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Introductory Remarks

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PHYSICAL ELEMENTS

Introductory remarks

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To set the scene for this session on the role of physical factors, the chairman showed a number of slides, including figure 1 taken from Schaefer (1979). Both winds and rain are important elements in migrant pest problems, but this particular figure relating to the role of the windfield portrays as vividly as any the strong link between the weather and insect concentration, which is the theme of this meeting. The figure shows the density of moths accumulating at a sea breeze convergence line as observed by a downward pointing radar (Schaefer 1979) on an aircraft flying transverse to the sea breeze front. Other slides (not shown here) were presented from Simpson *et al.* (1977), which showed that the distribution of moths in figure 1 is consistent with them being carried by the gravity current circulation of cold air behind the sea breeze front. Relative to the frontal position, this flow is from right to left in figure 1, then rising in the kilometre or two behind the front before returning to the right above a height of 400 m. Accumulation of insects can be expected to occur in the rising part of such a circulation provided that they are capable of descending through the ascending air.

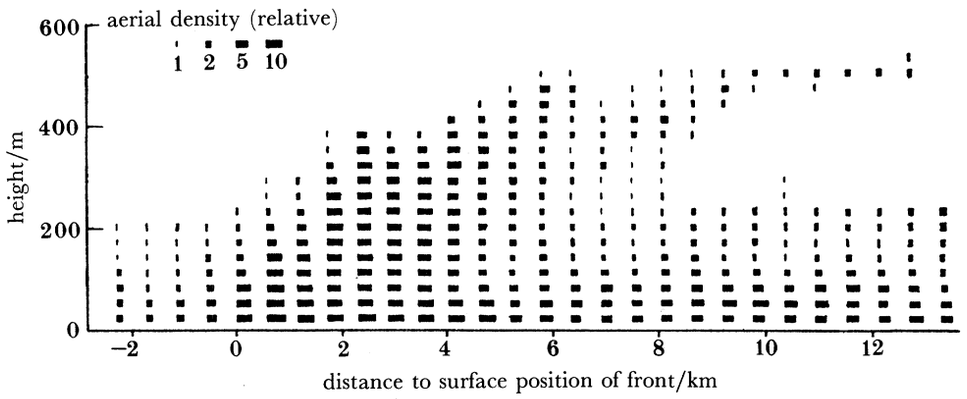

Figure 1. Density of moths accumulating at a sea breeze convergence line. New Brunswick, 22h37, 10 July 1976.

References

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Simpson, J. E., Mansfield, D. A. & Milford, J. R. 1977 Inland penetration of sea breeze fronts. *Q. Jl R. met. Soc.* **103**, 47–76.