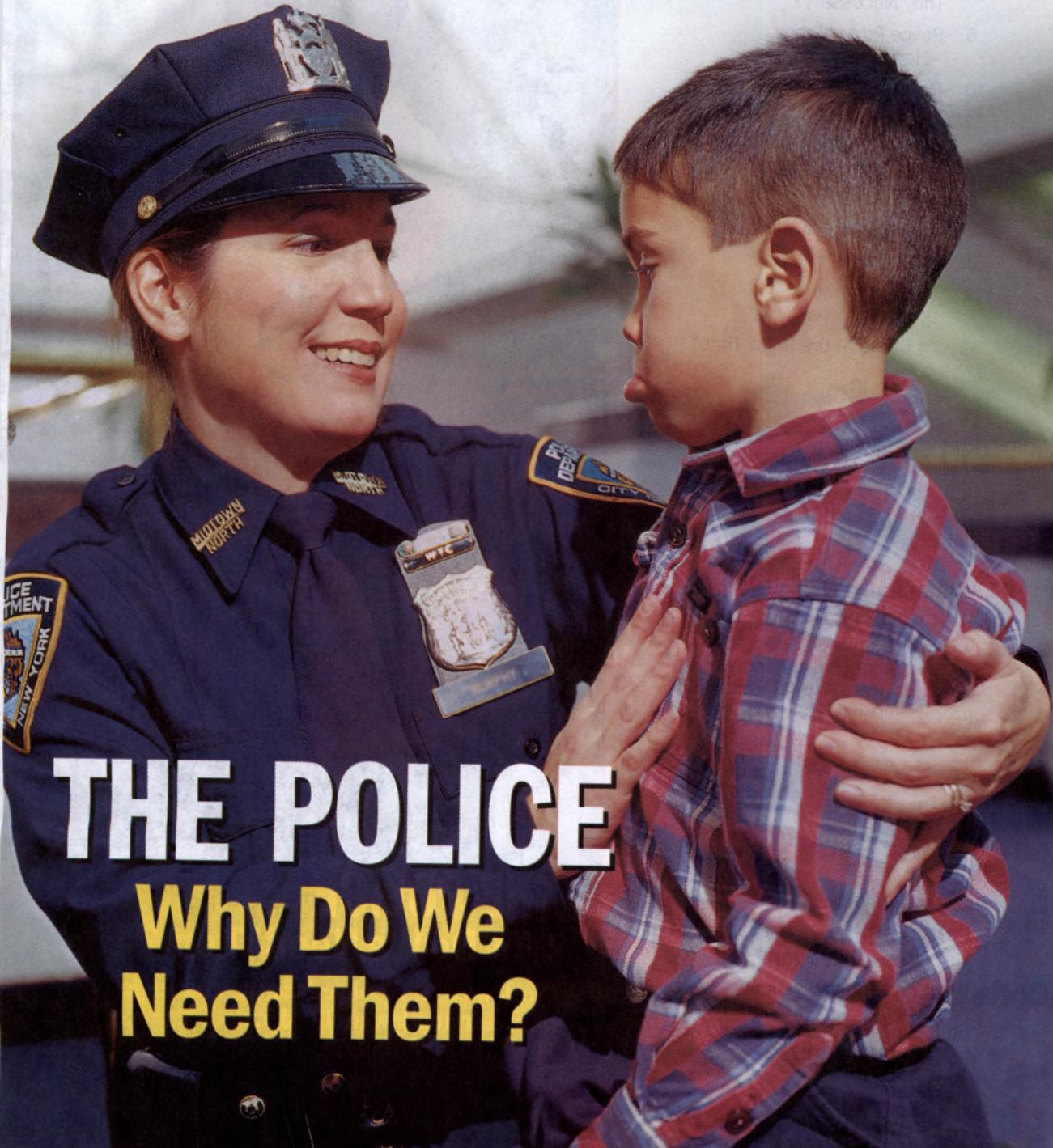


Awake!

JULY 8, 2002



THE POLICE

**Why Do We
Need Them?**

Awake!

AVERAGE PRINTING 21,153,000
PUBLISHED IN 87 LANGUAGES

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Worldwide, the police face the challenge of preserving law and order. How are they doing?



THE POLICE

Why Are They Necessary?

WHAT would life be like without police? Well, what happened in 1997 when 18,000 police officers went on strike in the Brazilian city of Recife, leaving its more than one million residents without police? "In five chaotic days in this beachside metropolis, the daily homicide rate has tripled," reported *The Washington Post*. "Eight banks have been robbed. Gangs have run wild through a shopping mall and driven through upper-class neighborhoods firing guns. And no one is obeying the traffic laws. . . . The crime wave has tested the limits of the morgue and flooded the largest state hospital, where gunshot and stabbing victims are stretched out on hallway floors." The justice secretary was reported as saying: "This kind of lawlessness is unprecedented here."

Wherever we live, evil is just below the veneer of civilization. We need police protection. Of course, most of us have heard about brutality, corruption, indifference, and abuse of power on the part of some police officers. The incidents vary in degree from country to country. But what would we do without the police? Isn't it true that the police often provide valuable services? *Awake!* asked some police officers in different parts of the world why they chose this career.

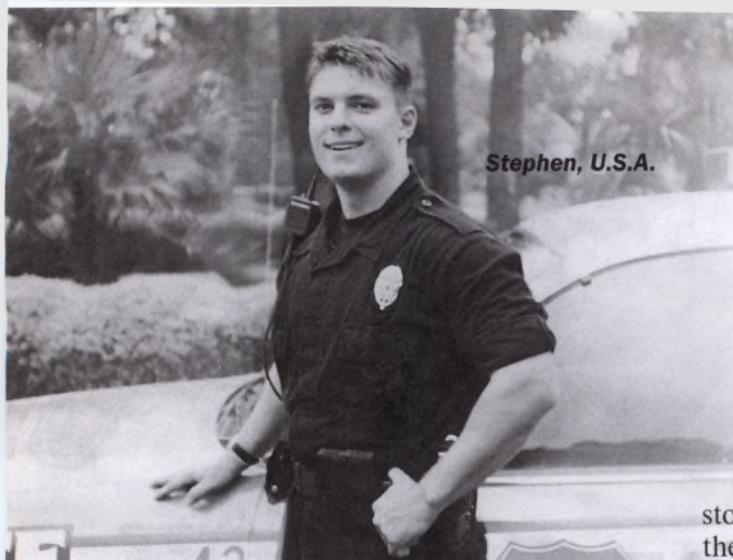
A Community and Social Service

"I enjoy helping people," said Ivan, a British police officer. "I was attracted by the variety of work. It isn't

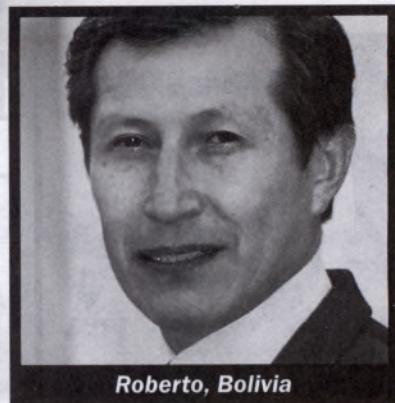
*Pages 2 and 3: Directing traffic in Chengdu, China;
Greek riot police; officers in South Africa*



Shop looted during a police strike in Salvador, Brazil, July 2001



Stephen, U.S.A.



Roberto, Bolivia

commonly realized that crime accounts for only 20 to 30 percent of police work. It's very much a community and social service. On a typical day on patrol, I could attend to a sudden death, a traffic accident, a crime, and a confused elderly person in need of help. It can be especially satisfying to return a lost child or to help a crime victim cope with his or her emotional trauma."

Stephen is a former police officer in the United States. He says: "As a police officer, you have the resources and time to offer the best help when people turn to you sincerely for support. That's what drew me to the job. I wanted to be there for people and bear the burden for them. I feel that I helped to protect people from crime, at least to some extent. I arrested over 1,000 people in five years. But finding lost children, helping Alzheimer's patients who had wandered off, and recovering

stolen vehicles all brought satisfaction. Then there was also the excitement of chasing down and catching suspects."

"I wanted to help people in emergencies," says Roberto, an officer in Bolivia. "As a youngster I admired the police because they protect people from danger. Early in my career I was in charge of foot patrols in the city center, where the government offices are. We dealt with political demonstrations almost daily. My job was to stop things from turning violent. I found that if I was friendly and reasonable with the leaders, I could avoid riots that might have caused injury to many people. That was rewarding."

The range of services that police provide is vast. They have handled situations from rescuing a cat in a tree to rescuing hostages from terrorists and confronting bank robbers. Nevertheless, from the time modern police forces began, they have been the focus of both hopes and fears. The next article considers why.

Awake!®

THIS JOURNAL IS PUBLISHED for the enlightenment of the entire family. It shows how to cope with today's problems. It reports the news, tells about people in many lands, examines religion and science. But it does more. It probes beneath the surface and points to the real meaning behind current events, yet it always stays politically neutral and does not exalt one race above another. Most important, this magazine builds confidence in the Creator's promise of a peaceful and secure new world that is about to replace the present wicked, lawless system of things.

Awake! (ISSN 0005-237X) is published semimonthly by Watchtower Bible and Tract Society of New York, Inc.; M. H. Larson, President; G. F. Simonis, Secretary-Treasurer; 25 Columbia Heights, Brooklyn, NY 11201-2483. Periodicals Postage Paid at Brooklyn, N.Y., and at additional mailing offices. **Changes of address** should reach us 30 days before your moving date. Give us your old and new address (if possible, your old address label).

POSTMASTER: Send address changes to Awake!, c/o Watchtower, Wallkill, NY 12589. © 2002 Watch Tower Bible and Tract Society of Pennsylvania. All rights reserved. Printed in U.S.A.

POLICE PROTECTION

Hopes and Fears

MANY people in early 19th-century England resisted proposals for a professional, uniformed police force. They feared that an armed force in the hands of the central government might threaten their freedom. Some were afraid that they would end up with a system of police spies similar to the French under Joseph Fouché. Nevertheless, they were forced to ask themselves, 'What will we do without a police force?'

London had become the biggest and richest city in the world; crime was rising and threatening business. Neither the volunteer night watchmen nor the professional thief-takers, the privately funded Bow Street Runners, were up to the task of protecting people and their property. Says Clive Emsley in his book *The English Police: A Political and Social History*: "More and more, crime and disorder were regarded as things which should not exist in civilised society." So Londoners hoped for the best and decided on a professional police force under the direction of Sir Robert Peel.* In September 1829, uniformed constables of the Metropolitan Police began patrolling their beats.

* British police became known as bobbies based on the name of their founder, Sir Robert (Bobby) Peel.

From the beginning of their modern history, the subject of police has raised issues of hope and fear—the hope that they would provide security and the fear that they might abuse their power.

American Cops Get Started

In the United States, New York City was the first to have a professional police force. As the city's wealth increased, so did its crime. By the 1830's, every family could read the lurid stories about crime that were printed in the newly published cheap newspapers—the penny press. Public outcry grew, and New York got its police force in 1845. New Yorkers and Londoners have been fascinated by each other's police ever since.

Americans shared the Englishmen's fear of an armed force in the hands of the government. But the two nations came up with different solutions. The English opted for a top-hatted force of gentlemen police, uniformed in dark blue. They were armed with only a short concealed truncheon. To this day British bobbies still do not carry guns except in emergency situations. However, as one report states, "there is a growing air of inevitability . . . that the British police will become a fully armed force in a matter of time."

Publication of *Awake!* is part of a worldwide Bible educational work supported by voluntary donations. Unless otherwise indicated, *New World Translation of the Holy Scriptures—With References* is used.

Would you welcome more information? Write Jehovah's Witnesses at the appropriate address: **America, United States of:** Wallkill, NY 12589. **Australia:** Box 280, Ingleburn, NSW 1890. **Britain:** The Ridgeway, London NW7 1RN. **Canada:** Box 4100, Halton Hills (Georgetown), Ontario L7G 4Y4. **Ghana:** P. O. Box GP 760, Accra. **Jamaica:** P. O. Box 103, Old Harbour, St. Catherine. **New Zealand:** P.O. Box 75-142, Manurewa. **Nigeria:** P.M.B. 1090, Benin City 300001, Edo State. **South Africa:** Private Bag X2067, Krugersdorp, 1740. **Zambia:** Box 33459, Lusaka 10101. **Zimbabwe:** Private Bag WG-5001, Westgate.

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In the United States, however, the fear that governmental power might be abused led to the adoption of the Second Amendment to the U.S. Constitution, which guarantees "the right of the people to keep and bear Arms." As a result, the police wanted guns. In time, their use of them resulted in street shoot-outs that became characteristic of American cops and robbers, at least in the popular image. Another reason for the American attitude toward carrying guns is that the first police force in the United States was born into a world very different from London's. New York had become chaotic as its population mushroomed. The influx of thousands of immigrants mainly from Europe and of Afro-Americans after the start of the Civil War of 1861-65 led to racial violence. Police felt that they needed to adopt tougher methods.

Therefore, police were often considered a necessary evil. People were prepared to put up with occasional excesses in hopes of achieving a degree of order and security. In some parts of the world, however, a different kind of police force was emerging.

Fearsome Police

Early in the 19th century, when modern police forces were starting to develop, most of mankind had been living under the rule of European empires. On the whole, European police were organized to protect the rulers rather than the people. Even the British, who so disliked the idea of armed, military-style police on their own soil, seemed to have had few qualms about using military police to keep the colonies in subjection. Rob Mawby, in his book *Policing Across the World*, says: "Incidents of police brutality, corruption, violence, murder and abuse of power punctuated almost every decade of colonial police history." After pointing out that imperial policing also provided some benefits, the same book adds that it caused "the imposition of a global impression of policing as a government force and not a public service."

Despotic governments in fear of revolutions have nearly always used secret police to spy on their citizens. Such police extract information by torture and eliminate supposed subversives by assassination or by arrest without trial. The Nazis had their Gestapo, the Soviet Union its KGB, and East Germany the *Stasi*. Amazingly, the *Stasi* employed 100,000 officers and possibly half a million informers to control a population of some 16 million. Officers listened to telephone conversations around the clock and kept files on a third of the entire population. "Stasi officers knew no limits and had no shame," says John Koehler in his book *Stasi*. "Churchmen, including high officials of both Protestant and Catholic denominations, were recruited en masse as secret informers. Their offices and confessionals were infested with eavesdropping devices."

However, fearsome police are not found exclusively in the realms of despotic governments. Big-city police elsewhere have been accused of causing terror when they adopt an overly aggressive style of law enforcement, especially if they target minorities. Commenting on a well-publicized scandal in Los Angeles, a newsmagazine stated that it had "taken police misconduct to a new level of lawlessness and given currency to a new term: the gangster cop."

Authorities, therefore, have been asking the question, What can police departments do to improve their image? In an effort to emphasize their public service role, many police forces have tried to stress the community-oriented aspects of their policing.

The Hope of Community Policing

Japan's traditional style of neighborhood policing has attracted foreign interest. Traditionally, Japanese police work from small district stations operated by perhaps a dozen officers organized into shifts. Says British lecturer in criminology and longtime resident of Japan, Frank Leishman: "The

scope of friendly service activity provided by *koban* officers is legendary: advising on addresses in Japan's largely unnamed streets; lending out unclaimed found umbrellas to commuters caught in showers; ensuring drunken *sararimen* get the last train home; and counselling on 'citizen's troubles.'" Neighborhood-based police have been a factor in giving Japan the enviable reputation of having streets that are safe to walk.

Could this type of policing be effective elsewhere? Some who study crime began to see a lesson in it. Modern advances in communications have tended to distance police from the people whom they serve. In many cities today, police work often seems to consist mainly of reacting to emergencies. It sometimes appears that the original emphasis on crime prevention has been lost. In reaction to this tendency, neighborhood watch has once again become popular.

Neighborhood Watch

"This really works; it reduces crime," says Dewi, a police constable, about his work in Wales. "Neighborhood watch means getting people to look out for one another's securi-



Traffic police in Hong Kong

ty. We organize meetings so that neighbors can get to know one another, exchange names and phone numbers, and hear about how to prevent crime. I enjoy the project because it introduces community feeling into neighborhoods again. Often, people don't even know who their neighbors are. The scheme works because it increases people's awareness." It also improves relations between the police and the public.

Another initiative has been to encourage police to be more compassionate toward victims. The eminent Dutch victimologist Jan van Dijk wrote: "Police officers must be taught that their deskside manners are as important to victims as bedside manners of doctors are to patients." In many places police still don't treat domestic violence and rape as real crimes. But Rob Mawby says: "The police approach to domestic violence and rape has improved markedly in recent years. Nevertheless, there is still room for considerable improvement." Police abuse of power is another area where nearly every force could improve.

The Fear of Police Corruption

The assumption of feeling protected by police sometimes seems naive, especially when news of police corruption circulates. Such reports have been around since the beginning of police history. Referring to the year 1855, the book *NYPD—A City and Its Police* described "the impression of many New Yorkers that

A typical Japanese police station



the thugs and the police were becoming difficult to distinguish." The book *Faces of Latin America*, by Duncan Green, reports that police forces there "are widely believed to be riddled with corruption, incompetent, and abusers of human rights." The chief personnel officer of a 14,000-strong Latin-American police force said: "What can you expect when a policeman earns less than [\$100] a month? If he is offered a bribe, what will he do?"

How big a problem is corruption? The answer depends on whom you ask. A North American cop who for years patrolled a city with a population of 100,000 answers: "Certainly there is a percentage of crooked cops out there, but the greater part



"Aren't British Bobbies Wonderful?"

The British were among the first who could afford the luxury of a professional police force. They wanted their society to be well organized —like their efficient stage-coach system that ran so punctually.

In 1829 the Home Secretary, Sir Robert (Bobby) Peel, persuaded Parliament to approve the London Metropolitan Police, with headquarters in Scotland Yard. Unpopular at first for cracking down on drunkenness and street gambling, in time, bobbies became the people's favorites.

In 1851, London proudly invited the world to come to the Great Exhibition and admire the achievements of British industry. Guests were amazed by the orderly streets and the absence of drunks, prostitutes, and vagrants. Efficient policemen directed crowds, lifted visitors' baggage for them, helped people to cross the road, and even carried elderly ladies to a cab. No wonder that British people as well as foreign visitors were

heard to say, "Aren't British bobbies wonderful?"

They seemed so effective in crime prevention that the chief constable of Chester in 1873 imagined a time when professional crime would be practically eliminated! Police also began organizing ambulance and fire-fighting services. They arranged charities that provided shoes and clothing for the poor. Some organized clubs for boys, excursions, and holiday homes.

Of course, the new police also had their disciplinary problems with corruption and brutality. But most took pride in keeping order with minimum force. In 1853, police in Wigan, Lancashire, had to confront a riot of striking miners. The courageous sergeant, in charge of just ten men, steadily refused to use the mine owner's firearms. Illustrative of the spirit that developed is a letter received by Hector Macleod in 1886, when he followed his father into the police profession. As quoted in *The English Police*, it said: "Being harsh, you lose public sympathy . . . I put the public first because you are the community's servant, among whom you are placed for the time being, and it is





your duty to please them as well as your commanding officer."

Hayden, a retired inspector of the Metropolitan Police, says: "We were taught always to act with restraint because successful policing needs the community's support. Our short wooden truncheon was an absolute last resort that most officers wouldn't use in their entire career." Also contributing to the positive image of the British bobby was a popular TV series that ran for 21 years about an honest constable who knew everyone on his beat, *Dixon of Dock Green*. It probably encouraged police to live up to that image, but certainly it encouraged Britain's love affair with the police.

Attitudes in Britain changed in the 1960's, and the tradition of national pride gave way to a tradition of questioning authority. Reports of corruption and racism in the ranks tarnished the image of police in the 1970's, despite their efforts to gain public support with the neighborhood watch scheme. More recently, after several accusations of racism and of fabricating evidence to achieve convictions, police have made further, genuine efforts to improve.

of the officers are sincere. That's certainly how I've seen it." On the other hand, a crime investigator with 26 years' experience in another country replies: "I consider corruption to be almost universal. Honesty among police is very rare. If a policeman searches a burgled house and finds money, he will probably take it. If he recovers stolen valuables, he will keep part of them for himself." Why do some policemen become corrupt?

Some start out with high principles but then succumb to the influence of corrupt colleagues and the debased standards of the criminal world with which

◀ Crowd control at an English soccer match



Police duties include assisting accident victims

they are involved. The book *What Cops Know* quotes a Chicago patrolman as saying: "With the police officers, with their experience of evil, there's an immediacy. They stand in it. They touch it . . . they taste it . . . they smell it . . . they hear it . . . they have to handle it." Contact with such depravity can easily have a negative effect.

Although police provide an invaluable service, it is far from ideal. Can we hope for anything better?



A Miracle in New York?

When police make special efforts, the results can be remarkable. New York was long considered to be one of the world's most dangerous cities, and by the late 1980's, it seemed that the demoralized police force had lost control. Economic pressure forced the city government to freeze wages and cut back on police manpower. Drug dealers moved in and with them a horrific wave of violence. Inner-city residents went to bed to the sound of gunfire. There were major race riots in 1991, and

the police themselves staged a noisy protest to air their grievances.

However, a new police chief took an interest in motivating his officers, meeting regularly with them to analyze strategy, precinct by precinct. James Lardner and Thomas Reppetto in their book *NYPD* explain: "The chief of detectives or the head of the Narcotics Bureau were people precinct commanders read about in newspapers but rarely met. Now they were all sitting together for hours at a

stretch." Crime figures began to plunge. Murders reportedly dropped progressively from nearly 2,000 in 1993 to 633 in 1998—the lowest in 35 years. New Yorkers had begun talking about a miracle. The decline in reported crime during the past eight years has been 64 percent.

How was this improvement accomplished? *The New York Times* of January 1, 2002, suggested that one key to success was Compstat, "a crime-tracking system that involves examining precinct-by-precinct statistics every week to catch and respond to problems as soon as they crop up." Former police commissioner Bernard Kerik stated: "We looked at where the crime was happening, why it was happening and then we redeployed troops [police] and resources to make sure that those areas were focused on. That's how you reduce crime."

POLICE What of Their Future?

WI THOUT police we would probably have anarchy. But even with police, is our world safe? In most cities today, as in many rural areas, there is a sense of crisis concerning security. Can we look to the police to save us from organized crime and from habitual criminals? Can we expect the police to make our streets safe? Will they win the war against crime?

David Bayley offers an opinion in his book *Police for the Future*: "The police do not prevent crime," he says. "Police are, indeed, only a band-aid on cancer. . . . We cannot rely upon the police, even when they are dedicated to preventing crime, to save society from crime." Studies have shown that the three main activities of police—patrolling the streets, responding to emergency calls,

and investigating crimes—do not prevent crime. Why is this so?

Trying to prevent crime by sheer weight of police presence would be impossibly expensive. Criminals don't seem to notice or care about affordable increases in patrols. Rapid response doesn't deter much crime either. Police have reported that unless they can arrive at the scene of a crime in less than a minute, they are unlikely to catch the culprit. Criminals seem to know that such speed is rare. Neither does criminal investigation help. Even when detectives do successfully convict and imprison criminals, it does not, apparently, prevent crime. The United States locks away more criminals than any other nation, but it still suffers a very high crime rate; whereas Japan, with few in jail, has one of the lowest. Even schemes like neighborhood watch haven't proved to have an effect that lasts, particularly in high-crime areas. Crackdowns on specific crimes, such as drug trafficking or robbery, have dramatic impact for a while, but again, the effects are difficult to sustain.

"That the police are not able to prevent crime should not come as a big surprise to thoughtful people," says *Police for the Future*. "It is generally understood that social conditions outside the control of the police, as well as outside the control of the criminal justice system as a whole, determine crime levels in communities."

What Would Happen Without Police?

How do you act if there are no policemen watching? Do you take advantage of their absence to break the law? It is amazing how many so-called respectable middle- and upper-class people will risk their reputation and their future for the dubious benefits of white-collar crime. *The New York Times* recently reported on 112 charged in a fraud scheme, who were said to be involved in a scheme to swindle auto insurance companies. Among those charged were lawyers, medical doctors, chiropractors, a physical therapist, an acupuncturist, and a Police Department administrative aide.

Another case of fraud on a grand scale recently shocked the wealthy patrons of the art world when the former leading administrators of Sotheby's in New York and Christie's in London were convicted of price-

fixing. They and their auction houses are having to pay out hundreds of millions of dollars in fines and compensation! Thus the insatiable greed for money strikes at every level of society.

What happened in Recife, Brazil, in 1997 when the police went on strike shows that many people readily turn to crime when there is no deterrent. Any religious convictions they might have do not affect their conduct. They can easily dilute or abandon ethics and principles. Little wonder that the

James R. Tourtellotte/U.S. Customs Service



Police Versus Terrorists

As the events of September 11, 2001, in New York City and Washington, D.C., illustrated, air pirates, hostage takers, and terrorists provide police with some of the most difficult challenges in protecting the public. Special squads in many parts of the world have been trained to storm parked aircraft. They have also learned the skills of surprise entry into buildings—rappelling from the roof, leaping through windows, and throwing concussion grenades and tear-gas canisters. Such trained officers have often succeeded in surprising and overcoming terrorists with a minimum of danger to hostages.

Can you imagine a society where people have such respect for the law that they don't need police?

police in most countries are fighting a losing battle in a world prone to lawlessness, whether petty or major.

On the other hand, some people obey laws because they respect authority. The apostle Paul told Christians in Rome that they should be in subjection to the authorities that God permits to exist, since these maintain at least a degree of order in society. Of such authority he wrote: "It is God's minister, an avenger to express wrath upon the one practicing what is bad. There is therefore compelling reason for you people to be in subjection, not only on account of that wrath but also on account of your conscience."—Romans 13:4, 5.

Changing Social Conditions

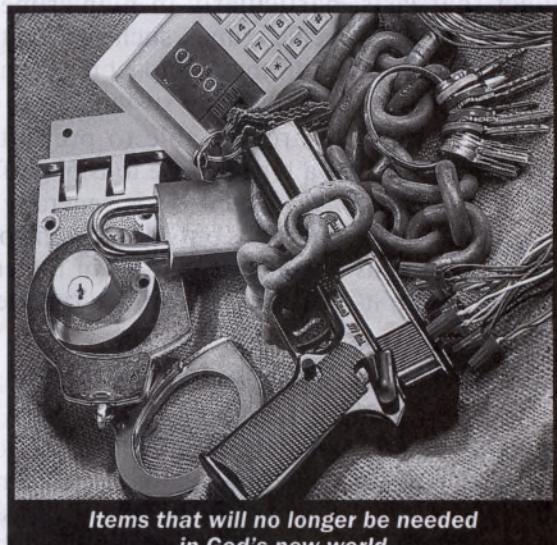
Police work certainly does have some effect on improving social conditions. When streets are visibly cleared of drugs and violence, people tend to live up to the community's improved image. But really, reforming society is beyond the scope of any police force.

There will be no criminals or crime

Can you imagine a society where people have such respect for the law that they don't need police? Can you picture a world where people have such concern for one another that neighbors are always willing to help and no one needs to call police for assistance? Perhaps that sounds like fantasy. But these words of Jesus, although spoken in another context, certainly apply. He said: "With men this is impossible, but with God all things are possible."—Matthew 19:26.

The Bible describes a time in the future when all mankind will be subjects of a government set up by Jehovah God. "The God of heaven will set up a

kingdom . . . It will crush and put an end to all these kingdoms." (Daniel 2:44) By educating all sincere people in God's way of love, this new government will change the social conditions that produce crime. "The earth will certainly be filled with the knowledge of Jehovah as the waters are covering the very sea." (Isaiah 11:9) Jehovah's King, Jesus Christ, will be able to prevent all crime. "He shall not judge by what he sees nor decide by what he hears; he shall judge the poor with justice and defend the humble in the land with equity."—Isaiah 11:3, 4, *The New English Bible*.



Items that will no longer be needed
in God's new world

There will be no criminals or crime. Police will not be needed. Everyone "will actually sit, each one under his vine and under his fig tree, and there will be no one making them tremble." (Micah 4:4) If you would like to be a part of the "new earth" described in the Bible, now is the time to investigate what God has promised in his Word.—2 Peter 3:13.

INDIAN RAILWAYS

A Giant That Covers a Nation

BY AWAKE! WRITER IN INDIA

More than 4,000 years ago, there were builders making bricks in northern India. Little did they dream, however, that those bricks would find their way into a gigantic network of railways on the Indian subcontinent.

INDIAN RAILWAYS is a giant system! Its trains are the main means of transport in India, a country with over a billion people. In addition to the normal daily travel of the population in general, India's traditional culture requires that the millions who live away from their relatives make frequent journeys for family events, such as birth, death, festivals, marriage, or illness.

Every day, on an average, more than 8,350 trains ply some 50,000 miles of running track, carrying over 12.5 million passengers. Freight trains haul goods in excess of 1.3 million tons.

Together, each day these cover a distance equal to three and a half times the distance to the moon!

Think of 6,867 stations, 7,500 locomotives, more than 280,000 coaches and wagons, and a total track length of 67,000 miles including sidings, and you will understand why Indian Railways needs to employ about 1.6 million people, the largest work force of any company in the world. Yes, a real giant!

How Was the Giant Born?

What motivated the building of railways in India? When did this vast project take

Steam, Darjeeling Himalayan Railway (DHR)

Steam, Zawar

NEW DELHI

Some of the major railway lines

Electric, Mumbai

Electric, Agra

Diesel,
Simla

Diesel,
Hyderabad

Those Ancient Bricks

During British rule (1757-1947), railways in the Indian sub-continent proved ideal for the movement of troops over long distances. Within three years of the inauguration of India's first train, engineers were laying tracks between Karachi and Lahore in what is today Pakistan. Stone was not available

for ballast to stabilize the tracks, but near the village of Harappa, workmen found kiln-baked bricks. Scottish engineers John and William Brunton felt that these would make a suitable and economical substitute. While workers were unearthing the huge brick deposits, clay statuettes and seals inscribed in

an unknown language turned up, but this did not cause a break in the all-important work of building the railroad. One hundred miles of track was built on Harappa bricks. Sixty-five years later, archaeologists systematically excavated the Harappa site, unearthing remains of the astounding Indus Valley civilization, which dates back more than 4,000 years, contemporary with ancient Mesopotamia!

off? And what about those 4,000-year-old bricks?—See box above.

In the mid-19th century, India produced a large quantity of raw cotton, which was transported by road to ports for export. India, though, was not the main supplier of cotton to British textile mills; most of their cotton came from the Deep South in North America. However, the failure of the American cotton crop in 1846 followed by the Civil War from 1861 to 1865 created an urgent need for an alternative supply. India was the answer. But transport needed to be faster to keep England's Lancashire mills rolling. The East India Railway Company (1845) and the Great Indian Peninsula Railway (1849) were set up. Contracts were also signed with the English East India Company, the major traders on the Indian subcontinent. Work was rapid, and April 16, 1853, saw the first train in India travel down 21 miles of track from the dock area known as Bori Bunder in Bombay (now Mumbai) to the town of Thane.

To reach the cotton-producing hinterland from Bombay meant crossing the Western Ghats, a range of rugged mountains. British engineers and workers, along with thousands of Indian workers—sometimes 30,000 at one time—toiled without the benefit of modern technology. Using switchbacks for the first time in the world, they laid a track that included an ascent of 1,821 feet in just 15 miles.

They dug 25 tunnels with a total length of 12,000 feet. The Deccan plateau was reached, and the railway was in business. Work went on apace all over the country, spurred not only by trade but also by the need to move troops and personnel quickly as the British increased their interests in the subcontinent.

First-class train travel in the 19th century, for the few who could afford it, made the heat and dust bearable. A private carriage had a comfortable bed, toilet and bath, attendants to provide refreshments from morning tea through to evening dinner, a fan with a tub of ice under it for cooling, a barber, and stories from Wheeler's Railway Library series, including the latest novels of Indian-born author Rudyard Kipling. Louis Rousselet, traveling in the 1860's, said that he could "travel over this immense distance with comparatively little fatigue."

The Giant Grows

By 1900, India's railway network had become the fifth largest in the world. Locomotives—steam, diesel, and electric engines—and rolling stock including coaches, all of which were formerly imported, were now produced locally. Some of the engines were real behemoths—locomotives weighing up to 230 tons, electric engines of 6,000 horsepower, and a 123-ton diesel engine with 3,100 horsepower. In 1862 the world's first double-decker train was introduced. India boasts the longest

railway platform in the world, 2,733 feet, at Kharagpur in West Bengal, and the longest covered platforms, at 1,000 feet each, at Sealdah in Calcutta.

The first trains ran on broad-gauged tracks. Later, to save money, meter gauge was introduced along with narrow gauge for the hills. In 1992, Project Unigauge got under way, and to date almost 5,000 miles of track has been converted from narrow and meter gauge to broad gauge.

Mumbai's suburban trains carry millions of commuters and seem to be permanently packed beyond capacity. Calcutta's underground metro can daily carry 1.7 million passengers. Chennai (formerly Madras) has India's first elevated rail system. Computerized booking and multimedia information kiosks are recent additions. This is a very busy and progressive giant.

The Exhilarating "Toy Trains"

To escape the heat, the British colonists loved to go to the mountains. The prospect of getting there faster prompted the building of the mountain railways with their "toy trains." Trips then became faster—that is, compared with going by horseback or being carried in a palanquin. For example, the "toy train" in south India takes its passengers into the Nilgiri Hills, or Blue Mountains. It averages 6.5 miles per hour and is perhaps the slowest train in India. But what a journey this is, through the tea and coffee estates of the mountains up to Coonoor at 5,617 feet!



The steam engine pushes the Nilgiri "toy train" up the steep gradient

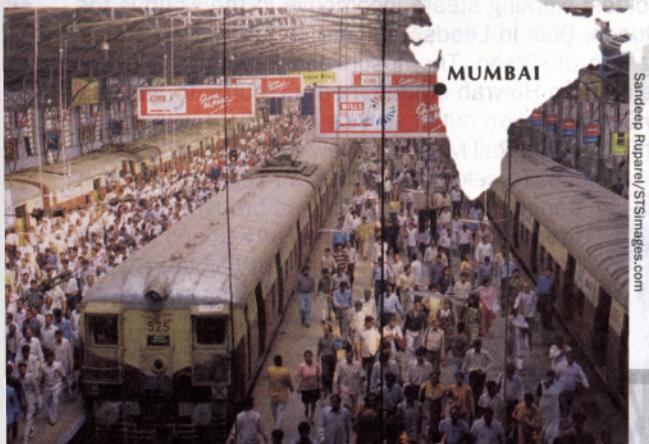
Nilgiri Hills

Built in the late 19th century, the track rises at a gradient of 1 in 12 and has 208 curves and 13 tunnels. It employs the Abt pinion-rack system. Rack bars like teeth act as a ladder that the engine climbs on, pushing the train from the back. This track is among the oldest and steepest in the world using rack and adhesion technology.

The Darjeeling Himalayan Railway climbs on tracks only two feet apart, at a gradient of 1 in 22.5, to Ghoom, India's highest station, 7,408 feet above sea level. The track has three spiral loops and six reversing zigzags. The most famous section, the Batasia loop, tempts passengers to jump out of the train, scramble

(Continued on page 18)

Churchgate Station, Mumbai



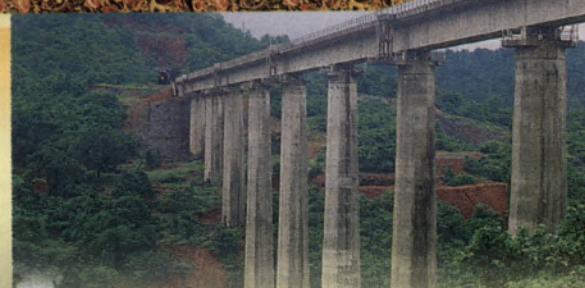
MUMBAI

Sandeep Rupare/VST Images.com

THE KONKAN RAILWAY —A Modern Marvel

The Konkan is a strip of land, about 47 miles at its widest, on the west coast of India, between the Arabian Sea and the Sahyadri mountain range. Extending south from Mumbai, India's commercial center, to the major port of Mangalore, the Konkan has much to offer in trade. For centuries the coastal ports handled this trade, within India and with other countries. But sea travel was hazardous—especially during the monsoon season, when rivers were also unnavigable—and road and rail routes went way inland to circumvent many natural obstacles. The people of the region longed for direct land access down the coast to transport goods, especially perishables, quickly to big markets. What was the solution?

The Konkan Railway was the biggest railway project in the subcontinent in the 20th century. What was involved? Building 472 miles of track with embankments up to 82 feet high and cuttings 92 feet deep. Constructing more than 2,000 bridges, including the 210-foot-high Panval Nadi viaduct, the tallest in Asia, which spans a 1,640-foot-wide valley, and the 1.3-mile-long Sharavati River bridge. Penetrating the mountain ranges to give the track an alignment that was as straight as possible by excavating 92 tunnels, 6 of them being more than two miles long. In fact, India's longest tunnel to date is one of these, the four-mile-long Karbude tunnel.



**The Panval Nadi viaduct,
the tallest bridge in Asia**

Dipankar Banerjee/STSimages.com

MUMBAI

Mangalore

The problems were immense—torrential rains, landslides, and mudslides, as well as tunneling through solid rock and, even more difficult, lithomargic soft soil, described as being like toothpaste. All these natural obstacles had to be overcome by engineering skill and technology. Centrifugal- and jet-fan ventilation in the tunnels, along with other safety features, were in themselves massive undertakings. Land had to be acquired from more than 42,000 different landowners, a colossal legal exercise.

However, on January 26, 1998, after a construction time of just seven years—a record for such a huge project—the first train on the Konkan Railway was flagged off. The journey from Mumbai to Mangalore was 700 miles shorter than the former circuitous route, and travel time was reduced by 26 hours. The Konkan Railway opened up to train travelers new vistas of magnificent scenery, to tourists exciting new places to explore, and to millions of people an improved economy.

THE FAIRY QUEEN

The oldest working steam locomotive in the world is the *Fairy Queen*. Built in Leeds, England, in 1855, by the engineering firm of Kitson, Thompson and Hewitson, it pulled mail trains from Howrah station, near Calcutta, to Raniganj in Bengal. Taken out of service in 1909, it was kept in the National Rail Museum, New Delhi, delighting train buffs. To celebrate India's 50 years of independence, this old faithful was brought out of retirement. Since 1997, the *Fairy Queen Express* has been chugging along, carrying tourists the 89 miles from Delhi to Alwar, in Rajasthan.



LUXURY AND SPEED—India Has Them!

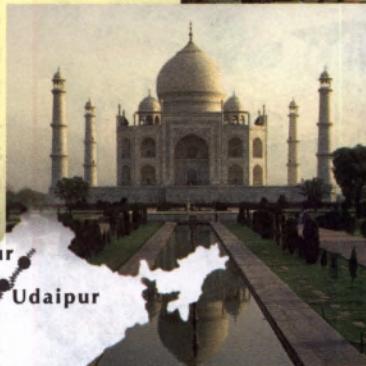
LUXURY India has an ancient and often opulent past. Exclusive railway tours offer a comfortable, though expensive, peek into that history. The *Palace on Wheels*, pulled by a steam locomotive, was launched in 1982. Luxuriously refurbished carriages, used formerly by maharajas and viceroys, retain the ambience of their royal heritage. The pearl-white exterior, Burma-teak paneling, crystal chandeliers, and rich brocades exude an air of splendor. Palatial sleeping compartments, dining rooms, lounge and library, excellent international cuisine, and service by liveried attendants make passengers feel really pampered.

In 1995 because of a change to broad-gauged track, a new Palace was built, and the old coaches were retired. A new luxury train named *The Royal Orient* continues on the old meter gauge in the western states of Gujarat and Rajasthan. The trains travel mainly at night, and passengers spend their days sightseeing. Travelers pass through the great Thar desert, with its ancient forts, citadels, and temples. One can take camel rides over the dunes and an elephant ride to famed Amber Fort. Nearby is Jaipur, the Pink City, rich in history and renowned for gems and handicrafts. Included in the tour are bird sanctuaries, a tiger reserve, and the home of the only Asian lions remaining in the wild. Don't miss the Udaipur lake palace and, of course, the Taj Mahal! All these and more contribute to exciting railway adventures.

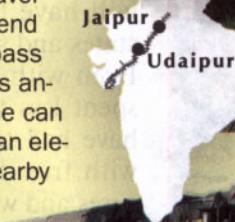
SPEED Indian trains cannot compete with high-velocity trains in France and Japan. But rapid and comfortable long-distance travel is possible on Indian Railway's 106 pairs of superfast intercity trains. The *Rajdhani* and *Shatabdi* trains, running at almost 100 miles an hour, compete with air travel in comfort and facilities. Air-conditioned coaches have reclining seats or comfortable sleeping berths. Meals and snacks, bed linen, safe drinking water, and medical assistance are included in the fare on these prestigious trains.



Hawa Mahal,
Jaipur



Taj Mahal,
Agra



The Royal Orient



Inside the
"Palace on Wheels"



HHA/Punjab/STImages.com

(Continued from page 15)

up the grassy slopes, and board the train after it takes the curve. The exciting journey is climaxed with a view of Kanchenjunga, the third-highest mountain in the world. In 1999 this railway was given World Heritage status by UNESCO, making its future more secure.

To reach Simla, which was India's 7,100-foot-high summer capital under British rule, the train goes through 102 tunnels, crosses 869 bridges, and rounds 919 curves in a stretch of

just 60 miles! One can see magnificent scenery through large windows and a transparent fiber-glass roof. Yes, the "toy trains" are a real delight. Since the fares have been kept quite low, however, the mountain railways are unfortunately running at a loss. Railway buffs hope that a solution can be found to save these exhilarating trains.

The Long Haul

It has been said that the advent of the railway in India marked "the end of one era and the beginning of another" and that "the railway sewed India together as no other integration scheme has managed to do since." How true! If you wish, you can board a train in Jammu, in the foothills of the Himalayas, and get off at Kanyakumari, India's southernmost point, where the Arabian Sea, the Indian Ocean, and the Bay of Bengal meet. You will have traveled 2,344 miles through 12 states and spent about 66 hours on the train. Even with a sleeper berth, you might have spent less than \$15 for your ticket. You will have had the opportunity to get acquainted with friendly, talkative people of many cultures and will have seen quite a lot of this fascinating country. Make your reservation—and happy traveling!

**The Batasia loop,
where the railway line
passes over itself**

**A view of Kanchenjunga Mountain
from the Batasia loop**



PORNOGRAPHY —IS IT JUST A HARMLESS DIVERSION?

WHEN Victorian archaeologists began systematically excavating the ancient ruins of Pompeii, they were shocked at what they uncovered. Scattered freely among the beautiful frescoes and artwork were many sexually explicit paintings and sculptures. Appalled by their lurid nature, the authorities stashed them in secret museums. They coined the term “pornography”—from the Greek *pornē* and *graphos*, meaning “writing about prostitutes”—to classify these explicit artifacts. Today pornography is defined as “the representation of erotic behaviour in books, pictures, statues, motion pictures, etc., that is intended to cause sexual excitement.”

These days, pornography is all-pervasive and appears to be accepted in most of modern society. Where once it was the province of disreputable cinemas and red-light districts, it is now eminently mainstream in many communities. In the United States alone, pornography generates more than ten billion dollars annually!

Some defenders promote pornography as a way to spice up a dull marriage. Says one writer: “It stimulates an active fantasy life. It offers instruction for sexual pleasure.” Others claim that it encourages frankness and openness about sexual matters. “Pornography benefits women,” claims writer Wendy McElroy.

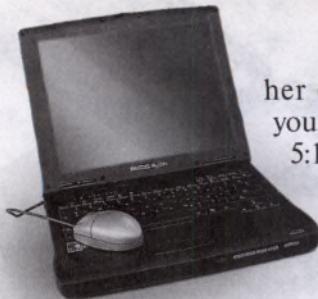


But not everyone agrees. Pornography has often been linked to a wide range of harmful outcomes and attitudes. Some suggest a connection between pornography and rape as well as other forms of violence against women and children. Infamous serial killer Ted Bundy admits that he had a “strong appetite for violent pornography.” He says: “This condition is not immediately seen by the individual or identified as a serious problem. . . . But this interest . . . becomes geared towards matters of a sexual nature that involve violence. I cannot emphasize enough the gradual development of this. It is not short-term.”

In light of the endless debate and the prevalence of pornographic material today, you might wonder, ‘Does the Bible offer any guidance in this matter?’

The Bible Is Frank About Sex

In the Bible, sexual matters are dealt with candidly and without shame. (Deuteronomy 24:5; 1 Corinthians 7:3, 4) “Rejoice with the wife of your youth,” counseled Solomon. “Let



her own breasts intoxicate you at all times." (Proverbs 5:18, 19) Clear advice and counsel are given regarding sexual relations, including the limits within which they should be

enjoyed. Sex outside of the marriage arrangement is forbidden. So are all forms of deviant and perverted sexual practices.—Leviticus 18:22, 23; 1 Corinthians 6:9; Galatians 5:19.

Even within these boundaries, restraint and respect are expected. "Let marriage be honorable among all," wrote the apostle Paul, "and the marriage bed be without defilement." (Hebrews 13:4) This counsel is in stark contrast with the intent and message of pornography.

Pornography Distorts Sex

Rather than portraying sexual relations as a beautiful and intimate expression of love between a man and a woman in honorable marriage, pornography demeans and distorts the sexual act. Casual and perverted sex are portrayed as exciting and desirable. Personal gratification with little or no regard for the other person is highlighted.

Women, men, and children are portrayed as objects that exist only for sexual gratification. "Beauty is measured by proportion of body parts, shaping unrealistic expectations," says one report. "Depicting women as anonymous, ever-wanting/waiting, empty sex toys for men, stripping and exposing their bodies for monetary gain and entertainment cannot possibly translate into a message that can exist in harmony with equality, dignity and humanity," concludes another report.

On the contrary, love "does not behave indecently," wrote Paul. "[It] does not look for its own interests." (1 Corinthians 13:5) The Bible exhorts men to 'love their wives as their own bodies' and to 'assign them honor,' not to

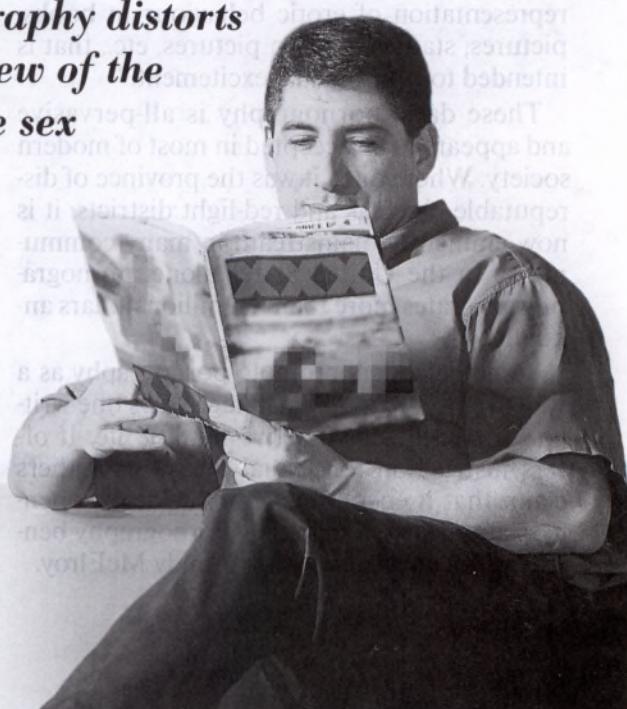
view women as merely objects for sexual gratification. (Ephesians 5:28; 1 Peter 3:7) Is someone, whether male or female, who regularly feeds on sexually explicit images of other people truly behaving decently? And is that person really showing honor and respect? Instead of love, pornography cultivates self-centered, selfish desire.

There is also another factor. Soon, like any other improper stimulation, what initially arouses becomes mundane and routine. "Over time," says one writer, "[the users of pornography] require more explicit and deviant material . . . They may push their partners into increasingly bizarre sexual activities . . . , diminishing their [own] capacity to express real affection." Does that sound like a harmless diversion? But there is another important reason to avoid pornography.

The Bible and Lust

While many today feel that there is nothing wrong or dangerous about feeding sexual fantasies, the Bible disagrees. It clearly explains that there is an intrinsic relationship between what we feed on mentally and how we act. "Each one is tried by being drawn out

Pornography distorts one's view of the opposite sex



and enticed by his own desire," points out the Christian disciple James. "Then the desire, when it has become fertile, gives birth to sin." (James 1:14, 15) Jesus said: "Everyone that keeps on looking at a woman so as to have a passion for her has already committed adultery with her in his heart."—Matthew 5:28.

As James and Jesus both indicate, humans act on the impulse of internal desires. Those desires, when fed and nourished, can in time become powerful obsessions. Obsessions are very hard to resist and can eventually push a person into action. Thus, what we introduce into our minds can have a powerful effect on what we eventually do.

Sexual fantasies can directly interfere with our worship of God. That is why Paul wrote: "Deaden, therefore, your body members . . . as respects fornication, uncleanness, sexual appetite, hurtful desire, and covetousness, which is idolatry."—Colossians 3:5.

Paul here links sexual appetite with covetousness, which is an inordinate desire for something that one does not have.* Covetousness is a form of idolatry. Why? Because the one coveting puts that desired thing before all else, including God. Pornography stimulates lust for something that one does not possess. "You want somebody else's sexual life. . . . You can have nothing in your mind but that appetite for what you lack. . . . What we lust for, we worship," says one religion writer.

Pornography Corrupts

"Whatever things are chaste, whatever things are lovable, whatever things are well spoken of, whatever virtue there is . . . , continue considering these things," exhorts the Bible. (Philippians 4:8) A person who feeds his eyes and mind on pornography is rejecting Paul's exhortation. Pornography is immodest because it shamelessly exposes the most intimate and private acts to public view.

* Paul was not here talking about normal sexual appetite—the desire to have normal sexual intimacy with one's marriage mate.

It is hateful because it demeans and dehumanizes people. It is unloving because it does not promote either tenderness or caring. It merely promotes selfish lust.

By gratuitously portraying immoral and lewd acts, pornography undercuts or sabotages a Christian's efforts to develop a 'hatred for what is bad.' (Amos 5:15) It highlights the committing of sin and is in stark violation of Paul's encouragement to the Ephesians to "let fornication and uncleanness of every sort or greediness not even be mentioned among you, just as it befits holy people; neither shameful conduct . . . nor obscene jesting, things which are not becoming."—Ephesians 5:3, 4.

There is nothing harmless about pornography. It is exploitative and corrupting. It can destroy relationships, perverting the natural expression of sexual intimacy into a voyeuristic activity. It poisons the mind and spirituality of the voyeur. It promotes selfish, greedy attitudes and teaches people to view others as objects fit only to satisfy their lust. It undermines efforts to do good and have a clean conscience. Most important, it can hamper or even destroy one's spiritual relationship with God. (Ephesians 4:17-19) Truly, pornography is a scourge to be avoided.—Proverbs 4:14, 15.



In Our Next Issue

- **Gambling—Is It Harmless Fun?**
- **How Can I Make Myself More Attractive?**
- **I Won My Battle With Postpartum Depression**

The Cochineal

A Very Special Insect

BY AWAKE! WRITERS IN MEXICO AND PERU

HOW do we get the bright-red colors in some lipsticks and other cosmetic products? It might surprise you to know that the crimson dye found in some blush and lipstick products comes from the cochineal, a scale insect that feeds on the prickly pear cactus. Let's take a closer look at this very special insect.

Harmful or Helpful?

The adult female cochineal measures about one eighth of an inch in length, which is about the size of a match head. Male cochineals are only about half the size of the female. But do not let the size of cochineals fool you. One reference work says: "They are among the most destructive insects." Despite this reputation, however, some farmers actually cultivate them. Why? In order to obtain carmine, a beautiful red dye that is derived from the dried, crushed bodies of female cochineals.

Since the days of the ancient Mixtec population, who lived in the modern-day state of Oaxaca, Mexico, cochineals have been used for dyestuffs. Spanish conquerors were fascinated by the cochineal's crimson color, and soon many Europeans indulged their taste for rich tints with this natural dye. Britain used to use cochineal for the traditional scarlet color of military uniforms. The use of cochineal was so widespread that from about 1650 to 1860, only gold and silver surpassed it as Mexico's most valuable export.

Disappearance and Recovery

By the mid-19th century, synthetic dyes began to replace natural colorants. Many factors contributed to this. John Henkel of *FDA Consumer* magazine explains: "Chemically synthesized colors simply were easier to produce, less expensive, and superior in coloring properties." Thus, within a short period of time, synthetic colors took over the market for color additives in food, drugs, and cosmetics. "But," says Henkel, "as their use grew, so did safety concerns."

Studies in the 1970's suggested that certain synthetic colorings might cause cancer. As these potential health hazards became known, natural dyes began making a comeback. The nation of Peru, for instance, now produces some 85 percent of the world's supply of cochineal. The Canary Islands are known for their cochineal harvest, as are southern Spain, Algeria, and countries in Central and South America. However, the present-day demand for carmine exceeds its availability, so the government of Mexico is attempting to increase its production.

How Carmine Dye Is Produced

The cochineal spends its entire life on the pads of the prickly pear cactus. It protects itself from predators by secreting a powdery, waxlike substance. This fluffy material encapsulates the insect and serves as its home. But it also makes the insect easy to locate at harvesttime.

Only female cochineals contain the red pigment, carminic acid. Pregnant cochineals contain the highest concentration of it. Thus, in order to obtain the best-quality dye, workers take special care to harvest pregnant cochineals just before they lay their eggs. In the Andes of Peru, the harvesting takes place about three times within a seven-month period. Cochineals are brushed off the plant using a stiff brush or are scraped off with a dull blade. After they are dried, cleaned, and pulverized, the powdered insect bodies are processed in ammonia or sodium carbonate solution. Insect solids are removed by filtering, leaving the remaining liquid purified. Lime may also be added in order to produce purple shades.

While the thought of applying makeup produced from insects may not sound very appealing, you can rest assured that natural "color additives are among the most scrutinized," says Henkel. "Those colors have been studied, studied, and restudied, sometimes dozens of times." So if you receive a compliment about how radiant you look, it may be due in part to the cochineal, a very special insect!

- 1. Cochineals on a cactus pad**
- 2. Close-up of pregnant females**
- 3. Dried cochineals**
- 4. Processing of liquid used in cosmetics**

Products made with the dye





The World's Longest Road Tunnel

BY AWAKE! WRITER IN NORWAY

If you want to see impressive mountains and fjords, come to western Norway! You will be awestruck! In addition, the narrow, winding roads and the many tunnels attest to man's ingenuity. Recently a new tunnel was completed—a feat of engineering that surpasses any of its kind. It is the Laerdal Tunnel, the world's longest road tunnel—a highway 15.2 miles long, bored through solid rock! Imagine driving into the mouth of the tunnel, knowing that after just a few minutes, there will be more than 3,000 feet of mountain overhead!

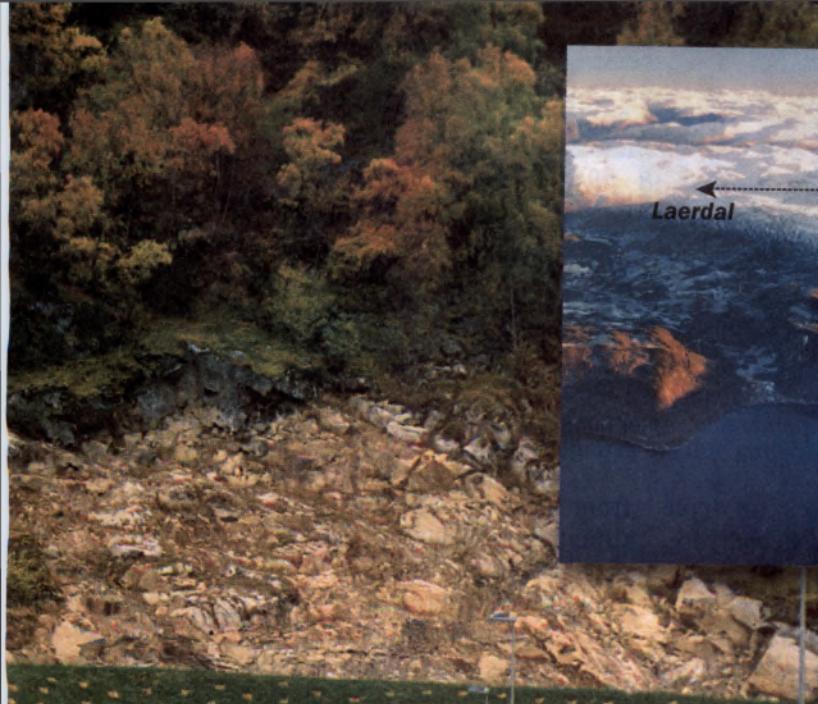
Why was such a long tunnel needed? It is an important part of the main link between the two biggest cities of Norway, namely Oslo (the capital, in the east) and Bergen (on the west coast). Other mountain roads between these cities are difficult during winter because of snow and wind. Therefore, a new route, one that would be reliable in bad weather, was greatly needed. In 1992 the Norwegian parliament decided that the new highway would include a tunnel between the small communes of Aurland and Laerdal. After five years of construction, the tunnel was officially opened in November 2000. How was this feat of engineering accomplished? How safe is the tunnel? What is it like to drive through it? Let's take a look.



The Problems of Construction

The tunnel connects Laerdal and Aurland, but the workers actually started in three places at the same time. A team started from each end, and a third group began work on a ventilation tunnel 1.6 miles long, which was to meet the main tunnel 4 miles from the Laerdal entrance. How could the three teams coordinate the drilling so as to be sure to meet, deep inside the mountain? To determine the exact starting point of each team, satellite navigation systems were used, and the direction of the drilling was guided by laser beams. These laser beams controlled the movement of the drilling rigs to ensure that holes drilled for explosives would be accurately positioned.

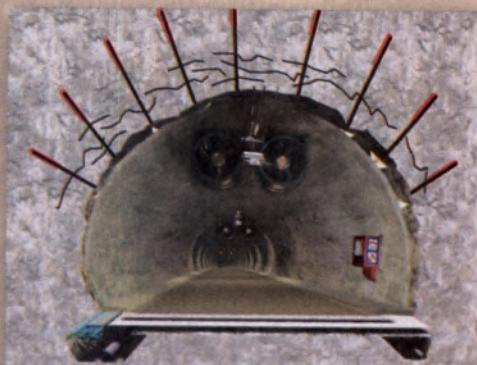
For each blast, about 100 holes were drilled, each 17 feet in depth. These holes were packed with some 1,000 pounds of explosives, which resulted in about 20,000 cubic feet of crushed rock. This rubble was then hauled out by truck. Before the drilling operation could start up again, the walls and the roof of the tunnel had to be secured. Long steel bolts were used, and the surfaces were sprayed with fiber-reinforced concrete, known as shotcrete. Each team advanced some 200 to 230 feet weekly. In September 1999, the breakthrough took place



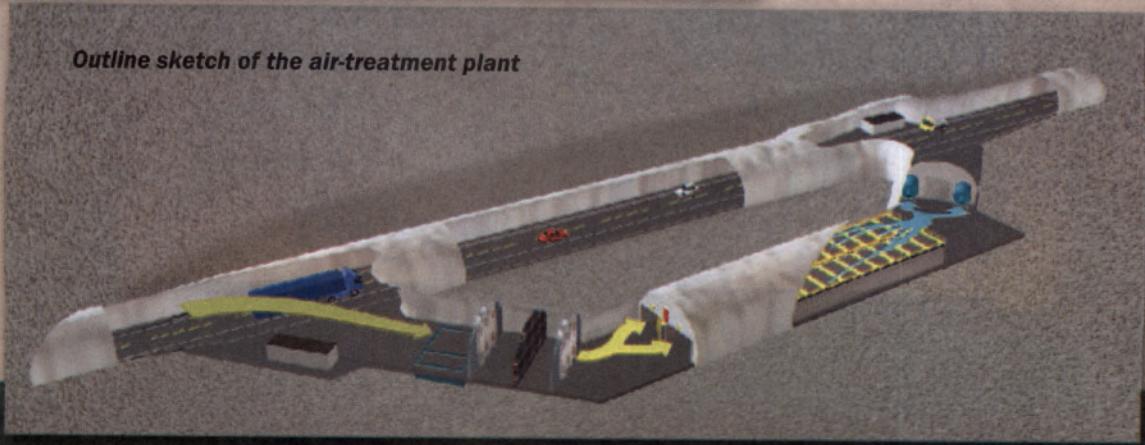
Route of the tunnel



Laerdal entrance



Cross section of tunnel,
showing steel bolts
securing walls and roof



Outline sketch of the air-treatment plant

when the two teams working on the main tunnel met, with a deviation of about 20 inches! Fourteen months later the tunnel was opened on schedule. At this point, the cost had reached \$120 million.

How Was Ventilation Provided?

Ensuring good air quality always presents a challenge to tunnel engineers. Since it takes approximately 20 minutes to drive through the Laerdal Tunnel, it is especially important that the air be clean enough to breathe. How was this achieved?

The 1.6-mile ventilation tunnel, which is 4 miles from the Laerdal opening, reaches out to a nearby valley and serves as a chimney, or outlet channel. Fresh air is drawn into the tunnel from both ends, and polluted air exits through the ventilation tunnel. Two powerful fans installed in the ventilation tunnel—with a combined top capacity of 60 million cubic feet an hour—can be used to increase the airflow when the air is highly polluted. This system supplies adequate fresh air at the Laerdal side of the tunnel; yet, something more had to be done for the Aurland side, which is longer. Therefore, 32 smaller fans, impulse fans, were installed in



The tunnel has some 100 emergency telephones and nearly 400 fire extinguishers

the tunnel roof to increase the airflow toward the ventilation tunnel. However, as this air flows the long distance from the Aurland side to the mouth of the ventilation tunnel, it becomes more and more polluted. How could this problem be solved?

The solution was to build a cleaning plant in a 300-foot-long parallel tunnel six miles

from the Aurland opening. At both ends, this tunnel is connected with the main tunnel. The air in the main tunnel is diverted into this parallel tunnel, where up to 90 percent of the dust and nitrogen dioxide is extracted.

With this ventilation system and cleaning process, the Laerdal Tunnel can satisfactorily handle up to 400 cars an hour. Sensors inside the tunnel monitor air quality and regulate the effect of the ventilation system. If the pollution level becomes too high, the tunnel will be closed to traffic, but so far this has not been necessary.

How Safe Is It?

Some people are apprehensive about driving through a tunnel. This fact along with recent serious accidents and fires in several European tunnels has made safety a matter of high

There are three mountain halls with special lighting effects



priority in the Laerdal Tunnel. What has been done to make the tunnel safe?

A control center in Laerdal constantly monitors the various security systems in the tunnel, and if safety is compromised, the tunnel will be closed. Many precautions have been taken in order to enable quick closing and rapid evacuation of the tunnel. Also, emergency telephones have been installed every 820 feet, and two fire extinguishers every 410 feet. The control center automatically registers the location of any extinguisher removed from its place. If one is removed, red traffic lights warn drivers not to enter the tunnel, and signs and lights inside the tunnel instruct drivers to drive out of the tunnel in the safe direction, away from the danger. The drivers are able to turn their vehicles around because there are turnarounds for cars every 1,640 feet and 15 locations that allow larger vehicles to turn around. The tunnel is also equipped with a radio antenna system that makes it possible to inform drivers by means of their car radio. Counting and photo systems monitor all traffic in and out of the tunnel. The road authorities consider this to be a very good level of security in view of the relatively low traffic density.

How Is This Tunnel Different?

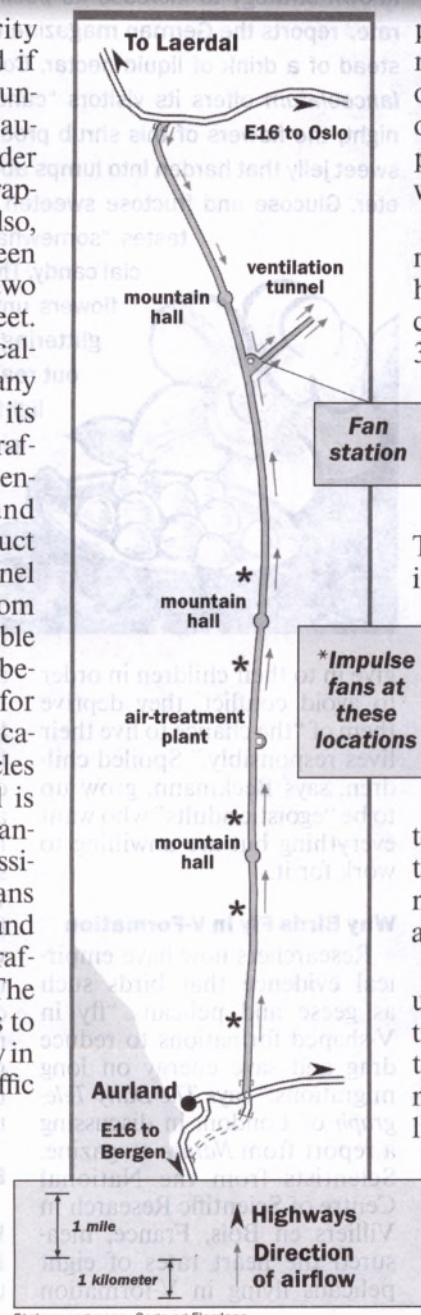
What is it like to drive through the tunnel? An important aim of the engineers

The Laerdal Tunnel

was to make driving through the tunnel a positive experience so that drivers would feel safe and would also drive safely. To accomplish this, the interior of the tunnel was designed with the help of, among others, traffic psychologists at a research institute and professional light designers, as well as a driving simulator.

The result? Well, the tunnel is not quite straight. Gentle curves help prevent drivers from becoming drowsy, yet they can see 3,000 feet ahead. Curves also make it easier to determine the distance to oncoming traffic. Three big cavelike mountain halls serve to break up the monotonous journey. This creates an illusion of driving through four shorter tunnels instead of one long one. Special lighting in these halls, with yellow or green light at the floor and blue light above, gives an illusion of daylight coming in and a sunrise. These effects together with good light along the length of the tunnel make most drivers feel comfortable and safe.

Now travelers can enjoy the unique experience of passing through the world's longest road tunnel. This feat of modern engineering has resulted in a reliable link between the east and the west of Norway. It is powerful evidence of what man can do when he uses his skill and ingenuity in a constructive way.



Statens vegvesen, Sogn og Fjordane

Watching the World

Healthy Flying

For a more pleasant flight, Mexico City's newspaper *El Universal* suggests the following: (1) Because air on board planes can be very dry, drink plenty of liquids. (2) Dry air can irritate the eyes, so wear eyeglasses instead of contact lenses. (3) Do simple exercises at your seat to relax your muscles and stimulate circulation in your legs. (4) Take a walk down the aisle every so often. (5) Wear shoes that are easy to remove, and use a footrest—perhaps your overnight bag. (6) Wear comfortable, wrinkle-free clothing made of natural fibers to allow your skin to breathe. (7) Drink alcoholic beverages moderately or not at all, as altitude increases the effects of alcohol. (8) Adjust the air-conditioning so that it does not directly hit your neck or back. (9) Try to sleep, preferably using an eye mask. (10) Chew something during takeoff and landing to alleviate pressure in the ears. Babies can be given a pacifier.

Spoiled Children in Germany

"A new culture of giving in" to children has been noted among parents, says Udo Beckmann, chairman of a German teachers' union. According to the newspaper *Südwest Presse*, Beckmann said that more and more children were being badly spoiled and, as a result, were not willing to exert themselves in school. "He stated that it was no longer an exception for parents to feel that homework puts 'too great a strain' upon their children and that it is 'unreasonable' to demand that children learn for class tests." The report also said that when parents constantly

"Candies" for Birds

'A Brazilian plant uses a hitherto unknown strategy to increase its pollination rate,' reports the German magazine *GEO*. Instead of a drink of liquid nectar, *Combretum lanceolatum* offers its visitors "candies." Overnight, the flowers of this shrub produce pellets of sweet jelly that harden into lumps about a quarter of an inch in diameter. Glucose and fructose sweeten the gel, which researchers say tastes "somewhat like jelly babies," a commercial candy. The report explains that "when the flowers unfold their leaves at sunrise, the glittering, transparent candies are laid out ready as if on a tray." This floral delight attracts at least "28 bird species from eight families." While foraging from shrub to shrub, birds get a good dusting of pollen, thus promoting the plant's rapid spread.



give in to their children in order to avoid conflict, they deprive them of "the chance to live their lives responsibly." Spoiled children, says Beckmann, grow up to be "egoistic adults" who want everything but are unwilling to work for it.

Why Birds Fly in V-Formation

Researchers now have empirical evidence that birds such as geese and pelicans "fly in V-shaped formations to reduce drag and save energy on long migrations," says *The Daily Telegraph* of London, in discussing a report from *Nature* magazine. Scientists from the National Centre of Scientific Research in Villiers en Bois, France, measured the heart rates of eight pelicans flying in V-formation

and then compared these figures with their "wing beats and flight patterns." The researchers found that the birds' heart rates dropped when in formation and that they beat their wings less frequently than when flying solo, even though their speed was similar. "In birds flying in formation," says *Nature*, "each wing moves in an upwash field that is generated by the wings of the other birds in the formation." This strategy enables great white pelicans to conserve up to 20 percent more energy than when flying alone.

Bible Reading in France

Although 42 percent of French people surveyed have a Bible, only about 2 percent say that they read it almost every



day, according to a poll published in the Catholic newspaper *La Croix*. Seventy-two percent say they "never read the Bible." Of those polled, 54 percent considered the Bible to be "an outdated book" that was "out of sync with the modern world." The report explains that "French people first consider the Bible from a cultural viewpoint," looking to it for an explanation of "the origins of Judaism and Christianity." *La Croix* states that "each year, about 250,000 Bibles and 30,000 New Testaments are sold in France."

Accredited School of Astrology

A school in the United States "where students learn to write horoscopes and give advice about the future . . . has won accreditation from a federally recognized body, in what is be-

lieved to be a first for a school of astrology," says *The New York Times*. According to the institute's founder, "the stars were favorably aligned" the month of the accreditation. Called the Astrological Institute, the school has courses that include "a master class on the asteroid goddesses" and a class on "how to write an astrological column." Most graduates "set up private practice, though some are hired by holistic healing centers, spas and cruise ships." The *Times* stated that "the institute received accreditation . . . after demonstrating that its teachers were qualified and that its graduates could be placed in jobs." However, according to the head of the Council for Higher Education Accreditation, "the accreditation did not validate astrology, but only recognized that the school fulfilled its promises to students."

Mount Everest Cleanup

The usual picture of Mount Everest, earth's highest mountain (29,035 feet), is one of pristine beauty and grandeur. However, a report in the New Delhi magazine *Down to Earth* reveals that Mount Everest has become a huge garbage dump. The hundreds of climbers who have scaled Everest's slopes over the decades have left behind literally tons of junk, including "empty oxygen cylinders, old ladders or poles and plastic canes." The dirtiest camp, says the report, is "the South Col camp, from where most climbers mount their final climb to the summit." Bhumi Lal Lama, an official of the Nepal Mountaineering Association, said that "we are considering paying [Sherpas] US \$13.50 for each kilogramme [2.2 pounds] of garbage they collect." Sherpas "usually act as guides and carry supplies for people" climbing Everest, says the report.

Happy Italian Children

"The Italian child is the happiest in Europe," says the Rome daily *La Repubblica* in reporting on a study by the Italian National Center for Documentation and Analysis of Childhood and Adolescence. Researchers found that 96 percent of Italian children grow up in homes with both parents, which is a higher percentage than in other European countries, where separation and divorce are more common. Additionally, over half also have grandparents living either in the same home or nearby. Thus, "8 out of 10" grandparents see their grandchildren "more than once a week." This, says the report, contributes to a child's "sense of belonging" and reduces loneliness. Says psychologist Alessandra Graziottin: "The happiness of a child, like that of an adult, is derived, not from riches or designer clothing, but from feeling loved."

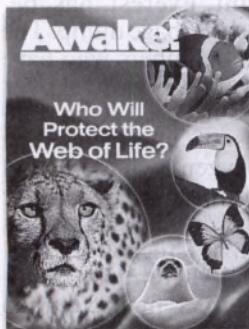


"Magic Spell" Backfires

"A Ghanaian man was shot dead by a fellow villager while testing a magic spell designed to make him bulletproof," reports Reuters news service. A number of villagers in northeastern Ghana had asked a witch doctor to make them invulnerable to bullets. "After smearing his body with a concoction of herbs every day for two weeks," says the report, the victim "volunteered to be shot to check if the spell had worked." The victim died instantly from a single rifle shot. Afterward, angry neighbors grabbed the witch doctor and beat him severely because his magic spell had failed. When seeking protection from rival tribesmen, people living in the far north of Ghana often consult witch doctors.

From Our Readers

Web of Life I am 11 years old, and I really love animals. When I received the series "Who Will Protect the Web of Life?" (November 22, 2001),



I couldn't wait to read it. I feel so bad for the wandering albatross, pictured on page 7. It is sad that they are drowning because of being accidentally caught on fishing hooks. I also liked the last picture on the page, the freshwater sawfish. Please keep printing articles like these!

S. V., United States

Prisons Words cannot express how I felt reading the article "Stories of Faith From a Historic Prison." (November 22, 2001) I have a son who is in prison for bank robbery. This is his second time. I am going to send this article to him. I pray that it will touch his heart and encourage him to accept the love that Jehovah has for all of us. Thank you for the comfort you bring to us.

C. M., United States

Suicide Thank you so much for the series "Life Is Worth Living." (October 22, 2001) When I was in middle school, I was under a lot of stress. Jehovah really supported me through the Bible and Christian association. Still, I felt unworthy. When I read the box entitled "Will God Forgive Me for Feeling This Way?" it was as if Jehovah were talking directly to me. It is such a joy to know that Jehovah does not forget people like me!

S. H., Japan

I want to tell you of my joy after reading this series. How happy I was not to be lectured, as I expected to be after reading the cover title! The box "Will God Forgive Me for Feeling This Way?" made me want to cry. Thanks to this article, I was able to talk with a Christian sister about what I am going through. Thank

you for handling this delicate subject.

A. F., France

I have read this series eight times. When I was in middle school, I thought about suicide. Death seemed attractive to me. This series helped me to realize that even though I may have an unhappy daily life, it is good to be alive. I am not one of Jehovah's Witnesses, but for some time I have been reading the *Watchtower* and *Awake!* magazines. You people are really wonderful!

S. M., Japan

Battered Women Thank you for the series "Help for Battered Women." (November 8, 2001) The title on page 3—"Maybe This Time He'll Change"—expresses the hope I've had for years. I can confirm the truthfulness of what you state on page 4, that all too often sympathy is shown to the perpetrator instead of the victim.

S. M., Germany

This series was so heartwarming. As no doubt many others did, I cried uncontrollably from the very first page because I remembered the hardship and the pain that I at one time endured. I treasure the thought that Jehovah views each one of us as precious. As a full-time evangelizer, I have found that people who live where I preach are eager to read this article, so much so that I have had to request extra copies. Many thanks for providing such valuable information.

K. J., Australia

"A Monument to the Devil Himself"

BY AWAKE! WRITER IN SPAIN

AN EXTRAORDINARY statue stands in the city of Madrid, Spain. Its appearance and its title—"The Fallen Angel"—may not surprise the casual observer. A closer look, however, reveals that it is a monument to none other than Satan the Devil!

A visitor to Spain, traditionally a Catholic country, expects to see statues of angels or "saints" but not one dedicated to the ruler of the demons. Notwithstanding, Ricardo Bellver, a 19th-century Spanish sculptor, decided to break with tradition. He was familiar with John Milton's epic poem *Paradise Lost*, which describes how Satan was ousted from heaven because of his pride and rebellion. In 1874, Bellver completed a statue portraying this dramatic fall.

Bellver did not depict the Devil as a horned, beastlike creature in harmony with traditional representations of Satan. Quite the contrary, he imagined the ruler of the demons as a beautiful but corrupt angel at the moment he was hurled from heaven. (Revelation 12:9) And this portrayal harmonizes more closely with what the Bible itself says.*

What did the people of Madrid think about such a statue? According to one art historian, some were appalled by the idea of erecting a statue to Satan. The Spanish government, however, put up the money, and the statue won two prizes

for artistic merit, one in Madrid and the other in the International Exhibition of Paris in 1878. Art triumphed over tradition, and by 1879 the impressive bronze statue took its place in Retiro park.

In today's secular society, this statue to Satan raises few eyebrows. "The city of Madrid should feel proud to be the only city in the world that has dedicated a monument to the Devil himself," asserts María Isabel Gea in her work *Curiosidades y Anécdotas de Madrid* (*Curiosities and Anecdotes of Madrid*). Be that as it may, few of the thousands who throng Retiro park every Sunday give the statue a second glance.

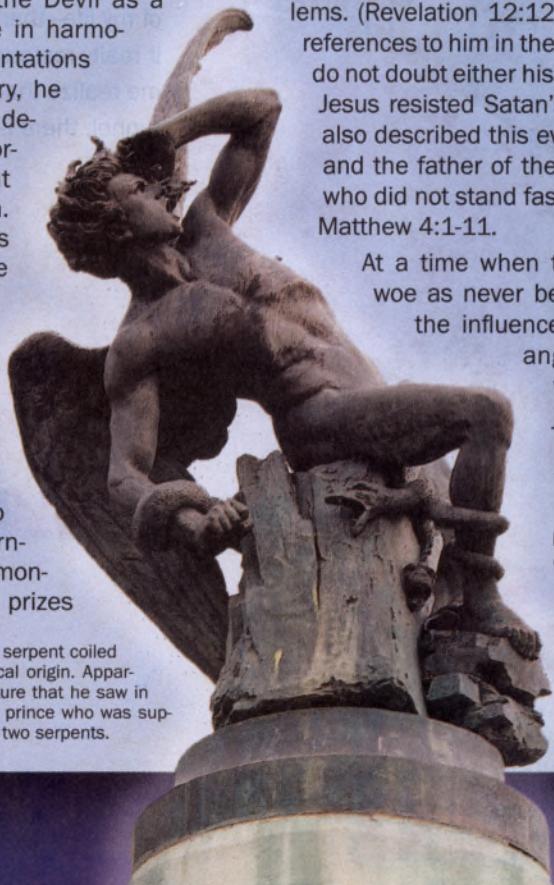
Likewise, few people today realize that Satan is the invisible source of many of the world's problems. (Revelation 12:12) But, in view of the clear references to him in the Scriptures, Bible students do not doubt either his existence or his influence. Jesus resisted Satan's blatant temptations. He also described this evil spirit creature as "a liar and the father of the lie" and as 'a manslayer who did not stand fast in the truth.'—John 8:44; Matthew 4:1-11.

At a time when the earth is experiencing woe as never before, it is vital to oppose the influence of this frustrated fallen

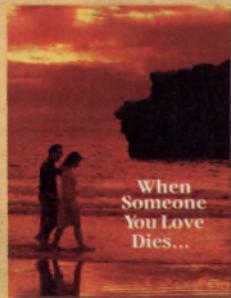
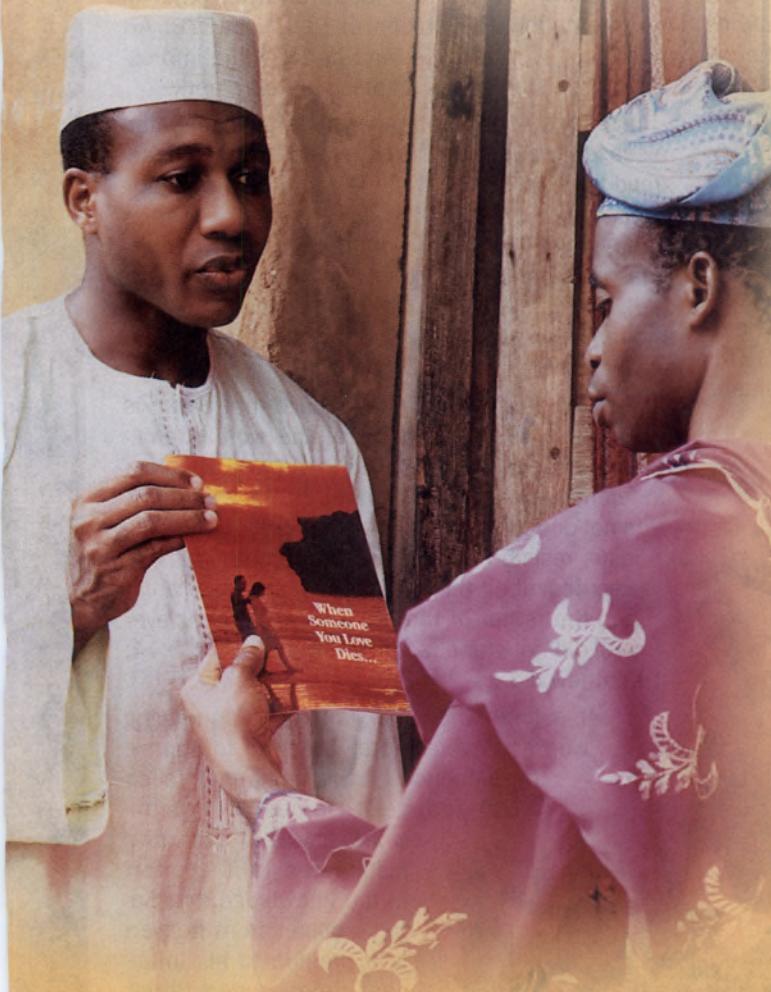
angel.* (James 4:7) Meanwhile, lovers of truth and justice can take comfort in the knowledge that Satan's ouster from heaven is a prelude to his imminent defeat when Christ 'breaks up the works of the Devil.'—1 John 3:8.

* Another feature of the statue, the serpent coiled around Satan's body, has a non-Biblical origin. Apparently, Bellver was inspired by a sculpture that he saw in Rome of Laocoon, a legendary Trojan prince who was supposedly killed, along with his sons, by two serpents.

* For more information about resisting the influence of Satan, see the book *Knowledge That Leads to Everlasting Life*, published by Jehovah's Witnesses.



"IT CAME AT THE RIGHT TIME"



THAT is what a man from the city of Abakaliki said in a letter to the branch office of Jehovah's Witnesses in Nigeria. He was referring to the brochure *When Someone You Love Dies*, which had recently been given to him. He explained:

"I lost my beloved wife, Tochi, in death soon after childbirth on June 18, 2000. More than a month later, I had still not recovered from the shock, numbness, emptiness, and disbelief of one of the most terribly traumatic tragedies that has ever befallen me. Then in July one of Jehovah's Witnesses handed me a copy of your publication *When Someone You Love Dies*. The brochure was to me like medicine, and gradually I am beginning to pick up whatever pieces remain of my life—thanks to the advice it offers. It really restored hope in me and made me realize that at the end of the dark tunnel, there is light."