

## Discussion

DR T. B. STRETTON: May I ask Lynne Reid if she has any idea at all why cilia seem to wipe mucus in one particular direction?

PROFESSOR L. REID: No.

DR STRETTON: It seems a remarkable thing, doesn't it, when gravity would tend to make it go the other way, and you might imagine it would be a rounder sort of flapping.

PROFESSOR REID: I think I'm right that when you first alter it, if you transplant it, it will still go the wrong way; it seems the cilia actually are trained, those particular ones; but if you get regeneration of cilia, then of course they seem to be properly conditioned to go the right way.

DR STRETTON, can I ask if you have any idea whether in smokers, the thing that is wrong with their airway is intrinsic or extrinsic?

DR STRETTON: No, I don't think the information is available. One would guess one might find a population where it was the extrinsic factors that were abnormal; and here I am thinking, I suppose you have had people with  $\alpha_1$ -antitrypsin deficiencies, who tend to get emphysema.

I am just speculating, but I would imagine again, sheer speculation, that the majority would be shown to have intrinsic bronchial obstruction. But I don't think there are any data on that.

CHAIRMAN: Could I ask Professor Reid a question? There has been some recent work done, I think in Florida, using the drug terbutaline and little plastic discs, which has shown that terbutaline in fact increases the clearance of these discs from the bronchial tree. Have you any idea how it works, and why a  $\beta_2$ -stimulant drug should have this effect on changing bronchial clearance?

PROFESSOR REID: You're going to find that most of the answers will have to be 'Don't know'. The answer here is, we don't know; I think what one can say is that we do know the rate of ciliary beat, etc., is susceptible to drug control, in which you will again get an increase with acetylcholine, and one can list a number of drugs which have this effect. But whether it is a direct effect on the ciliary cell, or in some way that it changes the secretion, is not known.