

firms whose sale of thalidomide it had licensed, the countries in which the drug was manufactured independently from Grunenthal continued to sell it for varying periods. One large firm in Japan, which started to manufacture thalidomide shortly after Grunenthal first marketed it, was sued by Grunenthal for priority, and the suit was won. Thereafter, the Japanese firm sold "Isomin" under license for Grunenthal and withdrew it in December, 1961. At least seven other small pharmaceutical houses in Japan manufactured the drug and sold it under various names: Bonbrain, Neo-Nibrol, Shin Nibrol, Glutanon and Sanodormin. These sales were independent of West German regulations, and the drug was not withdrawn from the market until the end of May, 1962, when 700 cases of phocomelia had been reported in Japan.

A similar thing happened in a number of other countries. Various pharmaceutical firms studied the formula, manufactured the drug and sold it under a variety of trade names. Thus, in Italy thalidomide was sold under the names of Imidene, Imidene Ipnótico, Profamil, Quetimid, Quietoplex, Sedimide, Sediserpil, Sedoval K17 and Ulcerfan. In spite of an outbreak of phocomelia in Turin in June, 1962, some of these products were not withdrawn in Italy until September, 1962.

The difficulty in detection of the production and sale of drugs containing thalidomide is illustrated by a report in the Brazilian magazine *Ocruziero* of September 6, 1962. The investigation was precipitated by the birth of a child with phocomelia. The magazine writer was told that thalidomide was not on sale in Brazil, but through his own inquiries he learned of 50 other infants born with phocomelia. Thereupon, he visited a pharmacy and purchased the drug under the name of Sedin. Later, he found that Sedalis and Slip were also manufactured in São Paulo and distributed in Brazil. Thereupon, the health authorities instituted an investigation. They found that thalidomide was sold under five different names, Sedin, Sedalis, Slip, Ondasil and Verdil. Moreover, in a ten-day surprise search, they confiscated nearly 2,500,000 pills (or boxes of pills), 46,000 flasks containing thalidomide and 96,000 kg. of the pure substance in the pharmacies and pharmaceutical firms in São Paulo. This was in the summer of 1962.

Such events illustrate the importance of an international office of drug information that would notify the health authorities in all countries of the world when a drug was suspected of being dangerous.

Although the drug has been withdrawn from the market, the danger is real that thalidomide, which has masqueraded under so many different names in so many parts of the world, will turn up again and again. Some pills, which were prescribed in good faith by physicians, are now tucked away in many a medicine closet, with only a prescription number and no name. The serious consequences of this well established custom of filling prescriptions by number is illustrated by 1 unfortunate woman who, because the bottle was unlabeled, unwittingly took Distaval during two successive pregnancies and has two children with phocomelia. There is a movement in England to change the law so that the pharmacist would be required to put the name of the drug on a prescription unless specifically requested by the physician to withhold it. Although there is no law in the United States regarding withholding the name of a medicine given by prescription the custom is firmly established that prescriptions are filled by number and the name of the drug is withheld. This is a dangerous custom since it means that a large amount of unlabeled medicine is accumulated by everyone. There is danger not only that a medicine that has been withdrawn from the market may remain available but also that, when medicines are taken by mistake, especially by children, the doctor may be at a loss to know what has been taken. Although common sense calls for a change in this custom a concerted effort by the medical profession will be necessary to effect such a change.

Experimental work with thalidomide has been initiated in many places. Somers (6) experimental production of phocomelia in the offspring of New Zealand white rabbits, fed enormous doses of thalidomide from the eighth to the sixteenth day of gestation, has been repeatedly confirmed by him and in other laboratories. The Himalayan white rabbits (7) appear to be susceptible to the effect of thalidomide on the fetus. Furthermore, Somers (8) has reported that although the dose is seventy-five times that given to man, the blood levels (9) in rabbits are only three times that normally obtained in man after a full therapeutic dose. Nevertheless, the production of phocomelia in other animals and even in other breeds of rabbits has not met with the same degree of success.

Much remains to be learned. Clearly, all animals do not react alike. What is safe for one is not necessarily safe for another. Even after all known safeguards