

Mr. STOVEL: Many of our chemicals go to what are known in the trade as formulas, in marketable package for the consumer, and we in turn work with them in developing it properly.

Mr. ENNS: How big is your operation in terms of employees?

Mr. STOVEL: In Canada we operate in several different business fields. We have about 2,500 employees in Canada. Our principal fields are agricultural, which is broken down into four parts: the biggest company is fertilizer and we export much fertilizer. Then we have pesticides, animal products, food products, and food stuff additives. We are also in the general industrial chemical field for processing industry such as, mining, pulp and paper, rubber, and you name it and we have it.

We have a building products division which has several lines of building products, and we have a drug division of which the main line of products is ethical drugs and sutures; and we have a line of consumer products such as dinnerware, plastic dinnerware, cleaning compounds, and so on. So you can see that we are rather diversified in our Canadian operation.

Mr. MITCHELL: How does the introduction of a new chemical compound come about? Is it by accident? I also know that when you produce one you immediately start to work to produce a better one. The study of one chemical may produce another chemical by reaction among the chemicals themselves, and it may turn out to be a better product, let us say, for the treatment of leaf vegetables, than what you are using. Or it might turn out to be a better product in the control of spraying such as fruit crops. Is there an element there as in some of the discoveries of some of these new chemicals which you put on the market.

Mr. WHITE-STEVENS: Well, if I may answer the first part as to how this is in general, then perhaps Dr. Cooper can be more specific with respect to the Canadian companies.

I do not know if you have one of these pamphlets, but we in Cyanamid have a particular division that we call CL, or the field chemical laboratory division. Many of these chemicals have been isolated from natural products by our own chemists. Some of these things are open chemicals available to anybody and not under patent control. Our file must approach a weight of 200 pounds at the present time. These things are continually put through a series of screens in the agricultural division where we screen them for possible use as food additives, as chemicals for plants, and so on, as chemicals for use with animals, for nutrition, as food additives, or for the control of animal diseases. These screens are carefully designed, and we have to determine whether or not the compound has a likelihood of use.

We usually find one compound in 500 which may have a use as an insecticide. So that compound goes into a secondary and more intensive screening to determine first of all whether or not this is true, and whether or not it is really valid. About that time we begin to do toxicological work, because we have men working with it, and if it is overtotoxic, we want to know it, and if so we would abandon it right away.

If not, we will then proceed through the secondary screening, and if it looks good all the way down the line, after two years in our laboratories, we turn it over to the experimental stations and the land grant colleges for further study. Then we have to bring in our engineers to scale it to pounds from grams, and they go to work on it, and compare the possible use of the compound under field conditions, and within the experimental facilities available at each step in the United States and in the provinces of Canada. This is our well organized approach to the problem.