imagination of humans. Dinosaurs are often imagined as having been huge and terrifying. When the name was first coined from the Greek words meaning "terrible lizard," they were thought of as being fearfully large because the then known dinosaur fossils were large.

Some types of dinosaurs were gigantic and did look fearsome, likely weighing more than ten times as much as a large African elephant. However, over the decades, paleontologists have unearthed bones of many smaller dinosaurs. Some are the size of a donkey, and some are not much larger than a chicken! Let's take a look at some of these fascinating ancient reptiles.

## *Reptiles That Fly*

One intriguing type of ancient reptile was the pterosaur ("winged lizard"), which includes the pterodactyl ("winged finger"). But these were not dinosaurs, nor were they birds. They were flying reptiles and are classified with other reptiles such as dinosaurs and crocodiles. Some of them had wingspans of

25 feet. One discovered in Texas in 1975 indicates that some had wingspans of more than 50 feet. These were perhaps the largest animals ever to fly.

While pterosaurs had the teeth, skull, pelvis, and hind feet of a reptile, they in no way resembled the reptilian dinosaurs. And while they appeared to be a bird with stiff aerodynamic wings, they were much different. Like birds, the pterosaurs had hollow bones and few flexible joints in wings and ankles. However, a bird's wings use feathers rather than a membrane as was the case with the pterosaurs. And the fourth finger of the pterosaur forelimb extended to support the wing membrane. In the bird the second finger is the principal support of the wing.

## *The Ornithischians*

The ornithischians ("bird hipped") were one of two general classes of dinosaurs as determined by the structure of their hips. Those in this category had a hip structure similar to that of a bird but, of course, vastly larger. Some were small in overall size, others huge. The iguanodon reached lengths of 30 feet. Skeletons of several types of hadrosaurs indi-

cate a duckbill upper and lower jaw, with numerous teeth. Hadrosaurs were apparently bipedal, walking or running on two legs. Some of them reached lengths of 33 feet.

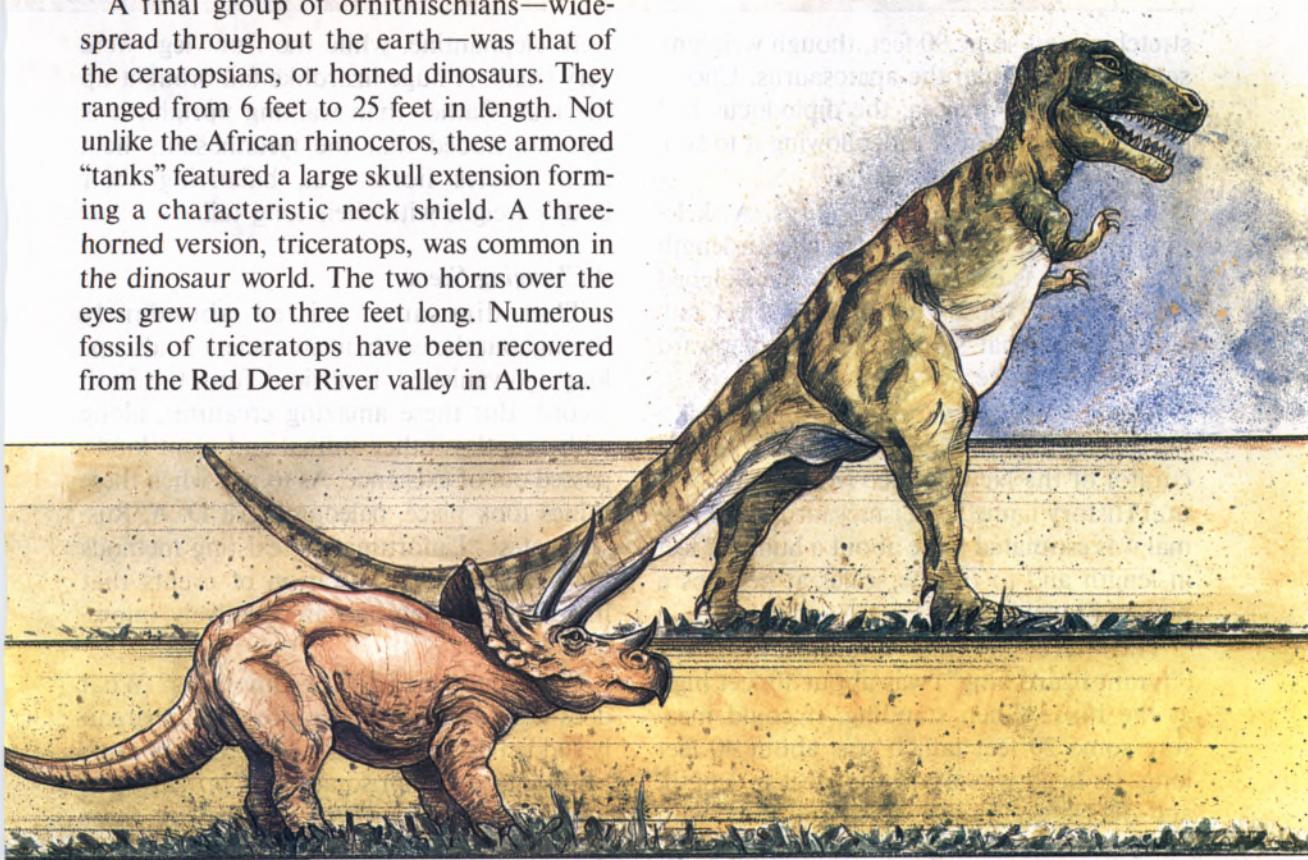
The stegosaurs were a group of the ornithischians that had large bony blades mounted in a pattern down their back. They walked on all four legs and were about 20 feet long, and 8 feet high at the hips. More recently, it has been thought that the bony back plates served not just as a protection but as part of a cooling system for their body. Hind legs were heavy and elephantine, while front legs were of smaller size, causing the small head to be low to the ground. The tail had long, bony spikes radiating from the end.

A final group of ornithischians—widespread throughout the earth—was that of the ceratopsians, or horned dinosaurs. They ranged from 6 feet to 25 feet in length. Not unlike the African rhinoceros, these armored “tanks” featured a large skull extension forming a characteristic neck shield. A three-horned version, triceratops, was common in the dinosaur world. The two horns over the eyes grew up to three feet long. Numerous fossils of triceratops have been recovered from the Red Deer River valley in Alberta.

### ***The Saurischians—Dinosaur Giants***

Another general class of dinosaurs is known as saurischians (“lizard hipped”), having hip structures like those of lizards, though, again, much larger. They fit the usual concept of dinosaurs: huge and fearsome. Among these were the apatosaurus (previously called brontosaurus), a plant-eating dinosaur that walked on all four legs. It reached lengths of 70 feet and weighed an estimated 30 tons. These dinosaurs have been unearthed in North America and Europe.

The equally gigantic diplodocus was more snakelike, with a long neck and tail but having legs. It is the longest dinosaur known,





stretching out some 90 feet, though weighing somewhat less than the apatosaurus. Uncovered in North America, the diplodocus had nostrils on top of its head, allowing it to submerge its head almost totally.

Then there is the brachiosaurus. A skeleton discovered in Tanzania reached a length of 70 feet. It is estimated that some weighed more than 85 tons. They stood 40 feet tall, with a body that sloped downward toward the tail, giraffelike.

In 1985 fossilized vertebrae of unusual size were unearthed in New Mexico, U.S.A. The curator of the New Mexico Museum of Natural History named it seismosaurus. The animal was estimated to be about a hundred feet in length and to tip the scales at perhaps a hundred tons!

The fierce-looking tyrannosaurus rex ("tyrant-lizard king") was about 10 feet high at the hips. When standing, it could measure some 20 feet tall. It was about 40 feet long. Its head was up to four feet in length, and its large mouth was equipped with many six-inch conelike teeth. The hind legs

were elephantine, while the front legs were very small. A huge lizardlike tail brought up the rear. Rather than walking upright, it is now concluded that the tyrannosaurs held their bodies horizontal, balancing their body's weight with their long tail.

#### ***A Changing Scene***

That dinosaurs existed abundantly throughout the earth, in an ancient landscape long ago vanished, is obvious from the fossil record. But these amazing creatures, along with countless other animal and plant kinds, passed out of existence. As to just when these things took place, paleontologist D. A. Russell states: "Unfortunately, existing methods for measuring the duration of events that happened so long ago are relatively imprecise."

What happened to the dinosaurs? What does their sudden appearance and apparently sudden extinction mean? Do the dinosaurs bring into question some basic principles of Darwinian evolution? We will explore those questions in the following article.



# WHAT HAPPENED TO THE DINOSAURS?

**P**ALEONTOLOGY is the study of fossils, and fossils are the remains of life from past ages." But as one paleontologist said, it is "a highly speculative and opinionated science." This is evident regarding dinosaurs. Listing some speculations as to what happened to them, Princeton scientist G. L. Jepson stated:

"Authors with varying competence have suggested that dinosaurs disappeared because the climate deteriorated . . . or that the diet did. . . . Other writers have put the blame

on disease, parasites, . . . changes in the pressure or composition of the atmosphere, poison gases, volcanic dust, excessive oxygen from plants, meteorites, comets, gene pool drainage by little mammalian egg-eaters, . . . cosmic radiation, shift of Earth's rotational poles, floods, continental drift, . . . drainage of swamp and lake environments, sunspots."

—*The Riddle of the Dinosaur.*

It is apparent from such speculations that scientists are not able, with any certainty, to answer the question: What happened to the dinosaurs?

### **Sudden Extinction Theory**

A more recent theory was put forth by a father-and-son team, Luis and Walter Alvarez. Walter Alvarez discovered, outside the town of Gubbio in central Italy, a curious thin, red layer of clay sandwiched between two limestone layers in the rock formation. The lower layer of limestone yielded an abundance of fossils. The top layer was almost devoid of fossils, leading the geologists to conclude that life suddenly disappeared and that the thin, red layer of clay had some connection with the extinction.

Analysis revealed that the clay was rich in iridium (a metal), 30 times richer than the concentration normally found in rocks. They knew that such high concentrations of this rare element could come only from the earth's core or from sources outside the earth. They concluded that the iridium was deposited by a huge asteroid that hit the earth, causing the sudden extinction of the dinosaurs.

After the discovery of the iridium-enriched clay at Gubbio, similar deposits were found in other parts of the world. Did this corroborate the asteroid hypothesis? Some scientists remain skeptical. But as the book *The Riddle of the Dinosaur* acknowledges, the Alvarez hypothesis added "fresh yeast to the study of extinction and evolution." And paleontologist

Stephen Jay Gould admits that it could diminish "the importance of competition between species."

Commenting on this new theory and the apparently sudden extinction of the dinosaurs, one science writer admits: "They could shake the foundations of evolutionary biology and call into question the current concept of natural selection."

University of Arizona scientist David Jablonski concludes that 'for many plants and animals, extinction was abrupt and somehow special. Mass extinctions are not merely the cumulative effects of gradual dyings. Something unusual happened.' That is also the case with dinosaurs. Their relatively sudden appearance and disappearance contradicts the commonly accepted view of slow evolution.

### ***The Dating of Dinosaurs***

Dinosaur bones are regularly found in lower earth layers than are human bones, leading

## **The fossil record of the dinosaurs supports not evolution but creation**

many to conclude that they belong to an earlier time period. Geologists call this time the Mesozoic period and subdivide it into the Cretaceous, Jurassic, and Triassic periods. The time frames used for these periods are on

the order of tens of millions of years. But has this been established with any certainty?

One method being used to measure the age of fossils is called radiocarbon dating. This dating system measures the rate of decay of radioactive carbon from the point of death of the organism. "Once an organism dies, it no longer absorbs new carbon dioxide from its environment, and the proportion of the isotope falls off over time as it undergoes radioactive decay," states *Science and Technology Illustrated*.

However, there are severe problems with the system. First, when the fossil is considered to be about 50,000 years old, its level of radioactivity has fallen so low that it can be detected only with great difficulty. Second, even in more recent specimens, this level has fallen so low that it is still extremely difficult to measure accurately. Third, scientists can measure the present-day rate of radioactive carbon formation but have no way of measuring carbon concentrations in the distant past.

So whether they use the radiocarbon method for dating fossils or other methods, such as employing radioactive potassium, uranium, or thorium, for dating rocks, scientists are unable to establish the original levels of those elements through ages of time. Thus, professor of metallurgy Melvin A. Cook observes: "One may only guess these concentrations [of radioactive materials], and the age results thus obtained can be no better than this guess." That would especially be so when we consider that the Flood of Noah's day over 4,300 years ago brought enormous changes in the atmosphere and on earth.

Dartmouth College geologists Charles Officer and Charles Drake further add doubt to the accuracy of radioactive dating. They state: "We conclude that iridium and other associated elements were not deposited instantaneously . . . but rather that there was an intense and variable influx of these constituents

during a relatively short geologic time interval on the order of 10,000 to 100,000 years." They argue that the breakup and movement of the continents disrupted the entire globe, causing volcanic eruptions, blocking sunlight and fouling the atmosphere. Certainly, such disruptive events could change radioactivity levels, thus distorting results from modern-day radioactive clocks.

### ***The Genesis Account and Dinosaurs***

While the radioactive dating method is innovative, it is still based on speculation and assumption. In contrast, the Bible account in the first chapter of Genesis simply states the general order of creation. It allows for possibly thousands of millions of years for the formation of the earth and many millenniums in six creative eras, or "days," to prepare the earth for human habitation.

Some dinosaurs (and pterosaurs) may indeed have been created in the fifth era listed in Genesis, when the Bible says that God made "flying creatures" and "great sea monsters." Perhaps other types of dinosaurs were created in the sixth epoch. The vast array of dinosaurs with their huge appetites would have been appropriate considering the abundant vegetation that evidently existed in their time.—Genesis 1:20-24.

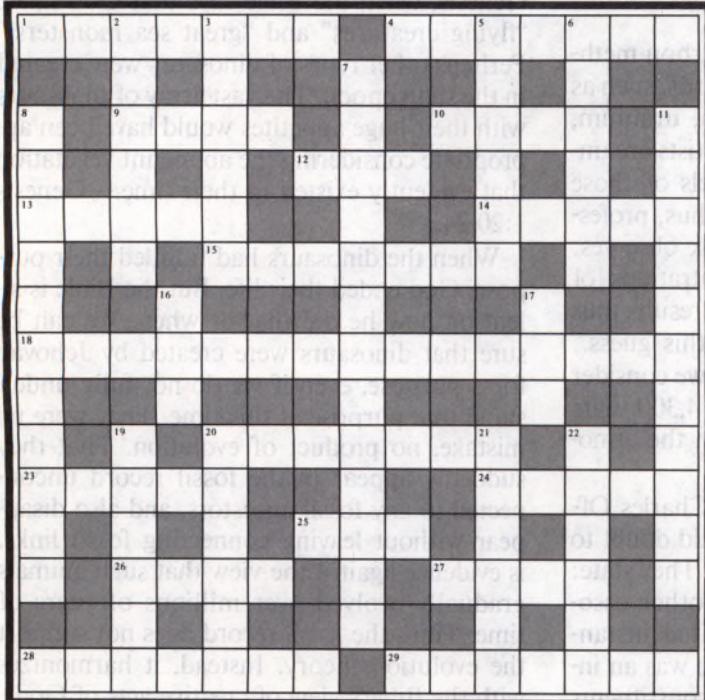
When the dinosaurs had fulfilled their purpose, God ended their life. But the Bible is silent on how he did that or when. We can be sure that dinosaurs were created by Jehovah for a purpose, even if we do not fully understand that purpose at this time. They were no mistake, no product of evolution. That they suddenly appear in the fossil record unconnected to any fossil ancestors, and also disappear without leaving connecting fossil links, is evidence against the view that such animals gradually evolved over millions of years of time. Thus, the fossil record does not support the evolution theory. Instead, it harmonizes with the Bible's view of creative acts of God.

# CROSSWORD PUZZLE

## Clues Across

1. Musical rattle (See 2 Samuel 6:5.)
4. One seized in war (Genesis 14:14)
9. The first stone in the first row of gems on High Priest Aaron's breastpiece (Exodus 39:10)
10. On the hill of Ammah in front of this site, Abner persuaded Joab to stop pursuing him (2 Samuel 2:24)
12. Poisonous snake (See Romans 3:13.)
13. Fifth son of Benjamin (1 Chronicles 8:2)
14. Physical grace or attractiveness (Proverbs 31:30)

CROSSWORD SOLUTIONS PAGE 27



15. The court official who prompted Ahasuerus to have Haman hanged (Esther 7:9)
18. The outcome of the fight between these two warriors would determine the fate of their respective nations [3 words] (1 Samuel 17:4-53)
20. Cautious (Ezra 4:22)
23. One of "the heads of the people" who attested to the postexilic trustworthy arrangement (Nehemiah 10: 14, 24)
24. In the midst of (Acts 20:30)
25. Seventh letter of the Greek alphabet
26. Untroublesome (2 Kings 20:10)
27. Name of a tower along the

north wall of Jerusalem  
(Nehemiah 3:1)

28. Stick used in the process of making thread (Proverbs 31:19)
29. A city in Zebulun (Judges 1:30)

## Clues Down

2. One touched Isaiah's lips with a glowing coal to cleanse away his sin (See Isaiah 6: 2-7.)
3. Town where Nebuchadnezzar slaughtered Zedekiah's sons "before his eyes" (Jeremiah 52:10)
5. This woman and her husband "risked their own necks" in behalf of the apostle Paul (Romans 16:3, 4)
6. A descendant of Judah and the father of Eshtemoa (1 Chronicles 4:17)
7. Uncomplainingly (Hebrews 3:18)
8. A dangerous snake [2 words] (Psalm 140:3)
11. Divine title denoting power [2 words] (See Genesis 17:1.)
16. Place from which the Aramaeans came to Syria (Amos 9:7)
17. Not to be boiled in its mother's milk (Exodus 23:19)
19. Twenty-four were seen seated around Jehovah's throne (Revelation 4:4)
20. One of the ingredients of the holy anointing oil (Exodus 30:23-25)
21. Twelfth letter of the Hebrew alphabet
22. Site mentioned in giving location of Moses' farewell address (Deuteronomy 1:1)

## **YOUNG PEOPLE ASK...**



# **Why Is This Happening to My Body?**

**A**DOLESCENCE—this can be an exciting time in your life. You are gradually changing from a child to an adult!

Perhaps, though, your parents have not discussed with you beforehand what to expect. Even if they have discussed it, the reality of puberty may be more than you bargained for. Things may be happening to you that make you wonder if something is seriously wrong with you. More than likely, though, quite the opposite is true!

### **The Menstrual Cycle—Curse or Blessing?**

About two years after puberty begins, a young girl experiences a significant development—the beginning of the menstrual cycle. Without adequate preparation, however, this milestone event can be frightening, shocking.\* “I’m really scared,” wrote a girl named Paula. “About three months ago, I started bleeding for a few days a month. Does this mean I have cancer? . . . I’m so upset thinking about this bleeding that I’m crying and shaking.”

The book *Adolescents and Youth* reports that some girls even feel shame and guilt when their cycle begins. Little wonder, then, that many girls keep the event secret. Said one young girl: “I was embarrassed to tell my

\* In one study, 20 percent of the mothers polled had told their daughters nothing about menstruation. Another 10 percent gave only the barest minimum of information.

mother. She’d never talked to me about it and I was frightened to death.”

But far from being something to be ashamed of, the menstrual cycle is evidence that your reproductive powers are maturing. Your body is now capable of conceiving and bearing a child. Oh, it will be years before you are really ready to be a parent. But here you stand, poised on the brink of womanhood. Is this something to be ashamed and embarrassed about? Hardly!

Besides, this is something universally experienced by women. The Bible refers to the menstrual cycle as “the customary thing with women.” (Genesis 31:35) And contrary to the opinion of some, it is not a curse.\* Perhaps, though, it will allay some of your fears if you better understand why and how this cycle takes place.

### **The “Monthly Miracle”**

The word “menstruation” comes from a Latin word that means “monthly.” Once a month your body becomes capable of conceiving a child. First, a rise in your body’s hormone levels signals your uterus, or womb.

\* It is true that the Mosaic Law declared a menstruating woman “unclean.” (Leviticus 15:19-33) But this was only in a ceremonial sense. Evidently, these laws served to teach respect for the sanctity of blood. (Leviticus 17:10-12) At the same time, the laws served to remind the Jewish nation that mankind is born in a sinful state and needs a redeemer.

This prepares itself to receive and nurture a fertilized egg; its lining becomes rich with blood and nutrients. Nearby are the two almond-shaped organs known as the ovaries, each containing thousands of tiny eggs. Each egg is a potential baby, needing only to be fertilized by a male sperm. Once a month, an egg ripens and bursts free from the ovaries.

Gentle "fingers" now sweep up the egg and draw it into one of the Fallopian tubes. The tiny egg now begins a four-to-six-day journey through it to the uterus. If a woman does not become pregnant during this time, the tiny egg disintegrates. The blood-rich lining of the uterus also breaks down. The uterus begins contracting and gently expels this lining through the vaginal canal.

For anywhere from two to seven days (varying from woman to woman) the menstrual discharge flows. And then the process repeats itself, month in, month out, until menopause.\* Well did one writer describe it as a "monthly miracle"! It is a process bearing the unmistakable signature of a Master Designer. It is yet one more reason to exclaim, as did the psalmist: "I shall laud you because in a fear-inspiring way I am wonderfully made"! —Psalm 139:14.

### Finding Help

Nevertheless, the menstrual cycle does present you with a number of practical concerns. For example, many girls worry, "What if it starts while I'm in school?" Granted, this could stain your clothing and cause you some embarrassment. Sex educator Lynda Madaras assures us, however, that "most girls don't bleed enough right at first to have it show through on their clothes." Still, you will want to be reasonably prepared.

A number of books dispense sound medi-

\* It may take months or years before the cycle establishes a pattern of regularity.

cal advice. But why not also share your concerns with your mother? No doubt she will have a number of practical suggestions. "My mother was like a friend to me," says one young woman. "We had big discussions, and she would answer my questions."

Admittedly, some mothers have a tough time talking about intimate matters. But if you approach her respectfully and let her know that this is really important to you, she just may be able to overcome her reluctance to talk. If that fails, why not confide in a mature Christian woman with whom you feel comfortable?

Though most women are able to go about their daily routine during their period, the book *Changing Bodies, Changing Lives* reminds us that some women suffer from "headaches, backaches, skin problems, mood changes, depression, cramps, nausea, and water retention." Simple aspirin compounds often relieve these symptoms. (Your doctor can determine if stronger medication is needed.) And if possible, you can avoid undue stress at that time by planning your activities around your cycle.

### Nocturnal Emissions

Young boys also have a number of problems to deal with as their reproductive system matures. For example, your sexual organs begin manufacturing a fluid called semen. This contains millions of microscopic sperm, each of which is capable of fertilizing a female egg and producing a baby if released during sexual intercourse.

Since you are not married, sperm simply builds up. Some is gradually absorbed by your body. But from time to time, some will be released at night while you sleep. This is commonly called a wet dream. A better name for it, though, is nocturnal emission, since the emission often takes place on its own, with



## Parents can help you adjust to the changes of puberty

or without an accompanying erotic dream. A boy's first experience with a nocturnal emission may be unsettling. "I had my first wet dream when I was about twelve and a half," recalled one teenager. "I didn't know what was happening. . . . I woke up and the bed was kind of wet. I thought I had wet my bed or something." Be assured, though, that such emissions are normal. Even the Bible makes mention of them. (Leviticus 15:16, 17) They are an indication that your reproductive system is functioning and that you are well on the way to manhood.

Admittedly, the thought of your mother discovering wet sheets may horrify you. But it is most unlikely that this would either shock or surprise her. It might help, though, to talk matters over with your father or another mature adult. This may relieve you of any lingering anxieties you may have. You may even be able to work out some way of maintaining your privacy in this matter.

## Coping With Arousal

As the reproductive system matures, both boys and girls are often extremely sensitive to sexual arousal. When this happens to a boy, the male sex organ, or penis, becomes engorged with blood, causing it to become erect or stiff. "But," reminds *The New Teenage Body Book*, "many erections happen for non-sexual reasons—and sometimes it seems, for no reason at all! Vibrations of a bus, tight clothing, exposure to cold, fear, and other stimuli can cause an erection." Young girls may similarly find themselves aroused for no apparent reason.

Unwanted sexual arousal can be upsetting, embarrassing. But it is a part of growing up and may happen frequently. Some youths manipulate or play with their organs so as to gain sexual relief. This is wrong and can, in the long run, create other problems.\* It is better simply to relax and get your mind off the matter. The arousal will soon pass. As you get older and your hormone levels settle down, you will find that spontaneous arousal occurs less frequently.

Puberty doesn't last forever. Perhaps one day you will even be able to laugh at some of the things distressing you now. In the meantime, take comfort in the fact that you are normal.

\* See the articles on masturbation in the September 8, 1987, November 8, 1987, and March 8, 1988, issues of *Awake!*

# A Reader's Response to an *Awake!* Article

THE August 8, 1989, issue of *Awake!* magazine contained an article about a girl named Suzy who was born with Down's syndrome. The article described the great love, effort, and patience shown to Suzy by her parents, sister, and brother. Responding to that article, a woman in Spokane, Washington, wrote the following letter to *Awake!*:

"After reading the August 8th *Awake!*, I just had to write to you. I want to thank you for having published the article about little Suzy. It is a strange feeling that I have because I am a 'parent' to my 'infant' mother, so I felt such a kinship to Suzy's mother. I'd like for all of you to know of another of the many things that some of us are faced with today, and how encouraged we are by the work you are doing in helping us to cope.

"I was so deeply touched by little Suzy with Down's syndrome that I cried. I've had much empathy for such children and parents, as I have known several. As I read about Suzy's difficulty in living, I wept for my mother. I myself am an elderly lady in my 70's, and I have seen my mother's life turn full circle now.

"I remember her first as a pretty, caring, loved, and vivacious young person. She is now in her 90's. From a series of strokes, I've watched her deteriorate physically into a pitifully contorted body, yet with her vital functions operating nearly normal.

## Living With DOWN'S SYNDROME



"Her first notable stroke brought an inability to balance her checkbook, make out grocery lists, etc. In one year's time, this condition had deteriorated into her inability even to warm up food for a snack or small meal.

"A year and a half later, another major stroke took her mobility, dexterity, speech, and she became incontinent. She had reached the 'infant' stage of life a second time, and I saw her as such. She has to be hand-fed, diapered like a baby, and lifted from bed to wheelchair.

"Mother couldn't talk to us to tell us what she was thinking, feeling, what she wanted or desired. But we learned to communicate with eyes, smiles, and tears! Her face would literally light up when I'd tell her something of interest that I had heard at the Kingdom Hall of Jehovah's Witnesses that I go to, or if some of the folks there had sent her a message, or perhaps something I had read of special interest in *Awake!* or *The Watchtower*.

"When I'd leave her, usually tears would fill her eyes, and she would lightly kiss my cheek good-bye. However, when after a visit I'd say, 'Mama, it's seven o'clock, and I will have to go

to the meeting at the Kingdom Hall,' she would smile and nod her head, 'yes,' and give me a *solid* kiss. She would then watch me as I walked to the door and would smilingly wiggle her fingers good-bye the way one of her great-granddaughters had taught her.

Halloween was to come shortly after she entered the convalescent center. I found her in the recreation room as I came to visit one day. Wheelchairs were pushed up, four to each long table, and spread out upon them was all the material needed to make Halloween items. There sat Mama with a face like a four-year-old that without words was saying: 'I don't want to do that, and I'm not going to do that!'

"I walked up behind her and said: 'Hello, Mama,' and as I leaned down and kissed her on the cheek, I giggled (to hide my tears) and whispered in her ear: 'They've got you in here to make Halloween stuff.' Turning her head to look up at me, she had the most impish twinkle in her eyes, smiling. Then she screwed her entire face into an expression of complete disdain! And so it was as each holiday came. She did not believe in those holidays, with their pagan backgrounds, and here she was, in her limited condition, holding to her beliefs.

"Eight months ago, another major stroke hit, putting her into a coma and beginning a kidney shutdown. Yet, all other vital functions were good. After five days, her doctor couldn't believe the reversal she had made. At first, she did not recognize any of us. But now, at times, she will respond when we kiss her. We will feel her lightly pressing her lips to our cheeks.

"These last eight months my mother has been like a newborn baby, a living and breathing human but incapable of surviving on her own. An infant will at times refuse to eat, but half an hour later will, by its cries,

signal that it is hungry or needs attention. Mother has no way of letting us know what she wants or needs. The nurses and family members have had to learn why at times she will hold food in her mouth for a length of time but not swallow. With the doctor's help, we have learned that this can be caused by her waiting for a belch to come up, because from the partial paralysis she suffers, her muscles will not work sometimes. If she hurries and swallows before it feels right, she will choke.

"In giving good care to an infant (someone like Suzy or my mother) one has to educate oneself. How fortunate Suzy was to have such a caring and loving family! We feel fortunate to have been reared by parents we have enjoyed. When we were growing up, Mama would read articles to us from Watch Tower publications on health tips and also many other topics of family interest. She encouraged me to use such information to write themes and give talks in school.

"So now we children are the parent, and Mother is the child. Why did I cry when I read of Suzy? Why have I reminisced about my elderly mother in relation to little Suzy? I guess it is because I felt a kinship with her mother. Also, I felt a sudden gush of deep love and appreciation for our heavenly Father, Jehovah God, who through his love for all of us has made a provision that sweet little Suzy and our mother will some day, in God's new world on a paradise earth, be perfect as he purposed mankind to be.—Matthew 6: 9, 10; Revelation 21:4, 5.

"I hope that some day, in the Paradise to come, our two families can meet and be together with others like us. Perhaps we can then shed tears of happiness, along with a lot of joy and laughter, giving thanks and praise to our Creator, Jehovah, and his Son, Jesus Christ, our Redeemer."—Contributed.

# DO YOU HAVE DIFFICULTY MAKING DECISIONS?



**W**HEN you are confronted with a personal decision, do you struggle painfully, procrastinate, and finally ask someone else to decide for you? And after the decision is made, do you keep wondering if a different choice would have been better? If so, you can probably identify with Flora's experience above. You know how difficult decision-making can be.

Nevertheless, you can learn to make decisions with greater ease and pleasure. How?

"Do you like it? Should I buy it?" asked Flora, displaying the finely tailored black coat she was trying on. "I like it," said her friend Anna, "but it's your choice to make." Weakened by indecision, Flora placed the coat back on the rack and left the store.

They were home not 15 minutes when Flora exclaimed, "I should have bought that coat!" They returned to the store the next morning, but it was too late. The coat was gone—sold to someone else.

## *Reduce Your Anxiety*

When struggling with a decision, do you anxiously fuss over making the right choice, as if only one option could succeed? If so, you will be happy to learn that this is rarely necessary. The book *Overcoming Indecisiveness*, by Dr. Theodore Isaac Rubin, points out: "It almost always is the decisionmaker and not the particular choice that makes the decision work.... The failure of the decision has little or nothing to do with the choice. The failure

is directly traceable and proportional to lack of dedicated commitment."

Yes, in most cases, an option can succeed if it is tenaciously pursued. So wholeheartedly support the decision that has been made. This will reduce much of the tension associated with decision-making.

But how can you actually make the decision itself?

### **Think Systematically**

This is important, especially if you are dealing with a decision having long-term features: making a major purchase; selecting a home, a career, a marriage mate. Fight any tendency to allow your mind to jump worriedly from one thought to another. First, collect the facts you need. Then, on paper, list your options. Take each option, and list its advantages and disadvantages, comparing these with your needs. If you know yourself—your personal preferences, values, priorities, strengths, and weaknesses—you are in a position to see which option satisfies your most important needs.

Unless you are facing an immediate deadline, take time to allow your true feelings to

surface. Rushing the process will only suppress your decision-making faculties. Actually, spending several days, weeks, or even months mentally living with each option, one at a time, may be enjoyable. Dr. Harold H. Bloomfield notes: "Many people think anxiety, worry, and tension are unavoidable as long as they're struggling with a problem or decision." But you do not have to postpone happiness until your decision is settled. You can choose to enjoy the decision-making process itself. It is a part of life that is both challenging and rewarding.

### **'But I'm Still Confused!'**

What if, after giving systematic thought to your options, you are still undecided? What can you do? Should you seek help from a friend?

Some people, lacking confidence, always want others to decide for them. Of course, if you are dealing with a matter that requires more than your scope of knowledge and experience, then your seeking advice from a qualified person would not be an abdication of responsibility. Those who have successfully made decisions similar to yours may provide additional options and facts to help you.

## **SOME BASIC STAGES OF DECISION- MAKING**

- 1: Listing and observing all the possibilities, options, or choices involved in the issue**
- 2: Sustaining a free flow of feelings and thoughts about each of the possible choices**
- 3: Relating choices to established priorities**
- 4: Coming to a conclusion by designating one choice and initiating the discarding of those not chosen**
- 5: Committing feelings, thoughts, time, and energy and completing the elimination of the unused options**
- 6: Translating the decision into optimistic action**

(Proverbs 15:22) However, the person whose assistance you seek will take your request more seriously if you have first thought matters through to the best of your ability.

If making a final choice is hard, remember that decision-making almost always involves taking risks. If you are afraid to make a choice until you are absolutely certain of success, you will remain indecisive, for many decisions involve uncertainty and must be made on the basis of probability. (Ecclesiastes 11:4) In most cases, no one option has every advantage. No matter what choice you make, there will be something to sacrifice. So make the choice that is most likely the best, and . . .

### ***Support Your Decision!***

Resist the temptation to second-guess your decision once it has been made. Re-

member, every time you mentally indulge in 'maybe I should have,' you rob yourself of strength that could be used to support your decision and make it work. So do not keep looking back, wondering how things might have turned out had you made a different choice. Unless clear evidence emerges that proves a change of mind is necessary, leave your rejected options behind. Put your energy behind your decision.

To summarize: Think systematically, select the option most likely to succeed, and support that choice wholeheartedly. Inevitably, some of your decisions will turn out better than others. Nevertheless, your ability and confidence will grow as you accept the responsibility of making and supporting personal decisions.

## No Money for the Blind

Eighty percent of the world's blind live in developing countries. The largest concentration is in Southeast Asia. There, one out of every 25 persons is blind or partially blind, reports WHO (World Health Organization). What are the main causes? Undernourishment and infections resulting from poor hygiene.

According to the Dutch magazine *Internationale*

*Samenwerkung*, WHO claims that with two thousand million U.S. dollars a year, it could carry out an effective campaign against blindness in the developing countries. Although this amount is less than what the world's governments spend for military purposes in *one day*, WHO declares that it is unable to acquire the needed funds.

So, lacking sufficient means, all that it can do now is to try to prevent blindness by distributing vitamin A capsules to children. About 400,000 children in India, Indonesia, Bangladesh, and the Philippines suffer from eye disease caused by lack of vitamin A. But WHO predicts gloomily that, at the present rate, the world will have 84 million blind and partially blind persons by the year 2000.

# **DEBT!**

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## **Getting In Getting Out**

**L**OIS and Rick had been married for almost a year. Like many young couples, they wanted everything at once—and it was easy! The payment on the TV was only \$52 per month, and adding a VCR only increased the payment to \$78. The new furniture was a little more difficult—the payment was \$287 per month. Of course, that did not include the drapes and the carpet, which boosted the payment by \$46.50. But the finance company had been cooperative.

The appliances came a little easier because the store accepted their credit card. That way monthly payments were automatic, and they did not have to apply for a loan. It would have been easier if Rick's sports car had been paid off before the wedding as he had planned, but he had not quite been able to manage that.

Rick put it this way: "I thought marriage would be great, but I worry so much about our debts that it's just not fun." Lois agreed and added: "It was so easy to get into debt. Will we ever, ever get out of debt?"

This plaintive query echoes the dilemma faced by millions of families in most countries of the world. Rare indeed are the persons who manage to live their lives without

shouldering a large, sometimes unmanageable, burden of debt.

## ***Getting Into Debt***

How does one get into debt? Simple! It is a way of life. Governments, multinational corporations, small businesses, families, and individuals have all come to accept debt as normal.

Pride often creates debt. Debt creates strain. Strain leads to other difficulties. So how does one live in a world that is debt oriented and, at the same time, stay out of debt?

Perhaps the first lesson to be learned is simple sales resistance. One cannot enter the door of most financial institutions without being assailed by posters offering loans. Credit cards are easily available. Over the spectrum from loan sharks to respectable banking institutions, there are millions of successful, aggressive persons who are in the business of selling money. To them, money is a commodity—like groceries—and their job is selling it to you. Learn to say NO.

## *Debt Management*

Many formulas exist to define an acceptable ratio of debt to income. But these vary so

much that many have little meaning. For instance, some economists feel that a family may comfortably allocate 30 percent of gross income to pay for shelter. This is for mortgage payments or rent. However, this formula may not be feasible for the very poor. So general formulas are often too vague. The whole problem of debt control is better considered on a personal level.

Some debt may be acceptable, but this demands discernment and careful management. For instance, most people cannot buy a home without incurring debt. It is unrealistic to think that a family must live in rented accommodations until they have saved enough money to go out and pay cash for a house. It will probably never happen. Rather, the family may feel that the money they are paying for rent can be channeled into paying off a mortgage on a house. Even though this plan will take many years, they conclude that it is more practical.

When we realize that the value of the house will likely increase with time, it follows that while mortgage payments may be higher than monthly rent, the family may be better off since they are creating equity, which is the value of the house minus the claims against

it. A house mortgage at a reasonable rate, with manageable payments, may therefore be an acceptable debt. The same may be said of other large, necessary family purchases.

Other forms of debt may be absolutely unacceptable. Debt management includes the ability to reject them. Perhaps the best rule is: Do not buy what you do not need and cannot afford. Avoid impulse buying. Even if something is half price, it is not a bargain for you if you cannot afford it. Do not borrow for luxury items. Do not take vacation trips unless you can afford to pay before you go. Whatever you buy must be paid for sooner or later. Credit cards are useful to avoid carrying cash but are very expensive when used as a means to borrow money.

### **Getting Out of Debt**

Some people may feel that advice on debt management is too late for them. "I'm already under a landslide of bills and commitments. How do I get out?" The fact is that it is never too late to start.

The first move should be to establish a working relationship with a reputable bank. If you must borrow, this is where you will likely get the best interest rate. If your bank refuses you a loan, it is probably doing you a favor. Remember, it is in the business of lending money and will lend it to you if it seems reasonable.

Second, you must start paying off the debts in some organized way. On paper, project your anticipated personal cash flow over the next 24 months. Be realistic. Include every bit of income you expect to have. Then list everything that must be paid. Include some allowance for items that you cannot even think of right now. List the debts in order of priority. Then allocate your money on a fair basis so that each debt receives at least some payment. Set a target payoff date for each debt.

## **IN OUR NEXT ISSUE**

*In-Laws  
—An Age-Old Problem*

*Sudden Destruction!—How  
Have They Coped?*

*Why Do My Parents  
Embarrass Me?*

## Sinking into excessive debt is like being swallowed by quicksand

In conjunction with this plan, consider where you might reduce costs. Debt reduction always requires some sacrifice. Can the grocery bill be shaved by bargain shopping? What cheaper substitutions can be used in meal planning? Can vacations be cut? Can your living standard be reduced? Can some luxury items be enjoyed less often? Sometimes we just have to be ruthless with ourselves. Certain expenses can be moved from the "necessities" column to the "luxuries" column.

Once you have a plan worked out on paper, discuss it with your bank loan officer. He will be impressed when he sees that you mean business. He may be able to show you how to improve the plan. He may even suggest a debt consolidation loan. If so, be sure to consider the interest rate and the length of time over which the consolidated debt is to be repaid. It will usually mean smaller payments over a longer period of time. But do not be tempted to use the debt consolidation to borrow more money.

### Communicate!

Any debt-reduction program requires communication if it is to be successful. Visit or telephone each person to whom you owe money. If you think it would be helpful, show them your plan. At least talk to them. Remember, they want to know what you are doing. Keep them informed. The one thing no lender can tolerate is silence. Silence is quickly interpreted as indifference or even refusal to pay. Many a creditor has started a lawsuit to recover money simply because no one bothered to explain what was happening.

Should you consider bankruptcy? In some



lands, all people are entitled to the benefit of such provisions of the law, but it is not to be taken lightly. Debt is a commitment. Moral obligation is involved. Bankruptcy has a ripple effect that creates problems for others. It will remain a blot on your record.

There is nothing wrong with the old-fashioned concept of "pay as you go." Indeed, if at all possible, the wisest course is not to get into debt in the first place. Debt can be a deadly quicksand that consumes you. Rick and Lois allowed themselves to be swallowed up. They have changes to make, but step-by-step they can climb out of their debts.

If you were buried under a literal landslide, you would use whatever mobility you had to start digging yourself out. It may be slow, but it works! Remember, no matter how long it may take or how difficult it may be to do it, getting out of debt is well worth it.

# Wood That Helps to Keep People Awake!

By *Awake!* correspondent in Sweden

**T**HIS is the beginning of a story that begins in a forest. Tree trunks provide the raw materials for the paper. This is how it begins. But let us now take a picture tour and



## The Paper Machine

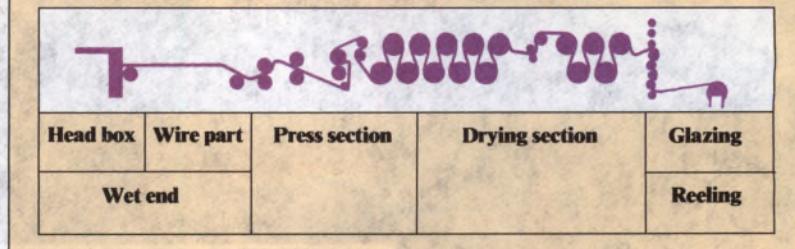
A. The pulp reaching the paper machine resembles thin gruel and is spread in a coating several yards wide on a wire-gauze conveyor belt. At this point the pulp is about 99 percent water. Most of this water will be removed during the journey through the machine, which is approximately 230 feet long.

B. The amount of water is reduced to about 60 percent in the

press section. The water is pressed out mechanically, often in conjunction with vacuum suction.

C. In the drying section, the paper layer is dried on steam-heated cylinders.

D. Polishing makes the paper smoother, and this is done by allowing the paper to pass between rollers. Only 5 percent of the water is left when the paper is finally wound into rolls.



see how a tree becomes a magazine like *Awake!*

The equipment in the first picture is a modern felling machine, a processor, in action. It not only cuts down the trees but also removes the branches. Further, it saws the logs into suitable lengths. The timber is transported by truck or rail to the paper mill. A fully loaded truck delivers 20 tons at a time. At the paper mill that *Awake!* visited for this report, one timber delivery arrives every 15 minutes throughout the day. A whole section can quickly be unloaded by





**The branch at Arboga,  
Sweden**

Each year, many trees must be cut down. However, in Sweden this is a very carefully controlled process. The authorities permit felling only if equivalent areas are replanted,

**Paper rolls being stacked**

giant mechanical claws, as seen in the last picture on page 25.

Many such trees are needed for just one issue of *Awake!* Since so much paper is used



each year, many trees must be cut down. However, in Sweden this is a very carefully controlled process. The authorities permit felling only if equivalent areas are replanted,

and in this way, Sweden's forests are continually replenished.

The diagram on page 25 shows the process within the paper machine. The pulp is fed at one end, and paper comes out at the other end. But how is the pulp produced?

First the timber is cut into suitable lengths, and the bark is removed in giant drums. Then the timber is automatically sorted according to thickness and length. Timber that meets certain standards is converted to groundwood pulp in the grinder. This pulp is one of four different kinds used in papermaking at this mill. The remaining timber is chopped into chips and is used to produce thermomechanical pulp and sulfite pulp. The fourth kind of pulp comes from recycled paper.

Groundwood pulp is produced by grinding, under pressure and between large grindstones, the timber with water. The result is a mechanically produced pulp.

Thermomechanical pulp is produced by refining wood chips under high pressure and heat so that the fibers are separated from one another. This gives longer and stronger fibers than the mechanical process.

Sulfite pulp is produced chemically. It is prepared in large vessels that decompose the chips by boiling them with magnesium bisulfite, as in a pressure cooker. This produces the strongest pulp of the first three types.

The fourth type, pulp from recycled paper, is produced after the used paper has been pulped and cleansed of old ink and glue.

Finally, on the winder the big rolls of paper are cut according to the customer's specifications and then packed. The completed rolls are sorted according to destination and then shipped by truck, rail, or boat to the customer.

The paper has now reached the printery at Arboga. The roll is fed into a machine that

cuts the paper into the appropriate size for Sweden's new full-color sheetfed press. This new press is capable of printing 15,000 impressions an hour.

Each issue is sent to subscribers in Sweden and abroad. In addition, bundles of copies for public distribution are sent to the hundreds of congregations of Jehovah's Witnesses throughout the country. Thousands of copies from these bundles are left by the Witnesses when they call at people's homes or meet them elsewhere.

Yes, that tree trunk in the forest has reached its final destination—the *Awake!* magazine. Notice, please, that *Awake!* includes articles that inform and awaken readers to the meaning of world events in the light of Bible prophecy. It thus assists readers to learn about man's Creator and His purpose for our day. Such knowledge will help you to understand the meaning of what is happening in our time and will also help you to build a solid hope for a better future.

#### CROSSWORD SOLUTIONS

S	I	S	T	R	U	M	C	A	P	T	I	V	E
	E	I		D		R	S						
H	R	U	B	Y	I	G	I	A	H	A			
O	A	L	A	S	P	S		B		L			
R	A	P	H	A	O		C	H	A	R	M		
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E		K		E			K			G			
D	A	V	I	D	A	N	D	G	O	L	I	A	T
V		R		I			D			T			
I	E	C	A	R	E	F	U	L	T		Y		
P	I	L	H	A		N	A	M	O	N	G		
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D	I	S	T	A	F	F	N	A	H	A	L	O	L

# WATCHING THE WORLD

## WORLD HEALTH REPORT

Twenty percent of the world's population—about a thousand million people—suffer from severe health problems, according to the Report on World Health issued by WHO (World Health Organization). The most serious are childhood diseases, respiratory infections, diarrheal diseases, sexually transmitted diseases (including AIDS), tuberculosis, schistosomiasis, and malaria. The greatest health problems are said to be in the nations of sub-Saharan Africa, where 160 million people are afflicted with AIDS, parasitic diseases, malaria, and other maladies; and in southern and eastern Asia, where 40 percent of the population, about 500 million people, suffer from disease and malnutrition. Many are caught in a downward spiral in which poverty brings on disease that in turn results in increased poverty and sickness. Annual health expenditures in the poorer countries average less than \$5 per person. According to Dr. Hiroshi Nakajima, director general of WHO, increasing this by only \$2 per person would allow for immunization and successful treatment with drugs for most of the diseases.

## POPE SUPPORTS GALILEO

"Pope John Paul II has acknowledged that the Roman Catholic Church was 'imprudent' to have condemned Galileo for asserting that the earth was not the center of the universe," reports *The Christian Century*. Galileo was condemned by the church in 1633 for advocating the Copernican view that the sun, rather than

the earth, is the center of the universe. Belatedly, in 1979, a commission was appointed by the pope to investigate the case. Its initial report, in 1984, said that Galileo had been wrongly condemned. Speaking in Pisa, the scientist's birthplace and site of his famous experiments on gravity, the pope acknowledged Galileo's work as "an essential stage in the methodology of research . . . and in the path toward understanding the world of nature."

## MAKING DECISIONS

When do you make your best decisions—when you are standing or when you are sitting? According to a study by the University of Southern California, "people under pressure make difficult decisions about 20% faster if they stand instead of sit," reports *American Health* magazine. The study involved a series of questions



flashed on a computer monitor, with the participants responding from a sitting and then a standing position. Standing brought the best results. Those older and more sedentary improved the most when making decisions while standing. This is not surprising, as the heart rate increases about ten beats a minute when you stand, stimulating the "brain areas that

control arousal." Standing and stretching regularly during the workday is recommended for sedentary office workers.

## AIDS VIA BLOOD SUPPLY

As many as 40 percent of Soviet AIDS victims have contracted the virus through contaminated blood, reports *The Toronto Star*. Calling the situation "extremely alarming," Valentin Pokrovsky, head of the Soviet Academy of Medical Sciences, admits: "We have an intolerably high percentage of cases of the AIDS virus being transferred via blood during surgery." In the southern cities of Elista and Volgograd, AIDS outbreaks have been traced to contaminated needles used in hospitals. At least 81 children have been infected with the virus there.

## NATURAL FARMING ENCOURAGED

"The National Academy of Sciences has found that farmers who apply little or no chemicals to crops can be as productive as those who use pesticides and synthetic fertilizers," reports *The New York Times*. "The study by the nation's pre-eminent body of scientists is perhaps the most important confirmation of the success of agricultural practices that use biological interactions instead of chemicals." Until recently, farmers had been taught to use generous amounts of chemical fertilizers and pesticides to produce the largest output of crops, and natural farming methods were considered inferior. But as insects and weeds developed resistance to the chemicals, farmers made greater

use of chemicals, thereby increasing the danger to human health. The study showed that by rotating crops and by using a diversified crop and livestock system, farmers were often able to increase their yields and reduce costs, as well as preserve the environment. However, the natural practices did take more work.

#### "ICE" THREAT

"Even as the U.S. struggles with crack cocaine," says *Time* magazine, "a more chilling drug has appeared: 'ice.'" Like crack, ice is not a new drug. It is a smokable version of crystallized methamphetamine, known since the 1960's as speed. Like crack, it is addictive and also brings on severe depression, paranoia, and convulsions. But while the high from crack lasts less than 30 minutes, that from ice lasts for eight hours or more. Already the top drug problem in Hawaii, ice is "making serious inroads across the U.S.," says *Time*.

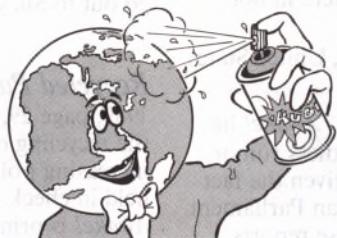
#### MICROWAVE-COOKING CONCERN

Foods placed in microwave ovens are bombarded with high-energy rays that convert the food's water molecules to steam, heating the food rapidly. Better safety standards and design have reduced the risk of radiation leakage. "Yet microwave ovens pose safety problems that conventional ovens do not," states an article in *The New York Times*. One question is whether the cooking is always thorough enough to kill the harmful organisms that may be found in foods, such as trichinae in pork and salmonellae in chicken. Part of the problem is that microwave ovens heat foods unevenly, with some parts undercooked while others are well done, and that the

air in the oven may be too cool to kill organisms on the surface of the food. Another question is whether it is safe to use plastics in such ovens, since the plasticizer used in some wraps can migrate to the food, especially if the plastic rests upon it. It is claimed that most of the problems are solvable if cooking guidelines are strictly followed.

#### NON-OZONE-DEPLETING AEROSOL

An inventor in Tasmania, Australia's island state, has produced an aerosol device that uses neither chlorofluorocarbons nor hydrocarbons, both of which are damaging to earth's ozone layer. His aerosol uses nitrogen instead, which makes up four fifths of the atmosphere. Besides availability, the costs involved in using nitrogen are low, and the gas returns



harmlessly to the atmosphere after use. Nitrogen had previously been ruled out as a propellant because injecting sufficient amounts of the gas into an aerosol can would have required expensive can strengthening. The inventor overcame this, reports the newspaper *The Australian*, by using a small gas cylinder connected to a specially designed valve inside the can. The design has only one moving part, will not burn or explode, and is said to comply with all world aerosol standards. It is expected to be on the market by early next year.

#### EARTHQUAKE SYNDROME

Earthquakes cause stress to both humans and animals. Last summer, when thousands of major and minor tremors shook Ito, Japan, many people began to complain of digestive disorders, diarrhea, and, in particular, insomnia. Doctors were "reluctant to prescribe a full dose of tranquilizers, for fear their patients might not awake should the series of tremors recur," explained *The Daily Yomiuri*. Ito animal hospitals reported that local pets also suffered from earthquake syndrome: dry coats, hair loss, itching, vomiting, loss of appetite, lack of vigor, and fever—all symptoms of stress.

#### GLOBAL WILDERNESS INVENTORY

How much of the world is still wilderness, relatively untouched by man? Roughly a third of the planet's land mass—about 18.56 million square miles—say environmental policy analyst J. Michael McCloskey and geographer Heather Spalding, who researched the matter for 18 months. Poring over aerial navigation charts, "they ignored regions showing roads, settlements, buildings, airports, railroads, pipelines, power lines, dams, reservoirs and oil wells," says *Science News*. They also "limited their tally to land tracts including at least 1 million acres." Heading the list, with total wilderness, is Antarctica. Then comes North America (37.5 percent); the Soviet Union (33.6 percent); Australasia, which includes the southwest Pacific islands (27.9 percent); Africa (27.5 percent); South America (20.8 percent); Asia (13.6 percent); and Europe (2.8 percent). Less than 20 percent of the world's wilderness areas are legally protected from exploitation.

## FROM OUR READERS

**Greenhouse Effect** The format and layout for the articles on the greenhouse effect (September 8, 1989) were done up so well that it made you want to keep on reading. The use of pictures and boxes gave you the feeling that you *did* have time to read it, in contrast with full pages of type. I found that I did not want to lay the magazine down until I finished it. As a result, I wanted to share its contents with others.

G. G., United States

The writing, art, and photography have improved—most dramatically. We were particularly impressed with the “Greenhouse” *Awake!*! We have read several poorly written articles on the same subject in magazines and newspapers that did not explain things in terms most people could understand. What a tool this issue will be for speaking to people here in hot southern California!

Mr. and Mrs. J. P. M., United States

**Horrifying Organ Source** *Awake!* has unfortunately repeated a groundless rumor, which is quite understandable given the fact that it appears as if the European Parliament had given its imprimatur to these reports. These rumors have done damage to the humanitarian cause of adoption.

T. L., U.S. Information Agency,  
United States

*The March 22, 1989, “Awake!” item entitled “Horrifying Organ Source” was based on a resolution published by the European Parliament, a credible organization. However, that organization now claims that it was the victim of misinformation. “Awake!” has since investigated matters and learned that while there were several well-publicized arrests in Guatemala for child trafficking back in 1987, there is no proof that children were being sold for organ transplants. Instead, the original reports state that babies were being obtained*

*and sold illegally for the purpose of adoption.*

—ED.

**Staying Friends** I am 11 years old and would like to thank you for the article “Young People Ask . . . Why Is It So Hard to Stay Friends?” (September 22, 1989) I had a best friend that just took me for granted. With the help from your publication, I decided to find a true friend.

B. S., Australia

**Down's Syndrome** Reading the experience about Suzy (August 8, 1989) so moved me emotionally that I wept throughout the whole story. I too appreciate that Jehovah has given us the grand hope of the resurrection, as I have lost my father in death. My heart and prayers go out to Suzy’s family.

B. E., United States

**Recycled Paper** Your issue of September 8, 1989, page 29, contained an interesting item on the recycling of paper, through which the ever-increasing pollution of our environment can be held in check. Yet, neither *The Watchtower* nor *Awake!* is printed on recycled paper. Whoever promotes certain standards but at the same time behaves in contradiction of them can only be designated a hypocrite.

F. S., Federal Republic of Germany

*Recycled paper of either suitable quality or sufficient quantity to suit our large-scale printing operation is presently unavailable. Since recycled paper is also up to 20 percent more expensive than paper made from virgin fiber, it will no doubt be some time before it is commonly used for production printing. Nevertheless, where possible, waste paper from our printeries is sold for recycling. And substantial quantities of recycled materials are also used in the production of covers for our hardbound publications.*—ED.



# The Deteriorating ENVIRONMENT

**'Unless something is done soon, we can expect widespread economic decline and social turmoil'**

**T**HAT was the message of Lester Brown, president of Worldwatch Institute, an environmental research group. His comments came in an annual "state-of-the-world" report.

Earth's environment, Brown said, continues to deteriorate. Unless the threats of ozone depletion, drought, deforestation, soil erosion, and population growth are brought under control, "economic decline may be inevitable." He noted that world food production has dropped 14 percent per person since 1984 and that grain stocks are at their lowest levels in 15 years.

Brown also stated: "Time is not on our side.

... We have to do it during the 1990's. Beyond that it will be too late. ... What will wake us up with a jolt is if we have another drought-related harvest. Then we will find ourselves with no grain to export, and the doubling or tripling of grain prices. The economic shockwave will make the oil shortages look like a picnic." He also observed: "It's already too late for some of Africa. There's no way to turn it around there. ... Latin America will probably be next."

Such trends harmonize with Bible prophecies that speak of famine, disease, war, and death, with man "ruining the earth" in our time. Jesus foretold that this would culminate in a "great tribulation such as has not occurred since the world's beginning." That will mean the end of this present system of things, clearing the way for a new world of God's making.  
—Revelation 6:1-8; 11:18; Matthew 24:21; 2 Peter 3: 10-13.

