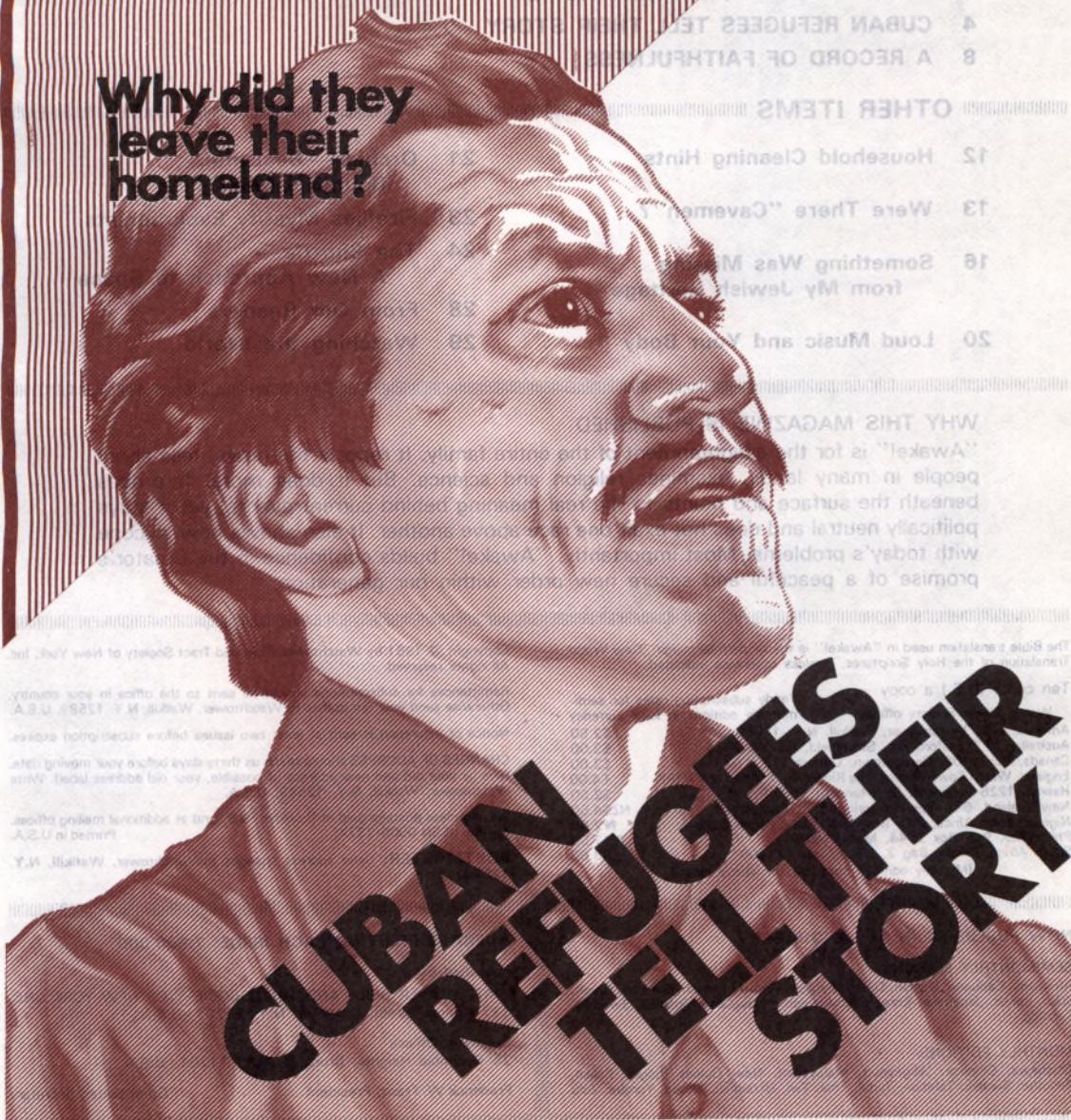


Awake!

JUNE 22, 1981

Why did they leave their homeland?



FEATURE ARTICLES

Among the thousands of refugees forced out of Cuba during 1980 were some who were very different. These were sincere Christians whose only "crime" was their worship of God. But why were they forced to leave? What conditions did they endure? What did they leave behind? These Cuban refugees tell their story of courage and faith.

- 3 CUBANS LOOK FOR A NEW HOME
- 4 CUBAN REFUGEES TELL THEIR STORY
- 8 A RECORD OF FAITHFULNESS

OTHER ITEMS

- | | |
|--|--|
| 12 Household Cleaning Hints | 21 Orchids—Beautiful, Bountiful Mimics |
| 13 Were There "Cavemen"? | 23 Fireflies Mystify Evolutionists |
| 16 Something Was Missing from My Jewish Heritage | 24 The Shuttle—
A New Approach to Space |
| 20 Loud Music and Your Body | 28 From Our Readers |
| | 29 Watching the World |

WHY THIS MAGAZINE IS PUBLISHED

"Awake!" is for the enlightenment of the entire family. It reports the news, tells about people in many lands, examines religion and science. But it does more. It probes beneath the surface and points to the real meaning behind current events, yet it stays politically neutral and does not exalt one race above another. It also shows how to cope with today's problems. Most importantly, "Awake!" builds confidence in the Creator's promise of a peaceful and secure new order within our generation.

The Bible translation used in "Awake!" is the modern-language "New World Translation of the Holy Scriptures," unless otherwise indicated.

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CUBANS LOOK FOR A NEW HOME

EARLY in 1980, a group of Cubans in a truck forced their way into the Peruvian Embassy in Havana. They were seeking asylum so that they could eventually leave the country. Soon afterward, the Cuban government announced that anyone else wanting to go to Peru would be free to leave.

Within two days, over 10,000 people jammed the embassy grounds in the hope of leaving Cuba. Within weeks, the matter had become international news, as tens of thousands more were permitted to leave. About 120,000 went to the United States alone.

The Cuban refugee problem is not new. For years, many hundreds of thousands have left for other lands. Among the countries that have permitted them entry are Bolivia, Colombia, Costa Rica, Ecuador, Peru, Spain, the United States and Venezuela. Other nations also have indicated that they will take such refugees.



Why Did They Leave?

Why did these refugees leave Cuba? The reasons varied greatly. Some thought that they could find a better way of life in another country. Others came into difficulty because of not being in agreement with the policies of the regime in power and fled the country to escape the problems that followed.

Also, in 1980 the Cuban government decided to take the opportunity to rid itself, on a large scale, of many whom they considered undesirable. For example, after the flow of refugees began, criminals were taken out of jails and forced into the refugee boats to get them out of the country. Others who were considered politically dangerous had

the same experience. Some who were known homosexuals were also forced to leave.

Another Type of Refugee

However, among the refugees who left Cuba in 1980 were about 3,000 who were forced out for a different reason. The newspaper *News-Times* of York, Nebraska, tells about it, saying: "Among the highly publicized groups of criminals and homosexuals who arrived in the United States in the Cuban boat-lift, is another, less publicized group whose only crime is that they continued to worship God in their own way despite the fact that their sect was outlawed five years ago."

The *News-Times* identified

that group as Jehovah's Witnesses. It added: "Jehovah's Witnesses have suffered before under dictatorships for refusing to bear arms and take part in the government in power, things their faith prevents them from doing. In Hitler's Germany, Witnesses went to the gas chambers along with Jews and other 'undesirables.'"

But what, exactly, were the circumstances that forced this

special group of men, women and children to leave Cuba? What conditions did they endure? What did they leave behind? In the next several pages we

will let the Cuban refugees themselves answer these questions as they tell their story.

CUBAN REFUGEES TELL THEIR STORY

TYPICAL of Jehovah's Witnesses who were forced to leave Cuba was José Tunidor. He relates the following:

"In December 1978, police came to my house, and I was taken away without any explanation. They put me in prison with another of Jehovah's Witnesses, Ernesto Alfonso. He, too, did not know why he had been put there.

"Later on, they took me back to my house to inspect it. They confiscated the literature explaining the Bible that I had. They also took my typewriter. Back at the prison, I learned that Ernesto had his typewriter and literature confiscated too. Why? We were accused of being antisocial simply because we believed the Bible and talked about its truths to others. We were accused of being dangerous, and the court sentenced us to three years in jail."

Tunidor was sent to a prison in Aguica, near Colón, in Matanzas province. There he worked in prison until he was transferred to the fields to cut sugarcane. Then he was expelled from the country. He was taken to La Cabaña, a famous prison in Havana, and then to a location near Port Mariel, where he was put on a ship headed for the United States.

Although many of Jehovah's Witnesses were forced out of the country while they were prisoners, others were collected from their homes and deported. They could not take any of their possessions with

them, and, at times, could not even say farewell to their relatives. Herminio Arroyo recounts:

"The police came to our house about three o'clock in the morning, when we were asleep in bed. They had extradition papers with them and told us to get dressed. We were taken to the immigration office immediately and stripped in a search for any valuables. At about 6 p.m. that same day, we and 300 others were put on a shrimp boat to start our trip to the United States."

Many others of Jehovah's Witnesses had similar experiences, being visited by authorities at dawn, or before, to force them out of the country. They had to leave with, literally, only the clothes on their backs. Even wedding rings, as well as other valuables, were taken from them.

It can be understood that a government would want to be rid of criminals and undesirable people. But why the urgency to put out of the country this sincere group of Christians? What is the background of this situation?

Persecution Begins

In 1962 the Cuban government cut off the importation of Bible literature by Jehovah's Witnesses. The State decreed

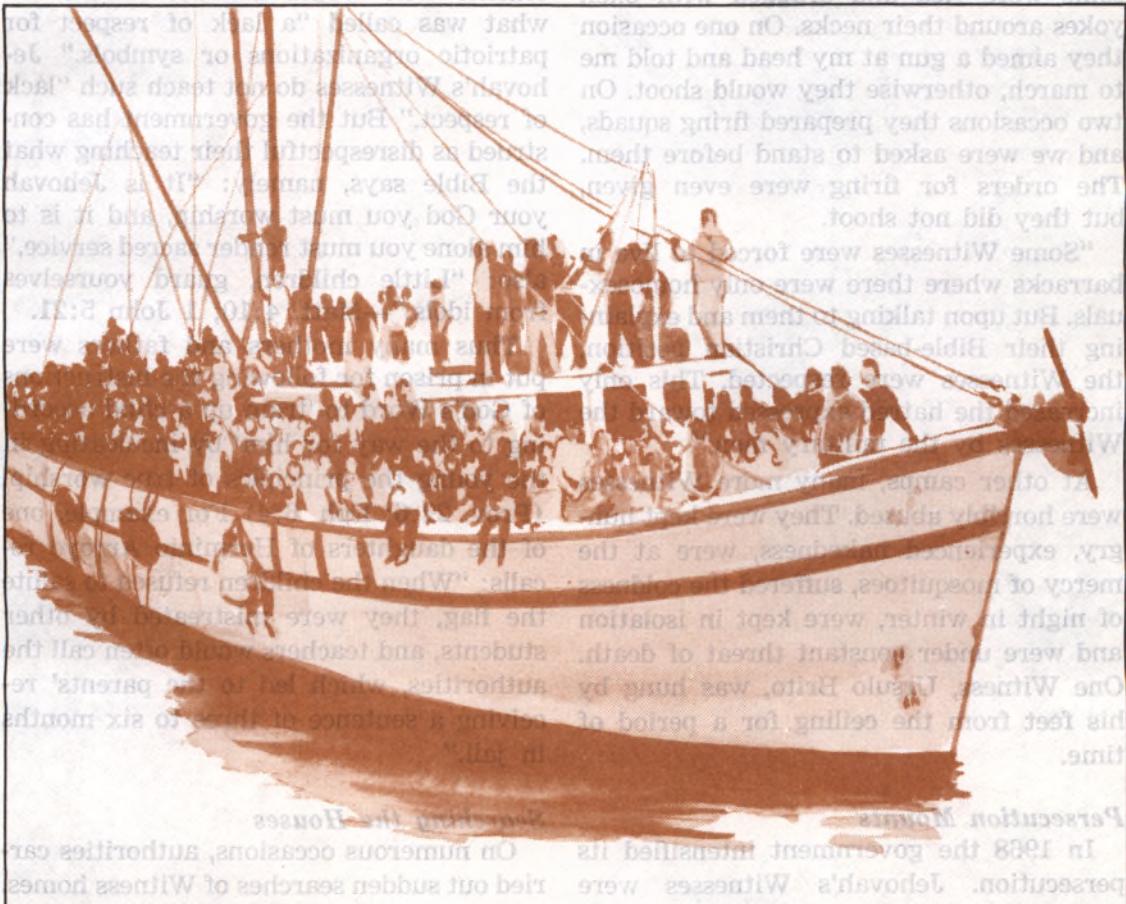
"We were accused of being antisocial simply because we believed the Bible and talked about its truths to others"

that such publications were "harmful, reactionary and pro-imperialist." Of course, those who are familiar with the work of Jehovah's Witnesses know that this could not be true. Jehovah's Witnesses in Cuba are the same class of decent and honest people that have a good record of behavior worldwide.

However, the persecution continued to grow. Luis Alcantur, one of the refugees now in the United States, recalls: "In

November 1965, a massive attack was hurled against Jehovah's Witnesses in Cuba, especially, at that time, against the young ones of military age. Hundreds of these young Christians ended up in various concentration camps, the majority of them in the province of Camagüey."

Regarding the beginning of those years in prison, Alcantur says: "We were deprived of food for 12 consecutive days. They gave us water only once a day. We



They had to leave with, literally, only the clothes on their backs. Even wedding rings, as well as other valuables, were taken

were kept standing, at the mercy of the sun, rain, mosquitoes and gnats. On the 11th day they plunged us into a cistern full of water."

At that time, Alcantur was 19 years old. He had been taken prisoner for refusing to participate in military service due to his being a conscientious objector.

Another refugee, Alberto Sanchez, says of his treatment: "Because we would not compromise our faith, we were beaten, cold water was thrown on us at night, and some were tied and dragged with oxen yokes around their necks. On one occasion they aimed a gun at my head and told me to march, otherwise they would shoot. On two occasions they prepared firing squads, and we were asked to stand before them. The orders for firing were even given, but they did not shoot.

"Some Witnesses were forced to live in barracks where there were only homosexuals. But upon talking to them and explaining their Bible-based Christian position, the Witnesses were respected. This only increased the hatred expressed toward the Witnesses by the military men."

At other camps, many more Witnesses were horribly abused. They were kept hungry, experienced nakedness, were at the mercy of mosquitoes, suffered the coldness of night in winter, were kept in isolation and were under constant threat of death. One Witness, Ursulo Brito, was hung by his feet from the ceiling for a period of time.

Persecution Mounts

In 1968 the government intensified its persecution. Jehovah's Witnesses were constantly attacked in the press, over

the radio and on television, being misrepresented as assassins, subversives and fanatics. Many other vile and untrue accusations were made. As a result, conditions became very strained even at places of employment. Many Witnesses lost good jobs and had nowhere they could appeal. They were forced to take jobs that nobody else wanted, and at very low wages.

Adding to the systematic attack, the government passed new laws imposing prison sentences on any father, mother or teacher who would instruct children in what was called "a lack of respect for patriotic organizations or symbols." Jehovah's Witnesses do not teach such "lack of respect." But the government has construed as disrespectful their teaching what the Bible says, namely: "It is Jehovah your God you must worship, and it is to him alone you must render sacred service," also: "Little children, guard yourselves from idols."—Matt. 4:10; 1 John 5:21.

Thus many mothers and fathers were put in prison for following the instructions of God's Word to 'train up a child according to the way for him' by inculcating in the young the principles of true worship. (Prov. 22:6; Eph. 6:4) For example, one of the daughters of Herminio Arroyo recalls: "When the children refused to salute the flag, they were mistreated by other students, and teachers would often call the authorities, which led to the parents' receiving a sentence of three to six months in jail."

Searching the Houses

On numerous occasions, authorities carried out sudden searches of Witness homes. They were looking for something to in-

Many mothers and fathers were put in prison for following the instructions of God's Word to 'train up a child according to the way for him'

criminate the Witnesses. For example, Luis Alcantur says of one of these searches:

"On March 30, 1977, security agents of the State came to my house at 5 p.m. At that time they had a method of entering and searching whereby many of them would come into the house at once. Then one of them would place objects such as weapons or drugs in some place. Another agent would pretend to find them. In this way they would accuse us falsely. "The searching of my house on that occasion ended at about 11 p.m. They took as many things as they pleased, including items of a personal nature, such as an electric shaver, clothing and money. They also took my typewriter and Bible literature. I was accused of possessing a counter-revolutionary document, but it never appeared during my trial."

Attacked Despite Constitution

Thus it is clear that over the past two decades the government of Cuba has tried to crush Jehovah's Witnesses. Refugee Cristo Leon called it "a systematic attack by the Cuban government against our worship." Jehovah's Witnesses have been banned, forbidden to import or print literature, their branch office has been shut down, their places of meeting for worship have been closed, their public ministry has been outlawed, and thousands of prison sentences have been handed out.

This 20-year-long assault clearly violates the constitution of the Republic of Cuba. That constitution "guarantees" freedom of religion. Article 54 clearly stipulates: "The socialist state, which bases its activity and educates the people in the

scientific materialist concept of the universe, recognizes and guarantees freedom of conscience and the right of everyone to profess any religion and to practice, within the framework of respect for the law, the belief of his preference."

Those who are familiar with Jehovah's Witnesses know that such respect for law is part of their religious beliefs. Indeed, they are known worldwide for their respect for law. Hence, they should certainly have been allowed to 'profess their religion and to practice it,' as they are allowed to do in most other countries.

Against Other Religions?

The actions of the Cuban government against Jehovah's Witnesses raise this question: Does the government also persecute other religions?

In Cuba there are many Catholic churches. Their doors are open to the public. The same is true of Protestant churches. But the meeting places of Jehovah's Witnesses are closed by governmental decree. Why the double standard? True, for a time some of the other religious groups received government pressure. But they soon compromised and allowed themselves to be used politically. But Jehovah's Witnesses cannot do that, as it would violate their faith. Hence, they have had to bear the brunt of persecution during all these years.

Yet a question still remains unanswered. Why do Jehovah's Witnesses follow a religious way of life that causes them so much suffering in a country such as Cuba? And how is it possible for them to endure so much hardship for so long a period of time, all the while sticking faithfully to their beliefs?

A RECORD OF **FAITHFULNESS**

CUBA is not the only country where Jehovah's Witnesses are persecuted. They have been banned in the Soviet Union, China and other Communist lands. They have also been persecuted in Argentina in recent years. In Malawi, several horrible waves of persecution raged against them for a number of years. During World War II, efforts were made to exterminate them in Nazi Germany, and many Witnesses died in concentration camps.

However, the persecution against Jehovah's Witnesses is not something recent. The accusations of sedition or of being antisocial are not new either. Other faithful servants of God, the Bible informs us, suffered the same persecution and were also accused falsely.—John 19:12; Acts 16:19-21.

Neutrality

What some nations have not been able to understand is that Jehovah's Witnesses are *neutral* in political affairs. They never interfere with or harm the political system of the country where they live. Some nations, misunderstanding this, think that the Witnesses are subversive because they do not go to war or because they do not perform what the Witnesses regard as acts of worship toward patriotic symbols.

But it is impossible for them to be subversive. Such a thing would be contrary to their high Bible principles. In fact, if those who have doubts about this would investigate carefully and impartially, they would find that Jehovah's Witnesses have never attempted a revolt against any government. They have never plotted against one, or incited others to do so. Instead, they would strongly censure any of their members who would break the law of the land where they live regarding moral behavior, the paying of taxes and other civic responsibilities. That

is why they are found to be among the most law-abiding citizens of every nation.

Jehovah's Witnesses do not believe that wars will solve the problems of mankind. They do not believe this because the Bible, God's Word, says that wars are not going to solve earth's problems. Instead, God's promise is for a time when "nation will not lift up sword against nation, neither will they learn war anymore." (Isa. 2:4) Even now, Jehovah's Witnesses obey the underlying principle of that prophecy. They live in agreement with the apostle Paul's counsel at Romans 12:18: "As far as it depends upon you, be peaceable with all men."

This is nothing new. For example, the book *History of Christianity*, by Edward Gibbon, says of the first-century Christians: "They refused to take any active part in the civil administration or the military defence of the empire. . . . it was impossible that the Christians, without renouncing a more sacred duty, could assume the character of soldiers, or magistrates, or of princes."

However, unlike many other lands, Cuba has no arrangement for exempting those who conscientiously object to military service. Therefore, young Christians in Cuba have suffered much for maintaining faithfulness to the principles of God's Word. The many thousands of Jehovah's Witnesses still in Cuba continue to suffer for their faithfulness to God's laws.

Yet governments such as Cuba

Jehovah's Witnesses have never plotted against any government, or incited others to do so. Instead, they would strongly censure any of their members who would break the law of the land

should ask themselves, What would really happen if all people faithfully abstained from war, as do Jehovah's Witnesses? The obvious answer is that war would forever disappear, as it already has disappeared among millions of Jehovah's Witnesses on an international scale, and as it will disappear completely from the entire earth in God's new order of righteousness.—John 13:34, 35; 2 Pet. 3:13.

Winning Respect in Prison

The imprisonment of Jehovah's Witnesses has called on them to show their integrity to God. They have done this, and at the same time they have shared their hope with other prisoners.

For example, Samuel Izquierdo tells what happened when he was imprisoned for not participating in military service: "I told them that my conscience did not allow me to submit to their political dictates and that I could not accept military training. The official handling my case angrily shouted orders that I should be locked in a cell.

"The cell was constructed of wood and measured 1.2 meters square by 1.5 meters in height [4 feet square by 5 feet in height]. This made it impossible for me to be able to stand up straight. Also, they had put human excrement all over the surface of the cell floor, and they locked me up there, naked and barefooted. The stench was horrible."

But this Witness tells how he was able to maintain his integrity under these conditions: "I was able to keep with me all the time a small Bible, the Greek Scripture portion. Although they found it when they searched me, they never paid any attention to the *little book*, as they called

it. From the very first day I was among the other prisoners I started to tell them about the hope of God's new order that the Bible holds out. More than 10 prisoners gathered with me. I would read the Bible to them and give them, as they said, spiritual comfort. This helped to keep me spiritually strong. And the prisoners respected me as a religious minister. At that prison, the soldiers finally considered me inoffensive and stopped punishing me."

Meeting Together

The Bible commands that Christians 'not forsake the gathering of themselves together.' (Heb. 10:24, 25) While Cuban law forbids Jehovah's Witnesses to meet openly, it cannot stop them from doing so in other ways. Even in the prisons they find ways to meet together.

Eduardo Aboud states: "There was much joy in being able to gather together secretly in some place in the camp to have Bible discussions. Each day one of us contributed a text of Scripture to comment on. We would also tell one another of our experiences and of the various tests of our faith that we all had to confront and overcome. Then we studied how to endure the difficulties that were likely to emerge the next day.

"Too, all of us had the opportunity to talk about God's purpose to other prisoners who were not Witnesses. There was a Witness in each one of the barracks in the camp; so each took his barracks as his personal 'territory' in which to preach. In this way, I was able to conduct two weekly Scripture studies using the things I had learned previously, since in that prison we lacked any written material, including the Bible. Nevertheless, each month we showed

"All of us had the opportunity to talk about God's purpose to other prisoners"

excellent activity in speaking Bible truths to others."

Outside the prisons, the formal meetings of Jehovah's Witnesses were banned. Kingdom Halls were even attacked by groups or mobs. Men, women and children were beaten. It was useless to have interviews with provincial authorities or representatives of the Ministry of the Interior. The response was always the same: "We follow orders from Havana."

Public Activity Forbidden

In addition to closing the Kingdom Halls, an effort was made to prevent Jehovah's Witnesses from performing their public ministry in the homes of others. Thousands of Witnesses were arrested every week when they went out in the public ministry. They were fined or spent time in jail.

Yet Jehovah's Witnesses in Cuba today obey God's command to tell others the good things they have learned from his Word. (Matt. 24:14; 28:19, 20; Acts 20:20) They perform this ministry in a variety of ways. And they answer today just as did the first-century Christians who were ordered "nowhere to make any utterance or to teach upon the basis of the name of Jesus." Those early Christians declared, when before the authorities: "Whether it is righteous in the sight of God to listen to you rather than to God, judge for yourselves. But as for us, we cannot stop speaking about the things we have seen and heard." They also stated: "We must obey God as ruler rather than men."—Acts 4:18-20; 5:29.

By the faithful course of action on the part of Jehovah's Witnesses, the name and

purpose of Jehovah God has become widely known throughout Cuba, as the refugees report. This has been of great benefit to many persons who want to hear the truth. In the prisons a great witness to God's purpose has been given.

Note what refugee Luis Garcia says: "In the prisons of Cuba neither the work nor the name of Jehovah's Witnesses was formerly known until those Witnesses who were sent to the prisons began to arrive. In time, more and more Witnesses had to go to prison. As a result, the witnessing was amazing both outside and inside the prisons. To say the words 'Jehovah's Witnesses' in any prison in Cuba was taken to mean courage, bravery, firmness, faithfulness and integrity in every respect."

Many prisoners have benefited by the message, and behavior, of the Witnesses. A great number of such prisoners have learned about God and his purpose and have changed their lives so as to become servants of God. An example is a man who was in prison for robbery before he learned about the Bible. He wrote this to the one who had taught him in prison:

"My dear brother: My deepest wishes are that when you read these lines you will be well physically and spiritually in union with your dear family. I can tell you that I feel all right. Spiritually I feel strong and optimistic, since every day my faith grows more and more. As the days go by, I understand things better. I see with great pleasure that God's holy spirit operates in me. Despite being alone in this environment, I have been able to put the name of the Almighty God in the highest position, since I am trying to apply all his teachings in my life."

"To say the words 'Jehovah's Witnesses' in any prison in Cuba was taken to mean courage, bravery, firmness, faithfulness and integrity"

"In the short time that we were together, I learned to get attached to you very much despite my age and despite the fact that I was very much part of this world. I have never been treated the way I was treated by you, because since all my associations previously had been with worldly people, sooner or later they would show their true nature. However, in you I always found love, sincerity and kindness.

"You have been for me a spiritual father, and you have helped me a great deal. Another thing that is helping me and that will be of use to me in the future is your example as a servant of God. Not only did you teach me what is written in the Bible as doctrine, but in your dealings you taught me by your example the right way to follow.

"I am not spiritually mature yet. I still lack much knowledge. But even with that disadvantage I am ready to defend the truth, because the truth cannot be hidden. Sometimes I say less than what I would like to express, but even with few words I can defend the truth.

"While I felt sad after you were released, I became very active in talking truth to others. That filled the emptiness.

"I am very glad to know God's ways and to know his purpose. I have made my dedication to serve him every moment and in any place where I may be found, even at the possible cost of my life. (Luke 9:62; Acts 20:24) Although distant from you, I have not forgotten your teachings. (Signed) Your brother and son in the faith."

Certainly, any government that sincerely observes God's servants can see the many benefits that they bring. Those who

become Jehovah's Witnesses become the best citizens. They take better care of their families, their children and their own and other people's properties. Jehovah's Witnesses put a high priority on honesty and morality.

What They Would Like

Of course, in every country where the Witnesses live, they would like to find understanding on the part of the government. They would like to carry out their religious worship in a free and happy way. And in most countries, they can do this.

However, they do not have this freedom in Cuba. Yet this desire was expressed to the Castro government in an appeal sent on December 16, 1978. At the end of the document, it was stated: "We pray for you and for the other officials of the Revolutionary Government so that you may reasonably understand our position, and if it is the will of God and his resolution, to be able to receive an urgent answer. In the Bible we are exhorted to do this in 1 Timothy 2:1, 2, which says: 'I therefore exhort, first of all, that supplications, prayers, intercessions, offerings of thanks, be made concerning all sorts of men, concerning kings and all those who are in high station; in order that we may go on leading a calm and quiet life with full godly devotion and seriousness.'

However, even if such a petition continues to go unfulfilled, Jehovah's Witnesses in Cuba will continue to serve Almighty God faithfully, no matter who opposes. "If God is for us, who will be against us?" says the Bible. (Rom. 8:31) They trust that Jehovah will resolve their situation in his due time and way.

household cleaning hints



THE following are a number of suggestions that have been helpful to many home-makers. Of course, circumstances differ in each home, so that what may be a time-saver to one may not help another. However, perhaps you can benefit from these practical suggestions.

- **CLEANING APRON**—Buy or make an apron with large pockets (or use a clothespin apron) to carry some of your rags, sponges, etc., or to use for stray items you pick up as you clean.
- **PAINTBRUSH "DUSTER"**—A small (1- to 2-inch [2- to 5-cm]) soft paintbrush can be used for dusting delicate items and hard-to-reach places (knickknacks, lampshades, picture frames, even louvered doors).
- **WAX WINDOWSILLS AND SASH**—They will be easier to dust and keep clean if, after you wash them, you coat them with a hard-finish wax.
- **EASIER OVEN CLEANING**—Before it becomes dirty, line the bottom with aluminum foil (also line the trays under the gas burners) and coat the interior surface with a solution of 2 tablespoons of baking soda in 1 cup of warm water. Though you may have pale-gray streaks on your oven walls, the muck will come off easier when cleaning. Mix a little ammonia in a pan of water. Set this in the oven overnight for easier cleaning the next day.
- **PROTECT FLOOR WHEN MOVING HEAVY FURNITURE**—Slip an old sock or mitten over each of the legs (you may have to use string or a rubber band to hold them up) so that the legs will not damage the floor and the piece will be easier to move.
- **WASHING VINYL OR FORMICA**—Simply use a mild hand soap and warm water. Do not make the solution too sudsy. Dry with a soft towel or cloth. Often the leftover pieces from bars of soap can be saved and used in this manner.
- **ENERGY-SAVER**—Alternate hard tasks with easy ones. Start with something strenuous, such as mopping and waxing the kitchen floor, and then do an easier job, such as sorting dirty clothes or mending. If you have been on your feet ironing, try to make the next job one you can do while sitting down.
- **BUCKET "TOOLBOX"**—If you carry all your rags, cleansers, brushes, waxes and polishes, window sprays, etc., in a small bucket, it will save you hundreds of extra steps.
- **VENETIAN-BLIND "GLOVES"**—To wash venetian blinds at the window, wear a cotton glove or an old sock dipped in a pail of thick suds. Squeeze out the excess moisture.
- **EFFICIENT DUSTING**—Use a soft, damp cloth folded into a pad so that no loose corners will catch on things or leave loose threads on them. Start with the highest items and work down. Dust after you have made the beds but before you clean with water and cleanser. Otherwise the dust may become light mud.
- **SCORCHED POTS AND PANS**—Soak these overnight in bleach, diluted about 4 to 1. They may require several days to come clean. When food sticks, making the pans very messy, boil a little water in the pan and squirt in some dishwashing liquid before you remove the pan from the stove.
- **"DUSTLESS" SWEEPING**—To keep dust from flying when you sweep, dampen the broom bristles and the inside of the dustpan. Also, controlled strokes will keep the flying dust at a minimum.
- **GREASE SPOT ON RUG**—Rub cornmeal into the spot and vacuum it the next day.
- **BATHTUB "MOP"**—To avoid bending over to remove the dirty ring from the bathtub, go to the toy department and buy yourself a child's toy wet mop. It will be the perfect size to tackle that "ring" and yet you will not have to bend over and scrub.
- **SHAKING OUT A DUST MOP**—This unpleasant task can be made simpler by placing the dirty end of the dust mop (while still attached to the handle) in a large paper sack. Close the paper sack around the handle of the mop —holding it firmly shut—and then shake it. If you shake it with the handle pointing up, the dirt will settle to the bottom of the sack and can then be discarded easily.

were there "cavemen"?

So great has been the influence of books, magazines, museum displays and even comic strips that people usually think of "ape-men" and "missing links" whenever anyone mentions "cavemen." Do you? These terms have almost become synonyms for some creature of the past in an "evolutionary chain"—"primitive man"—on the way from ancient primate to man as he is today. Is this "chain" real? Were there "cavemen" in the evolutionary sense? Has modern science proved these ideas to be true?

The average person assumes it has all been worked out by science, that we do have a proved unbroken chain of development of man, so that a person imagines apelike men of the ancient past living in caves, and even being contemporary with dinosaurs. Why? Well, due to pictures they have seen that have led them to think scientists have found whole creatures, just as illustrated—hairy, stooped over and all!

Examination of the evidence, however, shows there is a difference between what scientists really *know* and what they think *might* have been. For example, in



a famous museum of natural history is found a display of primates supposedly leading to man and showing also a "family tree of primates." But it has an important explanation that says: "In the absence of some fossils of both known age and known affinities, some branches and forks are only reasonable guesses." Guesses are not facts. The connections and ages are *not* proved.

It is true that scientists have found caves with heaps of ashes from fires, along with traces of food and other signs of human habitation. But that evidence does not tell us that *all* ancient men lived in caves, or that any who did, really form a link in a chain back to some type of "primitive man." There are people today who are cave dwellers, such as the Tasaday of Mindanao in the Philippines. While some might consider the Tasaday to be

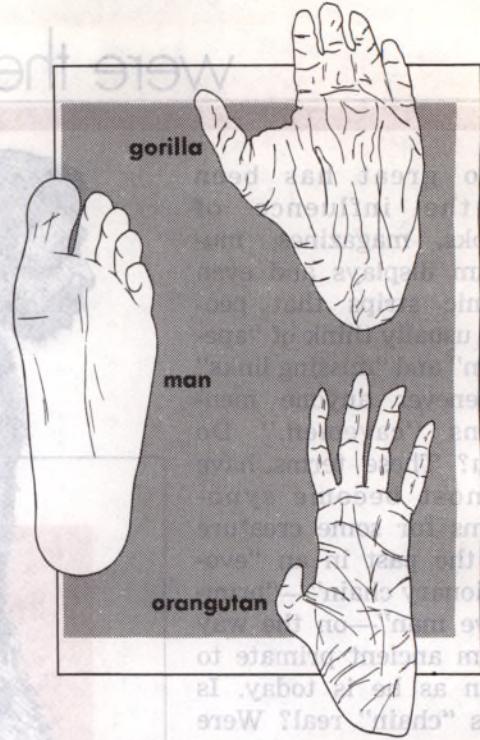
primitive due to a simple life-style, they are not hairy, lumbering, apelike creatures at all.

But have not scientists found skulls and bones of "ape-men," proving that such creatures lived here at one time? First of

all, it must be said that this type of fossil evidence is not plentiful. A few bones do not make a chain. Second, it is the way men interpret or explain what they find that poses problems. Interpreting scanty evidence is tricky. "As always, the fossil evidence is open to several interpretations," said one evolutionist. Another admitted about fossils: "The study of human evolution is a game, rather than a science in the usual sense." On ages of these fossils, still another said: "Anyone who feels that we already have the problem solved is surely deluding himself." Scientists disagree among themselves about what they have found. They make reconstructions of what they discover, interpret it; then later they reinterpret the evidence and change their ideas. To illustrate:

JAVA MAN was found in the early 1890's, but it was not a complete skeleton. The *Encyclopedia Americana* says it consisted of "no more than a skull cap and a thigh bone." The rest was a *guess*, and yet pictures appear of a hairy, apelike, stooped form. Do you think it possible to tell how much hair a creature had and what its skin color was from just a few bones? The discoverer claimed he had found an "ape-man," but scientists now say it was an early man. Interpretation changed!

PILTDOWN MAN for more than 40 years was exhibited as one evidence of the "evolutionary chain." As recently as 1956 it was described in a dictionary as "an extinct species of man." But in later editions the same dictionary called it "deliberately faked" and "an elaborate fraud." Interpretations changed again. Why? During the years in between proof was found that it was a hoax, deliberately prepared to look like an ape-man fossil. While the skull fragment was human, the jaw portion was from another creature, possibly an orangutan. Somebody tried to "invent" an



ape-man! Why were some scientists so easily deceived by fake evidence? Desperate, perhaps, grabbing at straws?

NEANDERTHAL MAN is also one of the better-known parts of the so-called evolutionary chain. When the first skull portion was found one scientist called it the skullcap of an idiot. Gradually interpretations changed as more bones were discovered. From early reconstructions that showed Neanderthals to be stooped and apelike, with long arms dangling down in front, we now have books that say that "Neanderthal probably did not look very different from some people of today." One encyclopedia now says that they were "completely human, fully erect." What a change! Comparing the illustrations in various books will show the adjustments in the claimed appearance of Neanderthal man. And rather than his being an idiot, it is now admitted that

Neanderthal man had a larger brain than most modern men!

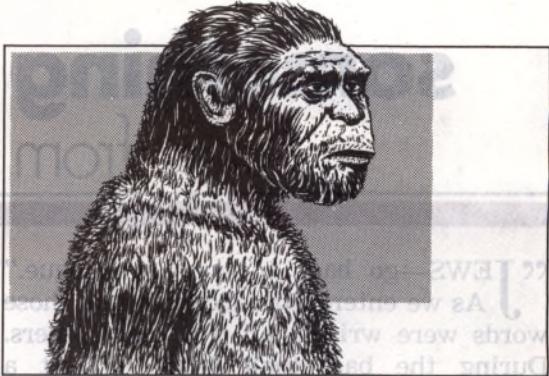
One reason why some scientists thought of Neanderthal as squat and bent is most interesting. An early skeleton found had bowed legs and a bent form. Of course, since they were *looking* for apelike creatures to fit their theory, how easy it was to make a mistake! Later, upon further examination, it was shown that the skeleton was deformed due to arthritis!

Nor is that all. In their efforts to make their finds look like a link between ape and man, when Neanderthal's foot bones were first reconstructed by evolutionists, "they were made to look like an ape's," says one book. But the same book admits that the feet actually "look and functioned very [much] like those of modern man." Look at the picture (opposite page) of feet. Do you think they look enough alike to conclude mistakenly that they are the same?

AUSTRALOPITHECINES are available for study, since many of their bones have been found. Are we more sure about them as ancestors of man? Textbooks say: "What they look like is guesswork." "There are still many gaps and holes in our knowledge of our ancestors, and some of the things we think we know about them are based on nothing more than careful guesses." Yet textbooks make it appear that they are links leading up to man.

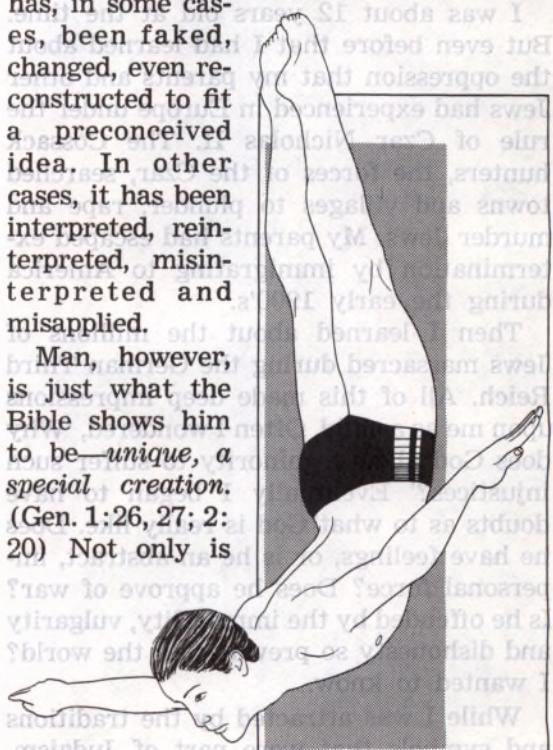
"**H**OMO ERECTUS" is a case that shows a person has to be careful not to accept all he sees in illustrations of missing links. One textbook asks: "Were they hairy?" It answers: "Probably not—at least no more so than many people living now." But on an earlier page the same book shows one as a hairy monster like the above illustration. Is that honest?

The facts are clear that there is *not* the claimed evidence of a chain linking man to primates. There were *not* "cave-



men" in *that* sense. Not only are links missing—the chain itself does not really exist. What has been presented as evidence has, in some cases, been faked, changed, even reconstructed to fit a preconceived idea. In other cases, it has been interpreted, reinterpreted, misinterpreted and misapplied.

Man, however, is just what the Bible shows him to be—*unique, a special creation*. (Gen. 1:26, 27; 2:20) Not only is



his brain far advanced in comparison with brains of animals, but so is his body. Even some evolutionists say admiringly: "The most arresting thing about the human body is that it is unique. There is nothing like it in the world."

something was missing from my Jewish heritage

"**J**EWS—go back to your synagogue."

As we entered the locker room, those words were written all over our lockers. During the basketball game against a "Christian" team, we were repeatedly pushed, shoved and tripped. All we wanted to do was play ball. But our Jewish team could not escape religious bigotry.

I was about 12 years old at the time. But even before that I had learned about the oppression that my parents and other Jews had experienced in Europe under the rule of Czar Nicholas II. The Cossack hunters, the forces of the Czar, searched towns and villages to plunder, rape and murder Jews. My parents had escaped extermination by immigrating to America during the early 1900's.

Then I learned about the millions of Jews massacred during the German Third Reich. All of this made deep impressions upon me as a child. Often I wondered, 'Why does God allow a minority to suffer such injustices?' Eventually I began to have doubts as to what God is really like. Does he have feelings, or is he an abstract, impersonal force? Does he approve of war? Is he offended by the immorality, vulgarity and dishonesty so prevalent in the world? I wanted to know.

While I was attracted by the traditions and symbols that were part of Judaism, these did not answer my questions. There seemed to be a void in my faith. Something was missing from my Jewish heritage.

In 1956 I graduated from Boston University. Rather than having attained any solidarity in my convictions, my uncer-

tainty about what is truthful regarding life and its purpose had been increased by such courses as cultural anthropology (the study of evolution).

By this time I had found a wife who would be faithful to me and support my secular endeavors. Her orthodox Jewish training revived in me the desire to go to the synagogue. However, as a result of something that happened during the high holiday services of Rosh Hashanah, we both stopped going.

We had entered the synagogue, but since we could not afford to purchase tickets to be seated, we decided to stand and listen to the services. We had not been there more than a few minutes when an attendant came up and told us that we would have to purchase tickets or we would have to leave.

"Well, if that's our choice, then we'll just leave," I replied. And that's what we did. How empty and disappointed we felt to realize that discrimination existed within the professed temple of God! Nevertheless, because we took pride in our Jewish heritage, we continued to cling to the basic tenets of Judaism. But there was still something missing—the questions that inwardly disturbed me were as yet unanswered.

A Turning Point

Our firstborn was a son, a special blessing to the typical Jewish family. What a shock when an accident threatened his life! Anxiety and mental anguish prevailed during the hours that we awaited what was expected to be an adverse re-

port on his condition. From my lips came a fervent prayer to an unknown God—if our son would live, I would know that God existed and was concerned with my plea. Our son recovered!

The very next morning one of Jehovah's Witnesses called at my place of business. Shortly thereafter my wife and I began studying with him in the Hebrew Scriptures according to the Masoretic text.

I recall vividly an incident that took place one evening during our Bible discussion with the Witness. He pointed out to us that man was a direct creation of God. (Gen. 2:7) "But man is the end result in a chain of evolutionary events," I contended, "and there is ample evidence available to prove this, including the uncovered forms of primitive man." Scanning the pages of my college textbook *Cultural Anthropology*, by Melville Herskovits, I found a series of photographs on page 15 illustrating the reconstruction of a few bones that were unearthed. "Is this not convincing evidence that 'Pithecanthropus erectus' is one of the missing links to modern man?" I insisted.

But later, when I reviewed the material, I noticed that the preceding page referring to that reconstructed figure stated: "No

branch of Anthropology requires more exercise of the scientific imagination." I was dumbfounded. I read it several times. Evidence? Not at all! *Imagination! Theories of men!*

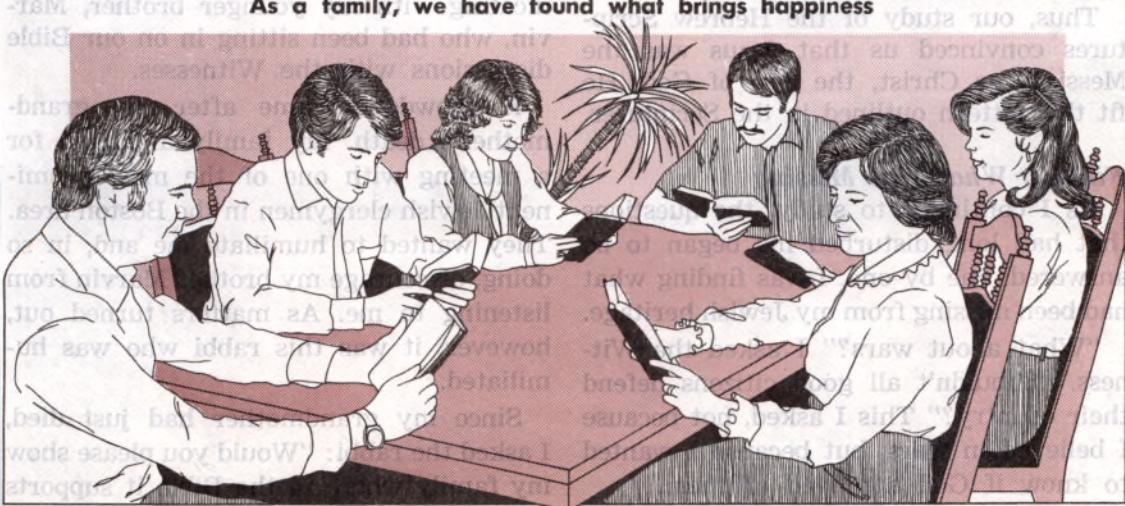
Soon efforts at defending my beliefs, even with the use of college textbooks, gave way to the convincing arguments presented from the Bible and Bible literature that we studied. In particular was I convinced by the booklet *Evolution versus The New World*. What impressed me was how the arguments in support of creation and of a Supreme Creator consistently harmonized with true science.

Accepting Jesus

The name "Jesus" had never been used in our household as I was growing up, except in a derogatory manner. This was also true of my wife's family. Why, on one occasion she had her mouth washed out with soap merely for mentioning the name "Jesus"!

"The Messiah has not come yet," I was told by my religious instructors. "God does not have a son," my Jewish associates asserted. "Jesus was an illegitimate child," was the common viewpoint among my relatives.

As a family, we have found what brings happiness



So when we first discussed the prophecy about the Messiah at Daniel 9:24-27, I objected: "How could this pertain to Jesus Christ? The Messiah is yet to come, and this one called Jesus has already come and gone."

But as we studied that prophecy and others, we began to accumulate revealing facts. Why, the prophecy in Daniel pinpointed the year of the Messiah's arrival, 29 C.E.! Details identifying him were carefully outlined in the 53rd chapter of Isaiah. And the prophecy at Genesis 49:10 even specified what tribe he would come from. "The Messiah has to have come already," I concluded, "otherwise, since the genealogical records are gone, he could not even be identified if he were to come now!"

That God truly had a son was a startling revelation to us, but became undeniably evident as we read from our copy of the Hebrew writings at Proverbs 30:4: "Who hath established all the ends of the earth? What is his name, and what is his son's name, if thou knowest?" (*The Holy Scriptures*, Jewish Publication Society of America) We learned that his birth from a maiden or young woman was legitimate, according to God's will, as prophesied in Isaiah 7:14 and 9:6, 7.

Thus, our study of the Hebrew Scriptures convinced us that Jesus was the Messiah, or Christ, the Son of God. He fit the pattern outlined in the Scriptures.

Finding What Was Missing

As I continued to study, the questions that had long disturbed me began to be answered, one by one. I was finding what had been missing from my Jewish heritage.

"What about wars?" I asked the Witness. "Shouldn't all good citizens defend their country?" This I asked, not because I believed in wars, but because I wanted to know if God approved of them.

"In times of war," he answered, "Catholics kill Catholics, Protestants kill Protestants, and Jews kill Jews. How could God approve of war or of an organization that approves of its members killing one another?"

This made sense to me. I was really happy to learn that God has no part in the wars of the nations. How gratifying it was to discover that he has a code of morality, clean speech and honesty so different from that which is accepted by people both religious and otherwise! It wasn't just reading the Bible that convinced us of this; it was seeing living evidence in the Witnesses we met and with whom we associated. I was so happy to learn that God has a purpose for his people and that working in harmony with that purpose can result in everlasting life in a perfect environment. (Isa. 25:6-9) In my mind I reasoned, 'How could such a loving God be an abstract or impersonal force?'

Family Opposition

By this time we became the targets of extreme family opposition. In addition to being disowned and ridiculed, we received threats that our son would be taken away from us. We were cut off from communicating with my younger brother, Marvin, who had been sitting in on our Bible discussions with the Witnesses.

A showdown came after my grandmother's death. My family arranged for a meeting with one of the most prominent Jewish clergymen in the Boston area. They wanted to humiliate me and, in so doing, discourage my brother Marvin from listening to me. As matters turned out, however, it was this rabbi who was humiliated.

Since my grandmother had just died, I asked the rabbi: "Would you please show my family where in the Bible it supports

the Judaic teaching on the immortality of the soul?" He avoided my question, suggesting that I was confused because I did not understand the Hebrew language. "It would be a lot more convincing if you would just open the Bible and show us the Scriptural support of the immortality of the soul," I replied. He still avoided the question.

As the discussion continued, reference was made to the Ten Commandments. So I asked him, "Where in the Bible are the Ten Commandments found?" He didn't know! He said something in Hebrew to my cousin, and, after about 10 minutes of looking through a reference book, my cousin told him in Hebrew where they were found. Realizing what had happened, I asked the rabbi: "If you have taken that effort to find the Ten Commandments, then why don't you show us, if you know, the Scriptural support of the immortality of the soul?"

When he kept referring to the Talmud (the oral law or tradition according to Jewish belief) and other writings in answering me, I stressed the need to accept the Bible as truth and began reading the prophecy of Jeremiah 31:31-34.

"If you want truth, there is truth in everything, including Satan the Devil!" the rabbi interrupted, as he slammed the Bible closed on my fingers.

"If you are a true shepherd of God's flock and I am a straying sheep, why don't you direct me back to the pen by answering my questions from God's written Word?" I responded.

When I persisted, he lost his composure and called me an ignoramus. At that point one of my relatives turned to another and said, "Why doesn't he just answer his questions?" They were disappointed that he was unable to prove me wrong. Such behavior on the part of one who was supposed to be a vital support of my Jewish heritage seemed so inconsistent to me.

More Questions Answered

As so many of my questions went unanswered by the religious teachers of the Judaic way of life! If the Jews are God's chosen people, still under the law of Moses, where is the holy temple of Jerusalem? Where is the ark of the covenant? Where is the Aaronic priesthood? Where are the animal sacrifices? Where are the genealogical records establishing tribal origin? If the sabbath is to be celebrated, where are the seventh-year sabbaths, the 50th- or Jubilee-year sabbaths? On all these issues, the Jewish clergy I talked to were either evasive or silent.

"From my study of the Bible, I have concluded that the Messiah has already come," I told another rabbi.

"That's impossible," he said.

"Well, then, how would you identify him, since the Scripture at Genesis 49:10 indicates that the Messiah would come from the tribe of Judah?" I asked.

"Well, you have me at a disadvantage," the rabbi confessed. "My training was concentrated on the Talmud. In order to be qualified to discuss this issue with you, I would have to study the Bible."

On another occasion my father had a rabbi telephone the house. "If you're prepared to prove to me Scripturally that Jesus is not the Messiah, and that the Messiah is yet to come, and that all the Jewish traditions are based on the Scriptures, then by all means let me know when you would like to come to talk to me."

"Well, I'll call you," he told me. He never called.

However, with the assistance of the Witnesses, we did much research at our home Bible study. We discovered that the Hebrew writings were clear on all these religious matters and revealed to us the real reason for the disappearance of the original Jewish system.

The priestly and governmental system

that was originated by God and given to the Israelites was blessed by him only as long as they honored him and upheld his laws. But due to their man-made traditions, they invalidated these commandments and flagrantly supported a system of injustice that lasted until 70 C.E., when it was destroyed by the Romans. The genealogical records establishing priestly and tribal identification were destroyed with the devastation of the temple. In its place, to this day, stands the Moslem shrine, the Dome of the Rock.

This, we learned, did not prevent the Grand Maker of time and events from moving ahead with a new arrangement that would bless not just one nation but people from every nation. (Gen. 22:18) From its beginning in the first century C.E.; a God-ruled international organization has flourished. By means of his holy spirit, God has provided for people of all kinds an education in his Word, the Bible. (Isa. 54:13) How glad we were to get the answers to these questions!

Since that day in 1956, when we opened

our minds and hearts to the truth of God's Word, Lorrie and I have grown in love and appreciation for the One who has manifested such tender feelings and concern for us. Yes, we and our three children—Joel, Julie and Mark, and his wife Marjorie—happily have come to know Jehovah, the Originator of life and hope.

Within the last few years I have had the joy of being reunited with my brother, Marvin, estranged for 18 years. I am happy to say that now he and his family have also become Jehovah's Witnesses.

Yes, I can truly say that I found the something that had been missing from my Jewish heritage—the worship of the true God, Jehovah. I have also found a loving family united in true worship and the intimate association of those faithful to the laws and principles of the Holy Scriptures. Here, among men and women of all backgrounds, persons both young and old, I have found a deep respect for the Bible's high moral code, clean and up-building speech and an atmosphere of honesty and forthrightness.—*Contributed.*

loud music and your body

IN A paper entitled "The Mind and Sound," Martin Polon of the University of California at Los Angeles warns that persons exposed to continuous sound pressure levels (SPLs) such as those at "new wave" and "punk rock" concerts (around 130 decibels) are risking more than possible damage to their hearing. Polon claims that blood levels of hormones associated with stress may double or triple after lengthy exposure to loud sounds. Damaging effects on the endocrine, reproductive, circulatory and nervous systems are also said to be possible. Physiological stress produced by extremely high SPLs can raise blood pressure and heighten levels of cholesterol and triglycerides, thus con-

tributing to degeneration of arteries and the heart muscle.

Polon lists other undesirable effects of lengthy overexposure to excessively loud sound, including interference with sexual and reproductive functions, epilepsy in sensitive persons, initiation of psychotic episodes, dizziness, vertigo and uncontrollable movements of the eyes. Expectant mothers should note that risk to a developing fetus is also given as a bad effect. Though more investigation will likely be needed to determine whether Polon's claims are valid or not, the wise course in the meantime clearly would be not to expose yourself to avoidable, continuously high SPLs.

Orchids— Beautiful, Bountiful Mimics

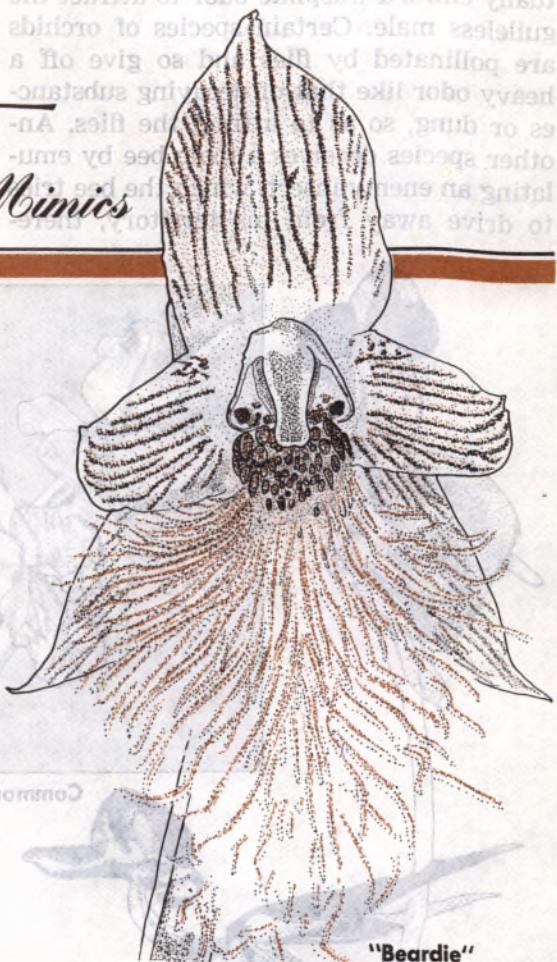
ORCHIDS! For me? Oh, how lovely!" With a response like that, you are well on your way to an enjoyable occasion, whether it be a wedding, a farewell meal or just a quiet dinner for two. It would seem that the claim of a certain orchid growers' association may be valid, 'When you send orchids, *wonderful things happen!*'

Wherein lies the appeal of orchids? Can you grow them yourself?

One of the reasons why orchids enjoy such popularity is that, with up to 35,000 species, they comprise "the largest family of flowering plants, nearly a seventh of all those on earth." Although the majority of species are found in the tropics, some are found even within the Arctic circle. A few species thrive in the desert, living only on cactuses. Others are purely aquatic. Two peculiar orchids flower completely buried in the earth, never seeing the light of day.

With such diversity, it would be expected that orchids also differ in size and appearance. And this is true. The flower of one species is just 2 mm (.08 inch) in diameter, and the whole plant could fit in a thimble. On the other hand, there are giants whose flowers measure up to 38 cm (15 inches) from tip to tip.

What color and shape do you prefer? The bountiful orchid family will supply your choice. Colors range from red, orange, yellow and green to purple, brown, white and even a rare blue.



"Beardie"

As for shape, orchids show themselves as artists at mimicry. Some species resemble a lady's slipper, moths, butterflies and wasps, pansies, kites and even birds in flight. Then there is "Beardie," as the Australians call it, that is, the image of a bearded hillbilly. Another, in Peru, has what appears to be a laughing gnome in the center of the blossom. Or would you prefer the one that resembles a group of four braying donkeys? And the mimicry does not lie only in the appearance.

The scent also is used to deceive, with a view to pollination. One Mediterranean

species resembles a female wasp and actually emits a wasplike odor to attract the guileless male. Certain species of orchids are pollinated by flies and so give off a heavy odor like that of decaying substances or dung, so as to attract the flies. Another species deceives a male bee by emulating an enemy insect, which the bee tries to drive away from his territory, there-

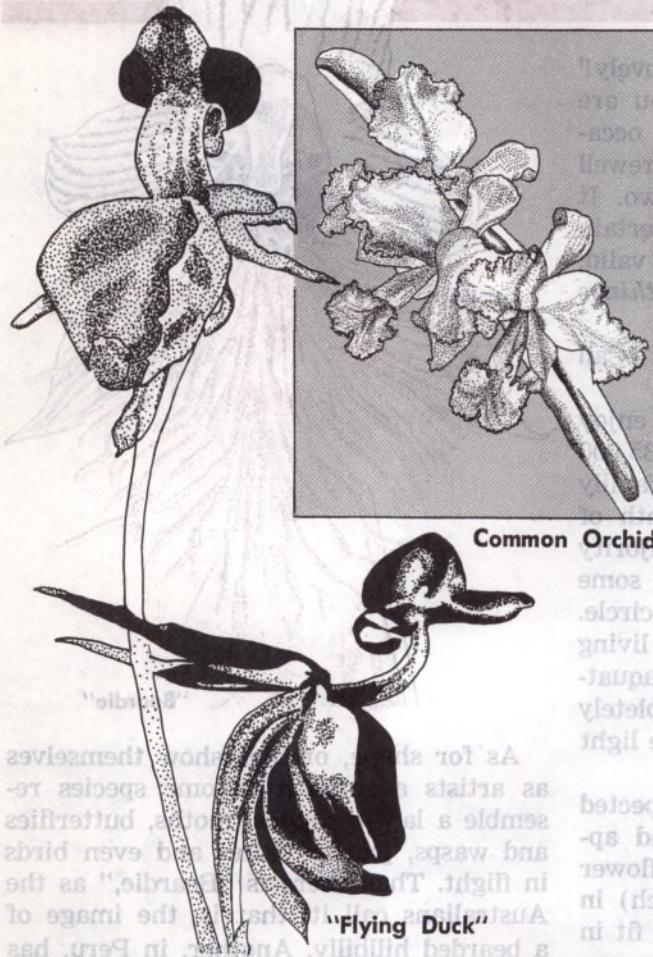
that of the bucket orchid with its large flower and bucket-shaped lip. The bee, attracted by the scent, lands on the lip to pick up the scent. In its efforts to transfer the scent to its hind legs, the bee falls into the fluid-filled bucket. Its struggle to climb the steep waxy wall of the bucket is in vain. At last the bee spies another exit, a tiny tunnel leading from the bucket

past the flower's column on which is a mass of pollen. The bee scrambles to safety at last—but on its thorax sticks some of the pollen to be carried to the next flower. What wisdom is reflected in this interdependent relationship!

The Life Cycle of Orchids

This is similar to that of other flowering plants. The pollen, after being carried by the insect, is deposited on the female part, the stigma. It soon germinates and begins to grow toward the ovary. In about six weeks the pollen tubes enter the ovary and the male sperm unites with the egg. The fertilized egg develops and forms a mass of cells that will become the embryo. Enclosing this mass of cells is a dry outer coat that is so light that the seed can be carried great distances by the wind. Some of these seeds are as fine as dust. In fact, the book *Botany* states: "A single ovary of the orchid *Cynoches* contains 3,770,000 seeds and . . . more than 300,000 of them weigh but 1 gm!" With so many seeds, why are orchids not more prolific? The reason is that only a fraction of these seeds will germinate, since germination requires a certain fungus that is not always present.

In order to overcome this problem, a remarkable method of multiplication has re-



by picking up the pollen from the flower. So perfect is the mimicry in one species that male bees actually attempt to copulate with the flower. The resultant contact transfers pollen from the flower to the carrier bee.

An ingenious method of pollination is

cently been introduced. Called "meristem" culture (from the Greek word meaning "divisible"), this method is specially used for growing scarce, exotic hybrids. Growers simply remove the embryonic growth cell and culture it in a nutrient solution where it reproduces itself many times over. At any desired time, the cells can be separated into individual flasks where they will grow into seedlings identical to the one from which they were taken. By using this method, growers have been able to reduce the cost of orchids greatly and at the same time meet the seasonal demand for certain popular species.

Interestingly, most orchids found in the temperate zones grow in the earth, whereas those found in the tropics have no connection whatever to the ground. But, contrary to popular opinion, the latter are not parasites. They are epiphytes, merely depending on the host tree or rock for support, without deriving any nourishment therefrom.

Would you like to grow some of these beautiful, intriguing mimics? Happily, orchids are one of the easiest plants to grow and their cultivation is no secret. So you can probably find one or more that will easily adapt to your climate and environment.

The insect world is famous for its "femme fatales"—female insects that seduce males and then dine on them. Female fireflies of the genus "Photuris" mimic the light-flashings of other firefly species, then eat the males of those species that respond. Now, the plot thickens. Photuris males also mimic the light signals of these other species, and Photuris females who come to dine may end up mating.



In Future Issues

- The Two-Day "Miracles"
- Staying Young While Growing Older
- So Glad to Be Alive!

ment. You can learn about their habits, needs and diseases through a library book or a local orchid association.

Today, the cut-flower trade in orchids is a multimillion-dollar business. But there is at least one orchid not used for decoration. The conquistadores noted that the Aztecs in Mexico added bits of an orchid's seed pod to their drink. And when you eat vanilla ice cream, if the flavoring is not artificial, you too are probably enjoying the extract from the orchid *Vanilla planifolia*.

Whether we grow, wear or eat them, they remind us of the Creator's generosity in providing variety in this family. As the psalmist said: "How many your works are, O Jehovah! All of them in wisdom you have made. The earth is full of your productions."—Ps. 104:24.

fireflies mystify evolutionists

Evolutionists ponder how this most complex example of mimicry known to exist in the insect kingdom evolved. An authority in the field offered these explanations: The male may be trying to seduce the hunting female Photuris to mate with him—before she eats him. Old males unable to compete in gaining a mate may be sacrificing themselves for the sake of the vitality of the next generation—noble souls! Third explanation—and an evolutionary gem—the males are trying to find sexually unresponsive females and rape them!

the shuttle

—a new approach to space

WITH a thunderous roar that shook the earth for miles, the world's first reusable spaceship, *Columbia*, blasted off its launchpad at Cape Canaveral, Florida, and rocketed skyward into space. That was on April 12, exactly 20 years after the first manned spaceflight by the Russian cosmonaut Yuri Gagarin. After 54½ hours and 36 earth orbits, the craft blazed through the earth's searing atmosphere to a landing on a dry lake bed in California, right on time and right on target.

That truly spectacular feat was the outcome of 10 years of development and the expenditure of \$10 billion. It was hailed as "ushering a new era in space exploration." Others described it as "a shot in the arm" for a nation beset with technological self-doubt. Still others greeted it with mixed feelings, saying it "was a tremendous waste of money."

Why such diverse reactions? As a matter of fact, what is the space shuttle and what is it supposed to do? Is it worth the cost?

Why the Shuttle?

In the past, all spacecraft were sent up by one-shot rockets that later burned up in the atmosphere or fell into the ocean depths. Even the costly spacecrafts themselves usually ended up in museums after just one trip. But with the Space Transport System (STS), the official name of the space shuttle, things are different. The heart of the system is a fleet of orbiters, the first of which is the *Columbia*, named after the first U.S. ship to sail around the world, in 1790. The space shuttle has been

described as a space cargo ship or truck that can make round trips into space over and over again, up to 100 times. This new approach will, in theory, make space flights much more economical.

What Will It Do?

With a payload capacity of 65,000 pounds, the orbiter can carry into space satellites for communications, science and the military, as well as other equipment—telescopes, cameras and even complete laboratories. It can also take up specialists to conduct experiments in space, to study the heavens and the earth, and to service, repair or even retrieve defective equipment. In time, it will be able to open up the possibility of transporting men and materials into orbit to build space stations for harnessing the sun's energy or for manufacturing in the weightlessness of space. To accomplish all of this the National Aeronautics and Space Administration (NASA) is currently building three more orbiters at \$500 million apiece—the *Challenger*, the *Discovery* and the *Atlantis*—so that perhaps 30 to 40 flights a year could be scheduled by the mid-1980's, and maybe even 50 by 1990.

A Look at the System

The 122-foot, 80-ton orbiter *Columbia* looks like a bulky delta-winged jet airplane with a 78-foot wingspan. At its tail are three of the most awesome rocket engines ever built. Together they can generate more power than is needed to light the whole state of New York. Yet, minus the nozzles, they are only about five feet

Three main rocket engines can generate power equal to 23 Hoover Dams

Remote manipulator deploys satellites, space labs and other gear

Empty fuel tank, costing \$3 million, discarded after 9 minutes

Computers on board perform up to 325,000 operations per second

Rockets slow orbiter to 14,000 m.p.h. for reentry at 40-degree angle

Silica shield withstands reentry heat of 2,500° F or more

Booster rockets provide thrust equal to 25 jumbo jets

Touchdown at 200 m.p.h. on specified runway

space shuttle

tall. Even its fuel pump, the size of an oil drum, has power equal to 28 diesel locomotives. To develop these high-performance engines has literally taxed current technology to its limit, and engine failures have constituted one of the main reasons for the delay of *Columbia's* maiden voyage, which was originally scheduled for early 1978.

On the launchpad, the orbiter is fastened to the mammoth 15-story-high external fuel tank, which holds 800 tons of liquefied oxygen and hydrogen. But all of that is burned up by the orbiter's three main engines in just nine minutes. Still, to lift all that weight into space is more than the three engines can do, powerful as they are. So two solid-fuel booster rockets are added alongside the fuel tank. Looking like two oversized crayons and packed with two million pounds of aluminum powder—the same explosives as those used in fireworks—they provide five times the power of the main engines. They are the largest solid-fuel rockets ever built and the first used in a manned spaceflight.

The Ascent

At blastoff, the orbiter's main engines ignited first. Seconds later, the booster rockets kicked on with an explosive force and the shuttle began its ascent, slowly at first. In two minutes, the boosters had consumed the last of their fuel supply and were uncoupled from the fuel tank by small charges of explosives. As they fell, three gigantic parachutes opened to ease the splashdown of these \$18-million rockets into the ocean below. Two specially built ships, *Liberty* and *Freedom*, were waiting in the target area to tow them back to shore to be reused about 20 times, at a cost of \$13 million each time.

Nine minutes after lift-off, the fuel in the external tank was spent and the shuttle had reached an altitude of 72 miles. The tank had to be jettisoned at this point

so that gravity would pull it back to earth. As the tank fell, the reentry heat burned it to a frazzle and the debris splattered into the Indian Ocean. The \$3-million tank is the only part not reused. Recovery would cost more than the tank itself.

Now *Columbia* was all by itself, coasting. Firing the two yet unused engines of the Orbital Maneuvering System on board took *Columbia* into a circular orbit 150 miles above the earth.

In Orbit

In the cockpit, the two pilots have a commanding view of 1,400 switches and relays and three television screens that are tied in with five computers on board. Actually, from nine minutes prior to take-off until moments before landing, the computers were flying the shuttle. The system is called "quad-redundant": the four main computers process the same information and must come up with the same answer. In case of disagreement, they vote and the majority rules. If this cannot resolve the problem, the fifth, or backup, computer is switched on and it decides. Their huge memory banks hold some 134 million bits of information and at crucial points of the flight they perform 325,000 operations a second.

One of the main objectives of the first flight was to test the cargo-bay doors while in space. On the inside of the doors are four radiator panels that must be exposed to space to dissipate the heat produced by all the electronic equipment on board. After that test, and some navigational-system checks, *Columbia* was ready to return to earth.

Reentry

To prevent the *Columbia* from experiencing the same thing that happened to the fuel tank on reentry, 70 percent of its external surface is protected by some 31,000 ceramic-coated silica tiles against

the 2,500° F temperature caused by atmospheric friction. The challenge of building this reusable heat shield was every bit as great as that of building the three main engines. The tiles, no two of which are alike, were designed and cut by computers and glued on by hand like a giant jigsaw puzzle. The enormous problems encountered during installation and testing of the tiles became another of the major causes for the delay of the project.

As *Columbia* descended, belly first, to about 80 miles above the earth, the tiles began to turn fiery red-hot, and the flaming glow around the craft cut off all radio communications. For 16 minutes *Columbia* was alone at this crucial stage of the flight, and the ground control crew held their breath. So did the crowd waiting on the Mojave Desert floor.

Then, suddenly, came the sonic boom—two loud shocks to announce that *Columbia* had made it through safely and was now coming in for a landing. For about a minute, 10,000 pairs of eyes were glued on the 80-ton shuttle as it glided down at an angle seven times steeper than any airliner coming in for a landing. The landing gear dropped, and seconds later, they hit the dry lake bed at 215 m.p.h. "Welcome home, *Columbia*! Beautiful, beautiful," cried the mission control communicator. So ended the first flight of the space shuttle.

Plans are being made to get *Columbia* ready for its next trip in about six months. Following that will be two seven-day test flights in 1982, which will then complete the experimental phase of the project.

Is It Worth It?

The economical advantage of the STS was based on the projection that the fleet of shuttles would fly about 50 times a year between 1979 and 1990. If only 30 flights a year were made, the cost per flight would be about the same as that of

conventional rockets. Currently, the schedule calls for no more than 20 flights a year, and whether there will be more demand remains to be seen. About one third of the flights are booked by the military, and, in fact, it has been said that without the military, the shuttle would have been scuttled long ago. Many fear that it is a military escalation in civilian guise.

Even from a scientific standpoint some are disenchanted. "What's happened," said Joseph Veverka, chairman of NASA's Comet Science Working Group, "is that the space science program in this country has been almost destroyed." This is because "money to complete [the shuttle] was taken from science projects." Even NASA is forced into the unglamorous role of space truck driver for other people's cargo because it has little money left to develop anything else.

While praising the STS as "worthy and productive," a group of scientists stated in the *Bulletin of the American Academy of Arts and Sciences* that "no fundamental principles of physics, no short-term biological issues and no questions of sound engineering practice" would be advanced by it. "By contrast," said Lester R. Brown, director of Worldwatch Institute in Washington, "there are urgent problems being ignored." He cited examples such as erosion of farmland and national indebtedness.

There is no doubt that the almost flawless first flight of *Columbia* is a great technological achievement. Because of that, many have the view that the new approach to space opened up by the shuttle will mean a better future for mankind. But, as the optimism generated by the first flight subsides, there will be plenty of opportunity for rethinking and re-evaluating this most complicated flying machine ever built by man.

For conversion into metric system: 1 pound = 0.45 kg; 1 ton = 900 kg; 1 foot = 0.3 m; 1 mile = 1.6 km.

From Our Readers

SINGLE-PARENT FAMILIES

Lately it seems as though there has been an outpouring of articles "pounding" on the sad fate of broken homes. All these articles may be true, but how do they make the innocent victims feel? To me it feels like someone constantly saying over and over again: "You lost your mate; you're hurting. You and your kids are doomed to sadness." Why do we have to be constantly reminded of how misfortunate we are, how unhappy our kids are, how bad we are going to fare in life?

Anonymous

Thank you again for another article on dealing with single parents, "Just you and me, Mom." Sometimes being a single parent really can be quite a battle, but when I can read an article that deals with my situation, it helps me to be balanced. Please, Please, Please continue.

A single parent

I am writing you this letter with tears in my eyes. I have just completed reading the article "Just you and me, Mom" and have found many answers to my prayers.

Anonymous, Oregon

RAPE

I need to thank you [for the articles on rape]. Four weeks ago after leaving work at a department store at a shopping mall at 7:30, I went to my car that was parked nearby and quickly got in. Out of nowhere a man pulled my car door open and threatened to kill me if I didn't get in the back seat. I didn't have to stop and think how to react. I started screaming loudly and clawing at his head, and when he said he was going to kill me, I screamed, "No, you aren't." Anyway, he knew it wouldn't be easy. The counsel on not being intimidated helped immensely. Thankfully, he ran away, and I locked the door and drove home.

M. M., Texas

I especially liked that number, since I was raped at the age of 6 and, believe me, I will never forget the fact. I am now 14 years old. I thought it was excellent, the advice you gave us on how we can protect ourselves. I thought it important to stress in that issue that in the majority of cases relatives are the guilty ones, as was true in my case.

T. O., Brazil



Watching the World

Evolution Under Fire

◆ How the subject of the origin of life is to be taught in public schools has once again come under dispute. A parent in California sued the state Board of Education for violating the religious freedom of his children by teaching evolution as fact. The state court's decision was a compromise: It held that teaching evolution does not violate personal rights, but that the educational authorities should present it as a theory, not as accepted fact.

Meanwhile, the state of Arkansas passed a bill requiring schools to give equal time to creation and evolution, though barring the teaching of religion in school. Fifteen other states have considered similar bills. This appears to be a reversal of the trend started about 20 years ago when evolution began to make a strong showing in American schools.

Britons Distressed

◆ The image of genteel civility and quaintness that once was typically British is being shattered by the crime wave raging through Britain's major cities. In the last 10 years, homicides in England and Wales have doubled and injuries from assaults have nearly tripled. "Violence is undoubtedly increasing at an alarming rate," said London's chief superintendent of de-

tectives. "Victims of assault and robbery, many of them elderly, are needlessly and wantonly beaten up." About 700 London bus operators were attacked last year, as were Lord Home and Lord Chalfont right near Parliament.

In Merseyside, which includes Liverpool, violent crime rose by 28.5 percent the first six months of 1980. Chief Constable Ken Oxford declared: "If we cannot prevent this dreadful increase, or contain it, the freedoms we have been accustomed to for so long will vanish."

China's New Catholics

◆ A recent dispatch from Shanghai claims that religion is thriving. At Holy Mary, Mother of God Cathedral, Mass is celebrated five times every Sunday and hundreds of Chinese Catholics attend each Mass. But there is a hitch: The Chinese Church does not accept the authority of the Vatican or the pope; and neither does Rome recognize the bishops and priests appointed by the hierarchy in China since the Church reopened. Ignoring Vatican Council II, Chinese priests still sing Mass in Latin.

"The Vatican does not allow us to love our country," said priest Sheng Pao-tse of the Shanghai cathedral, which operates under the China Patriotic Catholic Association. The objective of the Associa-

tion is to "help the Government implement the policy of religious freedom and unite all prelates and believers in the spirit of patriotism." Clergyman Sheng claims the Vatican has urged Catholics in China, estimated at about three million, not to go to church but to worship in private.

Sick Society

◆ It was front-page news in the San Francisco *Chronicle* when the city's coroner's office decided to offer "S & M Safety" classes. What are these for? They give instructions on how to avoid getting injured or killed while engaging in sadomasochistic sex. According to the city coroner, Boyd Stephens, an estimated 10 percent of the city's homicides can be traced to this sadistic perversion practiced among the homosexual community. "We decided that instead of making value judgments or ignoring the problem," Stephens added, "we would try to save lives."

This "liberal" attitude of not "making value judgments" caused Bob Greene, columnist in the New York *Daily News*, to comment that if the position of the coroner's office was merely a reflection of modern society, "then modern society is sick as can be, and should be labeled as such."

Latest on Fluosol

◆ The blood substitute Fluosol is gaining in its use in the United States for emergency cases and "clinical trials," reports the New York *Times*. Since the chemical's first and successful use in November 1979, 15 other surgical patients, all Jehovah's Witnesses, have received it with complete success. In Japan, where Fluosol was first developed by Green Cross of Osaka, over 200 transfusions of the chemical substitute have been reported thus far. In America, Fluosol is still under investigation by

the National Institutes of Health, and its routine use as a blood substitute has not yet been authorized by the government.

A Different Greek Tragedy

◆ The "Greatest Soccer Tragedy," according to the Athens *Daily Post*, took place at the Karaiskaki Stadium in New Phaleron, Greece. When 2,500 frenzied fans rushed onto the playing field to congratulate their "heroes" after a 6-0 victory, 19 persons were crushed to death and 54 were injured. Both President Karamanlis and Prime Minister Rallis offered personal condolences to the families of the victims. A week of mourning was declared, and scheduled events were canceled. Of the 19 who died, 15 were youths aged 14 to 19. Athens *News* described the wailing and mourning at the Tzannio Hospital as being "like a scene from an ancient tragedy."

Why Suicide?

◆ According to the World Health Organization, Denmark's suicide rate is highest among Western nations. Professor Niels Juel-Nielsen, who is researching the causes of suicide among Scandinavians, cites destruction of personal initiative by the social welfare system, decline in spiritual values, materialism and family breakdown as major factors in the high suicide rate. Twenty-six of every 100,000 Danes commit suicide each year. The rate is 25 for Finns and 19 for Swedes. Among all nations, Hungary has the highest suicide rate, with 43 for every 100,000 population. The rate for the United States is 13 and for England eight.

Most Medicine?

◆ According to the Athens *Daily Post*, "Greece claims first place among all European nations in medicine consump-

tion," much of which is imported. Delegates at the International Medical Congress in Athens were informed that Greeks, on the average, spend 75 percent more than Americans for medicines and 155 percent more than the English. The *Post* notes: "The danger has been repeatedly stressed both by Ministry of Social Care and the country's scientific associations, which have warned both from the human standpoint (the threat to public health) and the economic (waste of [foreign] exchange)."

Presidential Assassinations

◆ The shots fired at President Ronald Reagan on March 30 marked the ninth time an assassination attempt was made on a U.S. president. Four presidents were killed: Abraham Lincoln in 1865, James Garfield in 1881, William McKinley in 1901 and John F. Kennedy in 1963. Other presidents who were shot at but not injured were Andrew Jackson, Harry Truman and Gerald Ford, who was attacked twice. According to a New York *Times* report, more American presidents in office die from assassination than from any other cause, and assassinations occur more often in the U.S. than anywhere else.

Precipitation Prayers

◆ The record-breaking drought in the northeastern United States last winter prompted Terence Cardinal Cooke to designate February 22 as a special day of prayer for rain in the Archdiocese of New York. In a letter to parish priests the cardinal directed them to offer prayers during Mass for rain. All Catholics were asked to say private prayers on behalf of the near-empty reservoirs. In case some might not know what to say, a spokesman pointed out that there is a ready-made prayer in the missals. It reads: "Lord

God, in you we live and move and have our being. Help us in our present time of trouble. Send us the rain we need and teach us to seek your lasting help on the way to eternal life."

Beware of "Hot" Rings

◆ A traveling salesman in Bradford, Pennsylvania, came to a doctor's office complaining of swelling and numbness in the ring finger of his left hand. Tests found a tumor in his finger, and the ring on his finger "sent the Geiger counter off the scale." The ring was found to contain metal recycled from tiny 24-karat gold capsules of radioactive radon gas used in the 1930's to cure cancer. So far, nine of the contaminated gold rings have turned up in New York and Pennsylvania. Dr. William O'Brien, a New York radiologist, investigated the matter and believed that "some enterprising person got the radon seeds and sold them to jewelers" in the Buffalo area who have long since gone out of business.

Coffee and Cancer

◆ "We estimate the proportion of pancreatic cancer that is potentially attributable to coffee consumption to be slightly more than 50 percent," says a report in the *New England Journal of Medicine*. Cancer of the pancreas, accounting for about 20,000 deaths a year in the U.S., is fourth among the most common causes of cancer deaths, exceeded only by cancer of the lung, colon and breast.

In 11 hospitals, 369 pancreatic cancer patients and 644 others were questioned about their use of alcohol, coffee, tea and tobacco. Analysis of the results showed an unexpectedly strong link between the cancer and coffee, but none for tea. This led the researchers to suspect that something other than caffeine

may be the cause. Dr. Brian MacMahon, leader of the researchers, quit coffee, but stressed that the study is not conclusive. "I think there's a 90 percent probability that [the study] is right . . . But I don't think the evidence to date is going to convince a lot of people to give it up."

Audio-Video Piracy

◆ Representatives of 40 governments and businessmen from 68 countries recently met in Geneva to find ways to combat the ever expanding international piracy, not on the high seas, but in the recording and film industries. Currently, about one tenth of the world market of records, cassettes and videotapes is in the hands of the pirates—a \$1.5-billion-

a-year business. "It is clear that there are close links between record piracy and organized crime," says a dispatch from Geneva. Pirated copies of popular films and recordings often arrive on the market before the legitimate ones. A French singer on tour in Latin America found that a man imitating his appearance while using his name and songs was there ahead of him, and his own identity was being questioned.

Greece Legalizes Modern Bible

◆ Until recently, Bible translations in modern Greek have been illegal in Greece, though they have been distributed with some success. This was due to opposition by the Greek Orthodox Church. The ancient

koinē Greek of the original Bible text is difficult for modern Greeks to read with understanding. Now, according to the magazine *Christianity Today*, "the Court of the Magistrate, with the prosecuting attorney representing the state, issued a historic ruling implying the modern translation does not hurt the Orthodox church because it makes it possible for believers to understand the Sacred Word. . . . The verdict states that the New Testament can be translated into modern Greek and that the resulting translation may be read in the church. . . . The court verdict constitutes a turning point within the state church. It was hailed in progressive circles with evident jubilation."

Orthodox Church. The Evangelical Progressive Church—a 212-million-strong body within the World Council of Churches—has also passed a resolution calling for "the restoration of the Orthodox Church to its original unity." The Council of the World Council of Churches has also passed a resolution calling for "the restoration of the Orthodox Church to its original unity." The Council of the World Council of Churches has also passed a resolution calling for "the restoration of the Orthodox Church to its original unity."

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