contact

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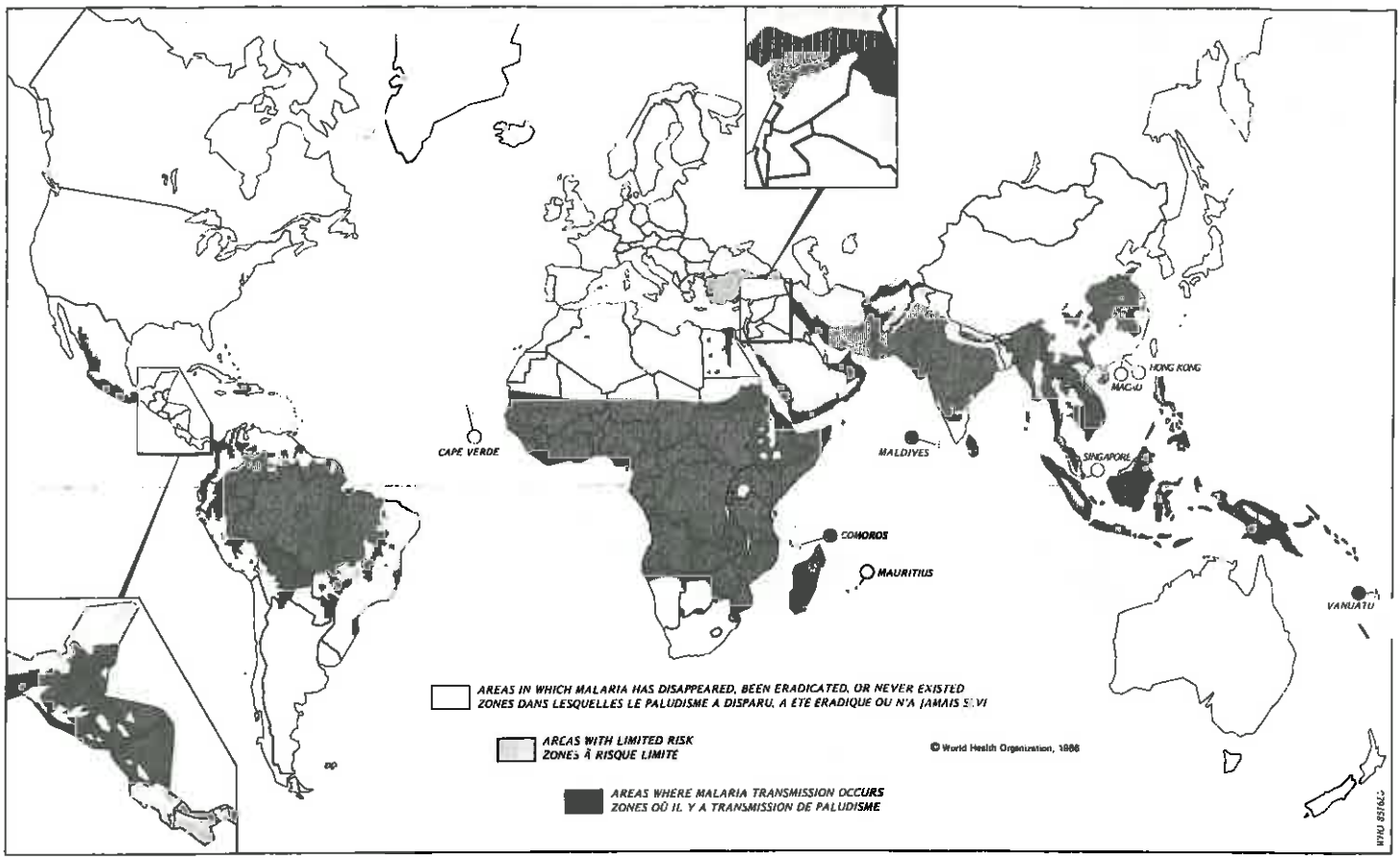
UPDATES ON :

MALARIA

AIDS

GUINEA - WORM

EPIDEMIOLOGICAL ASSESSMENT OF STATUS OF MALARIA, 1984



CASES REPORTED TO THE WORLD HEALTH ORGANIZATION

	AIDS From 1981 discovery to Jan. 1987	MALARIA 1983 *
Americas	31,741	831,000
Europe	3,858	71,000
Africa	2,324	5,636,000
Oceana	395	1,300,000
Asia	85	2,529,000
TOTAL	38,403	10,367,000

* latest year with reporting from all areas

MALARIA: A NEW BATTLE PLAN

by David Hilton, MD*

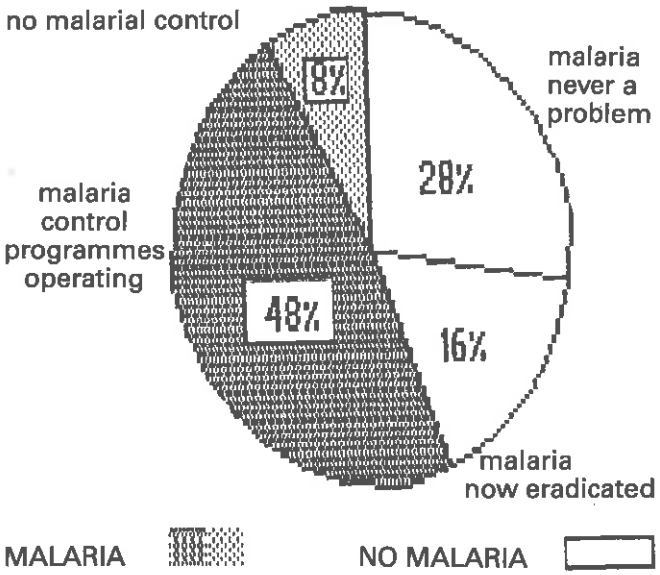
A radical change in the approach to malaria has been prescribed by the World Health Organization's Expert Committee on Malaria. Results were poor from conducting campaigns against malaria independently from other health problems. Therefore the committee gave its full support to the 1985 World Health Assembly recommendation to integrate malaria control into primary health care (PHC). In presenting their report to the WHO Executive Board, Secretary General Dr. Halfdan Mahler described it as a remarkable change as compared to previous policies and practices of the Committee.

Malaria, caused by a microscopic parasite which is transmitted by the bite of a mosquito, has long been considered by many to be the world's most serious disease problem. Although only 5.3 million cases were reported to WHO in 1984 (the most recent year with available statistics), it is estimated that **there are on the order of 98 million cases annually** (1). Deaths from malaria are harder to estimate. In the 1970s they were thought to be near 750,000 annually in Africa south of the Sahara alone! Recent studies, however, showed surprisingly low death rates there, probably due to the availability of antimalarial drugs. **Deaths world wide are still estimated in the hundreds of thousands every year.**

Out of the 1984 world population of 4,751 million, 2,600 million or 56% still live in areas where malaria is a serious health problem (see fig. 1). Since these are mostly in the developing countries the problem receives relatively little attention in industrialized nations, and it is difficult to find resources to combat it. Many Third World persons point out the glaring difference between this and the current panic over AIDS, which is also a threat in North America and Europe (see 3rd article).

Figure 1

WORLD POPULATION
Exposed to Malaria



It is precisely because of a lack of resources, reports WHO, that "the overall world malaria situation has not improved in the last 15 years." Although India and China report downward trends, the number of cases is increasing in areas of Asia and the Americas undergoing intensive agricultural colonization.

The problem is compounded by the continued development of strains of the malaria parasite which are resistant to antimalarial drugs and strains of mosquitos resistant to insecticides used to control the transmission.

* *Dr. Hilton is an Associate Director of the CMC.*

What is needed in order to improve malaria control, even more than the development of new technology, is better application of the knowledge already available.

This has led the Expert Committee on Malaria to turn to the primary health care sector, only recently adopted in many countries, to carry out the broad range of activities needed to bring the disease under control.

Countries with well developed primary health care systems, such as China, have already demonstrated the potential of this approach. There the implementation of antimalarial measures by community health workers, the early diagnosis and treatment of cases in the community, and the improvement of general health conditions through health education have virtually eliminated mortality from malaria and greatly reduced the severity of clinical attacks. The same success has been demonstrated in a number of localized areas in other parts of the world by community based primary health care programmes operated by churches and other non governmental organizations. (2)

How does this new approach translate into concrete action at the local level for those working in primary health care?

** First, and foremost, any antimalarial activity at the local level must be closely related to district, regional, and national activities. The malarial situation varies greatly, even from district to district, in distribution, type, and resistance of parasite and mosquito. Also the existing efforts at malaria control by both government and NGOs must be taken into consideration. Therefore any initiative for local action should be developed, where possible, in consultation with the district medical officer.

The Christian Medical Commission (CMC) believes that, where no system exists, it is best to begin at the community level. It is not required, or even necessarily desirable, to wait for a referral system to be in place before starting community health worker training. CMC experience indicates that when referral level facilities are used to initiate health activities they nearly always are over burdened with health problems that could be taken care of in the community, and resources are totally used up, preventing the establishment of community based services.

In areas where no programme exists, the following guidelines, extracted mostly from the Expert Committee Report, may be useful:

** ADDRESSING SOCIO-ECONOMIC FACTORS

It is generally accepted that malaria disappeared from most developed countries as a result of social and economic improvement. Therefore community based activities directed at improving these factors would be expected to reduce the incidence and severity of malaria over time. Such activities include provision of clean water, housing, and sanitation, improvement in agricultural production, and basic education. Many projects have demonstrated that these activities can be carried out even in the least developed of communities by the people themselves with local materials, when motivated by a member of the community trained in community organization. (3)

** HEALTH EDUCATION

By providing health education in a meaningful way, the community health worker can increase awareness in the community of appropriate ways to use health services as well as specific measures to prevent malaria.

** TREATMENT

The most basic antimalaria activity is the early diagnosis and appropriate treatment of the disease. It is therefore essential that patients or their parents not be deterred by the need to travel to distant clinics or hospitals and/or by long waits to get into the examining room. Community health workers should be responsible for small enough populations to know them well and be accessible at all times. They can learn to give treatment based on clinical diagnosis. Simple fever protocols can be established to identify localized infection, acute respiratory infections, and known epidemic diseases. In areas endemic for malaria, people with fever not thought to be from one of the other known causes should be treated for malaria.

In malarious areas where there are no health activities, management of fever with antimalarial drugs may be considered as the starting point for primary health care. In this case community health workers may be required to give a full course of chloroquine to all infants and

young children. In older children and adults, the health workers would give a course of the drug to individuals with undiagnosed fever. Treatment should be with drugs that are safe.

Community health workers should be able to recognize such indications of severe malaria as confusion, abnormal sleepiness, coma, seizures, abnormal bleeding, jaundice or severe anemia, inability to take oral medication, or failure to respond to initial treatment, and refer to the next level of health care.

At this, the first referral level, trained paramedicals should be able to recognize and refer severe malaria, confirmed by microscopy if possible, and treat less severe cases with intramuscular injections of antimalarials when necessary. Appropriate management of seizures and hyperpyrexia are also needed skills at this level.

Specific treatment recommendations by the WHO experts vary widely according to the local situation but **CHLOROQUINE** (known by many trade names including Nivaquine, Resochin, Aralen, and Delagil) is still considered to be drug of choice for treatment of suspected or confirmed malaria in all areas where it still maintains clinical effectiveness. In the past it was recommended that only a single dose of 10 mg per kilo be given to semi-immune individuals (those native to a malarious area) but the new recommendation is that every case be treated with a full course of 25 mg of chloroquine base for each kilogram of body weight given over 3 days (see fig. 2). In areas where resistance to chloroquine exists, sulfadoxine/pyramethamine (Fansidar) is listed as the second line drug for treatment of confirmed malaria failing to respond to chloroquine. Other drugs such as mefloquine and quinine are used only in limited areas where resistance to Fansidar is a problem. Indiscriminate use of these 2 alternative drugs is strongly discouraged to reduce chances of resistance to these becoming widespread. In most cases information on whether, and how, they should be used can be obtained from health authorities in the country.

Figure 2

TREATMENT OF MALARIA WITH CHLOROQUINE TABLETS 250 mg (150 mg base)

Age	1 day Initial/ after 6 hours	2 day	3 day
0 - 1 year	¼ + ¼	¼	¼
1 - 4 years	1 – ½	½	½
5 - 12 years	3 – 1	1	1
Adult	6 + 2	2	2

From WHO *Advances in Malaria Chemotherapy*

Shortage of currency, especially foreign exchange, makes availability of drugs a problem in many countries. In some places, especially Africa, commercial channels reach the outlying areas more effectively than do those of government. In this situation, well informed community health workers may be able to educate communities on the appropriate use of drugs available in the markets.

Given the logistical problems of delivering pharmaceutically pure chloroquine to 98 million patients with malaria all over the world each year, CMC reminds readers of traditionally used herbal medicines. The original antimalarial, quinine, was discovered in the bark of the Cinchona tree being used by traditional healers to treat fevers. Dr. Hari John, physician and CMC Commissioner from India, reports excellent results with the administration of Andrographics panniculata, 4 leaves for adults and 2 for children, in her community health program in Tamil Nadu.

Although many hopes are based on the development of a vaccine for malaria, the word from a recent WHO sponsored meeting on the subject was that an effective vaccine for human use is not likely to be available in the near future.

** PREVENTIVE DRUGS:

WHO recommends the use of prophylactic antimalarial drugs in malarious areas only for pregnant women and non-immune visitors, both of which are at very high risk for severe complications and death from malaria. "Mass prophylaxis" in children under five is no longer recommended because: "experience shows it to be impossible to achieve continuous suppression in a significant proportion of the population; it may interfere with the development of protective immunity; it may accelerate the development of drug resistance; it uses scarce resources better used for treatment; and it might increase the risk of retinopathy (chloroquine induced eye damage) occuring during the lifetime of the individual." Many clinicians in the tropics, how-

ever, still believe that pyrimethamine administered to small groups of children personally known to a community health worker is safe and effective. They site programs in which communities reported dramatic reduction of morbidity and mortality lasting over a period of years.

There have been many changes and much confusion about which drugs to use *for prevention* in the two high risk groups. For pregnant women, *the experts recommend chloroquine,* where it is still effective, at a dose of 300 mg base per week. Proguanil, for a while in disfavor, is now the recommended alternative at a dose of 200 mg daily, if necessary in combination with chloroquine. Sulfadoxine/pyrimethamine (Fansidar) and amodiaquine (Camoquin) have shown evidence of causing severe toxic reactions and are no longer recommended for prophylaxis.

There are many medicines and much conflicting advice on how visitors can avoid getting malaria. Figure 3 is a summary of the *latest recommendations of the malaria experts at WHO,* which will be updated whenever a change occurs.

Figure 3

MALARIA: ADVICE FOR TRAVELLERS

ALL PERSONS VISITING A MALARIOUS AREA SHOULD:

** Use repellents, long sleeve clothing, and mosquito nets or coils to prevent mosquitoes from biting.

** Take preventive medicine:
  * 300 mg of **chloroquine** once a week
  * starting two weeks before entering
  * until six weeks after leaving

** See a doctor immediately if you become ill.

** Carry along three tablets of Fansidar to take (all at once) **ONLY** if:
  * you develop fever and chills, and
  * you cannot go to a doctor.

  If, after taking, Fansidar, you continue to feel sick, see a doctor as soon as possible.

** MOSQUITO CONTROL ...

... can be approached on a community and individual level as well as in a national programme. Use of bed nets soaked with safe, long lasting insecticides is recommended and within the economic reach of many. Repellents such as mosquito coils may also be useful. Many herbs, such as Holy Basil (Oscinum sanctum) and the widely available Citronella can be rubbed on the skin or burned to repel mosquitos. Screening of houses is feasible in some cases. Promotion of these and other methods in the framework of a community based health programme can be very useful. Community activities such as local cleanup and clearing of ponds should be encouraged *(see fig. 4).* The entire community must agree to spray the inside of their houses with insecticide for this to be effective in reducing transmission of malaria by mosquitos.

Figure 4

Example of malaria vector control measures for individuals and communities

Type of activity	Individual action	Community action
Reduction of man-vector contact	– Simple or insecticide soaked mosquito nets and wall mats – Screening of houses/bedrooms – Protective clothing to prevent mosquito bites – Use of repellents to prevent mosquito bites – Use of mosquito coils	– Site selection of village – Deforestation and clearance of undergrowth near the villages and dwellings (specific to *Anopheles balabacens s.l.* and *A. nuneztovari)* – Vector deviation by siting of cattle sheds away from human dwellings (specific to zoophilic anophelines)
Destruction of adult mosquitos	– Use of flit-gun or aerosol packs	– Indoor residual spraying of chemical insecticides under proper supervision
Destruction of larvae	– Destruction or removal of small breeding sites	– Larviciding – Rearing and release of larvivorous fish – Flushing and cleaning of drains – Removal of algae and other growth from ponds
Source reduction and source alteration	– Covering water containers – Filling-in breeding sites	– Community clean-up campaign to remove rubbish and water-retaining debris – Intermittent irrigation of rice fields – Filling of vacant plots and pumping out of water – Land reclamation

Malaria has been with us for a long time. Over the years strategy against it has gone from control to eradication and back to control. In the quest for "health for all", the new strategy is taking the fight against the world's number one disease to those most devastated, and most able – the people themselves.

WHO Photo

Each and every family must be responsible for spraying their homes with insecticide. Otherwise the neighbors' mosquitos could still attack...

References:

1. "World Malaria Situation 1984", **World Health Statistics Quarterly,** 39 (1986).
2. "A Case Study from the Philippines", **Contact 56,** June 1980, and "Rural Basic Health Services: the Lardin Gabas Way", **Contact 41,** October 1977.
3. "Comprehensive Rural Health Project, Jamkhed, India", **Contact 10,** August 1972.

WHO Photo / P.N. Sharma

Spray teams must often walk several hours to reach isolated villages. But now community health workers are motivating people to control malaria themselves.

AIDS: THE FACTS

(adapted from WHO)

* AIDS (Acquired Immunodeficiency Syndrome) is caused by a virus, called HIV
  Only about 25% of those who become infected with the virus develop the disease, AIDS.

* AIDS virus is spread from person-to-person in three ways:
  - through sexual contact with an infected person;
  - by injecting infected blood into the body;
  - from infected mother to her unborn child.

* AIDS can be prevented.

  To prevent sexual spread:
  - limit the number of sexual partners;
  - avoid sexual relations with persons who have many sexual partners;
  - avoid anal and oral intercourse;
  - use condom (sheath) during intercourse.

  to prevent spread by contact with blood:
  - test all blood for transfusions before use;
  - give transfusions only when necessary;
  - ensure that needles, syringes, or other instruments that pierce the skin (for example in tatooing, circumcision, ear piercing, injections, etc.) are clean and sterile. Special care must be taken for needles, syringes, and other instruments that will be reused, to make sure that they are properly cleaned and sterilized after each use.

  to prevent spread before birth from mother to child:
  - advise infected women about the risks of infection from mother to unborn child.

* AIDS is **NOT** spread:
  - through food, water, or air;
  - by casual contact, such as when people work together, shake hands, or eat together;
  - among members of the same household, unless they have sexual contact or are born of an infected mother;
  - by mosquitos or other insects;
  - by toilet seats;
  - between faithful partners of many years.

AIDS is recognized by the WHO as a global health problem. However, for most people the risk to life and health is much greater from cigarette smoke, alcohol, driving without seat belts, and harmful eating habits. In developing countries undernutrition, impure drinking water, lack of sanitation and infectious diseases like malaria are far more common hazards to health. All of these diseases, AIDS included, can be prevented.

WHO Photo / Fairfield Hospital, Melbourne, Australia

AIDS virus, as seen through an electro-microscope, budding from the surface of an infected lymphocyte.

WHO Photo / E. Mandelmann

More and more intravenous drug users are contracting AIDS.

AIDS AND THE CHURCH
AS A HEALING COMMUNITY

The Executive Committee of the World Council of Churches, having received a report on the consultation held in Geneva in June 1986 on "AIDS and the Church as a Healing Community", wishes to call the attention of the churches to the urgency of this issue.

We call on the churches to respond appropriately to the need for pastoral care, education for prevention and social ministry as called for by the consultation.

The Executive Committee also asks the General Secretary of the WCC to plan for appropriate follow-up of the recommendations of the consultation by the sub-units on Church and Society, Education, and the Christian Medical Commission.

THE MEDICAL BACKGROUND

The consultation provided important medical information, including the following:

"The rate of spread of AIDS and its high fatality is frightening. AIDS is a viral infection which recently appeared, being identified only five years ago. It is sometimes considered to be the plague of the 20th century.

"According to reports from the World Health Organization, AIDS is present on all continents where it is contracted by men, women and children, regardless of socio-economic status, education, culture or religion. The number of people ill is increasing geometrically, doubling every 10-14 months. At this time, the world has about 30,000 persons with AIDS (24,000 in the USA, 2600 in Europe and 1000 reported cases in Africa).

"This number is probably underestimated, as many countries have not been able to give complete information. The number of persons infected by the virus who have no clinical manifestations (so-called carriers) is unknown. It probably numbers in the millions. It appears that a great number of people are infected annually. The rate of infection may vary significantly from one place in the world to the next.

"In Africa the illness is contracted primarily by a heterosexual population; in Europe, North America and Oceania primarily by male homosexuals and intravenous drug users. Mortality is high, reaching 75% one year after diagnosis and 100% three years after diagnosis. No efficacious treatment has been found. The hope of a vaccine is very uncertain. So far only preventive measures can help to stem the epidemic."

THE CHURCH AS A HEALING COMMUNITY

The consultation identified the following theological foundation for the Church as a healing community: "In the mysteries of life and death we encounter God; this encounter calls forth trust, hope and awe rather than paralysis and immobilization. Those we cannot cure we can support and sustain in solidarity: 'I was hungry ... thirsty ... a stranger ... naked ... sick ... imprisoned, and you fed ... clothed ... took care ... visited' (Matthew 25).

"The AIDS crisis challenges us profoundly to be the Church in deed and in truth: *to be the Church as a healing community.* AIDS is heartbreaking and challenges the churches to break their own hearts, to repent of inactivity and of rigid moralisms. Since AIDS cuts across race, class, gender, age, sexual orientation and sexual expression, it challenges our fears and exclusion." The healing community itself will need to be healed by the forgiveness of Christ.

The consultation called on the churches to undertake the following:

1. **Pastoral Care**

"The people of God can be the family that embraces and sustains those who are sick with AIDS or AIDS-related conditions, caring for the brother, sister or child without barriers, exclusion, hostility or rejection.

"Death is a mystery. We are angry and helpless when faced by its reality. We need to acknowledge our helplessness and not deny it. This has particu-

lar significance as we share the experience of ministry with persons with AIDS and as we are ministered to by them", as we grow with them in our Christian understanding of death in the light of Christ's death and resurrection.

2. Education for Prevention

"To assure high quality information on the disease, we invite the churches to participate actively with the health professions, local governments, where possible, and local community agencies in programmes of prevention education. We invite the churches to use the World Health Organization and its networks of local resources.

"AIDS is preventable. Society must concentrate sufficient resources on its prevention. This will involve measures that should reasonably be adopted by all: carriers, the sick, current high risk groups and the general population, since the latter includes many undetected carriers. It also calls urgently for responsible forms of behaviour by all, and for the improvement of physical and socio-economic conditions in many parts of the world.

"Preventive measures and altered behaviour patterns must address the different factors that favour the transmission of the virus; it is necessary, therefore, that the different modes of transmission prevalent regionally be clearly described and understood."

3. Social Ministry

"Given the widely varying valuations of some of the issues related to the disease, member churches and ecumenical councils will have to be rigorously contextual in their response. We affirm, however, certain commonly held values, especially:

1. the free exchange of medical and educational information about the disease within countries and across borders;
2. the freedom to pursue research about the disease;
3. the free flow of information about the disease to patients, their families and loved ones;
4. the right to medical and pastoral care regardless of socio-economic status, race, sex, sexual orientation or sexual relationship;
5. the privacy of medical records of persons with AIDS or AIDS-related Complex or positive antibodies.

"Since AIDS is a global epidemic, effective action by churches and individual Christians must extend not only to the AIDS neighbour closest at hand, but also through effective global collaboration to the stranger on the farthest side of the world."

The consultation also called on the churches "to work against the real danger that AIDS will be used as an excuse for discrimination and oppression and to work to ensure the protection of the human rights of persons affected directly or indirectly by AIDS."

The Executive Committee also wishes to call to the attention of the churches these further concerns expressed by the consultation:

> "to confess that churches as institutions have been slow to speak and to act; that many Christians have been quick to judge and condemn many of the people who have fallen prey to the disease; and that through their silence, many churches share responsibility for the fear that has swept our world more quickly than the virus itself;
>
> "to affirm and support the entire medical and research community in its efforts to combat the disease;
>
> "to affirm that God deals with us in love and mercy and that we are therefore freed from simplistic moralizing about those who are attacked by the virus."

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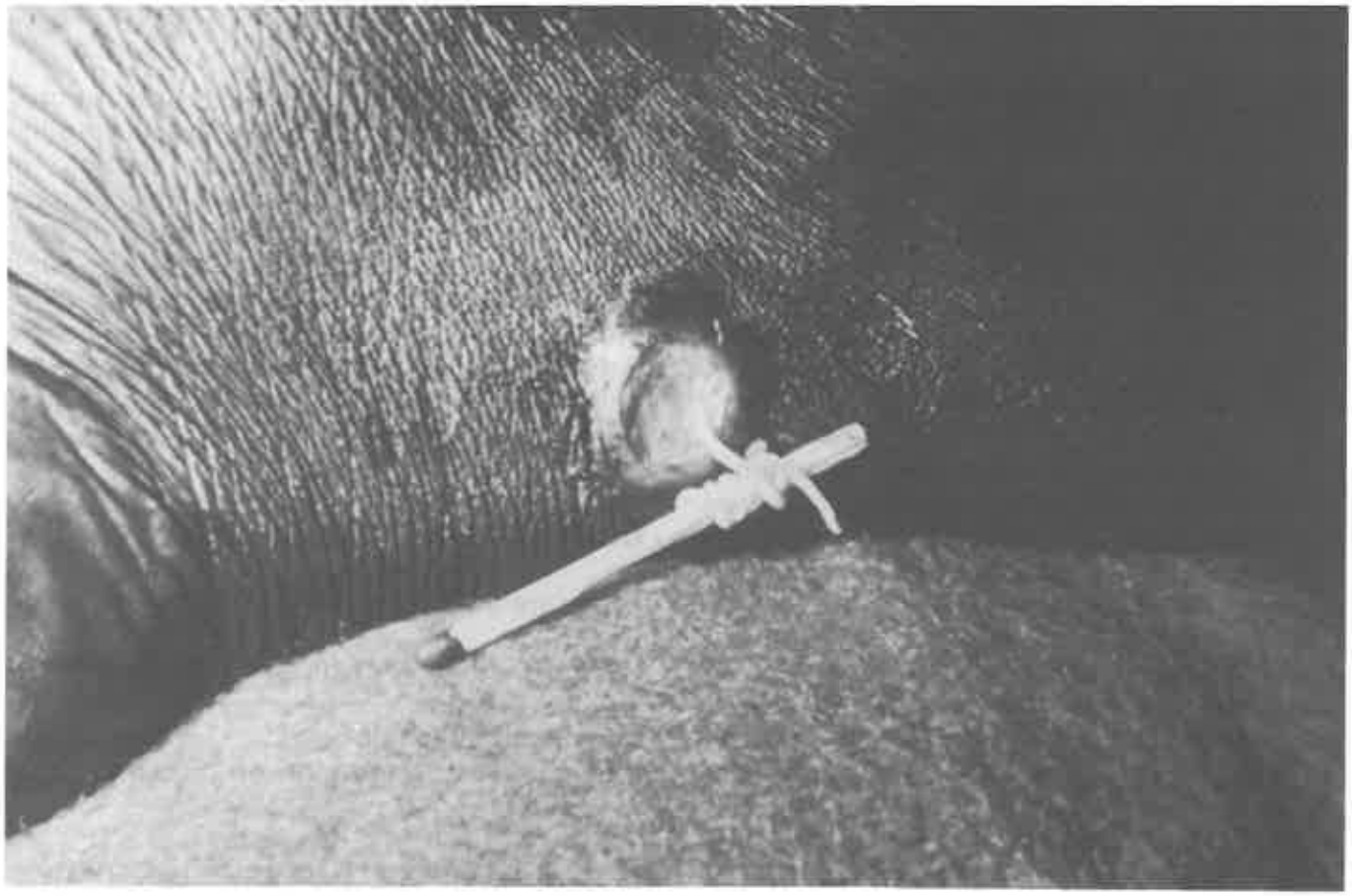


WHO Photo / H. Zaiman

A traditional way to heal the abscess caused by Guinea-worm is to wind out the emerging worm on a matchstick. (Ivory Coast)

ELIMINATION OF GUINEA WORM DISEASE

by Dr. Donald R. Hopkins*, Deputy Director, CDC

THE DISEASE

Guinea-worm is one of the most painful afflictions known to mankind. About 12 months after humans ingest contaminated water, narrow white worms, measuring up to 1 meter long (3 feet) raise a blister on the victim's skin, and then emerge through it. Most worms come out on the foot or lower leg, but may emerge from any part of the person's body. Several weeks are required before the entire worm emerges through the ulcer, since only a fraction of an inch of the worm comes out each day. Sometimes, the adult worm may be seen and felt just below the skin, or at the center of a deep abscess.

Usually the female adult worm emerges when the affected part of the body is immersed in water. She ejects hundreds of thousands of immature larvae, which, when released into stagnant bodies of fresh water, are ingested by the pervasive "water flea". Two weeks later, the larvae mature, and persons drinking the water containing the infected flea are exposed to the infection.

The disease is rarely fatal, except where wounds produced by the emerging worms become infected with tetanus bacilli. One study conducted in Burkina Faso found that 7.1% of tetanus cases seen at a major hospital were complications of Guinea-worm. In less than 1 percent of cases, a major joint may be permanently immobilized. Usually, the victim suffers local pain and tenderness at and near the sites of the emerging worms for weeks or

* *Dr. Hopkins is Deputy Director, Centers for Disease Control, and Director, WHO Collaborating Center for Research, Training and Control of Dracunculiasis.*

months, especially if there is secondary bacterial infection, as often occurs.

There is no known immunity and no effective cure for the disease. Persons drinking contaminated water are infected year after year, although each year's infections are manifest only in the following year, if at all. Some worms die in the body and are absorbed or calcified. Calcification is visible through x-rays.

At best, modern anti-worm drugs sometimes ease the emergence of the worm, but no drug has been found suitable for effective mass treatment. Aspirin and preventive treatment against tetanus are currently more practical. The traditional treatment is to wind the emerging worm slowly around a matchstick or twig – an ancient practice which some historians believe to be reflected in the staff of Aesculapius, symbol of the healing arts. Some historians also believe Guinea-worm to have been the "fiery serpent" which plagued the Israelites on the shores of the Red Sea.

SOCIO-ECONOMIC IMPACT

Over 100 million persons in Africa and the Indian subcontinent are estimated to be at risk of Guinea-worm infection. The socio-economic impact of the disease on affected populations is tremendous, but because these people live in rural areas and in poverty, this issue is largely overlooked.

More than half of a village's population may be affected at the same time, and the disease mostly strikes adults of working age, apparently because they drink more water. In one study, the period of incapacitation from the pain associated with emerging worms averaged 35 days; in another, 100 days. Moreover, the affliction is usually seasonal, striking just at the time of year when farmers must plant (early rainy season in Sahelian countries) or harvest their crops (end of rainy season/early dry season in countries closer to the Equator). Thus, by incapacitating a large segment of the most active workers for weeks or months, at the worst possible time of year, Guinea-worm disease greatly impedes agricultural production.

Guinea-worm also prevents children from attending school, either because of their own illness or the need to replace a disabled parent on the family farm. In Anambra State of Nigeria, one researcher documented absences from school at over 60% during the Guinea-worm season. Other studies in Nigeria, the Ivory Coast and Burkina Faso have confirmed the effect of Guinea-worm disease on school attendance, often during the period of examinations, year after year in areas where the disease is endemic. Some children who are able to go to school are distracted by the pain associated with an emerging guinea worm.

CONTROLLING THE DISEASE

There are 3 ways to control the disease:

1. safe sources of drinking water, such as tube wells
2. health education
3. chemical treatment of drinking water supplies.

Providing safe water is the preferred, and most expensive, intervention. A striking example of its effectiveness is the town of 30,000 people in Nigeria where the incidence of Guinea-worm dropped from over 60% to zero within 2 years after a piped water supply was introduced in the 1960s. Since there is no animal reservoir, and each infection in humans lasts "only" for 1 year, the worm cannot maintain itself once the cycle is interrupted.

Health education is less expensive than providing safe water sources and also a very important aspect of control. Villagers need to know how the disease is transmitted. Due to the year-long incubation period, the source of infection is often attributed to other causes. They also need to learn how to prevent the disease by boiling their drinking water or filtering it through a suitable cloth, and how to avoid contaminating the water supply by not entering it when they have a Guinea-worm blister or emerging worm. Boiling water is often not practical because of the scarcity or expense of fuel. A double layer of ordinary cotton cloth removes infected water fleas from the water, but debris and swollen fibers often impede filtration to intolerably slow levels. A German researcher in Burkina Faso has developed a monofilament nylon filter which is durable, effective, and resistant to clogging. This material can be adapted locally by sewing a rubber band in the hem to form a filter cap to fit over the mouth of any size vessel in which water is carried or stored.

WCC Photo

It's a shame to let manpower go to waste. But it's a much greater loss if 1 worker contaminates the water when a guinea worm is emerging from his skin, and later causes the disease in many other workers. (Sahel)

Health education is also necessary to encourage villagers to use and help maintain safe sources of drinking water when they are provided. The Centre Muraz in Burkina Faso (Section Parasitologie, Centre Muraz, B.P. 153; Bobo-Dioulasso, Burkina Faso), and World Neighbors (5116 North Portland Avenue, Oklahoma City, Oklahoma 73112, USA) working in Togo and Ghana, have developed an excellent brochure (1) and filp chart (2) suitable for teaching villagers about the infection and how to prevent it. A reduction of over 80% in Guinea-worm within 1 - 2 years has been achieved in an area of Nigeria, using health education alone.

Another effective control measure is periodic chemical treatment of drinking water sources with temephos (Abate), the same chemical which is being widely used in West Africa to control the black fly vector of river blindness (onchocerciasis). Temephos has a wide margin of safety for humans, is tasteless, odorless and colorless, does not kill fish, but is toxic to the water flea. Applied at the recommended dosage of 1 ppm at 6-week intervals beginning just before and continuing throughout the local transmission season, it, too, can greatly reduce the prevalence of Guinea-worm. A primary health care project on the Dogon plateau in Mali reduced guinea worm by 87% in 1 year by chemical treatment.

In Togo, a project by the Evangelical Church of Togo and World Neighbors used a combined approach of health education and safe water supply in working with an affected village of about 3,000 persons in Agu subprefecture. Health education alone was introduced from 1981 to mid-1983, after which the villagers contributed money and labor to help build 9 new wells (the village had had only 1 well before). As a result, the annual incidence of Guinea-worm disease in the village dived from 928 cases in 1981 to 7 cases in 1985.

NATIONAL PROGRAMMES

Of the remaining endemic countries, India has the only formal Guinea-Worm Eradication Programme, although the Ivory Coast has also set as a national goal its elimination. India and Pakistan are the only 2 non-African countries where Guinea-Worm is still a significant health problem. The programme in India, which began in 1980, uses a combined strategy of health education, provision of safe water sources to villages where Guinea-worm is endemic, 2 active searches each year for cases of the disease in all villages of affected states, and temporary chemical treatment of affected drinking water sources (mainly step wells) with temephos. As a result, Tamil Nadu, 1 of the 7 endemic states where the Indian programme began, was declared free of Guinea-worm infestation in 1985 (An aggressive control programme was underway in Tamil Nadu even before the national eradication effort began).

Between 1983 and 1984, the total number of cases found in India was reduced by 10%, from 44, 819 to 40,443. Between 1984 and 1985, the total number of cases had declined another 25%, to 30,134. Over the same 2 years, the number of affected villages in India has been reduced from 11,332 to 7,600. The target date for eliminating Guinea-worm from India is December 1990, the end of the IDWSSD.

(1) Centre Muraz
(2) World Neighbors

FAO Photo

India, through its formal Guinea-worm Eradication Programme, is providing safe water sources to villages where the disease is endemic.

The Ivory Coast has the most advanced programme of the affected African countries, its efforts based mainly on the provision of a vast rural water supply. Since 1982, health education has been intensified in association with the water supply programme. The result has been an impressive reduction in cases of Guinea-worm disease. In 1966, the annual total of reported cases was 67,123; in 1976 the total was 4,971; and by 1985 it was only 592.

In Guinea, the last known cases of the disease were reported in 1969, but Guinea-worm is not an officially reported disease there. I suspect that an ambitious rural water supply programme, beginning in the 1960's, may have already eliminated infection from the endemic areas in the northeast, bordering Mali. An active search will need to be undertaken to ascertain the true status of Guinea-worm in Guinea.

Nigeria, with an estimated 2.5 million cases of the disease, initiated its drive against Guinea-worm with its First National Conference in March 1985. Elsewhere in Africa, national plans for controlling or eliminating the disease have been developed in Benin, Burkina Faso, Cameroon, Niger, Togo, and Uganda. The recent regional workshop in Niamey, Niger will no doubt result in increased efforts to develop or implement national plans of action in these and other endemic countries.

One of the main elements of national strategy which was discussed at Niamey was the need to involve various other sectors and ministries besides health (such as water, education, rural development, ...), and the importance of involving non-governmental voluntary organizations such as medical missions. Indeed, if all groups involved in planning water supply, primary health care, education, health education, rural development, community mobilization and agricultural projects in affected rural areas were to simply include a "Guinea-worm component" in their activities, that alone would go a long way toward eliminating the disease. It would also add dramatic, rapid benefits to health, agriculture and education as other direct outcomes of those projects.

What Can Churches Do?

In addition to the overall "piggyback strategy" just mentioned, which may be appropriate for some churches, two other approaches seem especially well suited. The first is to help **improve reporting of cases of the disease.** One of the reasons Guinea-worm has been so neglected is that it is so under-reported. Although it does not kill, its socio-economic impact is considerable. Improved reporting will help national authorities to appreciate the extent and scope of the problem. At the meeting in Niamey, it was revealed that Guinea-

worm disease is officially reportable in at least 8 of the African countries concerned (Benin, Burkina Faso, Cameroon, Ivory Coast, Ethiopia, Ghana, Togo, Uganda). Except for the Ivory Coast, it is still vastly under-reported even in those countries. Whether the disease is officially notifiable or not, cases of Guinea-worm should be reported to the Ministry of health. This is true everywhere, but especially in Pakistan and Sudan, where very little statistical data on the disease are available.

Another practical course of action for church groups in affected areas is **health education,** to sensitize the populations concerned to the reasons why they suffer from this terrible disease, and to help them mobilize and organize themselves to do something about it. Depending on the community and resources available, desired outcomes of such education might be reduced pollution of water sources by persons with emerging guinea worms, treatment of local water sources with temephos, purchase and use of monofilament nylon filters, or even construction of wells to provide safe drinking water.

Even if its cause is misunderstood, it is so visible and has such a negative impact on so many aspects of the people's lives, that Guinea-worm disease can be seen as a common problem around which to mobilize communities as a part of primary health care. In surveys conducted in advance of rural water supply programmes in four major regions of Ghana, the development priorities of the rural communities, in order of preference, were found to be potable water, health services, and agricultural inputs. Eliminating Guinea-worm disease can contribute to all three. In a Nigerian study, villagers who were queried about their priorities for external assistance listed provision of electricity first, control of Guinea-worm disease second, and then provision of water, roads, construction of a hospital and other important needs.

Conclusion

The International Drinking Water Supply and Sanitation Decade (IDWSSD) was inaugurated in 1981. In April of the same year, the steering committee of the IDWSSD endorsed the eradication of Guinea-worm disease as a sub-goal of the Decade. The 34th World Health Assembly, in a resolution on the Water and Sanitation Decade a month later, indicated that the elimination of Guinea-worm disease would be one of the most important "health benefits" of the Decade. Guinea-worm is only transmitted to

WHO / UNICEF Photo by Bouhafa

To these village children in Bangladesh, this gathering place is a source of clean water and a source of hope.

humans through contaminated drinking water. It follows, therefore, that if the Decade's goal of providing safe drinking water is achieved, that disease should be drastically reduced if not eliminated entirely.

Less than half of the International Drinking Water Supply and Sanitation Decade remains, so the time for action against Guinea-worm is now. readers are also invited to share their experiences in combatting this disease with others, by writing **Guinea-Worm Wrap Up** c/o Virginia Sturwold, Ed.D.: Centers for Disease Control, International Health Program Office, Building 14, B-7, Atlanta, Georgia, 30333, U.S.A.

The 39th World Health Assembly...

... deplores the many adverse effects of Guinea-worm disease on health, agriculture, education, and the quality of life in affected areas of Africa and southern Asia, where over 50 million persons still remain at risk of the infection;

... recognizes the special opportunity afforded by the International Drinking Water Supply and Sanitation Decade (1981-1990) to combat Guinea-worm disease (as noted in resolution WHA34.25);

... stresses the importance of maximizing health benefits by using an intersectorial approach in the context of primary health care during the remainder of the Decade.

* * *

The 39th World Health Assembly is aware of the progress achieved to date by the Indian Guinea-worm Eradication Programme, the increasing awareness and actions beginning to be taken against the disease in Africa, and the successful elimination of the disease in several countries.

Therefore we:

1. ENDORSE the efforts to eliminate this infection, country by country, in association with the International Drinking Water Supply and Sanitation Decade;

2. ENDORSE a combined strategy to provide safe drinking water sources, active surveillance, health education, vector control, and personal protection, for eliminating the infection;

3. CALL on all affected Member States:

   A. to establish as quickly as possible, through primary health care, plans of action to eliminate Guinea-worm disease, giving high priority to endemic areas in providing safe sources of drinking water;

   B. to strengthen national surveillance of Guinea-worm disease and report the results regularly to WHO;

4. INVITE bilateral and international development agencies, private voluntary organizations, foundations and appropriate regional organizations:

   A. to assist countries' efforts to add, within the context of primary health care, a Guinea-worm disease control component to ongoing or new water supplies, rural development, health education and agricultural programmes in endemic areas by providing required support;

   B. to provide extra-budgetary funds for this effort;

5. URGE the Director-General:

   A. to strengthen international surveillance so as to monitor prevailing trends and incidence of this disease, and encourage cooperation and coordination between bordering endemic countries;

   B. to submit a report on the status of these activities in the regions concerned to the 41st World Health Assembly (May 1988).

Adapted by the Christian Medical Commission from Document A39/VR/15 of the 39th World Health Assembly, 16 May 1986.

7 APRIL IS WORLD HEALTH DAY

Each year the World Health Organization focuses attention on a topic important to world health through a programme of public information and health education. It does so as part of observances of World Health Day, 7 April, which marks the coming into force of its Constitution. For 1987, the topic is immunization and the theme: "Immunization: A Chance for Every Child."

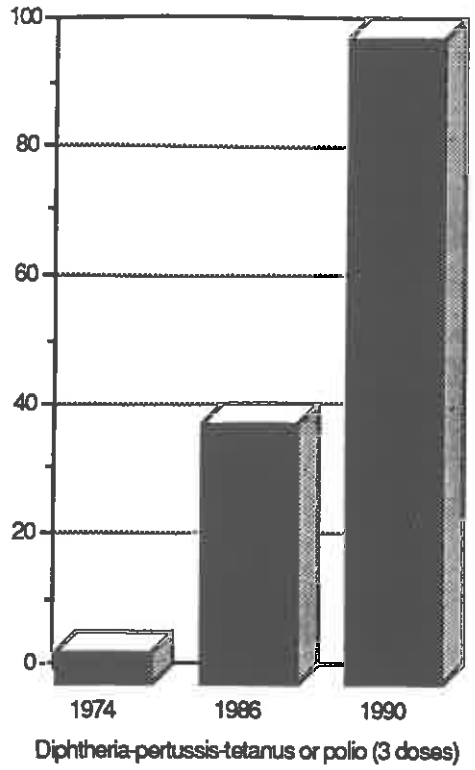
Millions of children die each year in developing countries, and countless others are disabled, as a result of vaccine-preventable diseases. Those lives could be saved by vaccines that have long existed in the developed world ...

Over a decade of work has been invested in this programme and much has been accomplished. But much still needs to be done. The story of immunization ... is basically one of hope for the world's children. The story is worth telling. The programme deserves continued support.

WHO 87/1

Yesterday, Today, Tomorrow

Expanded Programme on Immunization
World Health Organization



WHO 861796 *August 1986*

The World Health Organization's Expanded Programme on Immunization, launched in 1974, aims at protecting children against 6 diseases by 1990, namely: measles, diphtheria, pertussis and tetanus (DPT), polio, and tuberculosis.

This graph shows progress against DPT, or polio, which require three doses of vaccines.
– The mid-1970s: Less than 5 per cent of children under age 1 were protected.
– The mid-1980s: More than 40 per cent are protected.
– The 1990s: Although much has been accomplished, still much remains to be done to provide immunizations for the world's children, particularly in 18 countries where coverage reported for 1985 is less than 15 per cent for the third DPT dose.

Twelve of these countries are in Africa, 2 in the Eastern Mediterranean, and 4 in South-East Asia.

They account for 14 per cent of infants in the developing world.

USEFUL PUBLICATIONS

MALARIA

Malaria control as part of primary health care, Report of a WHO Study Group, World Health Organization, Technical Report Series 712, Geneva 1984, 73 pages.

Topics include: antimalaria action at the community (local) level, role of health services in the support of antimalaria action, human resource development for antimalaria action, intersectoral action, strengthening health infrastructure for malaria control through primary health care, areas for research, guidelines for antimalaria action in the context of primary health care, recommendations.

Price: Sw.fr. 8.–

Advances in malaria chemotherapy, Report of a WHO Scientific Group, World Health Organization, Technical Report Series 711, Geneva, 1984, 218 pages.

Topics include: problems facing malaria control, drug resistance in human pathogenic plasmodia, use of antimalaria drugs, recent progress in chemotherapeutic research, recommendations.

Price: Sw.fr. 20.–

WHO Expert Committee on Malaria, Eighteenth Report, World Health Organization, Technical Report Series 735, Geneva 1986, 104 pages.

Topics include: malaria control and developing primary health care systems, education and training of health manpower for malaria control, technological advances and their application to malaria control, research relevant to malaria control: field and laboratory, review of the present status of registration of malaria eradication, award of the Darling Medal and Prize, conclusions and recommendations.

Price: Sw.fr. 14.–

PLEASE NOTE: For all 3 above publications, "Special terms for developing countries are obtainable on application to the ... World Health Organization, Distribution and Sales Service, 1211 Geneva 27, Switzerland." The booklets are also available from this address.

AIDS

Weekly Epidemiological Record, Number 5, 30 January 1987, World Health Organization, 8 pages.

This bi-lingual (English-French) medical news service is currently in its 62nd year of publication. It provides updated information on current worldwide health concerns. Most recent topics include: Influenza, International Health Regulations, AIDS, Expanded Programme on Immunization, Biologicals, Travel Medicine, Vaccination requirements and centres.

Price: A one-year subscription is Sw.fr. 140.–

Available from: above address

CMC NOTES

MAP International

"Christian Health Care: The Challenge of Change" is a workshop taking place from 30 May to 2 June 1987 on St. Simons Island, Georgia, USA. Offered once every 3 years, more than 300 doctors, nurses, hospital administrators, mission board personnel and other health professionals from over 20 developing countries are expected to attend this 11th International Conference on Missionary Medicine. Challenges to be faced include nationalization, blocked currency, increased legislation, advanced technology and training. Special elective sessions will address the unique contributions of nurses. MAP International hopes to provide the opportunity to reflect on common problems and work towards their practical solutions.

Costs:
Registration before 15 april 1987: $195 ($100 for missionaries posted overseas, students, or registered spouses.) Registration after 15 April: $225. Lodging and meals $100 per person, includes 3 nights, double occupancy, 9 meals and refreshments.

More information from:
Registrar
International Conference on Missionary Medicine
MAP International
Box 50 / Brunswick, GA 31520
USA

THE SPIRIT OF HEALING,

18 - 25 April, 1987

"Can we as human beings step out boldly and follow our soul's intent, taking up the challenges in our lives and turning them into opportunities to create joy, peace and well-being? What are the obstacles in the path of the soul? It is often said: 'The path is the goal.' Can the path of healing be one of the most creative and life-embracing of goals? A Life centred in spirit, in the spirit of healing – what would it look like?"

This Conference will concentrate ... on discovering the inner causes of disease and how to eliminate them ... an experience of giving and receiving in a holistic way, with the needs of each individual being met as together we serve a higher purpose. Among those who have responded to the invitation to contribute during the week are:

Sir George Trevelyan, pioneer in development of adult and spiritual education in Great Britain, author of *Operation redemption.* **Sun Bear,** Native American medicine man of Chippewa Tribe, founder of Bear Tribe Medicine Society. He teaches how to stay healthy rather than cure illness. **Helen Ford,** medical doctor since 1973, trained intensively in working with natural substances and energies. **Ruth-Elaine Marggraf-Rhine,** art therapist, curative education in Steiner schools. **Geoff Freed,** co-founder and chairperson of the London Centre for Attitudinal Healing and staff member of St. James Church Healing Centre in Picadilly Square, London. **Molly Scott,** singer, composer and poet, teaches the power of sound and music to effect personal and spiritual change.

Different financial situations are recognized, and all who are interested are encouraged to write for more information to:

The Conference Secretariat
THE SPIRIT OF HEALING
Findhorn Foundation, Cluny Hill College
Forres IV36 ORD Scotland

CMC NEWS

A hearty welcome to 2 newcomers to the Christian Medical Commission, who joined us in January:

Ms. Christel Albert, Pharmaceutical Advisor, brings years of practical as well as advisory field experience to our staff. In Somalia, she was responsible for organizing the purchase of drugs, setting up a storage system and developing a network of distribution throughout a large number of refugee camps. Teaching and on-the-job training, in addition to consulting, were her primary duties while posted in Tanzania. For the last 4 years, she has been working as a hospital pharmacist in Germany, her country of origin.

Ms. **Birgitta Rubenson** comes to us as Programme Secretary (Nursing), replacing Dr. Ruth Harnar. Swedish by birth, she spent the first 19 years of her life in Ethiopia. Her work experience began as a ward nurse in a children's psychiatric ward of a hospital in Sweden, after which some of her posts have included maternal and child health clinics in Ethiopia and North Yemen, a training programme for traditional birth attendants and primary health workers, and the International Child Health Unit of Uppsala University, as Health Consultant to the Swedish International Development Authority.

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94	December 1986	Letting People Decide For Themselves – Eric Ram (CMC)

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Papers presented in CONTACT deal with varied aspects of the Christian community's involvement in health and seek to report topical, innovative and courageous approaches to the promotion of health and integrated development. A complete list of back issues is published in the 1st issue of each year in each language version. Articles may be freely reproduced, providing acknowledgement is made to: CONTACT, the bi-monthly bulletin of the Christian Medical Commission of the World Council of Churches.

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