

The requirements for a normal functioning of the central nervous system (CNS) are discussed with particular reference to the rigorous separation among central neurotransmitters. Any leak of a transmitter into synapses of different central pathways constitutes a sort of "short circuit". This evenience might lead to the formation of endogenous psychotogenic agents such as the adrenochrome-acetylcholine (ADAC) which upset the normal functioning of the synapses by activating monoamineoxidase (MAO) and inhibiting acetylcholinesterase (AcChE) and catechol-*O*-methyl transferase (COMT). The formation of ADAC can be non-enzymatic, but the involvement of enzyme systems such as catecholamine-cyclase and catalase-peroxidase is very likely in either its formation or deactivation. A new colorimetric method for measuring cyclase activity in serum, in concomitance with a reduced peroxidase activity, was applied to analyse the serum of a number of mental patients. The cyclase-peroxidase activity in the serum of these patients was significantly higher than the activity of normal serum. Among the different possible explanations of the fact, its meaning in connection with the protectiveeffects of melanin formation or with the lowering of the pool of physiological reducing agents is pointed out. The short circuit and ADAC formation hypothesis can reasonably account for the onset of mental illness and is not in contrast with other biochemical theories proposed so far.