THE SEASONAL INCIDENCE OF ONSET AND EXACERBATIONS IN MULTIPLE SCLEROSIS

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That the disease is significantly more common in the northern part of the northern hemisphere is one of the few epidemiological observations about multiple sclerosis which can be regarded as reasonably well established. The cause for this increased incidence in colder climates remains entirely obscure: an increased prevalence of upper respiratory infections or of vasospastic disorders under such conditions are amongst the possible mechanisms which have been speculatively invoked, but there is no reliable evidence in either direction.

For these reasons it was considered of interest to study the case histories of a large number of patients with multiple sclerosis personally examined in the north-east of England, to ascertain whether there was any seasonal incidence, either in the onset or in exacerbations of the established disease. There is little previous information on these lines in the literature of the subject, and Limburg, in the volume on multiple sclerosis and the demyelinating diseases, published by the Association for Research in Nervous and Mental Disorders in 1950, discusses the difficulty in assessing seasonal variations retrospectively on the basis of mortality and morbidity statistics, and suggests further observations drawn from clinical protocols, as in the present study. Hopkins and Swank (1955), in a study of patients in north-eastern Canada, found no monthly variation in incidence but noted a significant correlation with diurnal temperature range.

In many instances the onset of multiple sclerosis cannot be dated within a month, and in any case it is unlikely that the onset of symptoms coincides exactly with the initiation of the pathological lesion. It is also

possible that new symptoms may be caused by one or two strategically situated lesions amongst many simultaneously initiated or re-activated, and that some pathological exacerbations may even be entirely asymptomatic. However, both the onset of symptoms and, particularly the identifiable acute exacerbations of the disease, presumably indicate at the least a critical activation of the disease process—a pathological as well as a clinical exacerbation.

Quite often, the progress of the disease is insidious throughout. Such cases were excluded from the present series but an analysis of 700 case histories yielded relevant information in 514 instances, 246 in which the onset could be clearly dated, and 268

Incidence by MONTH of Multiple Sclerosis
(analysis of 514 episodes)

identifiable acute exacerbations. The monthly distribution of these incidences, separately and in combination, is indicated in Fig. 1.

There is little difference in the incidence per month of initial episodes (χ^2 with 11 degrees of freedom = 10.617—not significant). More exacerbations, however, occurred in July than in any other month, but this increase in July is balanced by a decrease in June and August. When the incidence for three-monthly periods throughout the year is compared, there is no evidence of seasonal preponderance either for total episodes (January to March, 130;

April to June, 120; July to September, 131; October to December, 133) or for initial episodes or exacerbations.

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REFERENCES

- Limburg, C. L. (1950). *Res. Publ. Ass. nerv. ment. Dis.*, XXVIII, 15.
Hopkins, C. E., and Swank, R. L. (1955). *A.M.A. Arch. Neurol. Psychiat.*, 74, 203.

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