

5th January, 1960

Memo. to: D. S. F. HOBSON, ESJ.

Dear Mr. Hobson,

Your memo. of 1st January, with Mr. Dobson's four questions and Sir Charles' comments, leads us into very deep waters, and I will try to be as helpful as possible. I know you appreciate the difficulties in the way of getting experimental results and of interpreting them with any degree of reliance.

You wish to "..... substantiate or refute the basic claims ..". Specifically, they are:

- A. 20% less tar
  - B. 50% less polycyclic hydrocarbons (e.g. benzpyrene)
  - C. 80% less aliphatic hydrocarbons
- and implicitly D. that the tar is less carcinogenic

Our knowledge of similar solvent treatment suggests that A is correct, and since we suspect that benzpyrene largely comes from pyrolysis of tar, that B is likely to be true, also. We have much less reason to worry about C, and the importance of D is largely in our own minds. (Why else are we anxious to reduce tar and nicotine?) It would be unwise therefore to enter upon a period of testing in the main hope of refuting Neukomm. Apart from D, the claim that interests us is B, and it is very likely to be met in fair degree.

Either we accept the implicit assumption in D or we do not. If we do not, then there is very little reason to worry about A, B and C, and what publicity by Neukomm can do. As valuable an effect can probably be got with the use of porous cigarette paper and filters.

It has been suggested that if Neukomm's claims are upheld we may have to think very seriously and quickly. I would maintain that now is the time to decide whether, if A, B and C are right, or nearly so, we are prepared to enter wholeheartedly into the Neukomm treatment.

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D. S. F. Hobson, Esq.

4th January, 1960

It seems to me that the only logical basis for decision is to attempt to estimate D. Is there a yardstick? First, no one has produced an experimental lung cancer in an animal with cigarette smoke or tar, so no direct comparison of Neukomm's tars is possible. Second, those cancers that have been produced on mouse skin painted with solutions of whole cigarette smoke condensate have taken a year or eighteen months to develop. On a long term, therefore, the carcinogenic activity of Neukomm's tars could be estimated, but before such knowledge would be of use in helping the Association Suisse to decide whether to take up its option, it would be necessary to show that what caused cancer on mouse skin was also what caused cancer in human lungs. (Would you assume this?). It is true there are also short term biological tests, but their correlation with the mouse skin test is not good and the same basic difficulty still exists. Nevertheless, this seems the most positive action and useful action to take.

Complicating all of this is the time factor. The option is until March 18th, which gives only bare time for a preliminary look at A, B and C, and, as I have said, the knowledge gained is not likely to be of any practical help to the Association Suisse. If this is all the time we can have, I am strongly against taking on the work and delaying our benzpyrene investigations into PCL smoke, which it would require.

On the other hand, Neukomm would surely understand the need for independent biological <sup>calculation</sup>, and if he could be persuaded to increase the time of option, a thorough investigation into A, B and C could be carried out in six months, with a short term biological assessment of D; or preferably with an extension of 18 months, a thorough report on A, B, C and D could be produced, which would really have some value.

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The advantage of this attack would be that a refusal by Neukomm to allow time for biological testing would weaken any pressure he could bring to bear on the manufacturers through the Press.

Equally, the granting of an 18 months extension period would enable simultaneous testing of tobacco extracted with hexane (Laporte) so that, if Neukomm's claim D were upheld, we would know if there was an alternative process available as a bargaining instrument, or free from the Neukomm patent.

I hope that this has made it plain that there are more issues to be considered than the correctness of Neukomm's claims, and how difficult it is to keep our feet on the bottom.

Felton has described the experimental work that can be done in detail in the following pages and how we could set about it. He has also included suggestions about the part Montreal could play, and ascertained that I.T.Co. (Bristol) have no surplus capacity to assist.

I shall be glad to discuss this further on Thursday, if you wish.

Yours sincerely,

Encs:

MSA.

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