Editorial

The Adrenochrome Hypothesis Revisited

For this issue, Dr. Humphry Osmond and I have prepared a review of the adrenochrome hypothesis and its relationship to psychiatry. This hypothesis was first announced at a meeting of the Dementia Praecox Committee of Scottish Rites Masons in New York in 1952, and was first published in the *Journal of Mental Science*, now the *British Journal of Psychiatry*, in 1954. It was the first comprehensive hypothesis of schizophrenia, and arose out of an earlier methylation hypothesis. The idea was rejected out of hand for a variety of reasons, but the criticism most vigorously pursued was that adrenochrome had not been demonstrated to be present in the body.

This proof demanded the extraction of adrenochrome in crystal form — something then not possible. The hypothesis became dormant, kept alive in other fields by a few workers. But the basis had been laid, including the most thorough examination of the chemistry of adrenochrome and its derivates by R. Heacock in our laboratory.

The chief beneficial effect was the role it played in developing Vitamin B_3 in treating the schizophrenias. An examination of our basic adrenochrome reactions suggested to us in 1951 that this vitamin might be useful in inhibiting or preventing the reaction and thus might be therapeutic for schizophrenia.

The first psychiatric double blind therapeutic trials showed our predictions based upon the adrenochrome hypothesis were correct. But this did not 'prove' the hypothesis. It merely made it more plausible.

According to a report in *The Globe and Mail*, December 12, 1989, only one in 10,000 compounds makes it to market at a cost of between $100-150 million. Dr. P. Seeman, Professor of Pharmacology, University of Toronto, stated that finding one drug that can beat the odds (1 out of 10,000) is largely serendipity. "Only a handful of compounds have ever been developed from pure logic on the scientist's part," he said. Our discovery adds another to this select few.

Our initial investment in 1952 was $23,000, and our total expenditure was certainly less than $2 million between 1952 and 1967. But at current costs and restraints on clinical research, the numerous double blinds still called for by our critics — which will merely repeat what we found 35 years ago — will certainly cost a lot more, but nowhere near $100 million. But there is no incentive for companies to do these studies since there are no patent possibilities.

The recent report that adrenolutin is present in blood removes a major criticism of our hypothesis. When applied to psychiatric research it may completely alter psychiatric practise. For if it turns out schizophrenics do have a lot more adrenolutin in their blood, then a simple laboratory test will become a marker which will allow early diagnosis, early treatment. It will be possible to determine the most effective treatments and to monitor response to therapy. Most psychiatrists will be surprised to find many of their depressions, anxieties and psychopathies will turn out to be "schizophrenic" if the adrenolutin levels are, in fact, diagnostic. This, of course, is a lot of speculation, for which I do not apologise. For our own speculations over thirty-five years ago have led to a variety of useful findings — including the fact that niacin lowers blood cholesterol.

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