

tion on muscle twitches and the increase in the frequency and amplitude of individual eye movements. While exhaustive observations of these phenomena were not made in this study, it was evident that the intensification of twitching and ocular motility seen in the controls was not present in the convulsed cats. On the other hand, the EOG components of the recordings on the 1st recovery day from the convulsed cats were early identical with those obtained during base-line periods.

The data indicate that the development of the REM deprivation-compensation effect is retarded by the occurrence of convulsions during the deprivation period. In this study, our attention was focused on the comparative evaluation of compensatory changes in REM sleep, although neurophysiological and behavioral changes in the waking state also have been observed (6). However, such changes usually require much longer periods of REM deprivation than were used in this series of experiments. In the absence of evidence to the contrary, it seems reasonable to assume that behavioral changes would also be retarded or reversed by ECS. We can offer one incidental observation in support of this contention: hypersexual behavior, appearing on the 21st day of REM-sleep deprivation in a male cat, disappeared after several electrically induced convulsions, although the REM-sleep deprivation had not been terminated.

In view of the fact that one ECS per day in nondeprived cats only accomplished a 30- to 40-percent reduction in daily REM time (3), the effect of four convulsions in the present series was disproportionately large. The seizures may have been intensified by the prior deprivation. No attempt to quantify the response to ECS was made in this study, but more recently we have observed a marked prolongation of the tonic phase in mice during periods of REM-sleep deprivation (7).

Our results suggest a means by which electroconvulsive shock therapy may be effective in depressive psychosis. It is a clinical commonplace that severe depressions are often accompanied by profound sleep disturbances. REM-sleep deprivation appears to be an inevitable consequence of any overall loss of sleep (8). If the various manifestations of the REM-deprivation effect (6, 9) contribute to the psychotic process, then it is not unreasonable

that an alleviation of this effect by electroconvulsive shock therapy may be a critical factor in the successful course of treatment (10).

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Solvent Contamination from Volatile Components of a Fiberglass Glove Box

Aflatoxin B₁, isolated and purified in our laboratories, showed an ultraviolet spectrum in complete accord with that reported in the literature. In ethanol, the spectrum exhibits major absorption peaks at 360, 265, and 223 mμ with absorptivity values of 21,700, 13,300, and 23,800, respectively. Some time after these initial spectra were recorded, two fiberglass glove boxes were installed. The plastic binder for the glass fibers is referred to as "polyester resin" in the manufacturer's cata-

log. Subsequently, all manipulation of the dry aflatoxins and preparation of aflatoxin solutions were carried out in these boxes. To prepare solutions, the crystalline material was washed into a volumetric flask with chloroform. Ultraviolet spectra of aflatoxin B₁ residues, redissolved in ethanol, from solutions prepared in this fashion showed considerable deviation from the normal spectrum. In particular, absorbance values at 223 mμ and 265 mμ showed large increases relative to the absorbance at 360 mμ.

In attempting to determine the cause of these abnormal spectra, we noticed that the abnormalities appeared when the chloroform solvent was exposed to the glove box atmosphere in an open beaker, rather than dispensed from a stoppered flask. This fact plus a persistent "plastic" odor in the boxes led to an examination of chloroform exposed to the glove box atmosphere. Beakers of chloroform, protected from dust fallout, were left in the glove boxes and in other test areas for about 18 hours. Residues from beakers of chloroform, stored within the glove boxes, showed strong ultraviolet absorptions in the 200 to 270 mμ region, with maxima at 210 to 225 mμ and 260 to 265 mμ. When small portions of these chloroform samples were added to "clean" aflatoxin solutions, the abnormal spectrum originally observed was reproduced. No such residue appeared when chloroform exposed to the atmosphere of other areas of our laboratories, including a stainless steel glove box, was evaporated. Infrared spectra of the residues obtained from chloroform exposed in the fiberglass glove boxes correlate with those of a number of the glove box components, particularly with the spectra of the phthalate esters used as plasticizers.

Therefore, if solvents such as chloroform must be handled in a fiberglass glove box, they should be exposed to the glove box atmosphere for *only* the time required for dispensing. This precaution should also protect the glove box, since we have observed that an accumulation of chloroform vapors in the box results in visible changes in the plastic.

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