a certain minimum value, the reaction was equal to that of a single area at a symmetrical site. The separation value which cancelled this reciprocal vicinity effect was, for areas 1·56 cm. × 1·56 cm., approximately 2·5 cm. For areas 2·5 cm. × 2·5 cm. a separation of at least 3 cm., and for areas 3·5 cm. × 3·5 cm. a separation of more than 4·0 cm., was required to abolish the vicinity effect.

Measurements on an area of back scatter from an adjoining field excluded the possibility that these differences in reaction were due to an additional amount of radiation received by the paired squares. 'Perspex' sheets under the lead shield in which exposure windows were cut ensured uniform compression of the part of the body. Comparisons of degrees of reactions were made with control exposed areas in symmetrical sites in the same individual.

In a series of experiments reported previously[1], it was shown by means of various devices (sieve, annulus, etc.) that the severity of skin reaction to X-rays depends on the product dose-in-roentgens × area rather than dose alone. If an area is irradiated through a sieve, the reaction produced is approximately the same as would be produced if the whole area were given a much smaller dose ; thus when a sieve was used having 11 per cent of its area transparent and 89 per cent opaque, the skin reaction produced was about what would be expected with a ten times smaller dose spread over the whole area.

It was stated that, the dose per unit area remaining unchanged, the reaction becomes a minimum when the normal tissues can exert their maximum protective role. In practice, this has proved to be the case in both X-ray and radium therapy. Introducing the perimeter/area and the shell area/volume ratios, a more comprehensive set of data are at hand when assessing the tolerable and optimal effective doses[2-4].

A possible explanation of the findings in these experiments may be the presence of a diffusible substance which is formed in the irradiated tissues. The quantity of this diffusible substance depends on the mean dose (to which dose × cm.² is proportional). It diffuses so that the concentration attained is proportional to dose × sq. cm./length.

In the series of experiments of which a preliminary note is made here and which will be published in detail shortly elsewhere[5], it was found that 'length' over which the hypothetical substance diffuses is of the order of a few centimetres, and that for areas of 2·5 sq. cm. the substance diffuses approximately up to 2 cm., for areas of 6·25 sq. cm. it diffuses up to approximately 3 cm., and for areas of 12·5 sq. cm. it diffuses not less than 4·0 cm. away.

The diffusion constant of this substance is being studied following also some suggestions made by the late Dr. D. E. Lea, of Cambridge, whose widow has kindly forwarded to me a manuscript containing a critical review of my 1941 work.

The investigation is being carried out with the aid of a grant from the British Empire Cancer Campaign for technical assistance.

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[1] Jolles, B., *Brit. J. Radiol.*, **14**, No. 159 (March 1941).
[2] Jolles, B., *Nature*, **157**, 552 (1946).
[3] Jolles, B., and Mitchell, R. G., *Brit. J. Radiol.*, **20**, 405 (1947).
[4] Jolles, B., *Amer. J. Roentgenol.*, **60**, 6, 745 (1948).
[5] Jolles, B., *Brit. J. Radiol.* (in the press).

A Saprophytic Liverwort

THE plant which is the subject of Dr. S. Williams's interesting note, under the above title, in *Nature* of May 14, p. 769, is almost certainly *Cryptothallus mirabilis* v. Malmb. By a remarkable coincidence, on almost the same day as that on which this issue of *Nature* was received in the Library of this institution, there also reached us an issue of the Swedish periodical *Botaniska Notiser* (Lund), in which there appears an illustrated note on the occurrence of *C. mirabilis* in Sweden, Finland and (probably) Austria. The author, H. Sjörs, of the Institute of Plant Biology, University of Uppsala, summarizes the known occurrences of this hepatic, comments on its ecological associates, and gives a useful list of literature references, the more important and more accessible of which are here reproduced for the convenience of those who may not have easy access to the *Botaniska Notiser*.

We shall hope to hear more from Dr. Williams in due course regarding this noteworthy addition to the British bryophyte flora.

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REFERENCES

Malmborg, S. von, "*Cryptothallus* nov. gen. Ein saprophytisches Lebermoos (vorläufige Mitteilung)", *Annales Bryologici*, **6**, 122 (1933).
Malmborg, S. von, "Weiteres über die Gattung Cryptothallus", *Annales Bryologici*, **7**, 108 (1934).
Schiffner, V., "Über *Cryptothallus mirabilis* Malmb.", *Annales Bryologici*, **7**, 165 (1934).
Sjörs, H., "Några växter funna huvudsaklingen år 1948" *Botaniska Notiser*, (1), 98 (1949). (English summary: "Some Plants Found Mainly in 1948", p. 102, with literature references.)

A Simple Medium for Mounting Small Insects

THE process of making permanent mounts of larvæ of various insects in Canada balsam is lengthy and often does not give satisfactory results, particularly of those covered with soft chitin. It involves complete dehydration and very careful handling. In the clearing medium, the specimens become very brittle and often lose important diagnostic hairs. For mounting mosquito larvæ, Wanamaker[1] has described a medium composed of creosote and Canada balsam; but with this medium preparations often get distorted and take a long time to dry.

A simple medium prepared by dissolving pine rosin in eucalyptus oil has given us very satisfactory results. Its refractive index (1·497) is lower than that of Canada balsam. The medium acts as a clearing as well as a mounting agent, and dries hard within three or four days. The insects can be mounted in this medium directly from 95 per cent alcohol after they have been in this dehydrating fluid for 15–20 minutes. They clear in about half an hour. It is preferable to prick the larvæ of mosquitoes in the thoracic region while they are in alcohol.

A detailed description of this medium will be published later.

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[1] Wanamaker, J. F., *Amer. J. Trop. Med.*, **24**, 385 (1944).