Book review

Perspectives in Schizophrenia Research. Edited by Claude F Baxter and Theodore Melnechuk. (Pp 464; \$57.12.) New York: Raven Press, 1980.

Schizophrenia research is experiencing a renaissance with the introduction of new techniques and some new hypotheses. This symposium reviews major areas of research up to the end of 1980.

The case that some patients with schizophrenia have structural changes in the brain is presented by Weinberger and Wyatt on the basis of the NIMH computerised tomography studies, following those at Northwick Park and reviewing the earlier and neglected air encephalographic literature. There is a degree of consensus that some chronic patients do have evidence of ventricular changes though whether these are a consequence of the disease or may precede its onset remains open. When such abnormalities are present they are related to intellectual impairment as noted by these authors. They may also be related to the presence of negative symptoms although this issue is not discussed. The question of whether there are sometimes cortical and cerebellar changes, and evidence of cerebral asymmetry, as suggested by the NIMH group, remains controversial. These issues could be greatly clarified by systematic and quantitative neuropathological studies. Unfortunately as is made clear in the paper by Matthysse such studies, although contemplated, are far from execution. A curious omission from the volume however is any comment on the claims of Nieto and Escobar, and more recently J Stevens, that gliosis can sometimes be seen in the brain in chronic schizophrenia.

Are there characteristic physiological changes detectable in life? Itil presents findings that some patients have abnormalities on computerised EEGs that predict response to neuroleptic drugs. The findings are compatible with the concept that some patients have irreversible structural brain changes, but unfortunately do little to identify the site or nature of these changes. Zahn summarises data that suggests that poor outcome (at least in the short-term) can be predicted by high autonomic arousal as indicated by slow habituation of skin conductance responses. Again the association is with one feature of the disease and not with the disease process and it is difficult to see how this approach will take us to underlying

mechanisms. The same might be said of the findings of Ingvar that blood flow in the frontal region is somewhat reduced in some chronic schizophrenics, a finding now replicated in the earliest PET scan studies. It seems unlikely that the blood flow changes are related to the structural changes seen with the CT scan and the question remains whether these changes reflect more than that in the circumstances of the test schizophrenics have mental preoccupations which differ from those of control subjects. Endocrine approaches hold out the promise of detecting underlying neurohumoural disturbance. Mason and Docherty review the older literature but recently there has been renewed interest in abnormalities of cyclical gonadotrophin secretion in some chronic patients. Meltzer and colleagues consider whether changes in prolactin and growth hormone secretion in response to neuroleptics and dopamine agonist drugs can be used as an index of the state of dopaminergic transmission. Although no simple and unequivocal test of dopaminergic function has been established it remains possible that the increased growth hormone response to apomorphine which is sometimes seen in acute schizophrenia reflects the supersensitivity of dopamine receptors which is assumed by some workers to underlie the positive symptoms of the disease.

Are endogenous opiate mechanisms disturbed in schizophrenia? The interest of this question and its possible relevance to changes in pain sensitivity in schizophrenia and other psychoses is usefully covered by Buchsbaum and colleagues. It seems that naloxone in high doses does sometimes diminish positive symptoms. Buchsbaum would like to think that such responses identify sub-groups of patients but as yet such patients have not been identified in other ways. More recent post-mortem studies at Northwick Park have not demonstrated groups of patients with specific abnormalities of opiate function, at least insofar as these are manifest in changes in opiate receptors. The two post-mortem neurochemical studies in this volume report increased numbers of dopamine receptors (assessed as butyrophenone binding sites) a finding on which there is now some general agreement although its pathologic significance remains disputed, in the paper by Seeman and colleagues, and increased concentrations of norepinephrine and its metabolite MHPG in a small number of brains, in the paper by Kleinman *et al.* This finding will be the focus of further interest.

There are other chapters (for example Goldstein on immunological changes, Berger and Davis on tardive dyskinesia, and Bird on brain banks) of general interest. Overall the book reflects the direction of much recent biological research, albeit predominantly in the United States, in schizophrenia. The major areas of interest (structural changes and dopaminergic transmission) are well represented but the gaps (neuropathology and aetiological hypotheses) are also apparent. A useful compendium which includes with each chapter a "lay person's summary" and a full account of the often lively discussion.

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