

CLEARED FOR EXPORT: AN EXAMINATION OF  
THE EUROPEAN COMMUNITY'S CHEMICAL  
AND PHARMACEUTICAL TRADE/ANDREW CHETLEY

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**Examination of the European Community's  
pharmaceutical and chemical trade**

**Andrew Chetley**

CLEARED FOR EXPORT

An examination of  
the European Community's chemical and pharmaceutical trade

by Andrew Chetley

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Coalition Against Dangerous Exports (CADE)  
BEUC -- European Bureau of Consumer Unions  
EEB -- European Environmental Bureau  
HAI -- Health Action International  
ICDA -- International Coalition for Development Action  
IOCU -- International Organization of Consumers Unions  
PAN -- Pesticides Action Network  
SAN -- Seeds Action Network



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## INTRODUCTION

"Authorities in the northern Brazilian state of Para last week exhumed the body of a foetus which had been miscarried in December 1982 after eight months of pregnancy.

"Its mother, whose name has not been revealed, was the victim of spraying with the defoliant Agent Orange [Tordon 155, manufactured by Dow Chemicals].

"The foetus was found to have deformities of the skull and the spine.

"The state agriculture secretary, Joao Batista Bastos, has drawn up a list of 16 exhumations -- of which the foetus was the first -- to be carried out near the town of Maraba... Defoliant was used there in 1981 and 1982 to prevent the tropical forest from encroaching on the road and from damaging telegraph lines beside it.

"Along with a 52-year-old man and the foetus, the list is made up of 14 children who died from 1981 to 1983, at ages from less than one month up to 10 years. . . .

"All were children of poor squatters on plots of subsistence farming on the road verges, or of landless labourers. Three were of one mother, Maria Lima Rodrigues, and all those died within four months of birth.

". . . Like many other products banned or subject to discouragement in other countries the defoliant is still available in Brazil through sales efforts by foreign companies and their local outlets." (1)

"On November 8, 1982, a 31-year-old Singapore housewife suffering from rheumatoid arthritis went to see a G.P. and was given Phenylbutazone tablets.

"Nine days later, she returned to him, complaining of tension headaches and a neck infection. The doctor prescribed the same drugs.

"The next day, she complained of itchiness and saw a hospital doctor.

"On 19 November she was admitted to the Singapore General Hospital. Her condition worsened and she died on November 27.

"The drug had caused blistering and sloughing off of her skin in big sheets as if she had had burns. The post-mortem revealed that the sloughing had led to the exposing of raw red flesh on the body. Her lips, mouth and stomach had multiple small ulcers.

"Clinical Associate Professor Chao Tzee Cheng, a senior forensic pathologist who did the autopsy, told a coroner's inquiry into the death that Phenylbutazone was the drug which caused this violent reaction." (2)

These two incidents from different parts of the world illustrate a global problem that is increasing in magnitude: the trade in hazardous products. Both cases illustrate the most extreme consequences of that trade and the subsequent misuse of the products -- death, usually to innocent victims. But underlying these dramatic and tragic deaths are the probable millions of undocumented or poorly documented instances of non-fatal pesticide poisonings and unnecessary side effects as the result of inappropriate drug therapy.

The World Health Organization (WHO) in 1972 offered a "conservative" estimate of some 500,000 cases per year of accidental pesticide poisoning worldwide. (3) Oxfam has extrapolated those figures to suggest that by 1981, there would have been at least 750,000 cases, with anywhere from 14,000 to 29,000 fatalities, most of them (72%) in developing countries. (4)

Statistics on the hazards of inappropriate drug usage are harder to come by. In the United States, in 1974, adverse drug reactions were estimated to result in 30,000 deaths each year, at a cost of some \$2 billion in medical and hospital charges. (5) An earlier study in 1971, suggested that the number of deaths could be as high as 130,000. (6) In the UK, one study in 1979 found that at least two out of every five patients receiving drugs from their doctors suffer from side effects. (7) The UK Royal College of Physicians indicated that excessive prescribing "constitutes a major cause of adverse reactions" amongst elderly patients, and noted that one in 10 elderly patients are admitted to hospital solely or partly because of adverse drug reactions. (8) In the UK, an estimate of 6000 deaths each year "associated with National Health Service prescriptions" is described by a Cambridge Regius Professor of Medicine as "unlikely to be an under-estimate". (9)

Although statistics on the direct effects of the inappropriate use of pesticides and pharmaceutical products are incomplete, it is even more difficult to quantify the indirect effects. One of the most clearly identified problems is the increased resistance of both diseases and pests to some of the standard remedies. A growing bank of data is emerging on antibiotic resistance, resistance to leprosy treatment, resistance of the malaria-carrying mosquito to DDT and similar pesticides, resistance of the rice pest, the brown plant hopper to pesticide treatment. The technological solution to this problem is to escalate the power of the treatment: stronger, more toxic pesticides; stronger drugs with more potential side effects. It is a dead-end solution. Agricultural experts have been sounding warnings for several years now about the inability of the chemical industry to keep pace with the more rapid development of resistance in pests. Now, similar fears are being aired about pharmaceutical products.

A further long-term effect is the impact of chemicals on the environment, and what that may mean for future health. The increasing number and potency of carcinogens released into the air, the land and the water result in a corresponding increase in research to find anti-cancer drugs. It is a treadmill that belies the best advice on preventive medicine. Preventing the disease in the first place is more effective and less costly than dealing with its treatment afterwards.

The question of economics is also important. Both the chemical and pharmaceutical industries are amongst the most profitable of European enterprises. The companies claim that their continued healthy trading position is essential for the economic well-being of Europe. However, often overlooked in that argument is the impact this has on the econo-

mies of developing countries, on the economies of individual families within those countries, and hidden social costs of those industries in Europe.

Firstly, considerable foreign exchange has to be used to import the pesticides and medicines, limiting the funds available for stimulating the social and economic development programmes within the Third World. Secondly, the expense of those products inevitably means that only the wealthier strata within developing countries will be able to benefit from their application. Large landowners can afford the pesticides; small peasant farmers cannot. The result is a widening of the gulf between rich and poor, often with the smaller landholders being forced to sell their land. Similarly with medicines, it is generally the wealthy elites who are able to afford the costly Western medicines, while the poor, suffering from diseases that can be treated by a handful of inexpensive essential drugs, suffer in silence.

A further consideration is the long-term effect of our increasing dependence on chemical and technological solutions to agricultural and health problems. Both the pesticide and pharmaceutical industries are relatively "new". It has only been in the past 40-50 years that they have developed the techniques and products that now pose a potential problem to health. Few, if any, long-term studies have been done on the consequences of the chemicalization of our lives. The tragedies of Seveso and Bhopal or of Thalidomide show how rapidly and destructively those consequences can strike. Less well documented are the slow to emerge effects of residues in human and animal tissues, deformities which develop for no apparent reason, months or even years after a medicine or pesticide has been used.

The purpose of this report is to examine the involvement of European companies in the trade of hazardous products, particularly pesticides and medicines, identify their responsibilities and the responsibilities of host Governments to ensure that an equitable system of production and marketing is developed -- one which benefits both the exporting and importing countries and the people within their borders.

Notes and References:

1. Sahabat Alam Malaysia, Pesticide Dilemma in the Third World -- a case study of Malaysia, Penang, Nov 1984, p71
2. Consumers Association of Penang, Drugs and the Third World: Phenylbutazone and Oxyphenbutazone Sale and Hazards -- A Malaysian Study, Penang, Oct 1984, p65
3. WHO, Safe Use of Pesticides, 20th Report of the WHO Expert Committee on Insecticides, Technical Report Series No. 513, Geneva, 1973
4. Bull, D., A Growing Problem: Pesticides and the Third World Poor, Oxford, Oxfam, 1982, pp37-38.
5. US Senate, Examination of the Pharmaceutical Industry, Subcommittee on Health of the Committee on Labor and Public Welfare, Washington, 1974, p719
6. Shapiro, S., et al, "Fatal drug reactions among medical inpatients", Journal of the American Medical Association, 216, 1971, p467
7. Weitz, M., Health Shock, London, Hamlyn Paperbacks, 1982, p3
8. UK Royal College of Physicians report Medication and the Elderly, (1984) cited in: Medawar, C., Drugs and World Health, The Hague, International Organisation of Consumers Unions, 1984, pl2
9. Melrose, D., Bitter Pills: Medicines and the Third World poor, Oxford, Oxfam, 1982, p97

## A DANGEROUS PRESCRIPTION

The modern pharmaceutical industry is a new phenomenon, dating from the mid-1930s when the anti-bacterial drugs were discovered -- the so-called "sulfa drugs". Prior to this time, drug therapy was fairly hit and miss, with the possible exception of some effective vaccines which stimulated the body to produce antibodies against diseases such as diphtheria and smallpox. Most drugs were vague concoctions which reduced symptoms, eased pain or induced sleep. Basically, it was left to the human body to fend for itself in warding off illnesses. (1)

The discovery of the sulfa drugs was followed rapidly by the introduction of penicillin and its derivatives, until in the 1950s came the development of the modern tranquillisers, oral contraceptives, steroids and cardiovascular drugs. The 1950s were the boom years for the pharmaceutical companies in terms of new discoveries. It was an exciting time for medicine. This has been followed up through the 1960s, 1970s, and 1980s with more gradual advances in drug therapy, with fewer significantly important therapeutic breakthroughs. (2)

Yet, nearly 100 years ago, significant changes were occurring in health in the industrialised North. By the last quarter of the 19th century, mortality in children between one to two years was beginning a steady decline, with infant mortality similarly declining about 20 years later. By the time the first modern drugs were introduced, infant mortality was at about 50 per 1000 live births in the UK, and falling rapidly. The improvement from the turn of the century figure of about 160 deaths per 1000 live births "can be directly attributed to public health measures and social legislation which improved the living standards of working people". (3)

That dramatic improvement has implications for developing countries today, where many face the same infectious diseases that decimated European populations a century ago. Admittedly, modern technology and advances in scientific knowledge may help to speed up the solutions to health problems, as will a better understanding of what interventions are the most effective. Costa Rica is an example of one developing country which proves the point. In 1970, the infant mortality rate stood at 61 per 1000. In just 10 years, that figure was reduced to 19 deaths per 1000 by: developing a rural health programme to deliver primary health care throughout the country; increased surveillance and identification of diseases at an early stage; low cost immunisation programmes against major killer diseases; use of oral rehydration treatment to combat diarrhoeal diseases; improved water supply and sanitation; improved education. (4)

Some modern medicines played a role in this, a small but important role.

### **Essential Drugs**

One expert estimates that for the 700 or so most important chemical compounds that form the basis of modern pharmaceuticals, there exist at least 50,000 names worldwide, an average of 70 different names per compound. (5) Obviously, it is impractical to expect any one doctor, or even a group of doctors working together, to become familiar with such a diverse selection of drugs. Most doctors, in their daily practice, prescribe from a self-imposed short-list of drugs, usually 20-100. Similarly, individual hospitals in the UK have developed restricted lists of anywhere from 200-600 preparations. (6)

In 1977, the World Health Organization (WHO), after careful study, issued a guideline for governments, an Essential Drugs List, which gives some 200 preparations. WHO suggests that the drugs on this list will be adequate to meet more than 90% of pharmaceutical requirements of any country. (7)

A former director of the WHO division responsible for pharmaceuticals is convinced that rational prescribing based on a restricted list of drugs is the only sane approach, particularly in developing countries. He states:

"When we observe the proliferation of pharmaceutical products whose efficacy and safety have not yet been proved, or whose indications have nothing to do with the real needs of most people in the Third World, we have to make a rational choice if we are to make the best possible use of available resources." [original emphasis] (8)

The International Federation of Pharmaceutical Manufacturers Associations (IFPMA), which represents virtually all of the world's major pharmaceutical companies, was less than enthusiastic about the essential drugs list when it was first proposed.

"The pharmaceutical industry believes that the medical and economic arguments presented by WHO as justification for an essential drugs list are fallacious and that the adoption of the Report's recommendations could result in suboptimal medical care and might reduce health standards already attained." (9)

Joseph Stetler, head of the US Pharmaceutical Manufacturers Association (PMA) said it would be "poor business practice" to support the WHO essential drugs list. (10) When Michael Peretz, Executive Vice-President of the IFPMA, was asked specifically by one researcher why the IFPMA was obstructing moves by WHO and other international organisations to promote rational drug policies, he replied, "You can't expect us to support policies which run counter to our own interests." (11)

More recently, the tone has mellowed. With the activation of WHO's Action Programme on Essential Drugs in the early 1980s, the pharmaceutical industry began offering a spate of special offers to developing countries. According to Peretz, some 40-50 companies "demonstrated their sense of social responsibility" by agreeing to supply drugs to the most needy countries at preferential prices and provide expertise on procurement and delivery systems. (12)

Stetler puts that apparent change-of-heart into some perspective. "They are not interested in becoming welfare organizations. . . . It's just their perception that they will come out ahead in the long run by doing it that way." (13)

When the Association of the British Pharmaceutical Industry (ABPI) announced a programme providing £250,000 to help a small Third World country with the supply of basic medicines, one report indicated that there was some reticence. According to a letter written by the President of the ABPI to one of its member companies, it was necessary to take this step because of pressure, "essentially of a political nature" from WHO and the UK Department of Health and Social Security. (14)

## Non-essential Drugs

If pharmaceutical manufacturers are slow to respond to efforts to provide essential drugs, they are much less reluctant to fill the market with products of questionable efficacy. A study done by the UN Centre on Transnational Corporations found that in three countries -- Mexico, Kenya and Malaysia -- the products marketed by foreign transnational pharmaceutical companies "did not correspond to the major health requirements and priorities of each country", with the exception of antibiotics. In all three countries, the best selling products were vitamins and tonics, despite the different disease patterns in each country. (15)

A more comprehensive study in five South-East Asian countries found that

"health priorities such as TB and malaria . . . are not being properly cared for. Only small proportions of the patients are being treated and, in many cases not completely. Instead, huge amounts of resources are being diverted to morbidity and drugs items of little significance and often meaning over-treatment. These two conditions make consumption of drugs in the ASEAN region extremely inefficient and wasteful." (16)

With firms based in European Community (EC) Member States supplying between 27-37% of the total drug imports in ASEAN countries during 1976, it is clear that those companies must bear some responsibilities for the wasteful and distorted market. (17)

Similar distortions can be found in other countries. In the Philippines, in 1980, 42 million pesos were spent on Vicks VapoRub -- hardly an important medicine. By comparison, only 4.1 million pesos were spent on the treatment of malaria, which is a serious illness in the rural areas, and the 20,000 leprosy victims in the Philippines received only 215,000 pesos worth of drugs to treat their illness. (18) In the Philippines, in 1976, 27% of the total import of drugs was controlled by firms based in EC Member States. (19)

It is a pattern repeated over and over again throughout the world. Nearly 18% of all drug imports in North Yemen in 1980 were for vitamins and tonics, compared to only 1% for drugs to treat the country's three most widespread diseases: malaria, bilharzia and tuberculosis. In Sri Lanka in 1977, vitamin preparations, soluble aspirin and cough remedies accounted for over 50% of pharmaceutical production. In Nepal, in 1980, more than one-third of the drugs on the market were tonics. (20)

In Bangladesh, in 1981, an estimated 1500 million Taka (£39 million) was spent on drugs. According to an Expert Committee set up to develop a rational drug policy for Bangladesh,

"Nearly one-third of this money was spent on unnecessary and useless medicines such as vitamin mixtures, tonics, alkalisers, cough mixtures, digestive enzymes, palliatives, gripe water, and hundreds of similar products." (21)

Six EC-based transnational drug companies controlled 47% of the Bangladesh market. One of those companies, Hoechst (FRG), was manufacturing Polytamin Tonic, described by the Expert Committee as "one of the most abused drugs on the market". The justification offered by the company for selling its multivitamin compound was that such products were "essential in countries where a balanced diet is not available." (22)

Doctors with practical experience in Bangladesh dismiss Hoechst's argument. Dr Martin Schweiger notes that malnutrition is treated with food, not drugs, and that "people will die from a lack of calories long before they die from the lack of a particular vitamin." (23)

Obviously, money spent on unnecessary vitamins and tonics is money that cannot be spent purchasing the right amounts of nutritious foods. The Bangladesh Expert Committee also noted that the excessive production of these non-essential products meant that the country, as well as individual families suffered.

"Though the multinationals have all the technologies and know-how to produce sophisticated essential drugs and basic pharmaceutical raw materials, in Bangladesh, these companies are engaged mostly in formulation of simple drugs, including many useless products." (24)

As a result, 90 of the 182 essential drugs needed for the public health services were not being produced.

Even in the UK, the well-respected consumers' magazine, Which?, concluded that most of the £45 million spent on vitamins during 1983 was a waste of money and a hazard to health. A survey of casualty wards of 20 hospitals in 1981 found one in every 1000 patients admitted for having taken an overdose of vitamin pills -- many of them were children. (25)

In 1982 the Bangladesh government took steps to improve its pharmaceutical situation, with the adoption of a Drugs Control Ordinance. (26) In 1985, the UK government also began to rationalise pharmaceuticals with the introduction of a restricted list of drugs recommended for use on the National Health Service. (27) Both these initiatives stimulated vociferous opposition from the pharmaceutical industry. In both countries, the industry took full-page advertisements in leading newspapers, campaigned vigorously within the health professions, claimed the measures would take away a doctor's freedom to prescribe, and would ultimately lead to the destruction of the pharmaceutical industry. (28)

#### **Bad Information Means Bad Medicine**

Sadly, another common factor in the marketing of pharmaceuticals around the world is the inconsistency of information about the same drugs in different countries.

There is a clear commercial rationale for this practice, explained by a former medical director of E. R. Squibb & Sons:

"The incidence of disease cannot be manipulated and so increased sales volume must depend at least in part on the use of drugs unrelated to their real utility or need." (29)

Thus, for example, the UK Data Sheet for the Sandoz drug, pizotifen, used for the treatment of migraine, lists in small print as a possible side effect "a gain in weight or increased appetite". In Pakistan, Sandoz promotes the same drug with a headline claim: "the latest and most effective appetite stimulant". (30)

In 1973, a survey of 55 packs of chloramphenicol from 21 countries, conducted by the International Organization of Consumers Unions (IOCU), did not find a single one listing all the contraindications. There was

wide variation in the warnings given with identical brands sold in different countries. (31) A similar survey of information provided with clioquinol products in 1974-75, (32) and with anabolic steroids in 1983, (33) found no improvement in this practice.

A comprehensive survey of 40 different products marketed in Latin America by 23 different transnational pharmaceutical companies from Europe and the United States found wide variations in warnings, indications and contraindications. (34) The products surveyed included antibiotics, oral contraceptives, anti-arthritic drugs and anabolic steroids. The study was released in May 1976 and by September of that year, the researchers report that approximately half the manufacturers had modified their labelling and promotional materials to "tell essentially the same story to physicians" in all Latin American countries.

However, in 1981, similar surveys on different drugs found conflicting information. For example, Hoechst's Novalgina was indicated for five conditions in Brazil, but for 12 conditions in Colombia and Ecuador. ICI's Atromid S was indicated for 2 conditions in Mexico, but for four in Brazil, and for five in Colombia, Ecuador and Venezuela. (35)

The pharmaceutical industry is strangely quiet about the reasons for these continued discrepancies in information. The usual, and often repeated, claim is that laws are different in different countries; therefore, there are different labelling and informational requirements. One senior pharmacologist explains the situation this way:

"Multinational pharmaceutical companies usually take the view that if it is legal to sell a drug in a particular country, then it is proper to sell it there, preferably in large quantities. In their country of origin many potentially hazardous drugs may be promoted only for a restricted range of uses, and with certain mandatory warnings. If an importing country has no such requirements, the company can omit the warnings and can promote many more uses, no doubt sincerely believing that the local regulatory authority must surely know best what is right for the country, and that it is not for the company to usurp its function." (36)

In other words, if legislation does not exist, (or is not enforced), to require companies to fully inform prescribers about the indications and contraindications of drugs, some corners are liable to be cut in order to sell extra drugs. Slowly, that situation is beginning to change. Some companies have started to implement the provision of standard information for their products in all countries. Others have indicated their willingness to do so. (37)

Even where legislation does exist, such as in the UK where it is required that all ads to doctors list the contraindications and potential hazards of drugs, manufacturers do not go out of their way to make that information accessible. A study of legibility of the small print (where the warnings are given) of ads found most doctors had great difficulty in reading the information. Many said they would not have bothered to read it if they had not been involved in the study. The researchers concluded that some pharmaceutical companies were "ignoring advertising regulations and making a mockery of the idea that advertisements should inform doctors about unwanted as well as wanted effects of drugs". (38)

Another UK survey of 74 advertisements for arthritis drugs, antibiotics, pain killers, heart drugs and tranquillisers found 42 of them did not

comply with the code of practice drawn up by the Association of the British Pharmaceutical Industry (ABPI). The ABPI code follows very closely the legal requirements laid down by the UK Medicines Act. (39)

The Secretary of the British Medical Association noted:

"There is a pressing need to resolve the current unsatisfactory situation in medical advertising, some of which is not in the best interests of patient care." (40)

Inconsistent information, coupled with extravagant promotional practices is a prescription for danger in any country. It is particularly the case in developing countries where, often, the only regular source of information on medicines comes from the company sales representatives. In the UK, (and in most industrialised countries), there is approximately one sales representative for every 18 doctors. In Bangladesh, the ratio is estimated at one for every 7 doctors; in Tanzania, 1:4; and in Nepal, Brazil and several Central American countries, as high as 1:3. (41)

In 1980, one researcher in Bangladesh asked a senior sales representative from the West German company, E. Merck, to describe what he saw as his duties. He replied: "To convince doctors to prescribe Merck products". When he was specifically asked if he would inform doctors if a Merck product was withdrawn from the German market, he answered, "No, I don't do that." (42)

The practice is not a new one. When evidence began to emerge in the early 1960s about possible side-effects of Thalidomide, UK-based Distillers, told its sales staff, "It has a toxic effect of which you should be aware . . . but there is no need to alarm the medical profession or discuss the matter unless it is raised." (43) As a study in Finland found, "the success of the representatives' work is measured by the volume of sales, and not by improvements in the knowledge of physicians." (44)

Over-enthusiastic selling leads to companies like E. Merck (FRG) claiming in East Africa that its Pasuma Strong potency drug "improves the quality and quantity of erections". One doctor who found this and similar advertising for potency drugs in all seven countries he visited, said, "I could not believe my eyes. I had never seen claims like this made by reputable companies in Europe." (45)

The well-documented study by the International Organization of Consumers Unions (IOCU) on anabolic steroids, found that in 1982, the Dutch firm, Organon, was promoting its products for the treatment of malnutrition, poor appetite or poor growth in children in Malaysia, India, Indonesia and the Philippines. This was despite the fact that anabolic steroids are known to have side effects such as: stunted growth in children; infertility; masculinisation of young girls; premature sexual development in young boys. In the Philippines, one of the products specifically stated: "There are no contraindications in children". (46)

### Risks and Benefits

The pharmaceutical industry regularly justifies this sort of practice with the claim that the potential benefit of drugs outweighs the possible risks. In the words of the industry-funded Office of Health Economics, "in countries with high levels of disease, little money and few professional workers relatively high treatment risks are more acceptable than in the rich North." (47)

That justification is often a cover for the lack of adequate information on what effect a particular drug is having on patients. Even in the UK, where there is a relatively sophisticated system for the reporting of adverse drug reactions (ADRs), official estimates suggest that between 90-99% of ADRs are unreported. (48) Thus, it is not surprising that a respected medical journal in Asia is able to claim: "chloramphenicol does not produce the same hazards or complications as in European societies". (49) The truth is, sufficient research has not been done to identify the complications and separate them from other causes of illness. It is, however, reasonable to suppose that the figure of 8% of patients admitted to a US teaching hospital as a direct result of adverse drug reaction would be at least equalled in the less controlled settings prevalent in developing countries. (50)

This is particularly the case when products with known high-risk are carelessly promoted, prescribed and used. One of the classic cases of this is chloramphenicol, a powerful, inexpensive antibiotic. Chloramphenicol can cause a fatal blood disease as well as other serious side effects. For this reason, its use is restricted in Denmark, West Germany and the UK to acute attacks of typhoid and paratyphoid fever, meningitis caused by *H. influenzae* and life-endangering infections in which less dangerous antibiotics are ineffective or contraindicated. In Mexico, it is sold over the counter with no indications of risk. (51)

In Peru, during 1983, one researcher found a chloramphenicol preparation manufactured by Farmitalia Carlo Erba of Italy as a treatment for diarrhoea in children. The chocolate-flavoured tablets, being sold by children in a small grocery store, were described by them as "sweeties for diarrhoea". (52)

Another example concerns the painkiller, dipyrone, which may cause a potentially fatal blood disease, agranulocytosis. It has been banned or withdrawn in the UK, Australia, Sweden and is not available in the US. Once again, regulatory authorities recommended its use only for life-threatening situations where there is no alternative available or suitable. In Argentina and Brazil, drugs containing dipyrone are amongst the best selling drugs on the market. In Colombia and Ecuador, Hoechst (FRG) recommends its brand, Novalgina, for the treatment of everything from headache and the common cold to cancer with no warnings of the possible dangers of use. Throughout Central America, Hoechst's Neomelubrina is promoted in the same way. (53)

### Overprescribing

The intensive marketing of the pharmaceutical companies is one of the factors which leads to the overprescribing of drugs in all countries. A study conducted in the Philippines found that for four relatively simple and very common ailments -- fever, headache, sore throat and diarrhoea -- doctors preferred drug therapy over non-drug therapy. All of the 153 doctors surveyed prescribed drugs for fevers; 93% for headache; 88% for sore throat; and 76% for diarrhoea. The majority of doctors tended to prefer newer, more expensive, drugs; a significant percentage tended to prescribe medicines with doubtful efficacy such as kaolin pectin for diarrhoea; over half the doctors used broad spectrum antibiotics for sore throats. Nearly three-quarters of the doctors said their usual source of information about drugs was from the literature provided by companies with drug samples. (54)

In North Yemen, one researcher reported a typical case of a patient who

needed his nasal arteries cauterised to prevent nose bleeds. He did not need any medication. Yet in the course of two days, he was prescribed 12 different drugs by a qualified doctor. They included: antibiotics, vitamins, nasal drops, blood coagulants, rehydration fluid, and Hoechst's painkiller, Novalgin. (55)

As a class, antibiotics and other anti-bacterials are the most improperly used drugs. One study estimated that 22% of antibiotics used in hospitals are prescribed unnecessarily. Another study found that 60% of prescriptions given to patients with a common cold were for antibiotics. (56) Antibiotics attack bacteria; colds are caused by a virus. It is futile to treat a cold with an antibiotic.

In fact, it is more than futile. It could be harmful on a very large scale. First of all, many people in both industrialised and developing countries are not aware of how dangerous it can be to fail to take a complete course of a treatment of antibiotics, (when they are actually necessary). An incomplete course enables bacteria to build up resistance to the drug. In most Third World countries, antibiotics are available without prescriptions and can be bought in any quantity from 1 to 100 tablets or capsules. They are often sold without any instructions on dosage and frequently consumed as a protection against a whole host of illnesses. (57)

Indiscriminate promotion, prescribing and use of antibiotics has led to an inability to effectively treat some typhoid outbreaks in India. In one such outbreak, 80 babies died from a Salmonella strain that was resistant to five antibiotics. Researchers in India have identified 690 out of 822 Salmonella strains as being resistant to at least one antibiotic; some were resistant to three or more. (58)

In 1969, an epidemic of dysentery killed 12,500 people in Guatemala and 2000 in El Salvador. The disease was resistant to chloramphenicol, tetracycline, streptomycin and sulphonamide drugs. In 1972, 6000 people died in Mexico as a result of chloramphenicol-resistant typhoid. (59)

Roche, in its advertisement for its broad-spectrum anti-bacterial, Bactrim, in the Bangladesh Pharmaceutical Journal, concluded that its product was the most commonly used anti-bacterial to which some 10,000 strains of bacteria were "least resistant". It recommended using Bactrim for the widest possible application. Yet a careful examination of the statistics provided by Roche showed that between 1970 and 1975, bacteria resistance to Bactrim had increased by more than 70%. To continue to recommend saturation use of the drug is a sure guarantee of eroding its effectiveness even further. (60)

According to Nobel-laureate Walter Gilbert of Harvard University, "If we continue to use antibiotics totally freely, we can look forward to a period in which 80-90 % of the infectious strains that arise are resistant." (61)

### **The Role of European Companies**

Western Europe is important for the pharmaceutical industry, both in terms of its share of world consumption of drugs, and its dominant position in the production of drugs. In 1980, one-third of the estimated world consumption of drugs was in Western Europe, the single most important market area. In the same year, 32.5% of the world's production of drugs occurred in Europe, again the single most important area. (62)

Focusing specifically on EC countries, as Table 1 shows, 19 companies in those countries accounted for nearly 19% of world drug sales in 1981.

The dominance of EC-based pharmaceutical companies in some selected markets in developing countries is shown in Table 2. In Bangladesh, just 6 EC-based companies control nearly 47% of the market; while in Mexico, 7 companies control 12% of the market; in India, 8 companies control 18%; and in Argentina, 9 companies control 17%.

The concentration is further shown in Table 3, where pharmaceutical exports to 5 ASEAN countries during 1976 are given. EC countries accounted for between 27 to 37% of the total value of imports.

**TABLE 1: WORLD MARKET SHARE OF LEADING EC-BASED PHARMACEUTICAL COMPANIES**

FIRM/COUNTRY	1977	1977	1980	1980	1981	1981
	US \$ million	%	US \$ million	%	US \$ million	%
Hoechst (FRG) (a)	1573	3.27	2441	3.25	2531	3.09
Bayer (FRG)	1273	2.65	2149	2.86	2378	2.90
Boehringer Ing (FRG)	735	1.53	1150	1.53	1198	1.46
Rhone Poulenc (FRA)	614	1.27	1000	1.33	1182	1.44
Glaxo (UK)	594	1.23	973	1.29	948	1.15
Beecham (UK)	524	1.09	816	1.08	800	0.97
Montedison (ITA)	487	1.01			642	0.78
Schering (FRG)	456	0.95	707	0.94	719	0.87
AKZO (NL)	442	0.92	623	0.83	598	0.73
ICI (UK)	414	0.86	827	1.10	771	0.94
Wellcome (UK)	385	0.80	831	1.10	733	0.89
Roussel Uclaf (FRA)	340	0.70	518	0.69		
E. Merck (FRG)	275	0.57	429	0.57	425	0.51
BASF (FRG)	210	0.43			251	0.30
CM Industries (FRA)	165	0.34				
Altana (FRG)	158	0.32			270	0.33
Boehringer Man (FRG)	353	0.73	360	0.48	464	0.56
Farmitalia (ITA)			297	0.39		
Sanofi (FRA)					577	0.70
Boots (UK)					377	0.46
Fisons (UK)					212	0.25
Reckitt & Colman (UK)					163	0.19
<b>TOTAL:</b>	<b>8998</b>	<b>18.74</b>	<b>13121</b>	<b>17.49</b>	<b>15239</b>	<b>18.64</b>
Est. World Market: (b)	48000		75000		81750	

Notes: a. Hoechst figures for 1981 include sales of Roussel Uclaf

b. Estimated total world market in 1977 and 1980 based on figures calculated by the UN Centre on Transnational Corporations. Total market for 1981 calculated on the basis of a projected annual growth rate of 9%, suggested by the UN CTC.

Sources: Compiled from: United Nations, Transnational Corporations and the Pharmaceutical Industry, ST/CTC/9, 1979; UN, Transnational Corporations in the Pharmaceutical Industry of Developing Countries, ST/CTC/49, 1984; Scrip, League Tables, Oct 1982.

Within the next 15 years, estimates suggest that the shape of the world market will change significantly, as Table 4 demonstrates. According to the UN Centre on Transnational Corporations, in 1980, some 53% of the world market was concentrated in Western Europe and North America, with only 29% of the market in Africa, Asia and Latin America. By the year 2000, sales in Africa, Asia and Latin America will account for some 48% of the world total, while sales in Europe and North America are predicted to decline to only some 39% of the world market.

**TABLE 2: PERCENTAGE OF PHARMACEUTICAL SALES HELD BY EC-BASED COMPANIES IN SELECTED MARKETS IN DEVELOPING COUNTRIES**

FIRM/COUNTRY	ARGENTINA 1977	INDIA 1980	MEXICO 1974	MEXICO 1977 est	BANGLADESH 1981
Bayer (FRG)	3.14	1.00	1.69	2.01	
Beecham (UK)				1.59	
Boehringer (FRG)	2.14		1.59	2.94	
Boots (UK)		2.30			
Byk-Liprandi (FRG)	1.44				
E. Merck (FRG)		1.60	0.90		
Fisons (UK)					11.20
Glaxo (UK)	1.68	7.30	1.05	0.83	8.80
Hoechst (FRG)	2.31	3.00	1.43	2.66	9.20
ICI (UK)			0.76		4.00
Lepetit (ITA)			1.17		
May & Baker (UK)		1.70			9.60
Montedison Farm. (ITA)	1.89			0.92	
Organon (NL)		1.10	1.02		4.00
Promeco (FRG)	1.63				
Rhodia (FRA)			0.86		
Roussel (FRA)	1.39		2.22		
Sanfer (UK)			1.36		
Schering (FRG)	1.42		1.73	1.32	
Wellcome (UK)		2.50			
<b>TOTAL EC:</b>	<b>17.04</b>	<b>18.00</b>	<b>15.78</b>	<b>12.30</b>	<b>46.80</b>

Sources: Compiled from: United Nations, 1984 & Chowdury & Chowdury, 1982

**TABLE 3: PERCENTAGE OF PHARMACEUTICAL IMPORTS IN ASEAN COUNTRIES ORIGINATING FROM EC MEMBER STATES (1976)**

COUNTRY	THAILAND	SINGAPORE	PHILIPPINE	MALAYSIA	INDONESIA
UK	11.50	20.20	5.10	19.10	2.70
Germany (West)	14.80	6.90	11.50	12.30	18.50
Belgium/Luxembourg	2.50	5.30			
Italy	3.60	3.70	3.00	4.70	2.70
Netherlands	1.90		2.40		4.60
Denmark	0.60		1.30		
France	1.80		3.40		
<b>TOTAL EC:</b>	<b>36.70</b>	<b>36.10</b>	<b>26.70</b>	<b>36.10</b>	<b>28.50</b>

Source: Sepulveda & Menses, 1980

Nonetheless, European companies, with their strong position in the world export market, are expected to maintain world dominance. As Table 5 shows, during 1983, EC-based companies controlled just under 46% of the world export market. In the UK alone, during 1980, exports of drugs to developing countries were estimated at £200, approximately one-ninth of the total UK production. (63) In addition to the export figures, however, it is important to remember that subsidiaries of European-based transnational pharmaceutical countries control a major share of the market in most developing countries -- and are likely to do so for some time to come. In a study involving countries at various stages of the development of an indigenous pharmaceutical industry, the UN Centre on Transnational Corporations found that the transnationals played a dominant role. Typically, a large number of small firms were engaged mainly in formulation and packaging of drugs and were competing for a small share of the market, while a small number of larger firms with higher levels of manufacturing sophistication, controlled the major share of the market. In most cases, the larger firms were subsidiaries of the transnationals. (64)

Concentrated control of the markets by the leading manufacturers has obvious economic benefits -- for them. It also has economic drawbacks, usually less obvious, for countries in which they operate, particularly poor countries.

**TABLE 4: ESTIMATED MARKETS FOR DRUGS BY REGION (1980-2000)**  
(in US \$ million & percentage of total)

REGION	1980	1980	1990	1990	2000	2000
	\$	%	\$	%	\$	%
Western Europe	25350	33.80	44840	29.89	70500	26.11
North America	14700	19.60	23940	15.96	34600	12.81
Asia	17100	22.80	38460	25.64	75950	28.12
Eastern Europe	12150	16.20	21760	14.50	33630	12.45
Latin America	3300	4.40	11950	7.96	31700	11.74
Africa	1730	2.30	7150	4.76	21220	7.85
Oceania	670	0.89	1400	0.93	2400	0.88
	75000	99.99	150000	99.66	270000	99.99

Source: Compiled from: United Nations, 1984

**TABLE 5: PERCENTAGE SHARE OF WORLD EXPORT MARKET  
BY EC-BASED FIRMS IN 1983**

<u>Country of Export</u>	<u>% of World Export Market</u>
Fed. Rep of Germany	20.0%
United Kingdom	10.7%
France	6.5%
Italy	5.0%
Netherlands	3.7%
TOTAL:	45.9%

Source: Medikament & Meinung, Nr.11, 15-Nov 1984

Sanjaya Lall, an acknowledged expert on the pharmaceutical industry, has identified three direct and seven indirect costs resulting from the market power of transnational pharmaceutical companies. The direct costs are:

- excessive profits;
- misdirected research and development;
- promotional expenditure.

The indirect costs are:

- over- and mis-prescribing of drugs, leading to financial waste, unnecessary adverse reactions and building of resistance to drugs and the creation of drug dependence;
- suppression of competition by small firms;
- prescribing the latest drugs which, by the income and health needs of poor countries are "overeffective";
- prescribing drugs which are ineffective;
- stultification of local research and development by creating a dependency on imported technology;
- selling without adequate warnings;
- lax clinical testing in developing countries when such testing has been strictly controlled in industrialised countries. (65)

Most of these issues have been touched upon earlier in this report; however, two problems deserve further discussion: profits and research and development (R&D).

### Prices and Profits

A study of the market in South-East Asia found final retail prices of drugs marked up by as much as 300% on the import cost. The researchers commented:

"The mark-ups are, in themselves, excessive. No other branch of industry may register such levels. This involves a 'profitability' which runs straight against the collective well-being of the ASEAN population." (66)

Even before the profits taken by wholesalers and retailers, there is ample scope for high profits in the pharmaceutical trade, particularly where trade is between a parent company and its subsidiaries. In 1978, in the UK, the drug industry as a whole had an average rate of return on capital of 21% -- 5% more than for industry generally. By 1980, while the profit returns for the rest of industry had declined, drug industry profits averaged 23%. (67)

Those declared profits are liable to be an underestimate, thanks to a common practice amongst transnational corporations known as "transfer pricing". Put simply, a transfer price is the price paid by a subsidiary to the parent company for raw materials. However, the price, in most cases, bears little or no resemblance to the actual cost of raw materials. Only 20-30% of the price can be directly attributed to the raw materials; the balance going to cover general expenses, including profit for the parent company. (68) Thus, when the UK government investigated the prices Roche was charging for the active ingredients in its best selling tranquillisers, Librium and Valium, it was discovered that Roche was asking more than 40 times the world market value for the ingredients. The government estimated that instead of the the 5% return on capital that Roche UK was declaring between 1966 and 1972, the real profit was in the region of 70%. (69)

In Colombia, between 1967 and 1970, the degree of overpricing of drugs ranged from 350% to 6,500% of the international market prices. In Argentina, the prices of drugs sold by transnational subsidiaries were found to be from 143% to 3,700% higher in eight therapeutic groups than prices at which the same products were imported from other sources. (70)

In Bangladesh, during 1981, UK manufacturers ICI, Wellcome and May & Baker were all charging five times the market price for raw materials to their subsidiaries on specific drugs. (71) The arbitrary nature of these prices was demonstrated when the Sri Lanka government decided to procure drugs on the basis of international tender. Previous to this decision, Beecham (UK) was able to charge extremely high prices for ampicillin. Yet, when faced with true competition on price, Beecham cut its own prices by 80%. (72)

Dr Rainford, the Deputy Secretary General of the Secretariat of the Caribbean Community, summed up the feelings of many in developing countries when he said:

"It has now become common knowledge that international trade -- and specifically North-South trade in pharmaceuticals -- bears hardly any relation to the objective costs faced by suppliers, but is rather one of the most striking manifestations of unequal exchange which has the ultimate effect of creating and sustaining the underdevelopment of the Third World." (73)

Not surprisingly, the industry rejects such an analysis. According to Michael Peretz of the IFPMA, "the international pharmaceutical industry has already made a very significant contribution to the developing world" through its establishment of local manufacturing capability in some countries. Peretz quotes figures to show that 18 European companies directly provide some 84,000 jobs in developing countries and are responsible for stimulating as many as 300,000 jobs in supporting industries. (74)

The other side of that "significant contribution" to developing countries becomes more apparent when the situation of Glaxo in India is examined. The subsidiary was established in 1914 with a starting investment capital of just 150,000 rupees. By 1971, it was worth 72 million rupees, of which 54 million was owned by foreign shareholders. The 300-fold growth had been achieved largely with Indian finance. But, in one sample year, the Indian subsidiary sent 2.4 million rupees in profits and 800,000 rupees in royalty payments to the parent company. (75) In other words, the Indian workforce, the Indian consumers -- including the government -- were providing a substantial income for the UK company and its shareholders, and a tremendous return on initial investment. One might almost call it a hidden "tax" on sales, working for the benefit of the company.

Even in the UK, foreign-owned drug firms, which account for 66% of the UK market, provide only 57% of drug industry investment and only 30% of the jobs. Hoechst, for example, has no wholly-owned drug manufacturing facilities in the UK. It prefers to build its production facilities in Germany, providing jobs for German workers who produce drugs for the British consumers to buy. However, Hoechst does have an extensive research facility in the UK, "because British chemists and microbiologists are among the best (and lowest paid) in the world." (76)

## Research and Development

The major justification for the high profits in the pharmaceutical industry is the need to cover extremely high research and development (R&D) costs. According to Dr Alan Hayes of ICI, every time there is a threat of regulation -- be it on price controls, safety controls, export controls, information controls -- "the public stance of the industry has been to state categorically that if the regulations are not relaxed, then no new medicines will appear -- or at least, so few as to force the industry to stop research and deny the public access to the new medicines to which it has a right." (77)

**TABLE 6: COMPARISON OF AMOUNT OF RESEARCH AND DEVELOPMENT BY THE 10 MOST PROFITABLE PHARMACEUTICAL FIRMS IN 1983**

FIRM/COUNTRY	WORLD SALES RANK	PROFIT %	NO OF R&D DRUGS	% OF TOTAL R&D
Smith Labs (US)		51.21	(a)	
SmithKline (US)	11	33.01	54	1.51
Eli Lilly (US)	7	32.88	61	1.70
Syntex (US)		32.70	43	1.20
ICI (UK)		31.24	33	0.92
Amer Home (US)	4	30.80	73	2.04
Pfizer (US)	6	30.49	38	1.06
Elan (IRE)		30.28	49(b)	1.37
Johnson & Johnson (US)		29.39	68	1.90
Adcock-Ingram		26.40	(a)	
Total top 10:				11.72

Notes: a) Not in the top 100 firms involved in the development of products.

b) Refers primarily to new formulations rather than new products.

Source: Compiled from: Scrip, Year End Review, 19 Dec 1984

**TABLE 7: US CLASSIFICATION OF NEW DRUGS UNDER INVESTIGATION BY THERAPEUTIC VALUE**

YEAR	Important Therapeutic Gain		Modest Gain		Little or No Gain		Other (a)		TOTAL No.
	No.	%	No.	%	No.	%	No.	%	
1977	64	3.3	299	15.5	1537	79.4	35	1.8	1935
1980	26	2.4	91	8.4	970	89.2			1087

Notes: a) includes "special situation" drugs which offer decreased safety or effectiveness but have some compensating virtue, and drugs under review for being "less than effective"

Sources: Compiled from: Lall, S., 1983 and Muller, M., 1982

As Table 6 demonstrates, the correlation between profits and research is not necessarily valid. Only two of the companies with the highest profits on pharmaceutical sales in 1983, (American Home Products and Johnson & Johnson), figured in the top 10 companies in active product development. The most profitable company did not even figure in the top 100 firms engaged in product research. One company, Elan, was primarily engaged in research on new formulations of existing products, rather than the development of significant new therapies.

Indeed, the question has to be asked: What does the industry mean when it talks about research and development? Table 7 gives some indication. It shows the US Food and Drug Administration's classifications for new drugs under investigation in 1977 and 1980. In 1977, only 64 out of 1935 drugs (3.3%) were considered as offering important therapeutic gain. By 1980, only 26 out of 1087 drugs (2.4%) were awarded that classification.

The US situation is not unique. Two doctors from the UK Department of Health and Social Security (DHSS) analysed the 204 new chemical entities (NCEs) granted product licences between 1971 and 1980. They concluded that the NCEs had generally been for diseases which are "common, largely chronic, and occur principally in the affluent Western society". They did a further analysis of the 103 applications for product licences between 1973 and 1977 and found 4% fully innovative; 31% semi-innovative; and 65% non-innovative. They concluded that innovation is "directed toward commercial returns rather than therapeutic need" (78)

The authors of the study continued:

"The pattern of introduction on to the United Kingdom market of new chemical entities over the last ten years fully justifies the criticisms levelled at the pharmaceutical industry by Franz Gross (1979) which were as follows:

Drug research within the pharmaceutical industry is in a critical phase, since it lacks innovating impulses and in many companies beats tracks. . . . Instead of limiting the numbers of drugs that are qualitatively and quantitatively quite similar to those already available, many drug companies are copying or slightly modifying successful therapeutic principles, with the result that an abundance of analogous drugs is offered, not rarely with exaggerated claims for efficacy. We now witness the flood of beta-blockers. . . . We have a plethora of closely related penicillin and cephalosporin derivatives, of topical corticosteroids, or diuretics or of minor tranquillisers. . . . The temptation to look for a share of a big cake exceeds all too often rational and scientific reasoning." (79)

One of the authors of the study, Dr John Griffin, left his position in the medicines division of the DHSS in July 1984 to take up a job as Director of the Association of the British Pharmaceutical Industry (ABPI). One of his first tasks was to lead the industry opposition to the limited drug list which came into effect in the UK in April 1985. A strong argument in the campaign, estimated to cost more than £500,000 was that the government was putting "Britain's research based industry in jeopardy" with its proposals for a more rational drug policy. (80)

## A System Out of Control?

There is no denying that the pharmaceutical industry has made important contributions to public health over the past 50 years through the development of many life-saving drugs. Equally, there is no denying that there have been abuses of power within the industry which have put the lives and health of millions of people at risk. These are not "isolated instances" to be shrugged off as aberrations of an otherwise perfect system of drug production, distribution and use.

Sanjaya Lall sums up the situation in the pharmaceutical industry and the social costs it imposes by saying:

"The combined effect of these factors on developing countries is that drugs are too expensive, too 'modern', often overused by those who can afford them, and extremely unequally distributed. Only a small proportion of the population can afford to buy the drugs provided by the multinationals (80% of the Indian population does not have access to drugs), and even they often mis-spend in relation to the benefits provided. Cheap and effective drugs are not provided to meet the real medical needs of the rest because this is not where the profits of the multinationals are made.

"These 'costs' are, furthermore, not just that the present system happens to provide inappropriate and costly drugs to an elite, but also that, in the absence of an alternative system of drug production, innovation and marketing, it becomes impossible for developing countries to provide essential medicines to the majority of their populations. The existing system is, in other words, so pervasive and powerful that, without major reform, it prevents the use of any easy alternative method of getting cheap and adequate supplies of essential drugs by poorer countries." (81) [original emphasis]

Dr Halfdan Mahler, Director General of the World Health Organization, expands on that argument:

"Thirty years ago modern health technology had just awakened and was full of promise. Since then, its expansion has surpassed all dreams, only to become a nightmare. For it has become over-sophisticated and overcostly. It is dictating our health policies unwisely; and what is useful is being applied to too few. Based on these technologies, a huge medical industry has grown up with powerful vested interests of its own. Like the sorcerer's apprentice, we have lost control -- social control -- over health technology. The slave of our imagination has become the master of our creativity. We must now learn to control it again and use it wisely, in the struggle for health freedom. This struggle is important for all countries; for developing countries it is crucial." (82)

Notes and References:

1. United Nations, Transnational Corporations and the Pharmaceutical Industry, ST/CTC/9, New York, 1979, ppl4-16
2. Ibid, ppl6-17
3. Melrose, D., Bitter Pills, Oxford, Oxfam, 1982, pl1
4. See for example: Mohs, E., "Infectious diseases and health in Costa Rica: the development of a new paradigm", Pediatric Infectious Disease, Vol 1, No 3, 1982, pp212-216  
- Weller, T. H., "Too few and too little: Barricades to the pursuit of health", Reviews of Infectious Diseases, Vol 5, No 6, Nov-Dec 1983, pp994-1002
5. von Wartensleben, A., "Major issues concerning pharmaceutical policies in the Third World", World Development, Vol 11, No 3, Mar 1983, pl70
6. George, C. F. & Hands, D. E., "Drug and Therapeutics Committees and Information Pharmacy Services: The United Kingdom", World Development, Vol 11, No 3, Mar 1983, p233
7. WHO, The Use of Essential Drugs: Report of a WHO Expert Committee, Technical Report Series No 685, Geneva, 1983
8. Fattorusso, V., "Essential Drugs for the Third World", World Development, Vol 11, No 3, Mar 1983, pl78
9. IFPMA, Statement as adopted by the IFPMA Council on the Report of a WHO Expert Committee on the Selection of Essential Drugs, Zurich, Apr 1978, pl
10. Muller, M., The Health of Nations, London, Faber & Faber, 1982, pl98
11. Ibid, p209
12. Peretz, S. M., "Patients, not political units, urgently need drugs", Ciba-Geigy Journal, No 3, 1981, p23
13. Muller, op cit, p210
14. Erlichman, J., "Third World drug plan seen as PR ploy", The Guardian, 13 Apr 1984 (In May 1985, the ABPI finally announced some details of its projects "to help with the supply of medicines to deprived areas of the Commonwealth". One project, based in the Maldives, will provide two vessels to enable mobile health teams to visit remote islands. The second project, based in Nairobi, will work with the African Medical and Research Foundation's "Flying Doctor" scheme, through the establishment of a laboratory facility to assist in the clinical diagnosis of illnesses.)
15. United Nations, Transnational Corporations in the Pharmaceutical Industry of Developing Countries, ST/CTC/49, New York, 1984
16. Sepulveda, C. & Meneses, E., (eds.), The Pharmaceutical Industry in ASEAN Countries, Bangkok, UN Asian and Pacific Development Institute, 1980, p330
17. Bumrungcheep, P., The Role of European Pharmaceutical Transnational Corporations in ASEAN Countries, Bangkok, Economic and Social Commission for Asia and the Pacific, Mar 1981, p9
18. Escobar, V., "We spend too much for the wrong drugs", CACP Journal, 2nd Quarter, 1982, p.8
19. Bumrungcheep, P., op cit, p9
20. Melrose, D., op cit, p32
21. Chetley, A., Bangladesh: Finding the Right Prescription, London, War on Want, 1982, p2
22. Ibid
23. Ibid
24. Ibid
25. Consumers' Association, "How to Buy Vitamins", Which?, Jan 1984, pp6-9
26. "Report of the Expert Committee for Drugs -- Bangladesh", reproduced in World Development, Vol 11, No 3, Mar 1983, pp251-257

27. See for example: Deitch, R., "A limited NHS drug list", Lancet, 17 Nov 1984
  - British Medical Journal, "Secretary of State limits range of prescribable NHS drugs", 17 Nov 1984
  - Pharmaceutical Journal, - The, "Prescribing limit for benzodiazepines and drugs for minor ailments", 17 Nov 1984
28. For Bangladesh, see: Rolt, F., Pills, Policies and Profits, London, War on Want, 1985
  - For the UK, see for example: Pharmaceutical Journal, The, "ABPI 'to fight tooth and nail'", 17 Nov 1984
  - Pharmaceutical Journal, The, "ABPI begins campaign against 'stupid and dangerous' proposal", 8 Dec 1984
29. Ledogar, R. J., Hungry for Profits, New York, IDOC, 1975, p25
30. Medawar, C., Drugs and World Health, The Hague, IOCU/HAI, 1984, p23
31. IOCU, "Chloramphenicol: recommended uses and warnings", International Consumer, Vol 14, No 3, Autumn 1973, pp11-15
32. IOCU, Clioquinol: Availability and Instructions for Use, The Hague, June 1975
33. IOCU, Anabolic Steroids: Availability and Marketing, Penang, Aug 1983
34. Silverman, M. & Lydecker, M., "The Promotion of Prescription Drugs and Other Puzzles", in Pharmaceuticals and Health Policy, (Blum, R., et al, eds.), paperback edtn, Penang, IOCU/Social Audit/HAI, 1983, pp78-92
35. United Nations, 1984, op cit, pp35-36
36. Herxheimer, A., "Problem drugs", World Health Forum, Vol 4, 1983, p245
37. United Nations, 1984, op cit. p37
38. Collier, J. & New, L., "Illegibility of drug advertisements", Lancet, 11 Feb 1984, pp341-342
39. Veitch, A., "Half drug adverts break firms' code of practice, says survey", The Guardian, 13 Sept 1984
40. Veitch, A., "BMA wants action against misleading drug adverts", The Guardian, 30 Nov 1984
41. Melrose, D., op cit, p.67
42. Ibid, p72
43. Braithwaite, J., Corporate Crime in the Pharmaceutical Industry, London, Routledge & Kegan Paul, 1984, p70
44. Ibid, p224
45. Bannenberg, W., "Omnipotent Industry?", Health Now, No 3, 11 May 1984
46. IOCU, 1983, op cit
47. Taylor, D., Medicines, Health and the Poor World, London, Office of Health Economics, 1982, p29
48. Medawar, C., p22
49. Ibid; p25
50. Blum, R. & Kreitman, K., "Factors affecting individual use of medicines", in Pharmaceuticals and Health Policy, (Blum, R. et al, eds.), Penang, IOCU/Social Audit/HAI, 1983, p151
51. United Nations, 1984, op cit, p34
52. Melrose, D., "Anarchy at the drugstore", Health Now, No 1, 7 May 1984
53. United Nations, 1984, op cit, pp33-35
54. Senturias, E. N., et al, A preliminary study on the prescribing habits of physicians in Manila, Philippines, (mimeo), Manila, National Council of Churches in the Philippines, 1984
55. Melrose, D., 1982, op cit, p86
56. Blum & Kreitman, op cit, p150
57. Melrose, D., 1982, op cit, p114
58. Ibid, p116

59. Ibid
60. Muller, M., op cit, p16
61. Seligmann, J. & Glass, C., "Overdosing on Antibiotics", Newsweek, 17 Aug 1981, p46
62. United Nations, 1984, op cit, p4
63. Taylor, D., op cit, p30
64. United Nations, 1984, op cit, pp8-9
65. Lall, S., "Economic Considerations in the provision and use of medicines", in Pharmaceuticals and Health Policy, op cit, pp200-203
66. Sepulveda & Meneses, op cit, p344
67. Medawar, C., The Wrong Kind of Medicine?, London, Consumers' Association and Hodder & Stoughton, 1984, p43
68. United Nations, 1984, op cit, p16
69. Melrose, D., 1982, op cit, p60
70. United Nations, 1984, op cit, p17
71. Melrose, D., 1982, op cit, pp61-62
72. Muller, M., op cit, p89
73. Melrose, D., 1982, op cit, p46
74. Peretz, M., "Pharmaceuticals in the Third World: The problem from the suppliers' point of view", World Development, Vol 11, No 3, Mar 1983, p261
75. Muller, M., op cit, p96
76. Erlichman, J., "Why the foreign drug firms will swallow the bitter pill of reduced profits", The Guardian, 30 Apr 1984
77. Hayes, A., What Can the AgroChemical Industry Learn From the Pharmaceutical Industry?, speech delivered at AgroChemical Conference, Zurich, Sept 1981
78. Medawar, C., 1984, The Wrong Kind of Medicine?, op cit, pp45-46
79. Ibid
80. Pharmaceutical Journal, The, 17 Nov 1984, op cit, p599
81. Lall, S., op cit, p203
82. Muller, M., op cit, p158

## THE PESTICIDE PERIL

Two very different wars helped to demonstrate both the promise and peril of pesticides. Although DDT had been around since 1874, its ability to kill insects was discovered during the Second World War. Following the war, its use became widespread in both agriculture and malaria control programmes. (1)

The Vietnam war brought a herbicide called "Agent Orange" to people's attention. More than 12.8 million gallons of Agent Orange were sprayed over Vietnam and neighbouring countries between 1965 and 1971 to clear jungle. The herbicide was extremely effective -- but its action did not stop with vegetation. One of the active ingredients in Agent Orange -- 2,4,5-T -- always contains dioxin as a contaminant. Dioxin has been described as "the most toxic substance known", and identified as the cause of several cancers, nerve damage, liver disorders, skin problems as well as being associated with miscarriages and birth deformities. (2)

Pesticides are described in an industry-sponsored pamphlet as "essential inputs" for agriculture. The pamphlet states that to deny farmers the use of pesticides would "imperil the living standards of tens of millions of people, many of them in the Third World." In industrialised countries, the pamphlet notes that the use of pesticides is "an important factor in enabling farmers to market, at a reasonable price, the high quality produce expected by the modern housewife." (3)

On average, pests destroy one-third of the world's food crops during growth, harvesting or storage. Particularly in developing countries, losses can be even higher. One estimate places crop losses in Latin America at 40%. (4)

The use of pesticides has been credited with increased crop yields in the UK of 2% per year over the past two decades. In the US, one researcher has calculated that removing all pesticide use would increase crop losses from 33% to 42%. Experimental programmes in developing countries have recorded improved groundnut yields of 179% and nearly double the yield of rice with careful pesticide use. In Ghana, the use of insecticides has led to an increase of cocoa yields by as much as 244%. The UN Food and Agriculture Organization (FAO) estimates that without the use of pesticides, some 50% of Third World cotton production would be destroyed. (5)

The use of pesticides has also saved many lives, notably the global efforts at malaria eradication which utilised DDT to combat the anopheles mosquito. By 1970, after a 15-year programme, the WHO estimated that 2,000 million cases of malaria had been prevented, with a saving of some 15 million lives. (6)

Such success, however, is counterbalanced by the hazards incurred by indiscriminate pesticide use: contamination of the environment; destruction of beneficial insects, plant life and animals; poisoning of humans and their food sources; an increasing number of pests demonstrating resistance to the chemicals which previously controlled them.

Put simply, pesticides do not know when to stop. They are designed to kill, and they do that very well. Too well, in some cases.

## Overkill

Throughout South and South-East Asia, an insect known as the brown plant hopper is happily feasting on Asia's rice crop. Fifteen years ago, the plant hopper was a minor nuisance. Today, it throws rice farmers into panic. In 1978, an epidemic of the pest caused nearly US \$900,000 damage in one area of Malaysia. A major reason for the unprecedented spread of the plant hopper is that pesticide applications killed off its natural enemies, leaving the plant hopper free to increase its numbers. (7)

For cotton farmers in Central America, the use of pesticides became a never-ending nightmare. For some 30 years, they had to cope with only three pests, and controlled them by natural methods and low levels of pesticides such as infusions of tobacco leaves. In the 1950s, applications with the newer insecticides began, eight times a season. By the mid-1950s, another three pests had appeared. During the 1960s, pesticide applications were up to 28 per season. Two pests were eliminated; four new ones appeared. By the early 1970s, there were eight important pest species and 40 pesticide applications per season. (8)

In field experiments, one researcher has shown how easy it is to get the wrong result with the use of pesticides. Professor Paul DeBach of the University of California has increased the pest population by 1250 times with carefully timed and measured applications of pesticides. (9)

In 1982, millions of fish began to die in the rivers and irrigation canals in Thailand. Estimates place the loss at about 5 million kilograms of fish, valued at some US \$10 million. For poor people in Thailand it meant the loss of an important source of cheap protein. The cause was traced to pesticide use in the rice fields and on rubber plantations. The pesticide residues contaminated the water supplies. Similar deaths of fish in Malaysia during the early 1980s led to a loss of income of up to M\$40 per day for farmers who depended on the fish catch to supplement their agricultural earnings. (10)

## Sleeping Sickness vs Seeping Sickness

The insecticide, dieldrin, has been described as "possibly the most dangerous environmental contaminant known". (11) WHO classifies it as "extremely hazardous". (12) The EC in January 1981 banned its marketing and use within the Member States, although exports are permitted. Japan has banned it as an ingredient in pesticides "to prevent environmental contamination". At least another 20 countries have banned or severely restricted its use. (13)

For Dutch-based Shell, the world's third largest pesticide manufacturer, the failure of the EC to impose any export controls on dieldrin is a blessing. Shell is the world's leading manufacturer of dieldrin at its plant in the Netherlands. One estimate suggests that between 80-90% of all dieldrin is produced by Shell (14). Another source reports that the Dutch plant produces about 5000 tonnes of the active ingredients for the three broad-spectrum "drins" -- dieldrin, aldrin and endrin -- with 98% of it intended for export to countries outside the EC. For 1978, production of dieldrin alone was estimated at 750 tonnes. (15)

The people living along the Chobe River in Botswana are not so pleased about Shell being allowed to export dieldrin. The product is being used to control the tsetse fly, which causes approximately 7000 cases of sleeping sickness a year worldwide, according to the WHO, 350 of them

fatal. According to the Wildlife Society of Southern Africa, the dieldrin is shipped to Botswana from Shell's subsidiary in South Africa, a country which has banned the use of the insecticide. (16)

There are two major problems with the use of dieldrin for the control of the tsetse fly. First, it may not be effective. Second, it can endanger other wildlife. The tsetse control programme was initiated by the FAO in 1975 with the setting up of a task force co-chaired by a director of the German-based chemical company, Hoechst. By 1981, FAO officials were privately expressing the belief that the area of tsetse infestation had actually increased since the programme began. Particularly when dieldrin was used via aerial spraying, it often failed to reach the tsetse fly, which has a habit of sleeping on the underside of the leaves. (17)

Studies in Nigeria, however, found that the dieldrin was effective in killing off many species of insects, fish, bats and squirrels. One species of monkey was also virtually eliminated. The pesticide also seeped into the soil in many areas, staying for anywhere from 7-32 months. (18)

### Resistance

From the moment chemical pesticides began being used extensively in agriculture, the pests began to fight back in their own way -- by developing resistance to the chemicals used. It is a natural evolutionary process. Usually, a small number of insects manage to survive the application of pesticides for a variety of reasons, including being able to de-toxify the chemical in their bodies. When they reproduce, they pass on that ability to their offspring, and a pest population evolves which has a strong tolerance for the pesticide used upon it.

In 1976, there were 67 strains of bacteria and fungi with resistance to at least one chemical, nearly double the figure of 35 in 1974. With insects, the problem is more obvious, as Table 8 shows. From only 7 resistant species identified in 1938, there were 432 by 1980. (19)

Sometimes the insects develop resistance to pesticides which have not even been used on them. In Malaysia, the diamond back moth developed resistance to both organophosphate and carbamate insecticides, although only the former was used. (20)

The usual response to resistance is to increase the amount of pesticide used. When this fails, another pesticide is tried, then another and another. In this race to try to defeat the pests, the insects may well be winning. The rate of introduction of new pesticides is slowing down -- from 25 a year in the late 1960s to 16 a year by 1979. (21)

Dr Alan Hayes of ICI is certainly cautious in his analysis of the industry's prospects:

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TABLE 8: PESTICIDE-RESISTANT SPECIES OF INSECTS (1938-1980)

YEAR	1938	1948	1954	1957	1960	1963	1965	1967	1975	1978	1980
NO.	7	14	25	76	137	157	185	224	364	392	432

Source: Bull, D., A Growing Problem, 1982, p24

"Unfortunately, when we look at the agrochemical industry's research and development investment, it appears that there is already far too much investment for what the market can reward. In addition, the prospects for inventing profitable major new herbicides, fungicides and insecticides are declining." (22)

In 1970, in the Rio Grande Valley of Mexico, one pest did win -- the tobacco budworm, an important cotton pest. An entomologist at the University of California said in 1974: "Their resistant strains cannot be controlled by any available insecticide at any dosage". As a result, more than 700,000 acres of cotton were lost, and a once prosperous community was plunged into social and economic disaster. (23)

Another entomologist concludes that

"only a third of a century after the discovery of DDT's insect-killing powers and despite the subsequent development of scores of potent poisons, the bugs are doing better than ever, and much of insect control is a shambles." (24)

It is not only in agriculture that this creates problems. Some pesticides are important in the control of insects that cause human illness. The most obvious example is DDT and the malaria mosquito. In 1955, WHO adopted a global malaria eradication programme. Initially, it was very successful; however, by the late 1960s, the programme was changed to a malaria control programme. After a decade of decrease, malaria was on the increase.

The cause was clear: resistance to the pesticides being used. It was not so much that the mosquitos had developed the resistance from the applications of pesticides in the public health programmes, but rather from the uncontrolled use of those same pesticides in agriculture. A professor at the University of California explained:

"Mosquito resistance of a level sufficient to impede their control has been most severe in areas where crops are treated frequently with insecticides." (25)

The situation was so worrying that in 1976, the WHO Expert Committee on Insecticides recommended that governments should monitor the import, manufacture, marketing and use of all pesticides in order to provide some advance warning on possible future developments of resistance. The committee also advised that "regulations should be introduced to control the entry and use" of agricultural pesticides. (26)

One WHO official is worried that already it may be too late.

"In 10 years time a US scientist in his laboratory will invent a new insecticide, yet somewhere in an Asian swamp is a mosquito today which already possesses the gene to resist it." (27)

#### **The Human Cost**

The pesticide industry claims that "fatal poisoning by pesticides is uncommon and appears to be largely due to accident (for example during transport), suicide, or crime." (28) The industry cites statistics from the US to show that pesticides are no more lethal than cosmetics, (see Table 9).

The industry says that if the manufacturer's instructions are followed, "the skilled and educated farmer knows how to handle these products and what to do with them." (29) However, the industry does admit that the situation may be different in developing countries.

Even in industrialised countries, there may be problems. A survey in the UK found that 86% of farmers received no training in pesticide use or safety. (30) The same study found fewer than 20% using protective clothing; 39% who failed to read general information on pesticides; more than one-quarter who found such information "hard to understand"; and more than half who used the wrong equipment.

Although there have been no reported fatal accidents from pesticides in the UK in recent years, and only a small number (20-30) of confirmed cases of poisoning, there are some worrying studies which show a higher than average rate of birth defects in children of agricultural workers. Similarly, in the US, a study of 3800 pesticide operators in Florida showed three times the normal death rate from lung cancer, while 22% of Nebraska farmers using organophosphorous showed clinical symptoms of pesticide poisoning. (31)

The WHO estimated in 1972 that there were some 500,000 cases of pesticide poisoning annually, 9200 of them fatal. David Bull of Oxfam extrapolated these figures, described by the WHO as "conservative", to project a figure for 1981 of 750,000 cases with at least 13,800 deaths. Using the top limit of WHO's estimate, the figure could be more than a million cases and some 29,000 deaths. Approximately half the cases and three-quarters of the fatalities occur in developing countries, giving a 1981 estimate of some 375,000 cases and 10,000 deaths in developing countries. (32)

The statistics are hard to come by, particularly in developing countries where access to health care facilities is limited. In Central America, for example, some 19,000 cases of pesticide poisoning were recorded between 1971 and 1976. However, one doctor, in an inspection of only two rural hospitals in Nicaragua, found 400 cases. (33)

Another problem is that many doctors are ill informed about the symptoms of pesticide poisoning and frequently diagnose it incorrectly. One Brazilian doctor told a 14-year old girl suffering from paraquat poisoning that she had "a case of nerves". (34)

**TABLE 9: CAUSES OF POISONING CASES IN THE US**  
(in percentage terms)

CAUSE	PERCENTAGE
Pharmaceuticals	57.9%
Cleaning and polishing agents	12.0
Cosmetics	4.9
Pesticides	4.9
Turpentine and dyestuffs	4.5
Poisonous plants	3.9
Petrochemical products	3.7
Gases and vapours	0.6
Miscellaneous	6.3
Unknown	1.3
Total:	100.0

Source: Pesticides in the Modern World, 1972, pl3

One of the best documented studies of pesticide poisoning comes from Sri Lanka. Table 10 gives the figures for poisoning cases between 1975-1978 and for 1980. Their significance becomes apparent when compared to deaths from other major health problems in Sri Lanka. During 1977, more people died from pesticide poisoning -- 938 -- than from malaria, tetanus, diphtheria, whooping cough and polio combined -- 646. (35)

Table 11 gives an indication of some of the incidents that have been documented over the past 10-15 years. They are, at best, the "tip of the iceberg". Figures on the long-term impact of pesticides on human health are virtually non-existent. Many pesticides have been implicated as being the cause of cancer which develops often years after exposure to the chemical. Others have been linked to miscarriages and birth defects. One pesticide, Kepone, has been found to cause infertility in men. (36) Recently, six weedkillers containing ioxynil, some of which have been on the market in the UK for 20 years without any apparent problems, were found to induce birth defects in laboratory animals. (37)

The industry is often adamant in its defence of the chemicals. An industry booklet claims there are only a small number of pesticides which can be regarded as dangerous, and most of these are insecticides. But, says the industry, "when properly used these, too, are safe." (38)

Earle Barnes, the chairman of Dow Chemical, says of his company's 2,4,5-T, "we consider it extremely safe". (39) WHO classifies it as "moderately hazardous". (40) It has been banned or severely restricted in at least 17 countries because of its toxic effects. (41) WHO recommends that "impermeable gloves, overalls, impermeable boots and a respirator be worn at all times during mixing and application". (42) In developing countries such a recommendation is virtually certain to go unheeded.

The industry knows very well that this is the case. ICI's technical manager for Asia said recently, "No one is going to use rubber boots in a tropical climate." (43) But that does not stop them from indiscriminate selling of pesticides in areas where they cannot possibly be used correctly. And, when the effects of incorrect pesticide use are made known, the companies respond that it could not be their product at fault. When Brian O'Dwyer, pesticides sales manager for ICI in Sao Paulo, was presented with medical dossiers on on paraquat intoxication in Brazil, he said, "All reports of intoxication are unsubstantiated medically. Paraquat can only cause problems if it is ingested or drunk, since it is immediately deactivated on contact with the soil." (44)

**TABLE 10: PESTICIDE POISONINGS ADMITTED TO GOVERNMENT HOSPITALS  
SRI LANKA**

YEAR	NO. OF INJURIES	NO. OF DEATHS
1975	13648	1042
1976	13778	964
1977	14653	938
1978	15504	1029
1980	11811	1112
<b>TOTAL</b>	<b>69394</b>	<b>5085</b>

Sources: Bull, D., 1982 & SAM, 1984

TABLE 11: SOME REPORTED PESTICIDE POISONINGS

COUNTRY & (source)	YEAR	NO. OF INJURIES	NO. OF DEATHS	PESTICIDE
Cent Amer (a)	72-75	14138	40	
Trinidad (a)	78-79	293		
Mexico (a)	1974	847	4	92% due to Mevidrin, methyl parathion and Sevin
Sri Lanka (a)	1975	13648	1042	
Sri Lanka (a)	1976	13778	964	
Sri Lanka (a)	1977	14653	938	
Sri Lanka (a)	1978	15504	1029	parathion, methamidopos (Tamaron) endrin (Endrex 20)
Malaysia (a)	72-76	422		malathion, paraquat, methamidopos, dieldrin, endosulfan, gamma BHC, DDT
Thailand (a)	66-70	320	24	
Thailand (a)	1972	450	40	
Indonesia (a)	67/68	829	114	
Indonesia (a)	1969	509	125	
Pakistan (a)	1976	2625	5	malathion
India (a)	1958		100	parathion
Iraq (a)	71/72	6530	459	methyl mercury fungicide
Malaysia (b)	78/79	30	27	paraquat
Indonesia (b)	80-83		70	Klerat (ICI)
Indonesia (b)	1982	303	3	DDT
Sri Lanka (b)	1980	11811	1112	
Philippines(b)	1977		18	
Malaysia (b)	1972	68		
Malaysia (b)	1975	71		
Malaysia (b)	1979	30	1	
Vietnam(US)(b)	65-71	76000		Agent Orange (2,4,5-T)
Brazil (b)	81-83		16	Tordon 155
Egypt (c)	71-76	65	1	Phosvel
Colombia (d)	56-81	7000	750	
Jordan (d)	1979	41	6	
US (d)	1975	25		Phosvel
Brazil (e)	1981	418		aldrin
Brazil (e)	67-69	3488	208	
Nicaragua (e)	1976	400		
Nicaragua (f)	67-68	500	80	
Mexico (f)	1974	689	7	Shell & duPont pesticides
US (f)	1974	14000	200	
		<u>199485</u>	<u>7383</u>	

Note: The figures in this table, with the exception of Sri Lanka, Central America, Trinidad and the US (1974), are usually for incidents reported in one region of the country, or of a single episode of poisoning, and should not be taken as indicators for the total amount of poisoning occurring in a particular country at a particular time. It is an indicative, rather than comprehensive, list.

Sources: a) Bull, D, 1982, pp41, 43, 44, 47, 49, 50, 52, 54, 56

b) SAM, 1984, pp22, 45, 46, 65-66, 71

c) Gerrits, R, 1983, p67

d) Wyrick, B., "Hazards for Export", special reprint by Newsday, 31 Dec 1981, pl1R

e) Gelber, A., 1981, pp44, 45

f) Lappe, F. M. & Collins, J., Food First, London, Souvenir Press, 1980, pp57, 58

For cotton workers in Colombia, it is impossible not to eat, drink and breathe the pesticides, as the following incident illustrates:

"At the sound of the plane, the peasant women rushed from their homes. They covered their wells, led children and livestock to shelter, and snatched clothes off the lines. Already, in the distance, a fine, oily rain partly obscured the mighty Andes.

"Then, as the man-made storm advanced through the Tolima valley, the women slammed their doors and secured their windows. Flying low, the sputtering plane -- a single-engine crop duster -- spread pesticides everywhere: over the canals where laundry and cooking utensils were washed, over the tiny houses, over the fruit trees, over a small country hospital where the workers would be treated if the poison made them seriously ill. The main targets were the vast fields of cotton, sesame and rice that dominate the valley. But the pilot did not shut off the spray nozzles as he flew from field to field. Almost nothing in his path escaped. 'After the spray planes come over', one of the women said, 'the chickens become drunk and walk around in circles or fall down'.

"In the fields, it was worse. There, workers caught in the chemical cloudburst had even less protection than the chickens. They breathed the poison as they waited for the mist to settle, and soon they returned to work. For the struggling wage-earners of the Tolima valley, there was little choice." (45)

#### **A Growing Market**

For millions in developing countries, there is no choice. Pesticide markets in industrialised countries are beginning to stagnate, due to decreases in arable land and greater government regulations on the types of pesticides that are permitted for use. In most developing countries, the market is wide open. If, as the industry claims, there are only a few pesticides that are "truly" dangerous, the place to sell them is in the Third World.

In the mid-1970s, 25% of the products exported by US pesticide manufacturers were banned, restricted or unregistered for use inside the US. In 1980, it was reported that Dutch-based Shell earns 7% of its annual profits from the sale of three pesticides -- aldrin, dieldrin and endrin -- which have been banned or severely restricted in the EC. (46) Despite those restrictions, the EC appears willing to operate a clear double standard. Recent official tender documents published by the EC indicate that the European Development Fund plans to finance the export of 40,000 litres of endrin and 60,000 kg of aldrin for a coffee plantation regeneration programme in the Ivory Coast. (47)

A recent survey in Malaysia found at least 14 pesticides on the market that have been banned or severely restricted in industrialised countries. Several European companies were involved in the marketing of these products, including Shell (DDT, dieldrin, aldrin, endrin, 2,4-D, DDVP); ICI (heptachlor, dieldrin, paraquat, 2,4,5-T, BHC, 2,4-D); Bayer (2,4,5-T); BASF (2,4,5-T, 2,4-D) and Hoechst (endosulfan). (48)

Overall, developing countries account for approximately 20% of the total world sales in pesticides, although in terms of the more hazardous insecticides, 39% of sales are in developing countries. (49)

The pesticide market is controlled by producers in the industrialised countries of Western Europe, North America and Japan. In volume terms, world production in 1980 was estimated at 5,208 metric tonnes, with 18% supplied by North America, 28% by Western Europe, 15% by Eastern Europe and 13% by Japan. (50)

**TABLE 12: WORLD PESTICIDES SALES BY COMPANY (1978-80 & 82)**  
(in US \$ millions & % of share of world market)

FIRM/COUNTRY	1978		1979		1980		1982	
	US \$ m	%	US \$ m	%	US \$ m	%	US \$ m	%
Bayer (FRG)	1480	13.5	1650	13.1	1705	12.5	1941	12.4
Ciba-Geigy (CHE)	1090	9.9	1190	9.4	1290	9.4	1215	7.8
Shell (NL)	655	5.9	740	5.9	855	6.2	813	5.2
Monsanto (USA)	605	5.5	700	5.5	875	6.4	1165	7.4
ICI (UK)	515	4.6	555	4.4	650	4.7	732	4.7
Rhone-Poulenc (FRA)	465	4.2	565	4.5	640	4.6	590	3.7
BASF (FRG)	450	4.1	515	4.1	530	3.8	450	2.8
DuPont (USA)	400	3.6	460	3.6	505	3.7	600	3.8
Stauffer (USA)	380	3.4	460	3.6	480	3.5	570	3.6
Eli Lilly (USA)	336	3.0	471	3.7	518	3.8	434	2.7
Dow (USA)	335	3.0	405	3.2	445	3.2	450	2.8
Amer Cyanamid (USA)	325	2.9	375	2.9	320	2.3		
Union Carbide (USA)	320	2.9	355	2.8	350	2.5	300	1.9
Kumiai (JPN)	279	2.5	280	2.2	290	2.1		
FMC (USA)	260	2.3	320	2.5	315	2.3		
Schering (FRG)	213	1.9	245	1.9	262	1.9		
Hoechst (FRG) (a)	210	1.9	435	3.4	485	3.5	471	3.0
Rohm & Haas (USA)	204	1.8	243	1.9	295	2.1	336	2.1
Sandoz (CHE)	162	1.4	181	1.4	191	1.4		
Roussel Uclaf (FRA)	161	1.4						
Diamond Shamrock (USA)	145	1.3	160	1.2	185	1.3		
Sumitomo (JPN)	120	1.0	130	1.0	190	1.3		
Velsicol (USA)	110	1.0	115	0.9	130	0.9		
Montedison (ITA)	97	0.8	110	0.8	80	0.5		
FBC (UK)					290	2.1	316	2.0
Chevron (USA)					225	1.6		
Takeda (JPN)					165	1.2		
Celamerck (FRG)					141	1.0		
Hokko (JPN)					140	1.0		
Makhteshim (ISR)					128	0.9		
Uniroyal (USA)					120	0.8		
Roche (CHE)					110	0.8		
Sankyo (JPN)					105	0.7		
Nippon Soda (JPN)					88	0.6		
Other - estimate	1644	14.9	1881	14.9	532	3.9	5190	33.3
<b>TOTAL:</b>	<b>10961</b>	<b>99.9</b>	<b>12541</b>	<b>99.9</b>	<b>13630</b>	<b>99.9</b>	<b>15573</b>	<b>99.9</b>

Note: a) Hoechst's figures in 1979, 1980 and 1982 include sales from Roussel-Uclaf

Sources: Compiled from: Gerrits, R., 1983; van de Waerdt, 1983; TIE, May 1983; La Lettre de Solagral No 38, June 1985, together with figures from industry sources and industry analysts. (See Note 51 for detailed explanation of how the total figures were derived.)

**TABLE 13: CONCENTRATION OF PESTICIDE MANUFACTURERS  
IN INDUSTRIALISED COUNTRIES ACCORDING TO WORLD SALES 1978-1980**  
(in US \$ millions & % share of world market)

FIRM/COUNTRY	1978	1978	1979	1979	1980	1980
	US \$ m	%	US \$ m	%	US \$ m	%
All European companies	5498	50.1	6186	49.2	7229	52.9
Swiss companies (3)	1252	11.4	1371	10.9	1591	11.6
EC companies (11)	4246	38.6	4815	38.3	5638	41.3
FRG companies (5)	2353	21.4	2845	22.6	3123	22.9
UK companies (2)	515	4.6	555	4.4	940	6.8
NL companies (1)	655	5.9	740	5.9	855	6.2
FRA companies (2)	626	5.7	565	4.5	640	4.6
ITA companies (1)	97	0.8	110	0.8	80	0.5
All US Companies	3100	28.2	3709	29.4	4413	32.3
All Japanese companies	399	3.6	410	3.2	978	7.1
Other	1644	14.9	1881	14.9	660	4.8

Source: derived from Table 12

**TABLE 14: APPROXIMATE VALUE OF SELECTED PESTICIDE MARKETS (1978)**  
**BY COMPANY AND REGION**  
(in US \$ millions)

FIRM/COUNTRY	1978	NORTH	EUROPE	JAPAN	S & C	FAR	AFRICA	OTHER
	US \$ m	AMER	E & W		AMER	EAST		
Bayer (FRG)	1480	488	370		296	192		133
Ciba-Geigy (CHE)	1090	479	294		76	98	32	109
Shell (NL)	655	281	124		124	58	39	26
Monsanto (USA)	605	387	96		42	36		42
ICI (UK)	515	128	180		36	87	30	51
Rhone-Poulenc (FRA)	465		279					186
BASF (FRG)	450	108	283					58
DuPont (USA)	400	208	68			44	20	60
Stauffer (USA)	380	247	68		34	30		
Eli Lilly (USA)	336	228	33		50	23		
Dow (USA)	335	157	33		60	50	33	
Amer Cyanamid (USA)	325	117	52		91	39		26
Union Carbide (USA)	320	160	83			44		32
Kumiai (JPN)	279			239				39
FMC (USA)	260	197	13		20	15		13
Schering (FRG)	213	21	174					17
Hoechst (FRG) (a)	371	29	174		37	23	70	35
Rohm & Haas (USA)	204	63	71		44	16		8
Sandoz (CHE)	162		93		21	29		17
Dia. Shamrock (USA)	145	66	31		26			20
Sumitomo (JPN)	120		18					102
Velsicol (USA)	110	55			24	16		14
Montedison (ITA)	97		73				13	9
Other - estimate	1644							1644
<b>TOTAL:</b>	<b>10961</b>	<b>3424</b>	<b>2618</b>	<b>239</b>	<b>985</b>	<b>805</b>	<b>240</b>	<b>2645</b>
<b>% of market:</b>		<b>31</b>	<b>23</b>	<b>2</b>	<b>8</b>	<b>7</b>	<b>2</b>	<b>24</b>

Note: a) Hoechst's figures includes sales by Roussel-Uclaf  
Source: Compiled from: Gerrits, R., 1983

Table 12 gives a breakdown of the world market in dollar terms for the years 1978-1980 and 1982, showing the control of the market by some two dozen transnational corporations. The top 15 companies control two-thirds of the market, which is estimated at US \$15,573 million in 1982. (51) Table 13 further identifies the concentration of European companies in the world market. More than half the total sales in 1980 were controlled by just 14 European companies. More than 40% of total sales were controlled by 11 companies based in EC countries.

A further indication of the importance of sales in developing countries to the leading manufacturers is shown in Tables 14 and 15. Table 14 gives a dollar value for selected markets for the top 23 companies in 1978. At least 17% of their sales came from developing countries. Table 15 shows the market values and world usage of herbicides, fungicides, insecticides and other agricultural chemicals in 1979. Overall, developing countries accounted for 19% of total pesticide use.

Another indicator of the power of European companies in the world pesticide market comes from analysing export figures. In 1978, the UK accounted for 12.2% of the world export market, part of the EC's share of 61.5% of the market. This compares to only 16.5% for the US. In all, Western Europe exported some 4.5 times the value of pesticides as the US. (52)

#### Who Benefits?

The most persistent justification for the sale of hazardous pesticides in developing (or any other) countries is that food production will be improved. The leading US manufacturer of pesticides, Monsanto, said recently, "Millions of people around the world already don't get enough to eat. Without chemicals, the problem would be much worse." (53)

Dr D. G. Hessayon of the British Agrochemicals Association echoed this sentiment when he said:

"The effect of not spraying tropical crops would of course be disastrous, and the resulting famine would be the greatest disaster the world has ever known." (54)

Taking these statements at face value, one could conclude that most pesticides are used to improve the production of staple crops necessary for the food supply of the poor. It would be an incorrect conclusion.

TABLE 15: WORLD PESTICIDE MARKET BY TYPE AND REGION (1979)  
(in per cent and US \$ millions)

REGION	HERBICIDES	INSECTICIDES	FUNGICIDES	OTHER	ALL TYPES
North America	52	23	15	44	34
W. Europe	21	13	37	37	22
Japan	8	13	20	7	12
E. Europe	12	12	19	6	13
Third World	7	39	9	5	19
% of world market	45	32	18	5	100
\$ value (million)	5643	4013	2257	627	12541

Source: Compiled from: TIE-Europe, 1983

According to the director of FAO's Plant Protection Service, the "vast majority" of pesticides are used for export crops, principally cotton. (55) In Indonesia, export crops grown on plantations, such as coconut, coffee, sugar cane and rubber, consume 20 times the quantity of pesticides used by the small land owners growing food for the local market. (56) In 1981, an extensive study found that 70% of pesticides in the Third World were used on export crops like coffee, tea, sugar, winter fruits and vegetables and non-food crops such as cotton and rubber. (57) The servicing of the export market means that products have to look good if they are going to sell. One study estimates that 16% of insecticide use on fruits and vegetables is for "cosmetic" purposes, to ensure there are no blemishes. (58)

Bull concludes:

"It cannot legitimately be argued that Third World pesticide use helps to reduce hunger and malnutrition. To feed the hungry it is necessary to put into the hands of the poor the power to grow or buy the food they need. Pesticides are a central part of a Third World commercial agriculture which often fails to do this." (59)

A by-product of the use of pesticides for export crops is that the toxic residues are exported as well. The US Food & Drug Administration conservatively estimates that 10% of the country's imported food contains illegal pesticide residues. Some 44% of imported coffee was found to contain residues of pesticides banned in the US. (60) Failure to meet residue guidelines can be costly for exporters in developing countries. One report showed that the beef industry in Guatemala, El Salvador, Nicaragua and Honduras has lost more than US \$1.7 million over the past 15 years due to DDT contamination of beef. The DDT was used excessively on cotton fields near where the cattle were grazing. (61)

Trying to assess the costs and benefits of pesticide use is difficult. Certainly, it has never been done for a Third World country, taking into account all the indirect costs and benefits. Professor David Pimentel has carried out such studies in the US which give some indication for an industrialised country. Using only direct costs and benefits, he arrived at a 4 to 1 return on money invested in pesticide use. However, when he added in the indirect costs such as health costs, loss of livestock and environmental pollution, (see Table 16), the return drops to 3 to 1. Pimentel pointed out that even this figure was likely to be biased in favour of pesticide use because of the practical difficulty of putting a

**TABLE 16: TOTAL ESTIMATED ENVIRONMENTAL AND SOCIAL COSTS FOR PESTICIDES IN THE US**

ENVIRONMENTAL FACTOR	COSTS \$
Human pesticide poisonings	184,000,000
Animal pesticide poisonings and contaminated livestock products	12,000,000
Reduced natural enemies and pesticide resistance	287,000,000
Honey bee poisonings and reduced pollination	135,000,000
Losses of crops and trees	70,000,000
Fishery and wildlife losses	11,000,000
Government pesticide pollution controls	140,000,000
	-----
TOTAL:	\$839,000,000

Source: Bull, D., p21

price on social and environmental costs. "If the full environmental and social costs could be measured as a whole, the total cost would probably be several times that estimated in this study." (62)

Applying similar criteria to situations in developing countries is difficult. For a start, there is no single cost benefit ratio. In each situation, in each country, even on different fields owned by the same farmer, the ratio is liable to change. Bull concluded after looking at the situation in several countries that it was more likely to be the larger, richer farmer who was already achieving reasonable yields on his crops who would benefit from the use of pesticides. (63)

In any event, there was nothing in any studies which suggested the most highly toxic pesticides would provide more benefit than those with a moderate or low degree of toxicity. Indeed, the US Agency for International Development (AID) began in 1978 to operate a risk-benefit analysis on all requests for the supply of pesticides in programmes it was supporting. In some 50 projects, it was found in most cases that the objectives of the project could be met by supplying pesticides with the least amount of toxicity. In only one project was it necessary to use a pesticide that was not registered for use in the US. (64)

#### **"Essential" Pesticides?**

The problem surrounding pesticide use is not so much whether they should be used or not, but rather, which ones, in what situations and how often? There is some justification for suggesting an "essential" list of pesticides, similar to the Essential Drugs list prepared by WHO. In the case of pesticides, the list would be more of a guideline of steps to take to improve food production, with pesticides in many cases playing a much smaller role than they do today.

A move towards this has come in recent years with the development of a strategy called integrated pest management (IPM). Professor R. F. Smith is one of its leading proponents and describes IPM this way:

"Integrated pest control is a broad ecological approach to pest control utilizing a variety of control technologies compatibly in a single pest management system. In integrated pest control, stress is placed on the importance of realistic economic injury levels which are used to determine the need for control actions. At the same time, all possible is done to protect and preserve naturally occurring biotic mortality agents such as parasites, predators and pathogens. When artificial controls are needed, for example chemical pesticide applications, they are employed in as selective a manner as possible and only when their use is economically and ecologically justified. The ultimate objective of the integrated pest control system is to produce the optimum crop yield of high quality at minimum cost, taking into consideration the ecological and sociological constraints in that particular agroecosystem and the long-term preservation of the environment. This is the ideal of integrated control toward which we should strive." (64)

Successful IPM programmes exist all over the world. In Malaysia, when crop losses of oil palm and cocoa crops reached 40% despite increasing pesticide use, spraying was halted and biological control with natural enemies achieved dramatic results. In Central America, one extensive comparative study found that yields increased 11% after a 39% reduction

in pesticide application. In India, a pilot programme for rice which began in 1975 has meant spray applications are down, natural enemies are recognised by farmers, resistant varieties are planted and pest populations are monitored by village teams. In the US and Europe, hundreds of commercial farms, some as large as 1000 acres, have functioned for years without pesticide use. (65)

The pesticide industry notes that one difficulty with IPM is that both the development and execution of such a programme "demands a high level of expertise". (66) So, too, does the selection and application of highly toxic pesticides, but that has not deterred the industry from promoting them as if they were panaceas for agricultural problems.

During the early 1980s, Oxfam found that in developing countries, "virtually every available medium is used to persuade people to use pesticides." (67) The marketing practices included the use of sales representatives, promotion to government extension workers, billboards, newspaper and journal advertising, radio and TV, posters, demonstration farms, cinema ads and cars and vans with loudspeakers.

Alvir Jacobs, chief of pesticide inspection for one state in Brazil said that in some ads, pesticides were referred to as "agricultural protectors. Pesticides are presented as if they were holy water or the sacred host." (68) Oxfam found ads from around the world that proclaimed hazardous products as "safe"; failed to warn against hazards; and encouraged unsafe usage practices -- such as the ICI ad in Malaysia for gamma BHC, a moderately hazardous pesticide, which showed a worker in bare feet, shorts, a short sleeve shirt and no gloves mixing and applying the chemical. In Guatemala, Bayer advertised Tamaron (methamphos - highly hazardous) without mentioning any hazards, despite a Guatemalan regulation requiring that ads give "all technical data relating to the product's qualities, and the safety measures relating to its use." Bayer claims to "abide strictly by the laws of recipient countries", but argues that "it is not customary anywhere in the world to mention the poison classification of a product in newspaper advertisements." (69) Perhaps it should be.

As early as 1972, the pesticide industry voiced its support for the concept of integrated pest management when it said the industry "does not hesitate to record its commitment to the general philosophy of integrated control".(70) However, so long as the industry continues excessive promotional practices for its products, little will change.

Percy Abeywardena, the Deputy Director of Extension Services in Sri Lanka, is unable to compete with the companies in trying to get the correct message across to farmers. He says,

"The companies can spend much on advertising and propaganda which the government cannot afford to combat, and which seems more attractive than the individual contact of the village agricultural extension worker." (71)

The pesticide industry will not voluntarily give farmers advice on IPM, especially if it means farmers will not use as much pesticide, as is made clear by the British Agrochemicals Association, who said there is "no getting away from the fact that companies will promote what they have to sell through the medium of advertising. Good agricultural practice, integrated methods of pest management are unlikely to feature in advertisements unless they help to promote the product in question." (72)

## An Unresponsive Industry?

A UN official, Noel Brown, noted in 1981 that the pesticide industry had an "unnecessarily hostile attitude toward environmental groups. Our argument is not that they make the stuff, but that there is an insufficient exchange of information." (73)

Earle Barnes, the chairman of Dow Chemical, demonstrated that hostility when he branded critics of 2,4,5-T as "extreme activists among the environmentalists who are opposed to using any kind of chemicals for agricultural purposes." (74)

Warner Gebauer, commercial director of Bayer, is equally concerned about the dangers of the critics. He told the 1981 meeting of the International Agrochemical Manufacturers Association:

"We have all lost count of the number of national and international institutions that find it necessary to concern themselves with agrochemicals. To my mind the self-appointed ones -- those who have no mandate from anyone but themselves -- are the most suspect. These include consumer groups, research associations, and also churches and trade unions. In West Germany we have prominent people suggesting that the approval of agrochemicals should no longer be left only to the experts but should depend on a 'social consensus', meaning that the agreement of all bodies involved in public life would be required, that is, consumer associations, the churches, trade unions and also the experts from science, industry and agriculture. You will appreciate the dangers that can emanate from these groups." (75)

Dr Alan Hayes of ICI suggested that one of the functions of the international association should be to act as a "source of information used to encourage agriculturalists, academics and farmers to promote the undoubted case for agrochemicals." (76) [emphasis added]

The dangers that can emanate from groups who are critical of the pesticide industry pale to insignificance when compared to the dangers that can emanate from the industry's uncontrolled promotion of its products. Nowhere in the written literature surveyed for this report was there any suggestion that all pesticides should be abolished, but rather that a more rational approach be used in their selection and use. The reason for demanding a more rational approach is that the chemical cocktails dumped on fields throughout the world in the past 25-30 years have not succeeded in achieving the desired results. Instead, pests have increased, grown more resistant, and in the process, human health, the environment and animal and plant life have all suffered what might well be irreparable damage. In the words of entomologist Professor Paul DeBach,

"The empirical and unilateral use of chemicals to attempt to hammer pests into submission by repeated costly blows is increasingly failing to provide a solution. A rapid and drastic change is necessary in order to achieve control of pests in an ecologically and economically satisfactory manner." (77)

#### Notes and References

1. McMillan, P., "Who killed Subramaniam?", Consumer Interpol Focus, No 7, Mar 1984, p.1
2. See: Sahabat Alam Malaysia (SAM), Pesticide Dilemma in the Third World -- a case study of Malaysia, Penang, (2nd edtn.), 1984, pp65-69  
- IOCU, The Pesticide Handbook: Profiles for Action, Penang, Jan 1984, pp90-91
3. Pesticides in the modern world, a symposium prepared by members of the Cooperative Programme of Agro-Allied Industries with FAO and other United Nations Organizations, London, 1972, pl  
(The Cooperative Programme was established in 1966 and given official status by FAO. Pesticide companies represented included: BASF, Bayer, Hoechst, Shell, Ciba-Geigy, Roche, American Cyanamid, FMC, Imperial Chemical, Sandoz and Stauffer. This close working relationship led to Hoechst being brought in as an official advisor for an FAO programme in Tanzania and the UN representative on a malaria control programme in Bangladesh being the representative of the company supplying the chemical, malathion. The "cosy relationship" between FAO and the pesticide industry was much criticised, and in 1978, the Cooperative Programme was "kicked out of FAO", according to one of its liaison officers.)  
-- For further information, see: Gerrits, R., Poison Swirls Around the World, Zandvoort, Holland, Stichting Mondiaal Alternatief, 1983, p43  
-- George, S. How the Other Half Dies, London, Pelican, 1976, pp214-234
4. Ibid
5. Bull, D., A Growing Problem, Oxford, Oxfam, 1982, pp4-5
6. Ibid, p5
7. Ibid, pl3
8. Ibid, pl2
9. Ibid, pl1
10. SAM, op cit, pp33 & 44
11. Guardian, The, "Disaster fear from insecticide", 15 Jan 1985
12. IOCU, op cit, pp38-39
13. United Nations, Consolidated List of Products Whose Consumption and/or Sale Have Been Banned, Withdrawn, Severely Restricted or Not Approved by Governments, 1st issue revised, Doc:DIESA/WP/1, New York, July 1984, pp126-129
14. Linear, M., "Zapping Africa's Flies", Vole, Mar 1981, p.15
15. van de Waerdt, J., Drins and Related Insecticides: Toxicology, Use and Alternatives, Zandvoort, Holland, Stichting Mondiaal Alternatief, July 1983, pl28
16. See: Guardian, The, op cit; and Linear, M., op cit, pl4
17. Linear, M., op cit, pl4 (See also: Note 3., above)
18. van de Waerdt, J., op cit, pp71 & 130-131
19. Bull, D., op cit, ppl6-17
20. SAM, op cit, p35
21. Bull, D., op cit, p23
22. Hayes, A., What Can the AgroChemical Industry Learn from the Pharmaceutical Industry?, speech given at AgroChemical Conference, Zurich, Sept 1981
23. Bull, D., op cit, pl6
24. Ibid
25. Ibid, p.33
26. WHO, Resistance of Vectors and Reservoirs of Disease to Pesticides, 22nd Report of the WHO Expert Committee on Insecticides, Technical Report Series 585, Geneva, 1976, p77
27. Bull, D., op cit, p32
28. Pesticides in the Modern World, op cit, pl3

29. Ibid
30. Friends of the Earth, Pesticides: The case of an industry out of control, London, 1984
31. Ibid
32. Bull, D., op cit, pp37-38
33. Gelber, A., et al, "The Pesticide Peril", Newsweek, 17 Aug 1981, p45
34. Ibid
35. Bull, D., op cit, pp43-44
36. Elkington, J., "American virility goes west", The Guardian, 23 May 1985
37. Erlichman, J., "Six weedkillers 'may be health hazards'," The Guardian, 25 June 1985
38. Pesticides in the Modern World, op cit, pl4
39. Wyrick, B., "Hazards for Export", special reprint, Newsday, 31 Dec 1981, pl4R
40. IOCU, 1984, op cit, pp90-91
41. United Nations, Consolidated List..., op cit, pp192-194
42. Pesticides Action Network (PAN), The "Dirty Dozen", information and media kit, Nairobi, Penang, Oxford, Quito, San Francisco, June 1985
43. Caufield, C., "Pesticides: Exporting death", New Scientist, 16 Aug 1984, pl7
44. Gelber, A., et al, op cit, p45
45. Wyrick, B., op cit, p9R
46. IOCU, 1984, op cit, pl21
47. Lemmers, J., "Dangerous pesticides included in EC aid programme", EC-Third World Bulletin, (ICDA), No 1, Apr 1985
48. SAM, op cit, pp11-17
49. Transnationals Information Exchange (TIE), "Getting a Handle on Pesticides", TIE-Europe, No 15, May 1983, p9
50. Wheelwright, E. L., Consumers, Transnational Corporations and the Developing World in the 80s -- II: The Pesticide Industry, paper presented at IOCU's 11th World Congress, Bangkok, 9-14 Dec 1984, pl
51. Putting a total value on the world market has proven difficult. The final figures arrived at in Table 12 should be considered an estimate, but nonetheless, a realistic one. Wildly differing figures were encountered in various publications: 1979 - \$13,760 million and 1981 - \$14,000 million (TIE-Europe); 1978 - \$9,355 million and 1980 - \$13,098 (Gerrits); 1983 - \$14,300 million (Righter); 1983 - \$13,300 (McMillan). Bull based some of his calculations on industry-provided figures of a 1978 market worth \$8,400 and 1979 - \$9,700.

The confusion seems to arise from an uncertainty as to how many companies are involved in the market and how much of it they control. Most figures are based solely on the dominant 24 companies. Industry analysts Wood, MacKenzie & Co use this criteria and it is often accepted that the figures for these companies are the total market. However, they also note that in volume terms, 15% of world production comes from Eastern European companies and fail to explain where a further "missing" 25% of production comes from.

The most comprehensive listing of sales was found in Gerrits for 1980. It was based on Wood, MacKenzie & Co sources, but included an additional 10 companies. Gerrits arrived at a total figure of US \$13,098 million. However, elsewhere, he states that the top 24 companies controlled 85% of the market in 1979.

It was considered unlikely that the market shares of the top 24 would move significantly between 1979 and 1980, so a calculation was made to add a further 15% to the value of the top 24 companies in 1980, arriving at the figure of US \$13,630 million. In working this same projection backwards through the 1979 and 1978 figures, a seemingly acceptable total was arrived at. This was checked against

industry estimates (based on the top 24 companies) which in 1978 and 1979 were calculated to be approximately 25% underestimated. By working back through figures for earlier years from 1960, using the higher estimate, an average growth in the market of 12.4% per year was established. This corresponds to the figure arrived at by Bull.

The total figure was also cross-checked via Wood, MacKenzie & Co, FAO and other industry estimates for the total Third World market in 1980 which ranged between \$2,600 - \$2,817 million. Projecting these figures gave a total market range of between \$11,000 - \$14,800 million.

It was concluded from all the various calculations that the most frequently occurring figure was in the area of \$13,600 million, and this was taken for the market value in 1980. La Lettre de Solagral quoted industry analysts that the top 15 firms in 1982 controlled two-thirds of the market. Projecting the 1982 figures gave a 1982 world market value of \$15,573, which is in line with the calculations for earlier years. Assuming only modest growth of 5% per annum the value of the world market in 1985 would be over US \$17,000 million.

52. Bull, D., op cit, p6
53. SAM, op cit, pl2
54. Bull, D., op cit, p68
55. Lappe, F. M. & Collins, J., Food First, London, Souvenir Press, 1980, p53
56. Cervantes, N., "Third World Still a Lucrative Market for Banned Pesticides", Depthnews Science Service, 20 Dec 1980, p3
57. PAN, op cit
58. Bull, D., op cit, p82
59. Ibid
60. Wheelwright, E. L., op cit, p8
61. Bull, D., op cit, p61
62. Ibid, pp70-71
63. Ibid, p77
64. Ibid, pl26
65. PAN, op cit
66. Pesticides in the modern world, op cit, p52
67. Bull, D., op cit, p92
68. Gelber, A., et al, op cit, p45
69. Bull, D., op cit, pp92-123
70. Pesticides in the modern world, op cit, p54
71. Bull, D., op cit, p92
72. Ibid, pl42
73. Gelber, A., et al, op cit, p46
74. Wyrick, B., op cit, pl4R
75. TIE-Europe, op cit, p22
76. Hayes, A., op cit
77. Bull, D., op cit, pl24

## OTHER HAZARDS

Many of the pharmaceutical and pesticide companies already mentioned in this report are engaged in other activities which have potential hazards. Hoffman-La Roche and Union Carbide spring immediately to mind over their connection with the tragic accidents in chemical plants at Seveso and Bhopal which caused so much human suffering. Their activities raise the whole question of the disposal and storage of **hazardous wastes and hazardous production processes**. Many of the pharmaceutical companies are also engaged in the marketing of **artificial infant foods**, whose inappropriate use has been associated with infant illness, malnutrition and death. A surprising number of the top pharmaceutical and pesticide firms are heavily involved in the **seeds** business where crop diversity is under threat, and some experts suggest that by the beginning of the next century the world's plant genetic supply may be dangerously eroded. Finally, all these companies rely heavily upon the power of international **advertising** agencies to influence buying decisions and, in some cases, undermine existing healthy cultural practices and beliefs.

This chapter will look briefly at these topics, highlighting some of the problems that exist and, where possible, outlining some of the proposals that have been made to deal with these additional potential hazards.

### **The Hazards of Waste and Production**

In 1976, the Organisation for Economic Cooperation and Development (OECD) passed a Declaration on International Investment and Multinational Enterprises which was subsequently revised in May 1984. One of the general policy recommendations was that multinational companies should give due consideration to "the protection of the environment".(1)

In the late 1970s, in the picturesque city of Niagara Falls in the northern part of New York State, tragedy began to strike families living nearby a disused canal that had been built in the late 1800s by an entrepreneur named William T. Love. The canal had been taken over by the Hooker Chemical Company, a subsidiary of Occidental Petroleum, and used during the 1940s and 1950s as a dump for some 20,000 tons of chemical waste. Eventually, the canal was given a coating of top soil, a school built on top of it, and then the chemicals began seeping out into the soil and into the nearby drainage systems. Included in the waste materials dumped was some 200 tons of trichlorophenol contaminated with approximately 130 pounds of tetra dioxin -- equal to the amount of dioxin contained in the Agent Orange dropped on Vietnam. In the homes near the Love Canal, doctors found above average incidence of miscarriages, birth defects, constant skin complaints, dizziness, nausea and postulated on the likelihood of high cancer amongst the residents in later years. (2)

In Cubatao, Brazil, a city of 85,000 people, the life expectancy is 30 years -- half the national figure of 60. Eight per cent of the children are born with deformities. The average level of air pollution is 1,200 particles per cubic metre of air -- more than twice the level that WHO claims will cause "excess mortality". The reason for this suffering lies in the 100 factories, many of them operated by US and European based companies. (3)

Outside the Shree Digvijay asbestos-cement factory in Ahmadabad, India, lies a pile of debris where children play. Soon their clothing and their skin becomes covered in the white asbestos fibres and dust. Inside the

250 nearby huts, used by temporary workers at the plant, most of walls and ceilings are constructed from bits of asbestos cement with the ragged fibres exposed. The plant is owned by the US-based Manville Corporation which states: "We will not sell asbestos or asbestos-containing products where adequate precautions are not likely to be observed." In Bombay, a similar plant owned by Turner & Newall Ltd. of the UK also has an open pile of asbestos contaminated waste outside. A worker at the plant said the employees were "not told at all" about the hazards of asbestos and there were no warning signs. (4)

In July 1976, the small industrial town of Seveso in northern Italy was covered with a white cloud containing dioxin. An explosion at a chemical plant released the dioxin which contaminated 1800 hectares of countryside and caused serious skin diseases amongst the local population. The plant was owned by Hoffmann-La Roche and was supposedly making ingredients for perfumes and flavourings. However, without notifying the Italian authorities, production of trichlorophenol had been started in the early 1970s. The production licence for the factory stated: "Permit to produce pharmaceutical products and colourants, not in any way dangerous." Dr Adolf Jann, president of Hoffmann-La Roche is reported as saying in a television interview about Seveso, "Capitalism means progress, and progress can lead sometimes to some inconvenience." In the subsequent investigation, it was found that sensible safety precautions had not been followed at the plant. Also, in 1982, two tonnes of earth contaminated with the dioxin were removed from Seveso, put into 41 canisters for disposal, and then went missing for over a year. They were finally discovered in a small warehouse in northern France. (5)

On 3 December 1984, what The Observer termed "the world's worst industrial disaster" occurred at Bhopal, India, when a cloud of highly toxic methyl isocyanate spewed out from a Union Carbide plant. At least 2500 people were killed. More than 200,000 people were treated as suffering from the immediate effects of the poisonous gas. Many of them suffered permanent injury -- blindness and lung damage -- that will affect them for the rest of their lives. Investigations showed that safety standards at the plant were inadequate and a spate of minor accidents that began in 1980 were ignored. The mayor of Bhopal claims he was never warned there was any hazard.

"Only now do we understand that a similar plant built in the United States was built in a relatively isolated area. We were not even told that the process of making the gas was dangerous. The management kept saying it's a safe plant, very safe." (6)

As the clamour for compensation for the victims grew, Simon Muchiru of the Environment Liaison Centre in Nairobi, said:

"Compensation is not enough. I think it is time for us to call for more strict regulations on the transfer of hazardous industries from the North to the Third World." (7)

The examples cited above, which represent only a tiny proportion of the hundreds of cases every year where toxic wastes and industrial pollutants escape into the environment to contaminate the air, water and soil and poison animal, plant and human life, show that no country is safe from these hazards. In the EC alone, 150 million tonnes of industrial wastes are produced annually. Of these, 40 million tonnes are chemical wastes, half of which are known to be toxic. (8)

A recent report by the US Economic Development Commission estimates that the equivalent of a lorry-load of toxic waste is produced each year for each person in the state of California. As a result, 2500 Californians can expect to die each year for the next decade due to cancers caused by exposure to the toxic waste. (9)

With more stringent restrictions appearing in the industrialised countries on the disposal of wastes and controls to ensure safer production, companies have begun to look to the developing countries for disposal sites, or for sites to set up factories whose pollutant level is too high to meet European or North American standards. In 1974, for example, US chemical companies spent 44% less on pollution control at their overseas plants than at those inside the country. (10)

During the late 1970s and early 1980s, incidents were documented which showed US companies attempting to dispose of wastes in Third World countries. This included an offer of \$25 million to the president of Sierra Leone to permit mining wastes to be disposed of in his country; wastes from the paint industry proposed for shipment to Haiti; and similar offers to Nigeria, Liberia, Senegal, Chile, the Bahamas and the Dominican Republic. (11)

In considering proposals for controlling the disposal of hazardous wastes, it is important that the industrialised countries include export controls. The same rigorous safety standards should be applied in all cases. Otherwise industries will exploit countries without high safety standards or without the means to enforce those standards. The result will be more Bhopals, more Love Canals, more death, more unnecessary suffering. The result, too, will be the loss of jobs in industrialised countries as whole production plants will be moved to avoid restrictions. Eventually, too, Third World governments may start to say no, not only to the export of hazardous wastes and hazardous production processes, but also to the export of other commercial products from countries or companies which refuse to operate a single set of standards.

### **Seeds of Destruction**

At first glance, it seems impossible to equate world trade in seeds with potential hazards. Seeds are the basic starting point in agriculture and horticulture. They are the first link in the entire food production chain. They are essential. The hazards lie, not in the seeds themselves, but in the increasing concentration of control over their trade.

Put simply, virtually all the world's food crops originated in areas of high crop diversity in Asia, Africa and Latin America. Successful species were transplanted in other parts of the world. However, a single crop species is constantly under threat of destruction from pests, soil conditions and weather and climatic conditions. In order to preserve successful agriculture, it has been necessary over the years to breed more resistant crops. The genes used to breed those crops have consistently been culled from the centres of crop diversity in developing countries. In a world where 95% of human nutrition is derived from only 30 plants, (12) the protection of crop diversity should be a high priority. Sadly, it is not.

During the past few decades, as agriculture became increasingly big business, plants have been bred to provide uniform crops -- the size, the colour, the quality would always be the same. As farmers in developing countries were slowly brought into the global agribusiness through

the cultivation of export crops, they too, were expected to use the same varieties of crops as Northern farmers. The result has been a staggering erosion of crop diversity.

Over the past 50 years, farmers in India were estimated to be producing more than 30,000 different varieties of rice. However, Dr H. K. Jain, Director of the Indian Agricultural Research Institute predicts that by the end of this century this diversity will be reduced to no more than 50 varieties with the top 10 accounting for more than three-quarters of the subcontinent's rice acreage. (13)

During the 1970s, international efforts began to establish "gene banks" to act as depositories for crop germplasm (seeds) of endangered species. Even that move has led to problems. The FAO estimates that European gene banks are storing two-thirds of the world's collection of seeds, and estimates extrapolate that to suggest that somewhere between 75-90% of the world's seed reserves are stored in either Europe or North America. (14) However, experts at the International Board for Plant Genetic Resources (IBPGR) estimate that between half and two-thirds of all seeds shipped to these banks from developing countries have been lost as a result of administrative and/or technical reasons. Furthermore, at least one government, the US, regards seeds which it has under storage as US government property, and reserves the right to deny access to some countries for "political reasons". (15)

The situation is further complicated by the large seed holdings of some multinational companies. For example, Campbell's (soup) has one of the largest banks of tomato germplasm in the world. (16) In terms of seeds moving in international trade, the private sector has strong control, as Table 17 demonstrates.

**TABLE 17: PUBLIC AND PRIVATE SECTOR DOMINATION  
OF INTERNATIONALLY-TRADED VARIETIES OF 13 MAJOR CROPS  
AS IDENTIFIED BY THE OECD SCHEME FOR THE  
VARIETAL CERTIFICATION OF SEED MOVING IN INTERNATIONAL TRADE IN 1981**

CROP	NO OF VARI- ETIES	PUBLIC SECTOR %	PRIVATE SECTOR %	CONCENTRATION
Maize	1038	8.36	91.64	Top 7 firms control 42.5%
Winter wheat	412	35.43	64.57	Top 5 firms control 16.8%
Sugar beet	326	4.90	95.10	Top 5 firms control 47.5%
Spring Barley	217	19.35	80.65	Top 5 firms control 33.3%
Lucerne (alfalfa)	173	84.33	15.67	Top 2 firms control 8%
Spring wheat	152	44.07	55.93	Top 7 firms control 26.3%
Spring oats	128	47.65	52.35	Top 6 firms control 21.9%
Durum wheat	107	52.33	47.67	Top 3 firms control 5.6%
Field pea	99	33.33	66.67	Top 3 firms control 19.4%
Timothy	97	35.05	64.95	Top 3 firms control 20.7%
Winter barley	84	19.04	80.96	Top 4 firms control 22.6%
Sunflower	71	46.67	53.33	Top 2 firms control 26.8%
Soybean	63	19.04	80.96	Top 4 firms control 50.8%

Note: The table has a strong European bias in that it does not take account of the North American market. Also, no effort is made to indicate market shares of any variety, but rather the number of varieties controlled by either governments or commercial enterprises.

Source: Compiled from: Mooney, P., Development Dialogue, p100

In the past 10-15 years, the shape of the seeds industry has changed dramatically from a proliferation of small, family-based companies to the domination of a handful of large multinational corporations. The change came about when several European governments and the US introduced legislation to implement "plant breeders' rights" -- essentially patent protection for the development of specific seeds. Suddenly there was a global market for patented seeds, and many large corporations swooped on the smaller firms. Since the early 1970s, more than 500 seed companies have been taken over by the corporate giants. (17)

Many of the new seed sellers were already active in the pharmaceutical trade or in pesticides, as Table 18 indicates. Seven of the top 20 pharmaceutical firms and 12 of the top 20 pesticide firms are involved in the seed industry.

Norman Borlaug, winner of the Nobel Peace Prize for his contribution to the so-called "Green Revolution" that helped transform agriculture, identified two important future trends which justified the economic investment in seed companies. First, it was now possible to breed a basic cereal strain that could be adapted over a vast market and secondly, government and foreign aid programmes could be persuaded to finance the introduction of new varieties, and even the distribution to peasant farmers. (18)

TABLE 18: MAJOR SEED COMPANIES  
WITH INDICATION OF PHARMACEUTICAL AND/OR PESTICIDE INTERESTS

COMPANY/COUNTRY	SEED SALES US \$ M	SEED FIRMS (a)	PHARMA RANK	PEST RANK	COMMENTS
Shell (NL)	650	71	--	3	55 crops, 83 varieties
Pioneer Hi-Bred (US)	557	29	--	--	6 crops, 55 varieties
Sandoz (CHE)	319	34	7	19	12 crops, 172 varieties
Cardo (SWE)	285	30	--	--	18 crops, 108 varieties
Dekalb-Pfizer (US)	187	30	8	--	8 crops, 142 varieties
Ciba-Geigy (CHE)	107	26	4	2	9 crops, 76 varieties
Upjohn (US)	139	11	18	--	13 crops, 52 varieties
Cargill (US)		11	--	--	6 crops, 47 varieties
Suiker Unie (NL)	100	16	--	--	12 crops, 72 varieties
Svalof (SWE)		10	--	--	16 crops, 62 varieties
Clays-Luck (FRA)	155	5	--	--	
Kleinwanzelbener (FRG)	80	27	--	--	14 crops, 125 varieties
Limagrain (FRA)	130	22	--	--	8 crops, 41 varieties
Bayer (FRG)			2	1	breeding prog in US
Monsanto (US)				4	growth regulators-wheat
Eli Lilly (US)			11	8	agri genetic engineering
DuPont (US)				9	"
Stauffer (US)				10	maize seed
Hoechst (FRG)			1	11	one seed co in UK
Dow Chemical (US)			33	12	agri genetic engineering
Rohm & Haas (US)				18	hybrid wheat
Diamond Shamrock (US)				20	sorghum
Sumitomo (JPN)				21	vegetable seed

Notes: Figures are for 1982

a) includes both wholly-owned subsidiaries and firms with a contractual relationship with the senior company

Source: Compiled from: Mooney, P., Development Dialogue, pp96 & 99

For companies already involved in pesticides, there was even more logic involved. The pesticide firms were able to profit in three ways:

- by coating seeds with chemical protectants to either improve growth or resist pests, thereby increasing the use of the company's chemicals;
- promoting specific varieties with the company's pesticides, so that more products were advertised at less cost to the company;
- combining seeds and pesticide research and producing compatible seeds and pesticides that would "need" each other. (19)

In practice, what this means for the end user, is explained by M. A. Adansi, Chief Research Officer at the Oil Palm Research Centre in Ghana:

"Multinational or transnational corporations are a menace by exerting their deleterious influence in a variety of ways. For example, in vegetable cultivation, one has no choice but to plant cultivars bred by Suttons of England (Cardo) or Burpee of the USA (ITT) . . . and subsequently protect them with pesticides produced by Shell Limited, ICI, Monsanto." (20)

Commercial companies, obviously, want customers to come back to them. In the seeds industry, one of the ways of guaranteeing repeat sales is to breed hybrid seeds that are sterile (will not reproduce for a second planting) or will not breed "true" the second time. The farmer has to purchase new seeds. Particularly with profitable vegetable seeds, Third World farmers are being encouraged to grow temperate zone vegetables instead of their better-adapted and sometimes much more nutritious tropical types. As Pat Mooney explains,

"companies have no choice but to regard traditional cultivars as 'competition' to their hybrid or otherwise proprietary ... varieties. . . . The major companies will always strive to eliminate this competition. The result: commerciogenic erosion." (21)

At the 22nd Conference of the FAO in November 1983, proposals were made to bring some rationality into the world trade in plant genetic resources. Delegates were urged to establish:

- an International Convention on Plant Genetic Resources;
- an intergovernmental subcommittee of FAO to supervise activities dealing with the world's plant genetic resources;
- a fund to enable work to be carried out.

In the end, a weaker International Undertaking on Plant Genetic Resources was adopted. It was further weakened by the UK, West Germany, France, the Netherlands, the USA, Canada, Japan and New Zealand "reserving their approval" -- the polite way of rejecting the proposal. (22)

Those are, of course, the countries where most of the world's leading seed companies are based. Their decision may have had more to do with the short-term protection of the seed industry, than with the long-term much more important goal of protecting the world's food security. It was a position they may come to regret if, in the words of some Third World diplomats the prayer, "Give us this day our daily bread" is not to become a prayer to Shell Oil. (23)

## Death in a Bottle

Over the past 25 years or so, the world has witnessed the decline of one of its most important natural resources: breast milk. Studies in many different parts of the world during the 1950s and 1960s showed an alarming decline in the number of mothers who were breast feeding their infants. (24) With the decline and the increased use of artificial infant milks and feeding bottles, came an increase in infant illness, malnutrition and even death. According to WHO's Director General, Dr Halfdan Mahler,

"Evidence from the developing countries indicates that infants breast fed for less than six months, or not at all, have a mortality rate five to 10 times higher in the second six months of life than those breast fed for six months or more." (25)

The factors leading to this unprecedented change in human feeding patterns are complex. They include modernisation, urbanisation, an increasing number of women in paid employment, poor knowledge about human lactation amongst health workers and others who parents might turn to for advice, practices in health care facilities which discourage breast feeding and the impact of commercial marketing. With all the factors, the aggressive advertising and promotion of the artificial milks served to underline the social trends that were occurring and played upon parents' fears and desires.

A Swiss judge, having had the opportunity to study carefully the promotional materials of the market leader, Nestle, during a two-year libel trial, commented:

"The need ensues for the Nestle company fundamentally to rethink its advertising practices in developing countries as concerns bottle feeding, for its advertising practice up to now can transform a life-saving product into one that is dangerous and life-destroying. If the complainant [Nestle] in future wants to be spared the accusation of immoral and unethical conduct, he will have to change its advertising practices." (26)

That conclusion could equally have been applied to any of the other companies involved in the marketing of infant feeding products. Although more than 80 companies have been identified as manufacturing and selling artificial infant milks, the bulk of US \$3.3 billion market is controlled by only 12, with the top four companies controlling more than two-thirds of the market, as Table 19 shows.

The controversy surrounding this subject led to an international meeting on infant and young child feeding convened by WHO and UNICEF in October 1979. That meeting recognised that:

"Poor infant-feeding practices and their consequences are one of the world's major problems and a serious obstacle to social and economic development. Being to a great extent a man-made problem it must be considered a reproach to our science and technology and our social and economic structures, and a blot on our so-called development achievements. It is not only a problem of the developing world: it occurs in many parts of the developed world as well." (27) [emphasis added]

The meeting came up with recommendations on ways of encouraging and supporting breast feeding; improving weaning practices, with concentration on the use of local food resources; strengthening education, training and information to parents and health workers; changes in health care practices; improvements in the health and status of women; and proposals for appropriate marketing and distribution of artificial infant feeding products and utensils.

One of the recommendations in the last category was that WHO and UNICEF should oversee the development of an international code of marketing. Between October 1979 and December 1980, the two agencies held a series of consultations with governments, health workers, scientific experts, other UN agencies, the infant food industry, and concerned non-governmental organisations to develop such a code. In May 1981, it was overwhelmingly adopted by the World Health Assembly, with only the US voting against it. (28)

This International Code of Marketing of Breast-milk Substitutes was approved as a recommendation for governments to adopt (and for companies to follow) as "a minimum requirement and only one of several important actions required in order to protect healthy practices in respect of infant and young child feeding." (29)

**TABLE 19: MAJOR COMPANIES IN THE INFANT MILK SECTOR:  
SALES 1979, ESTIMATED 1983 SALES**

RANK	COMPANY/COUNTRY	SALES	SALES	% OF
		1979 US \$ M	1983(a) US \$ M	MARKET (1983)
1	Nestle (CHE)	700	1025	31.06
2	Abbott/Ross (US)	335	490	14.84
3	Bristol-Myers (US)	250	366	11.09
4	American Home Products (US)	240	351	10.63
5	Varta (FRG) (b)	125	201	6.09
6	Glaxo (UK) (b)	90	145	4.39
7	Morinaga (JPN) (b)	65	105	3.18
7	Nutricia (NL) (b)	65	105	3.18
9	Meiji (JPN) (b)	50	80	2.42
9	Cow & Gate (NL) (b)	50	80	2.42
11	BSN Gervais Danone (FRA) (b)	40	65	1.96
12	Dumex/CDC (DNK/CAN) (b)	25	41	1.24
13	Snow Brand (JPN) (b)	15	24	0.72
	Others	138	222	6.72
<b>TOTAL:</b>		<b>2188</b>	<b>3300</b>	<b>99.99</b>

Notes: a) estimated sales for 1983 based on a 10% per annum growth rate in sales, the lowest figure suggested by marketing expert Professor James Post at US Senate Hearings on the subject in May 1978.

b) sales figures for these companies are for 1978, projected for 1983

Source: Compiled from: Borgoltz, P. A., Chap 12, in Advances in International Maternal-Child Health, Vol II, (Jelliffe, D. B. & Jelliffe, E. F. P., eds.), Oxford, Oxford University Press, 1982, pl60

The International Code recommends that some improper marketing practices be eliminated and that other, potentially harmful, practices be subject to restrictions. The practices to be eliminated include:

- direct consumer promotion including advertising, gifts and free samples of the products;
- contact between company marketing personnel and parents;
- the use of health care facilities as a promotional channel;
- gifts to health workers;
- bonuses to sales representatives based on sales of the products;
- pictures of infants on labels.

The practices that should be restricted include:

- information to families, health workers or on labels should include the superiority and nutritional benefits of breast feeding and the health hazards of unnecessary or improper use of artificial milks;
- health workers may only receive samples for professional evaluation and research;
- fellowships, grants, travel allowances and the like to health workers should be disclosed;
- donations of infant milks should only be used for infants who have to be fed on artificial milks and whose parents are too poor to be able to afford sufficient quantities, and should continue for the duration of that infant's need;
- donations of materials and equipment to health care facilities may not advertise specific brands of infant milks. (30)

Not surprisingly, the infant food industry, although it had been fully involved in the consultations to draft the code, was not happy with it. The International Council of Infant Food Industries (ICIFI), which represented companies controlling more than half the world market, said it found the code "unacceptable. . . . Many substantive points in the detailed provisions contain the same defects criticised during the consultation period." (31)

Despite that opposition, public opinion together with the action of some governments has led some of the companies to begin to change their marketing practices. In 1984, Nestle agreed that it would apply most of the provisions of the International Code in most countries, although it was reluctant to unilaterally do so in the European market. Other companies are taking tentative steps in that direction, although a recent survey by the International Baby Food Action Network (IBFAN) found that the industry was still "breaking the rules" laid down in the International Code nearly four years after it was adopted. (32)

By July 1984, 12 countries had adopted the International Code in its entirety either as law or as a voluntary measure. Another 34 countries were drafting legislation, while a further 33 countries had banned all advertising directly to the public. (33)

Most EC countries have been slow to act, despite two resolutions in the European Parliament urging Community-wide adoption of the International Code. (34) A draft directive to deal with labelling and quality of the products is currently under consideration, but the Commission appears to be relying on a weak voluntary code that has been drafted by European manufacturers as being sufficient. (35) The manufacturers' proposed code has been criticised as being "totally inadequate" by consumer groups, health workers and some Members of the European Parliament. (36)

It is important that European governments and the EC as a whole demon-

strate leadership on this issue by implementing the International Code. It is important not only for the health of infants in EC countries, but also because health workers from many developing countries train in European facilities. If, during their training, they are subjected to high levels of commercial promotion and advertising, they are liable to take back with them the very practices which the International Code seeks to eliminate. As in the other subjects discussed in this report, there can be no double standards on the question of infant and young child feeding.

### **The Advertising Age**

A common factor running through the business strategies of corporations engaged in the pharmaceutical, pesticide, seeds and infant feeding industries is their high level of expenditure on advertising and promotion of their products, both to general consumers and to professionals (such as health workers or agricultural advisors). Again, it may seem odd to characterise advertising as being a "hazard"; however, as will be seen, some of the concepts contained in advertising can be considered hazardous to both individuals and to the overall development strategies of Third World (and even First World) countries.

The advertising industry is, itself, transnational in character. Of the world's top 15 advertising agencies, 14 are US-based, with the leading agency, Dentsu, based in Japan. The eight largest US agencies operate in more than 20 countries each, with one agency, McCann Ericksson, operating in more than 50 countries. (37)

The growth of these giant concerns has largely followed the growth of transnational corporations, with agencies often expanding into a new country after one or two of their major clients established a new market. The basic imperative they followed was explained by Business International as long ago as 1963:

"The most vital challenge facing today's international firm is no longer how to build up the production of goods, but how to increase their penetration." (38)

Advertising helps to do this in two ways: first, by displacing local production, if there is any, through high profile media presence; and, second, through introducing new consumption patterns for goods.(39) Particularly in developing countries, this can have a detrimental effect. Janus and Roncagliolo, who studied the impact of advertising in Latin America, concluded that the use of national wealth to advertise less-than-essential consumer goods when basic human needs for food, clothing and shelter were not being met, was "highly questionable". They also point with concern to the undermining of "cultural sovereignty" through the dissemination on a global scale of a specific set of cultural patterns, a particular "way of life". (40)

In addition, two commentators note that

"advertising does more than merely sell products and form consumption patterns: it informs, educates, changes attitudes and builds images." (41)

Selling ideas, not products, is the function of advertising according to one marketing manager, who sees advertising agencies' main role as attempting "to influence human behaviour in ways favourable to the interests of their clients". (42)

Advertising as a valid source of information is dismissed by most practitioners. A spokesman for the International Chamber of Commerce said it was clearly a tool of persuasion. "I do not accept that the primary objective of advertising is to give information." (43) An advertising expert in the UK echoed that sentiment:

"It would be impossible to control advertising if one couldn't start with the assumption that the role of advertising is to persuade the consumer and the fact that it contains partial statements. All the evidence we have suggests that the consumer knows this and doesn't expect advertising to be a neutral summary of the benefits and disadvantages of a product." (44)

**TABLE 20: COMPARISON BETWEEN TWO DEVELOPMENT MODELS**

UN INTERNATIONAL DEVELOPMENT  
STRATEGY: SOME OBJECTIVES

TRANSNATIONAL CONSUMER MODEL

1. An attempt to improve the quality of education, reduce illiteracy and reorient programmes must be made at all levels, with a view to satisfying the needs of development.

2. All developing countries must formulate coherent health programmes for the prevention and treatment of illness and raise the general level of the population's health and well-being.

3. The level of nutrition must be improved, insofar as concerns the average intake of calories as well as the protein content.

4. Strong efforts must be made to promote private savings through financial institutions, post office savings and other systems.

5. Developing countries will adopt national policies which promote the participation of children and teenagers in the development process and guarantee that their needs are met in an integral manner.

Source: Janus, N. & Roncagliolo, R., "Advertising, Mass Media and Dependency", Development Dialogue, 1979:1, p95

1. Advertising is an alternative form of education insofar as it promotes social values and develops methods which permit the incorporation of illiterate and semi-literate populations into the consumer society.

2. It has been proven that advertising, as an instrument of transnational pharmaceutical corporations, frequently promotes medical products which reflect primarily market interests rather than the genuine health of the population.

3. There is evidence of a strong link between transnational advertising and the promotion of food and beverages lacking in nutritional value, which in certain cases may even be damaging to the population's health.

4. The fundamental task of advertising is to encourage the spending of all available disposable income on consumer goods, with a view to increasing and accelerating the sales of the firms' products.

5. Children and teenagers are a lucrative market and, consequently, they represent an important target group to which consumer models, superfluous and culturally alien to their national frameworks of development, are directed.

When one recalls that the primary source of "information" for health workers about pharmaceutical products is drug company advertising material, some of the hazards of advertising become very evident.

In developing countries, the hazards may be even greater. The ability to gain access to objective information about products is limited. In addition, by stimulating demand for non-essential goods, advertising can be seen as pressuring governments into giving priority to the investments needed to produce them, to the detriment of the basic needs of the population. Advertising thus constitutes a parallel and non-official development programme. (45) An illustration of this is provided in Table 20, which contrasts some of the objectives agreed for the International Development Strategy for the Second Development Decade approved by the UN in 1970, with some of the fundamental premises of advertising.

Within Europe, the regulatory framework for advertising is tangled. In Germany, some 25 different statutes apply to advertising. In the UK, there are more than 75 statutes. However, most European countries have some sort of voluntary system adjudicated by a council or authority which play a prominent role in the regulation of advertising, rather than relying on the more time-consuming and expensive process of chasing every complaint through the law courts. The voluntary agreements are usually based on the International Chamber of Commerce's International Code of Advertising Practice, approved in 1973, which lays emphasis on the need for advertisements to be "legal, decent, honest and true". (46)

However, a UN study suggested that as many as 60% of developing countries have no consumer protection laws relating to advertising. Also, if such laws do exist, the resources and experience required to administer them and ensure they are enforced is often lacking. (47) The example of the Guatemalan regulations on pesticide advertising cited earlier in this report is a case in point.

Certainly, a case can be made that while in the industrialised countries there are some controls over some advertising that serve to provide a degree of consumer protection, in developing countries a different standard operates. Yet, by the very nature of the market and the end-users of the products, if anything, the standard of advertising practice should be higher in developing countries, not lower. Even in industrialised countries, the ability to find objective information about some products is limited and therefore, given the advertisers' own admissions that advertising is not information, there is a need for more careful controls.

#### Notes and References

1. OECD, "Declaration on International Investment and Multinational Enterprises", revised version reproduced in The CTC Reporter, No 18, Autumn 1984, p38
2. Brown, M. H., "Love Canal and the Poisoning of America", in The Big Business Reader, (Green, M. & Massie Jr., R., eds.), New York, The Pilgrim Press, 1980, pp189-207
3. Wyrick, B., "Hazards for Export", special reprint, Newsday, 31 Dec 1981, pp29R-31R
4. Ibid, pp20R-22R
5. See: Adams, S., Roche versus Adams, London, Jonathan Cape, 1984, pp84-90  
- Wicks, J. & Buchan, J., "Mystery surrounds fate of Seveso waste", The Financial Times, 12 April 1983

6. Bhatia, S. & McKie, R., "Time-bomb at Bhopal", The Observer, 9 Dec 1984; and other news reports
7. IOCU, Proceedings of the 11th IOCU World Congress, Bangkok, December 1984, Penang, 1985, p7
8. IOCU, "EEC waste problem", Consumer Currents, Aug 1984, p8
9. New Scientist, "Chemicals kill thousands of Californians", 4 July 1985, p24
10. Weir, D., et al, "The Boomerang Crime", Mother Jones, Nov 1979
11. Scherr, S. J., Hazardous Exports: United States and International Policy Developments, (mimeo), Washington, Natural Resources Defense Council, June 1984, pp14-15
12. Mooney, P., Seeds of the Earth, Ottawa, InterPares/CCIC/ICDA, 1979, p3
13. Mooney, P., "The Law of the Seed", special issue, Development Dialogue, 1983:1-2, p14
14. ICDA, "Seeds of the Earth: A Political Breadbasket", special issue, ICDA News, Nov 1981, p1
15. Ibid
16. Ibid, pp6-7
17. Mooney, P., Development Dialogue, op cit, p96
18. Ibid, p97
19. Ibid, p125
20. Ibid, p104
21. Ibid, p115
22. Wheelwright, E. L., Consumers, Transnational Corporations and the Developing World in the 80s -- III: The Food Industry, paper presented at the 11th IOCU World Congress, Bangkok, 9-14 Dec 1984, pp23-24
23. Mooney, P., Development Dialogue, op cit, p132
24. Chetley, A., The Baby Killer Scandal, London, War on Want, 1979, pp23-24
25. Chetley, A., The Crisis in Infant Feeding, London, War on Want, 1981, p9
26. Chetley, A., 1979, op cit, p111
27. WHO, Joint WHO/UNICEF Meeting on Infant and Young Child Feeding: Statement and Recommendations, Geneva, 1979, p5
28. Chetley, A., 1981, op cit, p26
29. WHO, International Code of Marketing of Breast-milk Substitutes, Resolution WHA34.22, Geneva, 21 May 1981
30. WHO, International Code of Marketing of Breast-milk Substitutes, Geneva, 1981
31. Chetley, A., 1981, op cit, p25
32. IBFAN, Four Years Later and Still Breaking The Rules, Geneva, Minneapolis, Penang & London, May 1985
33. UNICEF, Ideas Forum, Issue No 19, 1984/4
34. See: European Parliament, Doc 1-1093/81; Doc PE83.818; Doc 1-541/81; Doc 1-962/82 for the resolutions and supporting reports
35. Commission of the European Communities, Proposal for a Council Directive on the approximation of the laws of the Member States relating to infant formulae and follow-up milks, COM(84) 703 final, Brussels, 14 Dec 1984
36. IBFAN, Comparison between "Industry Code of Practice for the Marketing of Breast-milk Substitutes in the EEC" prepared by the Association of Dietetic Foods Industries of the EEC (IDACE), the WHO "International Code of Marketing of Breast-milk Substitutes", with commentary on the IDACE code and suggestions for improvements, Geneva, Mar 1985  
 - Commission of the European Communities, Preliminary CCC Opinion on the implementation of the International Code of Marketing of Breast-milk Substitutes, CCC/32/83 final, Brussels, 1983

- War on Want, Commentary on and suggestions for improvement of "Code of Practice for the EEC for the Marketing of Breast Milk Substitutes, London, Feb 1983
- The IDACE code is reproduced in Commission of the European Communities, COM(84) 703 final, op cit, Annex 3
37. United Nations, Transnational Corporations in Advertising, ST/CTC/8, New York, 1979, p9
  38. Janus, N. & Roncagliolo, R., "Advertising, Mass Media and Dependency", Development Dialogue, 1979:1, p84
  39. United Nations, op cit, pp34-35
  40. Janus & Roncagliolo, op cit, p82
  41. Sauvant, K. P. & Lavipour, F. G. (eds.), Controlling Multinational Enterprises: Problems, Strategies, Counterstrategies, Boulder, Colorado, Westview Press, 1976; cited in United Nations, op cit, p34
  42. Ibid
  43. McComas, M., Europe's Consumer Movement: Key Issues and Corporate Responses, Geneva, Business International, 1980, pII-86
  44. Ibid
  45. Janus & Roncagliolo, op cit, p95
  46. McComas, M., op cit, ppII-65 to II-93
  47. United Nations, op cit, p36

## ACTION FOR CHANGE

Returning to the major theme of pharmaceuticals and pesticides, it is encouraging to note that over the past decade, an increasing awareness of the problems related to these two types of products has stimulated the development of some initiatives designed to provide solutions. This chapter will briefly outline some of those initiatives that have begun at both national and international levels.

Common to both pesticides and pharmaceuticals is the need for more and better information to be circulated about the potential hazards involved in their use. This is particularly important regarding exports of products from the industrialised countries to developing countries. With high concentrations of European-based pharmaceutical and pesticide firms involved in the export market, European countries have a special responsibility to ensure that double standards are not operating.

A 1980 OECD report found that in the majority of the 24 industrialised nations surveyed, exported goods were either explicitly or tacitly excluded from requirements laid down in national safety regulations. (1) The usual excuse given by governments in industrialised countries for failing to apply export controls is that to do so would "infringe upon the sovereignty of the importing country." (2) Yet, it has been the developing countries who have been amongst the strongest arguing for such controls.

In 1977, 1978 and 1979, resolutions were adopted by the UNEP (United Nations Environment Programme) Governing Council which had the full support of developing countries represented. The resolutions repeatedly called for industrialised countries to **prevent the export of potentially harmful chemicals** that had been banned or restricted for use in those countries without the prior knowledge and consent of authorities in the recipient countries. Also, in 1979, the UN General Assembly approved Resolution A/RES/34/173 calling on member states to exchange information on hazardous chemicals that have been banned, and "to discourage, in consultation with importing countries, the exportation of such products to other countries." (3)

The reason why developing countries have been asking for such controls is explained by Samuel Gitonga, Chief Agriculturalist for the National Irrigation Board of Kenya:

"We do not have the necessary machinery to go through an entire testing programme to determine whether the product is safe or not. For these reasons, I believe that the US and other developed countries have a responsibility to ensure that the information they have painfully gathered is made available to as many people as possible in the developing world. I certainly reject the idea that the developing countries always know what they want or which pesticides are best to use. Information that a product is not allowed for use in a particular country would be a very useful starting point. . . . I would like to stress my point that the developed countries have a clear responsibility to provide the less developed countries with information on pesticide regulations, suspensions, cancellations and so forth. . . . There is also a need for more international cooperation in the control of international sales of pesticides. We must ensure that unsafe products are not sold, or at least that the governments importing these products know exactly what they are receiving." (4) [emphasis added]

## Informed Consent

As a bare minimum, the provision of full information about hazardous products is essential. In the ongoing international and, in some cases, national discussions that are underway, two concepts related to this are emerging:

- 1) prior obligatory notification
- 2) prior informed consent.

Prior obligatory notification involves ensuring that authorities in the importing country are informed about all restrictions, bans and regulations on hazardous products before the products are actually shipped. Prior informed consent goes one step further -- the authorities in the importing country, having been so informed, specifically request the delivery of the products.

There are indications that some industrialised countries are beginning to include provisions covering exports in product safety legislation. Belgian legislation regarding health and safety of food and medicines refers to export as well as domestic use. (5) In France, legislation passed in 1983 on the safety of consumers provided ministers with the powers to halt the manufacture, import and export for up to one year of products likely to cause a serious or immediate danger. (6) In 1974, the Japanese government issued a directive concerning BHC and DDT, which are both banned for use in Japan, noting that export of these products could only occur once evidence was obtained showing that the importing country approved the import after it was made aware that the products were banned in Japan. (7) In March 1985, the Dutch government adopted an amendment to its Environmentally Hazardous Substances Act which requires prior notification to both the Dutch government and the importing country government of any products that are controlled by the Act intended for export, as well as consent from the importing government that the export should go ahead. The amendment is expected to come into effect by the end of 1985. (8)

Over the past decade there have been attempts to both strengthen and weaken export controls in the US. Current legislation on pesticides requires that prior to the export of a product not registered for domestic use, the foreign purchaser must sign a statement acknowledging an understanding that the product cannot be sold in the US. In addition, all exported pesticides must satisfy specific labelling requirements. With pharmaceuticals, unapproved medical devices and investigational drugs can only be exported with the prior consent of the importing country; however, drugs not approved for domestic use cannot be exported at all. (9)

Internationally, there have also been further developments. In 1981, the OECD recommended that when products involved in international trade were subject to recall procedures due to some defect, governments should use whatever available powers they had to prevent further exports of the products if the hazard involved warranted such action. (10) In 1982, the UN General Assembly, with strong support from developing countries, approved Resolution 37/137 which stated:

"Products that have been banned from domestic consumption and/or sale because they have been judged to endanger health and the environment should be sold abroad by companies, corporations or individuals only when a request for such products is received from an importing country or when the consumption of such products is officially permitted in the importing country,

". . . all countries that have severely restricted or have not approved the domestic consumption and/or sale of specific products, in particular pharmaceuticals and pesticides, should make available full information on those products with a view to safeguarding the health and environment of the importing country, including clear labelling in a language acceptable to the importing country." (11)

The resolution further requested the UN Secretary General to prepare and regularly update a consolidated list of products whose consumption and/or sale have been banned, withdrawn, severely restricted or, in the case of pharmaceuticals, not approved by governments. The first revised list was published in July 1984, and contained information from 60 governments on 431 products: 229 pharmaceuticals; 108 agricultural chemicals; 72 industrial chemicals; and 22 consumer products. (12)

In 1984, the OECD adopted a resolution concerning information exchange related to the export of banned or severely restricted chemicals which established a set of "guiding principles". Included in the principles was a recommendation that, where possible, importing countries should be informed about the restrictions in the exporting country regarding the product. (13)

A UNEP expert working group met in 1984 to discuss a set of Guidelines for the Exchange of Information on Potentially Harmful Chemicals (in Particular Pesticides) in International Trade. Consideration of the guidelines is still underway. There is particular difficulty over the definition of "potentially harmful chemicals" and also whether pharmaceuticals should be included in that definition. In the meantime an Interim Notification Scheme for Banned and Severely Restricted Chemicals was adopted by the UNEP Governing Council in May 1984. (14) The scheme provides for notification to importing countries of a control action taken by the exporting country at the time of export. Some progress has been made towards implementation of the scheme: some national authorities have been designated and lists of banned and severely restricted products are being compiled in some countries.

Both the OECD resolution and the UNEP notification scheme are based on the US Environment Protection Agency notification procedure and do not call for prior consent of the importing country. The purpose of the notification is to assist the importing countries to make "timely and informed decisions" regarding importation. It will be important to monitor carefully the implementation of both the OECD and UNEP schemes and attempt to assess any resulting changes.

The International Union for the Conservation of Nature (IUCN) passed a resolution at its General Assembly in November 1984 calling for the provision of information by pesticide exporting countries and prior informed consent before exports could take place. (15)

In April 1985, the World Bank issued policy guidelines on the use of pesticides in projects in developing countries. (16) The guidelines stressed that "pesticides should be viewed as a short-term response to the build-up of a particular pest species" and that, in an effort to prevent increased resistance amongst pests, it should ensure that projects were "using as few chemical pesticide applications as possible" and "refraining from using for agricultural pest control chemicals which are also in use in the same vicinity for human disease vector control." In terms of selection of pesticides, the World Bank advised that products listed in the WHO classification system as "extremely

hazardous" or "highly hazardous" were unsuitable for use by small farmers and should only be considered for use in large scale operations if all necessary training, protection and supervision can be assured." It also recommended that many of the organochlorine insecticides (such as DDT, BHC, Heptachlor, Chlordane and the "drins" -- aldrin, dieldrin and endrin) "should not be used for agricultural purposes". [emphasis added]

While some of the above initiatives include efforts designed to improve the situation of pharmaceutical exports, there have also been specific measures. WHO, for example, maintains a data bank in Sweden, to monitor international reports of adverse drug reactions. Although there are only 25 participating countries involved, most of them industrialised, there are now over 200,000 entries, with new reports coming in at a rate of about 4000 per month. (17) One of the shortcomings of this data bank, however, is that the information is kept confidential, and therefore is not freely available to those who could most benefit from it.

Since 1975, WHO has also operated a Certification Scheme on the Quality of Pharmaceutical Products Moving in International Trade. The exporting country is required to provide, if asked, whether a specific product is used on the home market, whether the manufacturer complies with recognised standards of good manufacturing practice and quality, and, if the product is not authorised for use in the exporting country, the reasons. (18) On the face of it, the Certification Scheme seems a good idea. However, by 1982, less than half of WHO's Member States were participating in it. Also, some governments, such as the UK, only provide information on quality, not the safety and efficacy of the products. (19) The WHO Action Programme on Essential Drugs, mentioned in an earlier chapter, while not dealing explicitly with the regulation of hazardous exports, does, through its emphasis on limiting the use of drugs to a tried and tested list, have some potential for eliminating the demand for more hazardous medicines.

### Codes

The past 10-15 years have seen a burgeoning of codes, most of them voluntary and most of them drawn up by the companies concerned, or at least with their heavy influence over the contents. Codes of practice, codes of ethics, marketing codes, quality codes, advertising codes, have all surfaced. The usual justification for a code is that it will be easier to draft and implement than legislation. The European Consumer Law Group (ECLG), however, notes that behind all the justifications,

"the primary motivation for codes on the part of producers and traders is self-interest, particularly the avoidance of legislation which would be more restrictive (or more rigorously enforced) than the code accepted." (20)

Most codes in existence today merely legitimise current practices, particularly if they have been drafted exclusively by the industries concerned. They also deal with loose, broad generalities which are hard to define and therefore allow for considerable latitude in interpretation, (usually in favour of the industry). Codes which specifically mandate a company or an industry to undertake or refrain from particular activities are rare. Perhaps the best known specific code, which does call for changes in marketing practices, is the International Code of Marketing of Breast-milk Substitutes, adopted by WHO in 1981. (21)

It is no coincidence that at the time that code was nearing adoption, the International Federation of Pharmaceutical Manufacturers' Associations (IFPMA) announced its own voluntary international code. (22) As far back as 1978, the World Health Assembly had mooted the possibility of a code on pharmaceuticals. (23) With the infant feeding code under its belt, there was some talk within WHO of taking on pharmaceuticals next. As Dr H Schwartz explains in the US industry newsletter, Pharmaceutical Executive, the IFPMA code was introduced to repel "a coming WHO effort to impose unacceptable controls over all pharmaceutical commerce in the Third World". (24) Dr Schwartz went on to explain that:

"The code pledges the industry to provide high quality products, to base its claims on valid scientific evidence regarding indications and conditions for use, to provide full scientific information with scrupulous regard for truth in all matters (including contraindications and toxicity), and to use complete candour in dealing with government health officials, physicians, nurses, other health providers and the public. To some, this may sound like a pledge in favour of motherhood and against cancer. But the real political question is whether the code will be adequate to defeat the forces against private enterprise within WHO."

The "scrupulous regard for truth" was apparently missing in the Merck advertisements in East Africa for potency drugs mentioned earlier, or in the over-zealous promotion of anabolic steroids. Indeed, the entire IFPMA code has been carefully dissected by Health Action International (HAI) and described as "worthless. . . . Not to be taken; at least, not to be taken seriously." (25) HAI has produced its own draft of a code which has been circulated to international organisations and many governments to act as a possible guide for legislation. (26)

The likelihood of WHO pushing for a pharmaceuticals code seems remote at the present time. In 1984, Dr J. F. Dunne of WHO indicated to a meeting of the UN Conference on Trade and Development (UNCTAD) that pressure for a marketing code could divert attention from introducing and implementing national policies on essential drugs. (27) Part of the reluctance must surely stem from the fact that a pharmaceutical code is "irrevocably opposed by the US," as a US delegate to the 1982 World Health Assembly put it. (28) At the 1984 World Health Assembly, the question was raised again amidst strong opposition by the US. No decision was reached, however WHO was mandated to hold a technical meeting in 1985, involving governments, experts, industry and non-governmental organisations to discuss the rational use of drugs including "the role of marketing practices". (29) It was at this type of meeting in October 1979 that the impetus was given to draft the International Code of Marketing of Breast-milk Substitutes.

With regard to pesticide codes, the Director-General of FAO suggested a code of conduct was necessary in 1981 and in 1982, the FAO Panel of Experts on Pesticide Specifications, Registration Requirements and Application Standards agreed. Subsequently, an international consultation on Harmonization of Pesticide Registration Requirements later in 1982 formally gave the go-ahead, mandating FAO to develop such a code in consultation with other UN agencies and "international organizations outside the UN System". The code has gone through eight drafts, with the latest one discussed in June 1985. In introducing the latest version, the Director-General of FAO stressed the "extraordinary effort" which had taken place in trying to reconcile the "zealous extremes" and present a draft which could be supported by consensus. However, there is

no doubt that the concerns of the pesticide industry and the exporting country governments have been given great attention judging by the changes which have occurred between the seventh and eighth drafts. The most significant changes were the deletion of the concept of prior informed consent and the incorporation of the UNEP Notification scheme wording. Most of the developing countries agree that the Code is a weak document but are nevertheless eager for its early adoption. A further re-draft will appear before the FAO Conference in November 1985, with a strong recommendation for its adoption. (30)

It is worth noting that the FAO code takes the increased use of pesticides as inevitable and concentrates on how their use can be made safer, whereas in contrast, the World Bank Guidelines emphasise the limited use of pesticides and encourage alternatives.

A primary difficulty with all codes is monitoring. If monitoring is left up to the industry, it is usually a very private affair, with little, if any, information disclosed about results. The draft of the FAO code suggests that governments should be responsible for monitoring -- a total impracticality in most countries. The experience with the infant feeding code has demonstrated that it has consistently been the non-governmental organisations such as the International Baby Food Action Network (IBFAN) and consumers groups that have provided the bulk of the information about code violations. Even at that, with no enforcement mechanism, the only sanction available has been publicity and adverse public opinion.

In all likelihood, if codes are finalised for pesticides or pharmaceuticals, they will be voluntary measures, and the actual monitoring will be done by groups such as the Pesticides Action Network (PAN) and Health Action International (HAI). Certainly, in such circumstances, codes cannot be seen as substitutes for legislation. The European Consumer Law Group concluded that "issues of health and safety should be regulated by statutory provisions", not by codes. (31)

Nonetheless, if legislation is not forthcoming, codes can provide a platform for urging change. Business International warned pharmaceutical firms to be wary about a UN-drafted code, because its existence would provide a "legal, internationally recognized basis" on which to file complaints about corporate practices. It said that could lead to "distributional headaches and competitive uncertainties" as well as continued public criticism. (32)

### **The Role of NGOs**

Non-governmental organisations (NGOs) play an important role in the discussions that have arisen regarding the exports of hazardous products, (and in many other subjects). While NGOs are often characterised by the business community as being unrepresentative or having no mandate or legitimacy, Dr Peter Willetts, Lecturer in International Relations at the City University in London, suggests that they do indeed have legitimacy. In citing the example of Amnesty International, he says it is conceivable that Amnesty

"has greater power than any single government. It derives global legitimacy both from its very high status, one recognition of which was the award of the Nobel Peace Prize in 1977, and from the high moral value that many people attach to the policies it is pursuing." (33)

Willetts goes on to identify the strengths of NGOs as being personal commitment, development of specialist knowledge, a high degree of flexibility and freedom from bureaucratic constraints, and a professional approach to the use of information. On this last point, Willetts notes that NGOs should often be considered as being more reliable in presenting information than either journalists or government officials.

"If they [NGOs] are arguing a controversial case, many people will assume that they are biased and therefore they are not to be trusted. In this unequal contest pressure groups cannot afford to make mistakes, because thereafter their statements will not so readily be given credibility and references to the mistakes will continually be thrown back at them." (34)

Certainly, information dissemination has been a trademark of both the Pesticides Action Network (PAN) and Health Action International (HAI) as well as the other NGOs that have been active on these subjects. PAN was formed in 1982 amongst 39 NGOs from 16 countries. By 1985, it had expanded to include some 300 NGOs from 49 countries. At its first global meeting in February 1984, a three-point plan of action was developed designed to:

- address policy initiatives of inter-governmental organisations;
- challenge pesticide abuse and raise public awareness;
- promote workable alternatives to pesticide dependence. (35)

Some of its member organisations such as the International Organization of Consumers Unions (IOCU), the Bureau Européen des Unions de Consommateurs (BEUC), and the International Coalition for Development Action (ICDA) have been instrumental in preparing and distributing policy documents and guides to hazardous pesticides. (36) On 5 June 1985, (World Environment Day), PAN launched its "Dirty Dozen" campaign in 25 countries around the world in an effort to heighten global awareness of the hazards of the 12 pesticides "responsible for most of the pesticide deaths and much of the environmental damage that pesticides cause every year." (37)

HAI, established in 1981, has more than 50 NGOs from some 30 countries involved in its efforts to promote the safe, rational and economic use of pharmaceuticals worldwide. Over the past four years, HAI has been encouraging the full implementation of the WHO Action Programme on Essential Drugs and investigating "non-drug" solutions to the world's major health problems. Since 1981, HAI has produced several pamphlets on the pharmaceuticals issue and in 1984 organised and produced a regular newspaper at the World Health Assembly that served as a forum for providing delegates with up-to-date information on the subject. HAI's basic policy is that all drugs registered for use should:

- meet real medical need;
- have significant therapeutic value;
- be acceptably safe;
- offer satisfactory value for money. (38)

Both PAN and HAI members are also active participants in Consumer Interpol -- IOCU's early warning system to curb the global trade in hazardous products and processes. Between November 1981 and June 1985, 60 consumer alerts were circulated within the Consumer Interpol network which now comprises over 60 correspondents from some 42 countries. (39)

In March 1985, the Seeds Action Network (SAN) was launched involving

groups in Africa, Asia, Latin America, Europe, North America, Australia and New Zealand. SAN's goals are to:

- prevent genetic erosion,
- promote the conservation of germplasm especially at village and local level,
- expose the role of transnational corporations and the international agricultural research centres and challenge agribusiness control of genetic resources,
- increase public awareness of the issue and promote public control over genetic resources as well as the full exchange of these resources. (40)

Concerned about EC failure to respond quickly and satisfactorily to international initiatives and to resolutions of the European Parliament regarding exports of hazardous products, BEUC, HAI, PAN and ICDA launched a joint international campaign in March 1984 demanding that the EC and the governments of its Member States "develop coherent policies to control the export to developing countries of all pharmaceuticals and pesticides which are banned, severely restricted, withdrawn or unregistered in EC countries." (41) During 1985, IOCU and the European Environmental Bureau (EEB) joined with the other groups and formally established the Coalition Against Dangerous Exports (CADE) to further strengthen this campaign and intensify the pressure for action.

The next chapter looks specifically at the situation in the EC and its Member States, and outlines action that could, and should, be taken urgently.

#### Notes and References

1. OECD, Safety of Consumer Products - Policy and Legislation in OECD Member Countries, Paris, 1980, pp36-37; cited in: Harland, D., Legal Aspects of the Export of Hazardous Products, (mimeo), paper presented at the 11th IOCU World Congress, Bangkok, 9-14 Dec 1984, p3
2. Domzalski, Y., "Need for European Controls", Drugs and Agrichemicals, ICDA, Brussels, Mar 1985, p7 (The comment was made by an official from the European Commission, regarding regarding controls on pesticides. Similar statements have been made by several individual governments from Member States of the EC, as well as the Australian and US governments.)
3. Bull, D., A Growing Problem, Oxford, Oxfam, 1982, p149
4. Ibid, p147
5. Harland, D., op cit, p3
6. Consummation: Sécurité des consommateurs, Loi no: 83-660 du juillet 1983
7. Oxfam, Submission to Members of Standing Committee H, regarding amendments to the UK Food and Environment Protection Bill, 17 Apr 1985
8. Ibid
9. Scherr, S. J., Hazardous Exports: United States and International Policy Developments, (mimeo), Washington, Natural Resources Defense Council, Jun 1984, pp16-19
10. BEUC, Withdrawal and Recall of Dangerous Products in the European Community and the Member States, Brussels, 1984, p64
11. United Nations, General Assembly Resolution A37/137, 17 Dec 1982
12. United Nations, Consolidated List of Products Whose Consumption and/or Sale Have Been Banned, Withdrawn, Severely Restricted or Not Approved by Governments, DIESA/WP/L, New York, July 1984

13. OECD, Recommendation of the Council Concerning Information Exchange Related to Export of Banned or Severely Restricted Chemicals, Doc: C(84)37(Final), Paris, 4 Apr 1984
14. UNEP, Implementation of the Provisional Notification Scheme for Banned and Severely Restricted Chemicals, Doc No. UNEP/WG.112/2, 23 Nov 1984
15. ICDA, Drugs and Agrichemicals, Mar 1985, p2
16. World Bank, Guidelines for the Selection and Use of Pesticides in Bank Financed Projects and their Procurement when Financed by the Bank, Doc: OPN 11.01, Washington, April 1985
17. United Nations, Consolidated List, op cit, p249
18. Ibid, p250
19. Melrose, D., Bitter Pills, Oxford, Oxfam, 1982, ppl69-170
20. European Consumer Law Group (ECLG), "Non-Legislative Means of Consumer Protection", Journal of Consumer Policy, Vol 6, No 2, 1983, p210
21. WHO, International Code of Marketing of Breast-milk Substitutes, Geneva, 1981
22. IFPMA, Code of Pharmaceutical Marketing Practice, Geneva, 1981 (revised 1982)
23. WHO, Resolution on the Action Programme on Essential Drugs, WHA31.32, 1978
24. HAI, An International Code of Pharmaceutical Marketing Practice, Penang, 1981 (revised 1982), pl0
25. Ibid, cover
26. HAI, A Draft International Code on Pharmaceuticals, Penang, 1982
27. Hurtado, M. E., "Divide and rule at WHA, or Third World amnesia?", Health Now, No 5/6, 17 May 1984, p2
28. Melrose, D., op cit, pl67
29. WHO, Resolution on Rational Use of Drugs, WHA37.33, 17 May 1984
30. FAO, International Code of Conduct on the Distribution and Use of Pesticides, COAG/85/9, Rome, Feb 1985
31. ECLG, op cit, p223
32. Business International, "Why Worry About Codes?", 25 May 1984, pl65
33. Willetts, P., (ed.), Pressure Groups in the Global System, London, Frances Pinter, 1982, p24
34. Ibid, pl87
35. Wheelwright, E. L., Consumers, Transnational Corporations and the Developing World in the 80s -- II: The Pesticide Industry, paper presented at the 11th IOCU World Congress, Bangkok, 9-14 Dec 1984, ppl0-11
36. See bibliography
37. PAN, The "Dirty Dozen", information and media kit, Nairobi, Penang, Oxford, Quito & San Francisco, June 1985
38. HAI, EEC Pharmaceutical Exports to Developing Countries, The Hague, Feb 1985, p4 (See also bibliography for other publications)
39. Personal communication from Consumer Interpol coordinator, July 1985
40. ICDA News, 1985 (forthcoming)
41. ICDA, Drugs and Agrichemicals, op cit, p8

## THE EUROPEAN DIMENSION

Pharmaceutical and pesticide companies based in, or operating from, EC Member States control a major proportion of the world markets for these products. One-fifth of the total world drug sales are controlled by EC-based companies, and nearly one half of the world export market. More than two-fifths of world pesticide sales and a staggering 61% of the export market is in the hands of EC-based manufacturers. (1) If Europe leads the world in selling and exporting these products, it is not unreasonable to expect European governments and the EC to also lead in the provision of adequate controls over how they are marketed.

However, other than the measures noted in the previous chapter that have been adopted by some individual European governments, the approach to pesticide and pharmaceuticals exports taken by the EC could best be described as "laissez-faire". Existing EC directives dealing with these products specifically exempt products intended for export from safety controls. In 1982, the commissioner responsible, K.-H. Narjes, replied to written questions from a Member of the European Parliament about pesticides and pharmaceutical exports and said that "developing countries' interests are protected by a system of international quality certification of medicines" set up by WHO, and that "to try and impose Community rules on non-member countries or deny them supplies of pesticides they need could cause vexed political problems". (2)

As was noted in earlier chapters, the problems related to pharmaceuticals stretch far beyond quality control and similarly, with pesticides, it is developing countries who are asking for support in establishing pesticide controls. Commissioner Narjes' response side-stepped the main issues in both these subjects.

It is striking that in international fora such as the OECD, the UN General Assembly, WHO, FAO and UNEP, many of the EC Member States (often speaking as a bloc), were prepared to agree to the principles of prior informed consent or other controls. Yet when the time came to translate those principles into practical action through the political forum of the Commission, the gestures of good international ethical behaviour seem to have vaporised. It is also significant that in 1983, when Europe itself faced the possibility of receiving hazardous products that had been banned in the US, a spokesperson for the Commission told the European Parliament:

**"The Commission considers that any country participating in international trade shall ensure that products which may cause an immediate hazard to users or consumers are not allowed to be exported."** (3) [emphasis added]

The European Parliament has taken the Commission at its word, and in October 1983, adopted a resolution on the export of pesticides which called for amendments in existing Community Directives so that:

"the government of the importing country is informed of the particular nature of the product and of the restrictions to which it is subject in the exporting country and the reasons for such restrictions [and] that the government of the importing country, having received such notification, explicitly requests the purchase." (4)

The resolution also called for legislation to ensure that the same standards of labelling and packaging are used for any pesticide exports

as those required in Europe, and that directions for use are written in the most common language of the country of destination, preferably accompanied by diagrams.

To date, the Commission has not acted to implement these changes.

At the present time, a report is being drafted by the European Parliament on the subject of pharmaceuticals which is expected to lead to a similar resolution later this year. Meanwhile, the Parliamentary Assembly of the Council of Europe in 1983 adopted a recommendation on the export of pharmaceuticals which called for the application of existing controls within Europe to medicines intended for export. The recommendation also called for European governments "to give their full political support to the development of an effective code of marketing practices in the field of pharmaceuticals". (5)

The Council of Europe made those recommendations because it was convinced that,

"in its present state, the North-South drug trade, with a few exceptions of goodwill, represents a striking illustration of unequal exchange with the ultimate consequence of sustaining underdevelopment in the Third World, and . . . that a more balanced trade of pharmaceutical products is likely in the long run to be more beneficial to the drug industry in Europe and to health care in the Third World." (6)

The Commission, and Member State governments, would be well advised to consider the opinion of the Council of Europe and act upon its suggestions.

#### **Types of Hazards**

In considering recommendations for controls on hazardous products, it is important to recognize the different types of hazards. All too often, the word "hazard" is equated only with the most extreme dangers -- the thalidomides and dioxins of this world. However, as we have seen in earlier chapters of this report, the trade in pharmaceuticals and pesticides is fraught with other hazards, not always so obvious.

A starting principle, suggested by the Council of Europe in relation to pharmaceuticals, but equally applicable to pesticides, is:

"The sale of pharmaceutical products cannot be considered as an ordinary trade since it involves human health and well-being." (7)

Bearing that principle in mind, it is necessary to look at the various categories of hazards that have been defined in the international debate on this subject. The terms usually used include products which have been **banned, severely restricted, withdrawn** (usually after some serious or fatal side effect to use has been identified), or products **not approved or registered for use** in the country of origin.

Products which have been **banned** for use in industrialised countries are generally the ones which attract the most attention when investigations are made into inappropriate exports. Manufacturers who continue to export products which have been banned in the industrialised countries are usually accused of "dumping" the products in developing countries.

As a basic starting point for controls over the trade in hazardous products, it should be accepted that products which have been banned due to their unacceptable risk to either health or the environment, should be banned for export as well.

While bans on products are usually imposed by governments or official regulatory agencies, it often happens that manufacturers will simply voluntarily **withdraw** a product in advance of a compulsory ban, so that the product is still registered or licensed in the country of origin. Here again, when the withdrawal has occurred because of unacceptable risk to health or the environment, the withdrawal should be universal. All exports should be prohibited and it should be the responsibility of the exporting government to ensure that a single standard is maintained.

While such a system may be tenable for products with extreme hazard risks, it does little to deal with the major problems in both pesticides and pharmaceuticals that are most evident in developing countries, and also, in some cases, even in industrialised countries. The vast majority of effective pharmaceuticals are **severely restricted** in industrialised countries -- that is, they are available on prescription only. Similarly, most pesticides are subject to restricted use, in that the equipment for their application should be of a certain standard, they should not be used in conditions when high winds are liable to spread the pesticide over habitation or unnecessarily expose other vegetation or wildlife, and protective clothing should be worn by people working with the chemicals. Those restrictions simply do not apply in the majority of developing countries where prescription-only drugs are freely available over the counter, in some cases dispensed by completely untrained staff, and where pesticide use occurs without regard to sound application procedures. It is pointless to suggest a ban on the trade of these products; however, it is worth introducing a prior informed consent procedure whereby the export can only proceed once the importing government has been fully informed of all relevant restrictions on the products, the reasons for them, and then specifically requests the exporting government to allow the shipment.

Similarly, with products which are **not registered** or **not approved for use** in the country of origin, there should be a prior informed consent procedure in operation. In some cases -- for example, medicines designed to treat specific tropical diseases -- there may be a very rational reason for not registering the product in an industrialised country: there is no need nor any market for it. However, it is sometimes the case that manufacturers will not go through the registration procedure because they suspect that the product may fail the rigorous safety standards set by some regulatory bodies.

In every category, obviously, there will be some exceptions. Therefore, there is a need for a procedure to allow for such exceptions. This procedure needs to be transparent, that is, open to public scrutiny and debate. It should involve governments ensuring that manufacturers have satisfied all the conditions for export. The conditions would be more rigorous with the highest risk products.

This approach incorporates the best of two possible means to achieve a more rational trade in hazardous products: the information exchange and the outright ban on exports of products considered unsafe for domestic consumption. Several commentators have suggested such a combined policy as the best means to protect consumers in all countries. (8)

There is also a need to look at the situation within the boundaries of

the Community. With recent moves by the Dutch, Danish, Belgian, French and UK governments to introduce changes in laws dealing with the trade in hazardous products or to protect consumer safety, it would be advantageous to have a uniform standard set within Europe that could then easily be applied to exports as well. In the trade of both pesticides and pharmaceuticals, there are many differing standards amongst the Member State governments which only serves to complicate and confuse the market, both from the perspective of the manufacturers and the consumers. A case could be made for the establishment of a European Environment Protection Agency and a European Food and Drug Administration which could then evaluate the safety, quality and efficacy of agricultural chemicals and pharmaceutical products in a uniform manner. Initially, there would be some costs involved in the establishment of such mechanisms, but the long-range benefits in terms of savings at the national level, the standardization of registration and regulatory procedures, and a better guarantee of consumer and end-user protection more than justify such an approach.

A further positive approach can be taken by European governments and the EC through improvements in their development aid programmes. The guidelines on pesticides elaborated by the World Bank and the concept of Essential Drugs prepared by the WHO should be the guiding principles in all aid programmes dealing with health and agriculture. Efforts should be made to strengthen those parts of programmes which deal with primary health care and the development of a satisfactory health care delivery system in developing countries as a priority. Similarly, in agricultural programmes, there is a case for supporting the development of "primary agriculture care" which enables the communication of sound pest management strategies and the development of the necessary infrastructure to ensure protection of the health and livelihood of the poorest farmers. Suggestions similar to these were included in the October 1983 European Parliament resolution on pesticides which called on the Commission to include in its development programmes measures to:

- increase technical aid to developing countries to improve pesticide regulation and control procedures
- encourage the use of integrated pest management in agricultural programmes
- study the development of more appropriate methods of protection for those who use pesticides in developing countries
- improve training in the use of pesticides. (9)

In conclusion, the EC and its member governments should not remain complacent on the issues raised regarding hazardous exports. There have been many sound recommendations offered over the past decade for rational approaches. Many of them have been summarised in this report.

**There can no longer be any justification for inaction.**

As a minimum, therefore, it is recommended that the EC urgently take steps to:

- **amend directive 79/11/EEC and directive 78/631/EEC** so that pesticides can only be exported after the government of the importing country specifically requests the purchase after having been first of all fully informed of the nature of the product, restrictions to which it is subject in the exporting country and the reasons for such restrictions. (This action was called for by the European Parliament resolution on pesticides of 14 October 1983.)

- develop and adopt a directive to approximate the Member States' laws, regulations and administrative provisions relating to exports of pharmaceuticals. Such a directive would have the intention of prohibiting the export of pharmaceuticals which are banned, withdrawn, severely restricted or otherwise controlled within the European market, or which have not been registered for that market, unless authorities in the receiving country specifically requested the product having first been fully informed of the controls on its use in Europe.
- cooperate fully in the implementation of the United Nations General Assembly Resolution 37/137 on the exchange of information on hazardous products
- cooperate fully in the implementation of the WHO Action Programme on Essential Drugs and Vaccines, including providing additional resource support for that programme, and implementing its recommendations in all health related aid programmes
- endorse the World Bank guidelines on pesticide use and pest management and implement them in all agricultural aid programmes
- participate fully in and strengthen the WHO Certification scheme for pharmaceuticals
- support the efforts of FAO to develop a strong and enforceable code of conduct on pesticides, with the understanding that such a code is no substitute for legislative controls
- urge the WHO to develop a similar strong and enforceable code of conduct on pharmaceuticals, again with the understanding that it is no substitute for legislative controls
- fully implement and follow-up the FAO International Undertaking on Plant Genetic Resources and participate as signatories to the Understanding in the newly established Intergovernmental Commission on Plant Genetic Resources at FAO
- support the creation of and contribute substantially toward a new US \$100 million fund for the conservation of Plant Genetic Resources to be established at FAO through the new Intergovernmental Commission
- ensure the enactment of legislation so that no enterprise may market, or license others to market, both proprietary plant varieties and proprietary crop chemicals for the cultivation of those proprietary varieties within the same market area
- require environmental impact studies precede the introduction of new crops and new plant varieties into cultivation in any region and appropriate steps be taken to ensure the conservation of any endangered wild or cultivated plant material prior to the introduction of new crops or varieties
- fully implement and follow-up the International Code of Marketing of Breast-milk Substitutes, as called for in two European Parliament resolutions

- establish a working committee to integrate the various efforts within Europe dealing with the export of hazardous products, bearing in mind the concept outlined above of the several categories of hazards that need to be included and to develop proposals which will lead to the establishment of a body or bodies which can act as a Europe-wide Environment Protection Agency and Food and Drug Administration.

#### Notes and References

1. See pages 13-14 and 32 of this report
2. Commission of the European Communities, "Answer given by Mr Narjes on behalf of the Commission", Official Journal of the European Communities, No C 245/10, 20 Sept 1982
3. ICDA, Drugs and Agrichemicals, Mar 1985, p7
4. See: Official Journal of the European Communities, No C307, 14 Nov 1983, pp109-111
5. Parliamentary Assembly of the Council of Europe, Report on the sale of European pharmaceutical products in the countries of the Third World, (rapporteur: M. Lind), Doc:5113, 21 Sept 1983, pp3-4
6. Ibid, p3
7. Ibid, p4
8. See, for example: BEUC/IOCU, Exports of Dangerous Medicinal Products from the Countries of the European Community to the Third World, Brussels/The Hague, Mar 1985
  - Harland, D., Legal Aspects of the Export of Hazardous Products, paper presented at the 11th IOCU World Congress, Bangkok, 9-14 Dec 1984
9. See Note 4, above

## BIBLIOGRAPHY

- ABPI, Minutes of Half-Yearly General Meeting -- 14 Oct 1982, 1267/82, London, 20 Dec 1982
- Adams, S., Roche versus Adams, London, Jonathan Cape, 1984
- Awaji Island Monkey Center, The Cries of Deformed Monkeys, Sumoto City (Japan), undated -- 1981?
- Beardshaw, V., Prescription for Change, The Hague, IOCU/HAI, 1983
- BEUC, Withdrawal and Recall of Dangerous Products in the European Community and the Member States, Brussels, May 1984
- BEUC/IOCU, Exports of Dangerous Medicinal Products from the Countries of the European Community to the Third World, Brussels/The Hague, Mar 1985
- Bhatia, S. & McKie, R., "Time-bomb at Bhopal", The Observer, 9 Dec 1984
- Blum, R., et al, (eds.), Pharmaceuticals and Health Policy, originally published in hardback by Croom Helm, London, 1981; paperback edition, London 1983 by Social Audit/IOCU/HAI
- Braithwaite, J., Corporate Crime in the Pharmaceutical Industry, London, Routledge & Kegan Paul, 1984
- British Medical Journal, "Secretary of State limits range of prescribable NHS drugs", 17 Nov 1984, pp1388-1389
- Brown, C., "Drug firms accused of hysterical reaction", The Guardian, 12 Dec 1984
- Bull, D., A Growing Problem: Pesticides and the Third World Poor, Oxford, Oxfam, 1982
- Bumrungcheep, P., The Role of European Pharmaceutical Transnational Corporations in ASEAN Countries, Bangkok, Economic and Social Commission for Asia and the Pacific, March 1981
- Business Asia, "Philippine Generics Bill Draws Strong Reaction from Drug Companies", 12 Sept 1980, pp293-294
- Business International, "Pharmaceutical Industry Takes Varied Approaches to Threat to LDC Sales", 9 Feb 1979, pp43 & 46
- "Why Worry About Codes?", 25 May 1984, p165
- Caufield, C., "Pesticides: Exporting death", New Scientist, 16 Aug 1984
- Chetley, A., The Baby Killer Scandal, London, War on Want, 1979
- The Crisis in Infant Feeding, London, War on Want, 1981
- Bangladesh: Finding the Right Prescription, London, War on Want, 1982
- "Drugs: What a waste of money", Far East Health, Apr 1984
- A Dangerous Prescription, London, War on Want, 1984
- Chowdhury, Z. & Chowdhury, S., "Essential Drugs for the Poor: Myth and Reality in Bangladesh (1980-1982)", Ecocodevelopment News, No 23, Dec 1983, pp39-58
- Collier, J. & Medawar, C., "Why fewer drugs is a prescription for a healthier Britain", The Guardian, 17 Dec 1984
- Collier, J. & New, L., "Illegibility of drug advertisements", Lancet, 11 Feb 1984, pp341-342
- Commission of the European Communities, Preliminary CCC Opinion on the implementation of the International Code of Marketing of Breast-milk Substitutes, CCC/32/83 final, Brussels, 1983
- Proposal for a Council Directive on the approximation of the laws of the Member States relating to infant formulae and follow-up milks, COM(84) 703 final, Brussels, 14 Dec 1984
- Consumers' Association, "How to Buy Vitamins", Which?, Jan 1984, pp6-9
- Consumers Association of Penang, Drugs and the Third World: Phenylbutazone and Oxyphenbutazone Sale and Hazards -- A Malaysian Study, Penang, Oct 1984
- Cook, R. J., Where next with the US export of nonconforming contraceptives?, (mimeo), address given to the 112th Annual Meeting of the American Public Health Association, Anaheim, Calif., 11-15 Nov 1984
- Cultural Survival, Inc., "Poisons and Peripheral People: Hazardous Substances in the Third World", Newsletter, Vol 5, No 3, Summer 1981

- Deitch, R., "A limited NHS Drug List", Lancet, 17 Nov 1984
- Domzalski, Y., "Need for European Controls", Drugs and Agrichemicals, ICDA, Brussels, Mar 1985
- Dowie, M., "The Corporate Crime of the Century", Mother Jones, Nov 1979
- Eckholm, E. & Scherr, S. J., "Double standards and the pesticide trade", New Scientist, 16 Feb 1978
- Elkington, J., "American virility goes west", The Guardian, 23 May 1985
- Ellwood, W., Generating Power: A Guide to Consumer Organizing, Penang, IOCU, Dec 1984
- Erlichman, J., "The pill-makers bluster -- but is it just bluff?", The Guardian, 6 Mar 1984
- "Third World drug plan seen as PR ploy", The Guardian, 13 Apr 1984
  - "For safety's sake . . . makers get tough", The Guardian, 23 Aug 1984
  - "Profit squeeze stifles drug research", The Guardian, 28 Nov 1984
  - "Pesticide export curb sought", The Guardian, 13 Dec 1984
  - "Will Bhopal cause an ethical reaction to uncurbed export of pesticides?", The Guardian, 22 Dec 1984
  - "No dilemma for Doctor Griffin", The Guardian, 21 Jan 1985
  - "Six weedkillers 'may be health hazards'", The Guardian, 25 Jun 1985
- Escobar, V., "We spend too much for the wrong drugs", CACP Journal, 2nd Quarter, 1982
- European Consumer Law Group (ECLG), "Non-Legislative Means of Consumer Protection", Journal of Consumer Policy, Vol 6, No 2, 1983, p210
- European Parliament, Working Documents 1983-1984, Doc 1-91/83, "Report on the protection of the European Consumer against imports into the Community of products declared unfit for consumption by US legislation", by Mrs V. Squarcialupi, Strasbourg, 5 Apr 1983
- Working Documents 1983-1984, Doc 1-458/83, "Report on the export of various dangerous substances and preparations and the desirability of increasing the protection of workers and consumers in the importing countries and of the European consumer of exotic foodstuffs", by Mrs V. Squarcialupi, Strasbourg, 27 Jun 1983
- FAO, International Code of Conduct on the Distribution and Use of Pesticides, (draft), Doc: COAG/85/9, Rome, Feb 1985
- Fattorusso, V., "Essential Drugs for the Third World", World Development, Vol 11, No 3, Mar 1983
- Friends of the Earth, Pesticides: The case of an industry out of control, London, 1984
- Gelber, A., et al, "The Pesticide Peril", Newsweek, 17 Aug 1981
- George, C. F. & Hands, D. E., "Drug and Therapeutics Committees and Information Pharmacy Services: The United Kingdom", World Development, Vol 11, No 3, Mar 1983
- George, S. How the Other Half Dies, London, Pelican, 1976
- Gerrits, R., Poison Swirls Across the Third World, Zandvoort, Holland, Stichting Mondiaal Alternatief, Feb 1983
- Gillie, O., "Taking medicine", Sunday Times, 16 Dec 1984
- Gofton, K., "Drugs all in a twist", Marketing, 12 Apr 1984
- Green, M. & Massie Jr., R., (eds.), The Big Business Reader, New York, The Pilgrim Press, 1980
- Guardian, The, "Disaster fear from insecticide", 15 Jan 1985
- Hall, R., "Drug giants take on witchdoctors in love potion market", The Observer, 9 Dec 1984
- Hansson, O., "Is Entero-Vioform a killer drug?", New Scientist, 23 Nov 1978, pp614-616
- Harland, D., Legal Aspects of the Export of Hazardous Products, (mimeo), paper presented to the 11th World Congress of IOCU, Bangkok, 9-14 Dec 1984
- Hayes, A., What Can the AgroChemical Industry Learn from the Pharmaceutical Industry?, paper presented at AgroChemical Conference in Zurich, Sept 1981

- Health Action International, An International Code of Pharmaceutical Marketing Practice, Penang, May 1982
- A Draft International Code on Pharmaceuticals, Penang, 1982
  - The rational and economic use of drugs in the third world, Penang, 1982
  - EEC Pharmaceutical Exports to Developing Countries, submission to the Environment, Public Health and Consumer Affairs Committee of the European Parliament, The Hague, Feb 1985
- Heffer, S., "That limited list -- will research feel the axe first?", Medical News, 13 Dec 1984
- Herxheimer, A., "Problem drugs", World Health Forum, Vol 4, 1983
- Hodgkinson, N., "The bitterest of pills to have to swallow", The Guardian, 6 Feb 1985
- IBFAN, Comparison between "Industry Code of Practice for the Marketing of Breast-milk Substitutes in the EEC" prepared by the Association of Dietetic Foods Industries of the EEC (IDACE), the WHO "International Code of Marketing of Breast-milk Substitutes", with commentary on the IDACE code and suggestions for improvements, Geneva, Mar 1985
- Four Years Later and Still Breaking The Rules, Geneva, Minneapolis, Penang & London, May 1985
- ICDA, "Seeds of the Earth: A Political Breadbasket", special issue, ICDA News, Nov 1981
- The European Pharmaceutical Industry and Developing Countries, Brussels, 1983
- IFPMA, Statement as adopted by the IFPMA Council on the Report of a WHO Expert Committee on the Selection of Essential Drugs, Zurich, Apr 1978
- Code of Pharmaceutical Marketing Practice, Geneva, 1981 (revised 1982)
- IOCU, "Chloramphenicol: recommended uses and warnings", International Consumer, Vol 14, No 3, Autumn 1973, pp11-15
- Clioquinol: Availability and Instructions for Use, The Hague, June 1975
  - Forty-Four Problem Drugs, Penang, May 1981
  - Anabolic Steroids: Availability and Marketing, Penang, Aug 1983
  - The Pesticide Handbook: Profiles for Action, Penang, Jan 1984
  - "EEC waste problem", Consumer Currents, Aug 1984
  - Proceedings of the 11th IOCU World Congress, Bangkok, December 1984, Penang, 1985
- Islam, N., "Luxury drugs in the Third World", Lancet, 20 Aug 1983, p457
- Janus, N. & Roncagliolo, R., "Advertising, Mass Media and Dependency", Development Dialogue, 1979:1
- Lachkovics, E., Pharmaceuticals and Health Policies, Penang, IOCU, Apr 1984
- Lancet, (editorial) "Pharmaceutical policies for the Third World -- Whose responsibility?", 16 July 1983
- (editorial) "Non-steroidal Anti-Inflammatory Drugs: Have we been spoilt for choice?", 21 Jan 1984, pp141-142
- Lappe, F. M. & Collins, J., Food First, London, Souvenir Press, 1980
- Lauridsen, E., "But some are more essential than others!", World Health, July 1984
- Ledogar, R. J., Hungry for Profits, New York, IDOC, 1975
- Lemmers, J., "Dangerous pesticides included in EC aid programme", EC-Third World Bulletin, ICDA, No 1, Apr 1985
- Linear, M., "Zapping Africa's Flies", Vole, Mar 1981
- McComas, M., Europe's Consumer Movement: Key Issues and Corporate Responses, Geneva, Business International, 1980
- McMillan, P., "Who killed Subramaniam?", Consumer Interpol Focus, No 7, Mar 1984
- Medawar, C., Insult or Injury?, London, Social Audit, 1979
- Drug Disinformation, London, Social Audit, 1980
  - The Wrong Kind of Medicine?, London, Consumers' Association and Hodder & Stoughton, 1984
  - Drugs and World Health, The Hague, IOCU/HAI, 1984
- Medawar, C. & Freese, B., Drug Diplomacy, London, Social Audit, 1982

- Melrose, D., Bitter Pills: Medicines and the Third World poor, Oxford, Oxfam, 1982  
 - "Anarchy at the Drugstore", Health Now, No 1, 7 May 1984
- Mohs, E., "Infectious diseases and health in Costa Rica: the development of a new paradigm", Pediatric Infectious Disease, Vol 1, No 3, 1982, pp212-216
- Mooney, P., Seeds of the Earth, Ottawa, InterPares/CCIC/ICDA, 1979  
 - "The Law of the Seed", special issue, Development Dialogue, 1983:1-2
- Moorehead, C., "Killer chemicals -- Third World beware", The Times, 10 July 1984
- Muller, M., The Health of Nations, London, Faber & Faber, 1982
- New Scientist, "Cutting drugs bill will cause 'two-tier health service'", 13 Dec 1984  
 - "Chemicals kill thousands of Californians", 4 July 1985, p24
- New Zealand Coalition for Trade & Development, The Drug-dumpers, Wellington, Sept 1983
- OECD, Safety of Consumer Products - Policy and Legislation in OECD Member Countries, Paris, 1980  
 - Recommendation of the Council Concerning Information Exchange Related to Export of Banned or Severely Restricted Chemicals, Doc: C(84)37(Final), Paris, 4 Apr 1984  
 - "Declaration on International Investment and Multinational Enterprises", revised version reproduced in The CTC Reporter, No 18, Autumn 1984
- Parliamentary Assembly of the Council of Europe, Report on the sale of European pharmaceutical products in the countries of the Third World, (Rapporteur: M. Lind), Doc. 5113, 21 Sept 1983
- Peretz, S. M., "Patients, not political units, urgently need drugs", Ciba-Geigy Journal, No 3, 1981, p23
- Pesticide Action Network, The "Dirty Dozen", information and media kit, Nairobi, Penang, Oxford, Quito & San Francisco, June 1985
- Pesticides in the modern world, A symposium prepared by members of the Cooperative Programme of Agro-Allied Industries with FAO and other United Nations Organizations, London, 1972
- Pharmaceutical Journal, The, "Prescribing limit for benzodiazepines and drugs for minor ailments", 17 Nov 1984  
 - "ABPI 'to fight tooth and nail'", 17 Nov 1984  
 - "ABPI begins campaign against 'stupid and dangerous' proposal", 8 Dec 1984
- Reyes, D. A., (ed.), The Philippine Health Situation and the Transnational Drug Companies, Manila, AKAP, 1982
- Righter, R., "Millions face peril of pesticide", The Sunday Times, 16 Dec 1984
- Rolt, F., Pills, Policies and Profits, London, War on Want, 1985
- Rosenzweig, F., Exportation and Use of Pesticides, Zandvoort, Holland, Stichting Mondiaal Alternatief, (2nd edtn.), June 1982
- Sahabat Alam Malaysia, Pesticide Dilemma in the Third World -- a case study of Malaysia, Penang, Nov 1984
- Scherr, S. J., Prepared Statement to the Subcommittee on International Economic Policy and Trade Committee on Foreign Affairs, US House of Representatives, Washington, National Resources Defense Council, 12 Mar 1981  
 - Hazardous Exports: United States and International Policy Developments, (mimeo), Washington, National Resources Defense Council, June 1984
- Seligmann, J. & Glass, C., "Overdosing on Antibiotics", Newsweek, 17 Aug 1981
- Senturias, E. N., Quijano, R. F., & Sia, I. C., A Preliminary Study on the Prescribing Habits of Physicians in Manila, Philippines, (mimeo), Manila, National Council of Churches in the Philippines, 1984
- Sepulveda, C. & Meneses, E., (eds.), The Pharmaceutical Industry in ASEAN Countries, Bangkok, UN Asian and Pacific Development Institute, 1980
- Shapiro, S., et al, "Fatal drug reactions among medical inpatients", Journal of the American Medical Association, 216, 1971

- Silverman, M. & Lydecker, M., "The Promotion of Prescription Drugs and Other Puzzles", in Pharmaceuticals and Health Policy, (Blum, R., et al, eds.), paperback edtn, Penang, IOCU/Social Audit/HAI, 1983, pp78-92
- Sonenclar, R., "Prescription for Profits: Be Selective, Be Careful", Financial World, 17-30 Oct 1984
- Tanner, J., "Capitalising on male sexual fears", Africa Now, Oct 1984
- Taylor, D., Medicines, Health and the Poor World, London, Office of Health Economics, 1982
- Teeling-Smith, G., "The golden triangle", Times Health Supplement, 29 Jan 1982
- Times, The, (editorial), "Prescribing Propaganda", 13 Dec 1984
- Transnationals Information Exchange, "Getting a Handle on Pesticides", TIE-Europe (newsletter), No 15, May 1983
- Tucker, A., "Chemicals kill river life", The Guardian, 21 August 1984
- UK Royal College of Physicians report Medication and the Elderly, (1984) cited in: Medawar, C., Drugs and World Health, The Hague, International Organisation of Consumers Unions, 1984
- United Nations, Consolidated List of Products Whose Consumption and/or Sale Have Been Banned, Withdrawn, Severely Restricted or Not Approved by Governments, (first issue revised), DIESA/WP/1, New York, July 1984
- Transnational Corporations in Advertising, ST/CTC/8, New York, 1979
  - Transnational Corporations and the Pharmaceutical Industry, ST/CTC/9, New York, 1979
  - Transnational Corporations in the Pharmaceutical Industry of Developing Countries, ST/CTC/49, New York, 1984
- UNICEF, Ideas Forum, Issue No 19, 1984/4
- United Nations Non-Governmental Liaison Service (NGLS), What's Cooking?, Geneva, 1983
- US Senate, Examination of the Pharmaceutical Industry, Subcommittee on Health of the Committee on Labor and Public Welfare, Washington, 1974
- van de Waerdt, J., Drugs and Related Insecticides: Toxicology, Use and Alternatives, Zandvoort, Holland, Stichting Mondiaal Alternatief, July 1983
- Veitch, A., "Half drug adverts break firms' code of practice, says survey", The Guardian, 13 Sept 1984
- "BMA wants action against misleading drug adverts", The Guardian, 30 Nov 1984
- Veitch, A. & Brown, C., "Clarke aims for 'white list' of safe drugs", The Guardian, 6 Feb 1985
- Veitch, A. & Erlichman, J., "NHS drugs curb 'will cost 2,000 jobs'", The Guardian, 5 Feb 1985
- Voluntary Health Association of India, Health for the Millions, Special issue on Bangladesh Drugs Policy, Vol VIII, No 6, Dec 1982
- Voluntary Health Services Society, In Touch, Special issue on the Bangladesh Drugs Policy, No 56, Jul/Aug 1982
- von Wartensleben, A., "Major issues concerning pharmaceutical policies in the Third World", World Development, Vol 11, No 3, Mar 1983
- War on Want, Commentary on and suggestions for improvement of "Code of Practice for the EEC for the Marketing of Breast Milk Substitutes", London, Feb 1983
- Wassermann, U., "Pharmaceuticals for the Fourth World", Journal of World Trade Law, 13(2), Mar-Apr 1979, pp178-181
- Weir, D., et al, "The Boomerang Crime", Mother Jones, Nov 1979
- Weitz, M., Health Shock, London, Hamlyn Paperbacks, 1982
- Weller, T. H., "Too few and too little: Barricades to the pursuit of health", Reviews of Infectious Diseases, Vol 5, No 6, Nov-Dec 1983, pp994-1002
- Wheelwright, E. L., Consumers, Transnational Corporations and the Developing World in the 80s -- I: The Drug Industry; II: The Pesticide Industry; and III: The Food Industry, papers presented by the Australian Consumers' Association at the 11th World Congress of IOCU, Bangkok, 9-14 Dec 1984

- WHO, Safe Use of Pesticides, 20th Report of the WHO Expert Committee on Insecticides, Technical Report Series No. 513, Geneva, 1973
- Resistance of Vectors and Reservoirs of Disease to Pesticides, 22nd Report of the WHO Expert Committee on Insecticides, Technical Report Series 585, Geneva, 1976
  - Joint WHO/UNICEF Meeting on Infant and Young Child Feeding: Statement and Recommendations, Geneva, 1979
  - International Code of Marketing of Breast-milk Substitutes, Resolution WHA34.22, Geneva, 21 May 1981
  - International Code of Marketing of Breast-milk Substitutes, Geneva, 1981
  - The Use of Essential Drugs: Report of a WHO Expert Committee, Technical Report Series No 685, Geneva, 1983
- Wicks, J. & Buchan, J., "Mystery surrounds fate of Seveso waste", The Financial Times, 12 April 1983
- Willetts, P., (ed.), Pressure Groups in the Global System, London, Frances Pinter, 1982
- World Bank, Guidelines for the Selection and Use of Pesticides in Bank Financed Projects and their Procurement when Financed by the Bank, Doc: OPN 11.01, Washington, Mar 1985
- Wyrick, B., "Hazards for Export", special reprint, Newsday, 31 Dec 1981
- Yudkin, J. S., "Provisions of medicines in a developing country", Lancet, 15 Apr 1978, pp810-812

