

Exhibit 44

1 IN THE CIRCUIT COURT
2 TWENTIETH JUDICIAL CIRCUIT
3 ST. CLAIR COUNTY, ILLINOIS
4 --o0o--
5 DIANA HOFFMANN,)
 individually and as)
6 Independent Administrator))
 of the Estate of THOMAS)
7 R. HOFFMANN, Deceased,)
 et al.,)
8))
 Plaintiffs,)
9))
 vs.) No. 17-L-517
10))
 SYNGENTA CROP)
11 PROTECTION, LLC, et al.,)
)
12 Defendants.)
 _____)
13
14 VIDEO-RECORDED VIDEOCONFERENCE
15 DEPOSITION OF
16 PHILIP BOTHAM, Ph.D.
17 Volume 7 (pages 1684-1827)
18
19 January 6, 2021
20
21
22 (Beginning at 5:08 a.m.)
23
24

1 right?

2 A. Yes.

3 Q. If you'd look at that Table 1, age and
4 racial structure of the working groups -- that's
5 SYNG-PQ-22611736 for counsel on the call.

6 If you'd look at that.

7 A. Yes. I'm looking at Table 1.

8 Q. Okay. All right. So seven of the
9 participants were under the age of 25, right?

10 A. Seven of the spray men, yes.

11 Q. And nine were between 25 and 34?

12 A. Yes.

13 Q. So 16 out of 27 were 34 or younger?

14 A. In the spray man group, that's correct.

15 Q. In the -- in the so-called test group,
16 not the control group?

17 A. Yes.

18 Q. Okay. So more than half the men were
19 34 and younger, right?

20 A. Yes.

21 Q. And if you could confirm this for me as
22 well, those who participated had to be healthy in
23 order to work? In other words, they were actually
24 working? These people were actually spraying?

1 A. Yes, that's correct.

2 Q. And if he could not work because of
3 illness, he would not have participated in the
4 study. Is that your assumption from reading this?

5 A. Well, that would be an assumption. I
6 don't think it spells that out.

7 Q. In other words, if any of the sprayers
8 were sick or disabled using paraquat and couldn't
9 work, they would be excluded from participation in
10 the study at least as far as I see it. I would like
11 your confirmation of that.

12 A. Well, I think this paper is silent on
13 whether they actually excluded anybody because of
14 illness. So I don't know -- I think maybe what
15 you're saying is speculative.

16 Q. Right. Can you look, though, and see
17 if, in fact, they were using from the abstract of
18 the study and from the front page, if you just read
19 that, that they were actually using people who were
20 actively working?

21 A. Yeah. Sure. That is true.

22 Q. So they were actually working. So your
23 assumption would be somebody who is afflicted with
24 Parkinson's disease or neurological disorders would

1 find it quite difficult to be a spray man in a
2 Malaysian plantation of this chemical. Would you
3 agree?

4 A. Yes. That would be what you would
5 normally expect.

6 Q. Okay. So do you know what a selection
7 bias is for epidemiology?

8 A. I do.

9 Q. What does that mean?

10 A. It means that you're not necessarily
11 selecting a full cross section of a population, for
12 example.

13 Q. Like, if you wanted to know, for
14 example, the impact of a chemical on an array of
15 mice by age and you got mice who normally live
16 between two and three years and you got all of your
17 mice at age 15 weeks and you were trying to assess
18 the impact across an age spectrum of the
19 implications of paraquat exposure, you wouldn't be
20 able to extrapolate about how that could impact mice
21 that are 20 weeks or 50 weeks old, could you?

22 A. Well, I think we need to be careful not
23 to conflate two different issues here. There's
24 selection bias in epidemiology studies, and there's

1 the selection of appropriate age ranges in animal
2 studies, and the considerations are different for
3 those two.

4 So the analogy of animal studies is
5 not -- is not one that is 100 percent relevant to
6 epidemiology.

7 Q. Well, let's come back to that, then.
8 Okay? Let's come back to that study.

9 Let's go back to epidemiology. If
10 you're looking at the impact across a population,
11 you'd want representative numbers in your test group
12 from different age categories, particularly when you
13 know the typical way age-wise when a disease like
14 Parkinson's disease presents, correct?

15 A. In a study like this, you would -- I --
16 in a practical sense, you would only be able to look
17 at the population that was working in the field.
18 And it is possible that that working population here
19 were largely of a younger age. They may not have
20 been older workers who were engaged in this
21 activity.

22 Q. But to the extent that you know, as you
23 said in the deposition yesterday, that the typical
24 average age of onset of Parkinson's disease is in

1 the mid-'60s, if you're looking at a population like
2 this of a group of men where 16 out of 27 of the
3 study participants were 34 years or younger, it's
4 difficult to draw any parallels or conclusions based
5 upon a -- a -- the presentation of symptoms for
6 Parkinson's disease, isn't it?

7 A. Well, the intention of the study, the
8 purpose of the study was not to focus on Parkinson's
9 disease. This was to look at long-term health
10 effects, not -- not a specific neurotoxicology
11 epidemiology study.

12 Q. And how did we -- in this study, how
13 did -- how did Syngenta, ICI, define "long-term
14 health effects"?

15 A. Well, again, I'd have to read the paper
16 in full to see if there was some commentary on that.

17 Q. Okay. Do you know what they were
18 testing? What they were observing?

19 A. Well, the paper was looking at various
20 functions of the -- of the people that were
21 monitored. Respiratory function, liver function,
22 for example.

23 Q. And skin?

24 A. Yes. And renal function too.

1 Q. Renal function. The study measured --
2 if you go to page 3 of the study, you'll see that
3 it -- there's a reference to the study having
4 measured respiratory function, liver function, renal
5 function, and red and white blood cells.

6 Do you see that?

7 A. Yes. That's correct, yes.

8 Q. So there was no effort to tell us
9 anything about the central nervous system effects of
10 long-term spraying of paraquat from this study, was
11 there?

12 A. No. This study was focusing on the --
13 on the known potential toxicity that paraquat has,
14 so particularly on the lung and the kidney.

15 Q. Right. It wasn't designed and did not
16 inform us about anything concerning neurotoxicity
17 effects of long-term spraying of paraquat. Would
18 you agree with that statement?

19 A. This study can't -- doesn't inform on
20 that, no, directly. That's -- that is true.

21 Q. So this study would not tell us
22 anything about long-term exposure to paraquat
23 potentially causing Parkinson's disease or not,
24 would it?

1 A. No. That was not the intention of the
2 study.

3 Q. Right. If you go back to that Table 1,
4 the range -- age range of the men was less than 25
5 to over 45, right?

6 A. Yes.

7 Q. There was seven spray men under 25?

8 A. Yes.

9 Q. Six spray men over the age of 45?

10 A. Yes.

11 Q. Okay. Was there ever any follow-up of
12 these workers some years later to your knowledge?

13 A. I'm not able to answer that question.
14 I really don't know.

15 Q. Okay. The study that you said is out
16 for publication yesterday involving pharmacokinetics
17 in primates -- is that a study you referred to as
18 the Stevens study?

19 A. Yes, that's correct.

20 Q. Is Stevens the principal investigator
21 in that study?

22 A. He was the principal investigator for
23 Syngenta, yes.

24 Q. Right. And who else was involved in

1 Q. Okay. And the -- would you agree also
2 that from these documents that I've shared with you
3 that the technology and understanding of how to
4 perform stereology was employed in multiple
5 scientific disciplines including biology?

6 A. Yes. That seems to be true from what
7 we've got here.

8 Q. Okay. I believe you told me in --
9 earlier in this deposition that before 2007, at
10 least, when CPL laboratories was closed, okay, that
11 laboratories ICI and Syngenta had in England were
12 state-of-the-art labs, correct?

13 A. Yeah. In many -- in many aspects, they
14 were.

15 Q. Had ICI and then later Syngenta wanted
16 to use available 2D or 3D stereology techniques in
17 their laboratories in the 1960s or '70s or '80s to
18 count dopaminergic brain cells, there was nothing
19 preventing them from buying the stereology equipment
20 and hiring a trained stereologist to do the studies,
21 was there?

22 A. Conceivably, that's true.

23 Q. Did they do that?

24 A. I'm not aware that they employed a

1 specific expert in stereology.

2 Q. Okay. Until Louise Marks came on the
3 scene in the early 2000s, correct?

4 A. That's right.

5 Q. To your knowledge, had Chevron wanted
6 to use available 2D or 3D stereology techniques in
7 their laboratories in the 1960s and 1970s to count
8 dopaminergic brain cells, was there anything from
9 where you're sitting that would prevent them from
10 buying the stereology equipment, hiring a trained
11 stereologist to do the studies?

12 A. Again, conceivably, there's nothing
13 that could have stopped them from doing that.

14 Q. Okay. Was IP injection available as a
15 laboratory tool for the introduction of chemicals
16 into test animals by 1960?

17 A. It was.

18 Q. From a purely technological standpoint
19 based upon what I've shown you about stereology and
20 stereology availability, there was nothing
21 preventing either ICI or Chevron from performing in
22 the 1960s or 1970s the exact same type of studies
23 performed by Dr. Louise Marks in the early 2000s,
24 was there?