

Mr. Kleinfeld. We have no other witnesses scheduled. I thought if anybody was here who wanted to appear, we might give them the opportunity.

Dr. Hedrick. Is there anyone here that would like to appear before the committee?

Dr. Knight. Do you wish to hear any more on pesticides?

Dr. Hedrick. Oh, yes.

Dr. Knight. I only have about three or four clinical cases which I can report. I am beginning to learn something about the subject. You must judge whether they are interesting or worthwhile.

Dr. Hedrick. All right. Will you be sworn.

Do you solemnly swear the testimony you are about to give to this committee will be the truth, the whole truth, and nothing but the truth, so help you God?

Dr. Knight. I do.

TESTIMONY OF GRANVILLE FRANK KNIGHT, M.D., F.A.C.A.

SANTA BARBARA, CALIFORNIA.

Mr. Kleinfeld. What is your full name, sir?

Dr. Knight. Granville Frank Knight, M.D.

Mr. Kleinfeld. What is your occupation.

Dr. Knight. Physician.

Mr. Kleinfeld. How long have you been a physician?

Dr. Knight. I was licensed in 1930.

Mr. Kleinfeld. Where did you graduate?

Dr. Knight. Columbia, College of Physicians and Surgeons.

Mr. Kleinfeld. Have you been practicing medicine?

Dr. Knight. That is right, since 1935.

Mr. Kleinfeld. And you want to tell the committee something about some actual cases of what?

Dr. Knight. What I am sure are toxic reactions to the pesticides.

Mr. Kleinfeld. Please tell the committee.

Dr. Hedrick. We will be glad to have them.

Dr. Knight. I just became interested in the pesticides, or really interested a few months ago. For several years I had been suspicious that a number of these so-called virus diseases which we have been seeing in frequent recurrent waves might have something to do with the large amount of pesticides which have been used on our crops.

I didn't do much about it until just recently when I started to do a good deal of reading and have paid more attention to what has been going on. And in my history of patients ill with virus infections, I asked for exposure to pesticides.

Just recently my office nurse, I am sure, has suffered from exposure to chlordane and DDT. She knew I was interested in this subject, and she finally admitted that an illness which she had had two months ago might very well be due to exposure to chlordane and DDT. She was using aerosol bombs containing both these substances -- chlordane in 5 percent and DDT in 2 percent concentration two or three times a week in her closets, on the beds, - because of fleas (of which we do have a few in California) and also for ants around the outside and inside of the house.

Now she developed signs of an upper respiratory infection which did not respond to some of the antibiotics, such as penicillin and aureomycin. Did not respond very well to anything.

It was accompanied by headache, marked neuralgic pains in the forehead, back of the neck and ears. Together with that she had marked fatigue.

She had formerly been a very healthy, active person and never seemed to tire.

Anyway, she finally gave me the history she had been using these substances for six months. So I had laboratory work done which showed evidence of liver damage by positive icteric index and thymol turbidity tests.

I put her on substances which are useful for the nutrition of the liver, such as liver itself, (whole raw-liver concentrate), lecithin and vitamin B complex, which brought about improvement in two or three days.

She has since stopped those twice for intervals of three or four days, and when she stops, relapses, and symptoms come back. That is only one case.

Dr. Hedrick. Did you examine adipose tissue on her?

Dr. Knight. Not yet. I am going to take a biopsy.

Another case is a woman who complained of high blood pressure, headaches, nervousness, tremors, twitching muscles, vague fear sensations at night, and marked fatigability, which was not usual for her. She had been very healthy up until five years ago.

She was referred to me by an internist to see whether or not there might be any allergic complications present which might explain the picture, or any focal infection.

I finally brought out the history that she had been exposed to chlordane in her house. This had been used by her pesticide group over a period of five years. For about sixty-three months it was used in her closets where her clothes were hanging. It was used also in a bin where her fruits and vegetables were stored, as well as underneath the house for the destruction of ants. This was 5% chlordane powder and a two percent emulsion.

Mr. McDonough. Was that applied by a professional applicator?

Dr. Knight. That was applied by a professional applicator.

Mr. McDonough. How frequently?

Dr. Knight. About every three months. I talked with the company personally to make sure of what they were using.

Now we cannot say absolutely that her symptoms are due to that. I have taken a fat biopsy, not reported as yet. When she is away she seems to feel better.

You might say that is a psychoneurotic manifestation and when away from home everybody feels better -- when away from home on vacation. I think there is more to it than that.

I am quite certain in my own mind it is due to chlordane poisoning or hypersensitivity.

Mr. McDonough. Is that here in Los Angeles?

Dr. Knight. Here in Los Angeles.

Mr. McDonough. Do you practice here in Los Angeles?

Dr. Knight. In Santa Barbara.

Mr. McDonough. This application was made by professional applicators here in Los Angeles?

Dr. Knight. That is right.

Mr. McDonough. That is something the committee has not gone into -- the application and the use of pesticides in households by professional applicators.

Are you familiar with the procedure in the Health Department about the control of the use of such things as that?

Dr. Knight. No, I am not.

One trouble, I think, with this pesticided question, which is certainly a difficult one, is that fact that people are exposed to them by using them in their own homes, by applications of licensed men, and also by food residues.

For instance, I think there may be such a thing as a hypersensitivity or allergy, and there is a difference. An allergy is an unusual reaction to a substance which does not ordinarily bother the normal person, whereas a hypersensitivity is a marked exaggeration of the usual toxic reaction of a drug.

Atrophine, if it is given in large enough doses, will cause flushing, dry mouth, dilated pupils and a rapid pulse in a normal person. Those who are hypersensitive may get this reaction to one-hundredth or one-thousandth of that amount. Whereas an allergic reaction would be a different thing, such a hives, asthma or eczema.

Hypersensitivity is a marked response to small amounts of a drug. Which in most individuals would cause no reaction whatsoever. And whether we are seeing allergic reactions or dealing with hypersensitivity reactions in these people, or whether they are true toxic effects repeated exposure, I don't know. But I think we are certainly up against something.

I have one other case of exposure to chlordane. This was the husband of a patient of mine. I did not see him personally, but his wife reported he developed hoarseness and difficulty in breathing and cough following repeated use of chlordane that he was using to spray his orchard. He was not using a mask as he should have been.

He was finally thought to have a cancer of the larynx, since apparently there was so much thickening of the tissue in the larynx, and he was sent to one of the veteran's hospitals for investigation, where they thought for some time it was cancer. Finally they decided it was not and it might be due to an allergic or toxic reaction to chlordane. So they sent him home with definite instructions not to use chlordane again, and particularly, if he did, to use a mask.

He went ahead and again sprayed with chlordane without using the mask and developed acute edema (swelling) of the larynx, and had to have a tracheotomy. That is one example.

That is about all I have which is certain in my own mind. I think as more and more of these cases are reported, we are going to know a lot more about it.

Dr. Hedrick. Do you believe virus pneumonia may be caused by DDT?

Dr. Knight. I am suspicious that DDT may be playing a part in it. Whether it itself can act as a virus and cause virus pneumonia, or whether it lowers resistance to virus is another question, and I suspect that the latter is what may be happening. I think it is perfectly possible there is a correlation between them. I don't know for certain but I am suspicious.

Dr. Hedrick. Any questions, Mr. Jones?

Mr. Jones. Your practice has included a specialization in allergies, I believe you said?

Dr. Knight. Allergy and ear, nose and throat, a combination of the two.

Mr. Jones. How long have you been specializing in allergy?

Dr. Knight. Since 1936.

Mr. Jones. I have no further questions.

Dr. Hedrick. Mr. McDonough?

Mr. McDonough. I have no questions, except to say this is a new avenue here we have not done anything about. We have not attempted to check with the Health Departments in the various hearings we have had, or have not called any witnesses in to find out what control there is for the use of these chemicals that may be used by professional applicators.

I think your testimony is very valuable, Doctor, and I am very glad you volunteered it.

Dr. Knight. Thank you.

Mr. McDonough. There may be something here that the committee ought to be doing that it is not doing.

Dr. Knight. One thing that bothers me as regards residues on food, is how can one control the small truck farmer. The large acreage can be inspected, but the small one, no, which I fear is going to leave us with toxic residues on some food that is getting to us which cannot be controlled. At least I don't see how it can be.

Dr. Hedrick. Do you believe statements that have been coming out in some magazines recently that the American people are gradually being poisoned to death may be more truth than poetry?

Dr. Knight. That is pretty difficult to say. It means we are apparently being exposed to one more toxic chemical, and we are exposed to quite a few of them as it is now. The place that the pesticides will take, I don't know. But I am sure that the more toxic chemicals the body is exposed to, the more difficult it is for it to survive normally.

Dr. Hedrick. Mr. Kleinfeld.

Mr. McDonough. Just another point there, Mr. Chairman. We heard testimony where insects become resistant to these insecticides. Does man become resistant to them?

Dr. Knight. I do not know, and we would have to go through a number of generations to find out, which I think would be a little bit late if they are causing much damage.

Mr. McDonough. You don't know of any studies on that?

Dr. Knight. No.

Mr. McDonough. Now there certainly must be a lot of men engaged in the application of high chemical sprays in the fruit and vegetable business, who keep on doing it day in and day out, month in and month out, year in and year out.

Dr. Knight. I think there must be a great variation in individual resistance to them. I suspect that we may find nutrition plays a part, or the presence of other low grade illness. That has to be proven yet, but we do know, or at least it has been reported, that one pesticide operator had nine hundred parts per million in his fat without showing any signs of illness, and yet others apparently with perhaps five may show liver damage.

Mr. McDonough. Parts per million of what?

Dr. Knight. DDT in body fat.

Mr. McDonough. And he was healthy?

Dr. Knight. Apparently healthy. There is a great variation in resistance to all sorts of things as regards human beings.

Mr. McDonough. I think we ought to find out from the insurance companies what the mortality is on that classification and whether there are special rates for such people. They ought to have some valuable studies.

Dr. Hedrick. Mr. Kleinfeld?

Mr. Kleinfeld. Doctor, are you in a position to say what the symptoms of DDT poisoning are?

Dr. Knight. Not as an authority on the subject, no. I can give you what I suspect are the symptoms.

Mr. Kleinfeld. What do you suspect.

Dr. Knight. I suspect there may be upper respiratory -- in other words, marked congestion of nose, nasal discharge, cough. Many of these so-called virus cases I have seen around have a sore spot deep down in the throat or underneath the breastbone. Along with that goes diarrhoea, nausea, sometimes vomiting, headache, neuralgic pains in parts of the body, particularly in the head and chest, marked fatigue and depression.



Mr. Kleinfeld. Do you think the average qualified general practitioner is in a position to recognize those symptoms as perhaps being caused by DDT poisoning?

Dr. Knight. I am sure that he is if he is interested in the subject. But so far I do not believe there is a great deal of awareness on the part of the medical profession, as a whole.

There is a good deal of difference of opinion and a lot of skepticism, which is perfectly natural. I don't think that many practitioners at the present time are alerted to correlation of that sort.

Mr. Kleinfeld. Did you say there was a woman who had nine hundred parts per million of DDT?

Dr. Knight. There was a man.

Mr. Kleinfeld. How much?

Dr. Knight. Nine hundred parts per million in his fat, if I am not mistaken.

Mr. Kleinfeld. Nine hundred parts per million?

Dr. Knight. I think that was it.

Mr. Jones. We have never had that brought to our attention, in our hearings.

What is the highest we had?

Mr. Kleinfeld. One person mentioned that somewhere. The person, incidentally, apparently suffered no ill effects.

Dr. Knight. Apparently not.

Mr. Kleinfeld. Stored in adipose tissue?

Dr. Knight. Yes.

Mr. Kleinfeld. Supposing he became ill from some common disease and lost considerable weight, what would or what might happen to that storage of DDT? Would you have any opinion on that,

Dr. Knight. Yes. There is pretty good evidence that DDT would probably be released in fairly large quantities, and circulating through the bloodstream would have the effect of a large dose of DDT. And if he were sensitive to it, it could certainly produce plenty of trouble, or if it were toxic for him, let's say.

Dr. Hedrick. In other words, he would be poisoning his own self, would he not?

Dr. Knight. That is right. And if one had a pneumonia --

Dr. Hedrick. Or typhoid.

Dr. Knight. Or typhoid, it would be added to the toxic effects of DDT. It is the longlasting effects of some of these pesticides I don't like.

Dr. Hedrick. Acute poisoning from DDT is unusual, is it not? It is usually cumulative, is it not?

Dr. Knight. There has been acute poisoning in pesticide operators exposed to large amounts of it. But I think we are concerned more with the action of repeated, small amounts which may build up to what is toxic for the individual.

Mr. Kleinfeld. Just one last question.

Dr. Hedrick. Yes.

Mr. Kleinfeld. There have been a number of witnesses who have exposed their opinions to this committee -- and perhaps they are correct, that they are not concerned with the existing situation on insecticides. These people usually are entomologists who say that, because nobody can show anybody who dropped dead because of DDT poisoning.

In your opinion, is that the sole criterion which should be used in determining whether or not any product may be harmful?

Dr. Knight. No, absolutely not. I think it is extremely important for the health of our population that we avoid as much as possible

anything which is deleterious in small amounts over a long period of time. Particularly with this sort of material we do not know the long-term effects. In other words, if some persons are exposed for five, eight, ten years, we don't know what is going to happen to them even if they finally get rid of what they have. We don't know how high they will build up. If they are continually ingesting small amounts, such as one part per million or two parts per million, over eight or ten years, it could go up to nine hundred parts per million. Mr. Kleinfeld. We have had reports of DDT appearing not only in meats, but in milk, which is, of course, drunk not only by adults, but by children and babies. This DDT was found fairly recently by the Food and Drug Administration to be present in fairly small quantities. Would you still be concerned about that?

Dr. Knight. In view of the fact that it builds up, I would certainly be concerned, and particularly as we have to protect our infants as well as the rest of the population, and the young may be more susceptible.

Mr. Kleinfeld. I have no further questions.

Dr. Hedrick. Do you believe there should be some legislation then prepared to control DDT?

Dr. Knight. Yes, sir, I do. I don't know yet just what form it should take.

It seems to me that there is not too much excuse now for having DDT sold in hardware stores and grocery stores. We know that flies have become resistant to it. If we remove that source, there are other things which can be used. There are pyrethrums and I believe there is a new type of insecticide which is artificial pyrethrum.

We would at least cut out one source of DDT exposure if we banned the use of chlordane and DDT for household use.

Now if a pesticide operator with a license were to use it, that is a different thing. That can be controlled. But if we cut it out of the home, I think we would accomplish a great deal.

Dr. Hedrick. In other words, selling at the corner grocery store and the corner drug store should be limited, in your opinion, to the average individual?

Dr. Knight. Yes.

Mr. McDonough. Just one point. In writing legislation, would you say that should apply to chlorinated hydrocarbons or DDT?

Dr. Knight. I would say to chlorinated hydrocarbons.

Mr. McDonough. You mean all of them?

Dr. Knight. Yes. And parathion is pretty dangerous to have for home use also. I believe -- I am not certain whether that is sold in grocery stores or not.

Your others, except chlordane, probably are less toxic, although I have read some evidence that sensitivity to lindane or its toxicity, may increase many times with repeated exposures. So whereas lindane is not one of the longlasting ones and is eliminated fairly rapidly, repeated exposure might be bad.

Mr. McDonough. That is all.

Dr. Hedrick. Thank you for coming before the committee.

Dr. Knight. Thank you, sir.

Dr. Hedrick. Is there anyone else who wants to appear? If not committee will stand adjourned.

(Whereupon, at 11:55 a.m., the subcommittee adjourned.)