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Seasons of Birth and Sub-Types of Schizophrenia

SIR: Many studies show disproportionately higher rates of schizophrenic patients born during the winter months (Hare *et al*, 1974; Torrey *et al*, 1977). We undertook a study to find out if there is an excess of winter births among schizophrenic patients, and in particular if seasonal variations are related to the gender and sub-types of schizophrenic patients. We examined the seasons of birth of 472 patients with the diagnosis of schizophrenia admitted consecutively to a teaching hospital over a period of 5 years. We also studied the gender and paranoid vs non-paranoid sub-types of this subject group.

The total group did not show an excess of winter births, neither did the total male ($n=193$) and total female ($n=279$) schizophrenic patients. However, the male paranoid schizophrenic group ($n=102$) showed a significant ($P=0.05$) increase of births during the first quarter of the year. The different sub-group of female patients showed a homogeneous distribution of seasons of birth. We found a fairly stable distribution of seasons of birth among both the male and the female non-paranoid sub-groups (those with a greater genetic loading). According to Huxley's "genetic morphism" hypothesis (Huxley *et al*, 1964), the genes endow these sub-groups of patients with better capabilities of resisting various environmental factors. The homogeneous distribution of birth among the female paranoid sub-group could be explained on the basis of certain "built-in" protective factors for the female population (Seeman, 1981). Nature has provided the female with protective factors which may be responsible for their later onset of illness, better response to neuroleptics, fewer relapses, better work record, greater social adjustment, and significantly fewer peri-natal problems as compared to their male counterparts. Although there have been several explanations, the significantly greater number of

births of males in the paranoid sub-group during the winter months has been explained on the basis of the two hypotheses, viz. pre- or perinatal birth trauma or the viral infection hypothesis (Torrey & Peterson, 1976). They contend that because of the higher prevalence of viral infection during colder months, the schizophrenic patient is infected with slow or latent viruses, which alter the function of nerve cells in critical areas of the brain without altering the histological structure. Since the direct evidence of viral infection is lacking, we proceeded to test the first hypothesis, i.e., that subtle birth trauma later predisposes to the development of schizophrenia in susceptible individuals. For this purpose we examined the birth dates of 44 (38 males and 6 females) patients with the diagnosis of minimal brain dysfunction admitted consecutively during the same period as those of our schizophrenic sample. This group of patients is known to have high incidence of subtle brain insults. However, we failed to find any seasonality of birth in this sample. Therefore, we may infer that in our sample the significant increase of births among male paranoid schizophrenics during the winter months could not be explained by factors related to peri-natal trauma. This finding tends indirectly to give more weight to the viral hypothesis of schizophrenia, especially among male paranoid schizophrenics.

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