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TWO NEW SHORT-ACTING HALLUCINOGENS OF THE PSILOCYBIN GROUP

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Two new variations of the Psilocybin molecule (Fig. 1), CEY 19 (4-phosphoryloxy-N-diethyltryptamine) and CZ 74 (4-hydroxy-N-diethyltryptamine) which had been synthesized in the laboratories of the Sandoz Corporation, Bâle, under the direction of CERLETTI[1] and HOFMANN[2], were tested for their psychotogenic effect on humans. The results are based on eighty test sessions.

The duration of the effect averaged three and a half hours, the minimum being one hour and twenty minutes and the maximum six hours (Figs. 2 and 3). There were

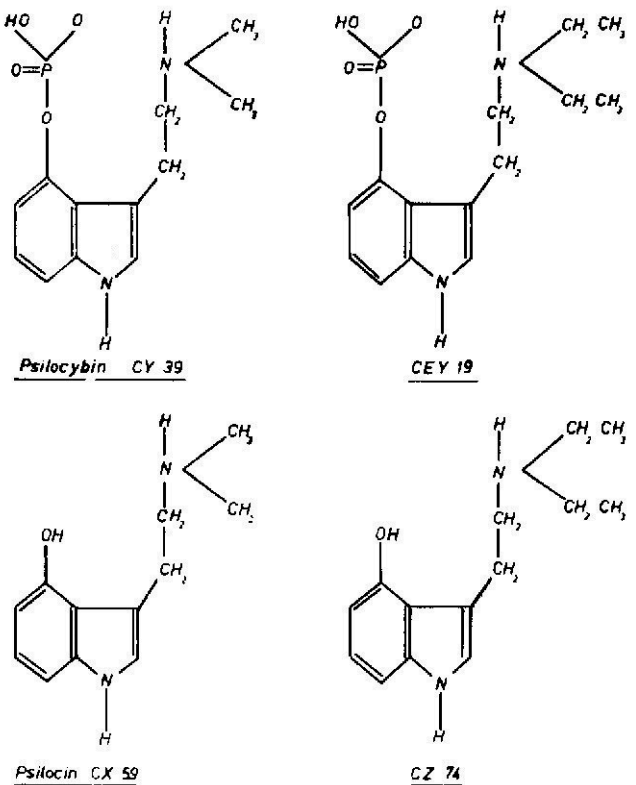

Fig. 1. Variations of the Psilocybin molecule.

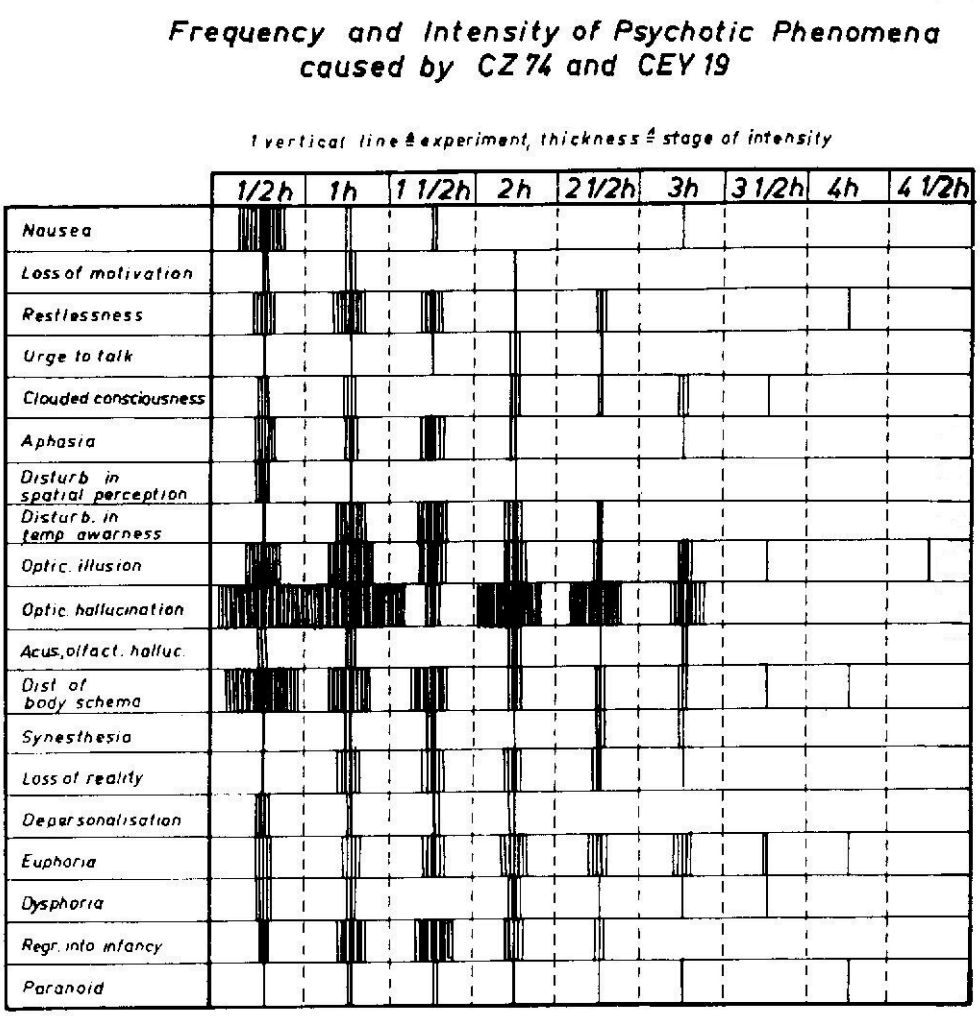

Fig. 2. Experimental results with the new variants CEY 19 and CZ 74.

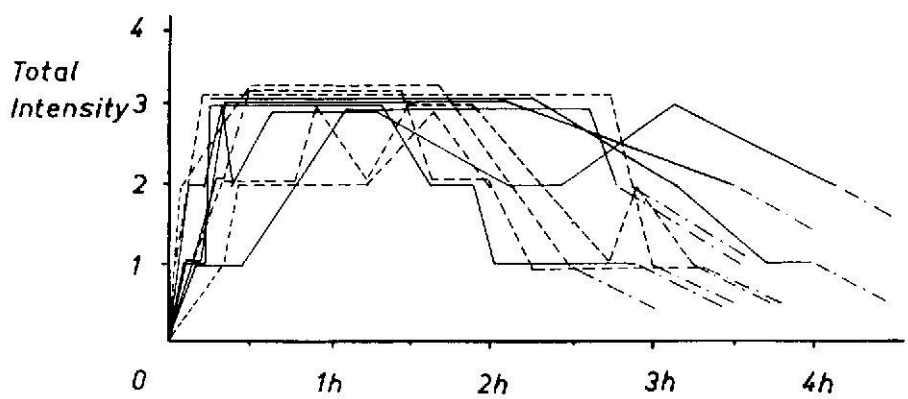

Fig. 3. Frequency and intensity of psychotic phenomena caused by CZ 74 and CEY 19.

variations in duration due to dosage and personal traits of the subjects. No statistically significant difference in either the nature or duration of the effects was found between the two substances tested.

RESULTS

Physiological reactions

These were nausea, salivation, reduced pupillary reaction, slight tachycardia or brachycardia (±20/min), temperature increase of 0.3 to 1.0°C, blood pressure variation of ±10 mm Hg systolic and ±5 mm Hg diastolic, lively tendon reflexes and variable impairment of co-ordination; altogether there was no variation which exceeded normal tolerance under average dosage. Dose levels were between 0.05 and 0.26 mg/kg body weight, with average effects being observed at 0.20 mg/kg.

Psychopathological reactions

In all sessions there was disturbance of body image, illusions, pseudo-hallucinations and hallucinations. In 50% of cases motor restlessness, aphasia, loss of concentration and temporal and spatial disorientation could be clearly observed. In 25% of the cases there was loss of impetus, derealisation and acoustic hallucinations. More rarely and only with the highest doses did extreme psychotic symptoms (in the sense of Leuner[6]) occur, with increased volubility, depersonalisation, cosmic-mystic experiences, delirium, schizophrenic behaviour with catatonic fits and temporary paranoia. Age regression (feeling younger) was only observed in one-seventh of all cases. Figure 2 shows the frequency, intensity and timing of the phenomena, whilst the curves of the individual sessions, using ISBELL's[5] intensity rating, are given in Figure 3.

After-effects

These consisted of mild euphoria or dysphoria and disinhibition. Most subjects could resume mental work after four hours. With one exception, more severe after-effects did not occur and no depressive moods, abnormal experiential reactions and suicidal tendencies were observed.

DISCUSSION

Both compounds produce experimental psychoses in humans which differ only slightly from the LSD 25 and Psilocybin-induced psychoses[7,8]. The effect of the two substances is virtually identical, both qualitatively and quantitatively. The extent of the disturbance depends upon dose level and personal traits of the subject. Physiological effects are slight and within the normal limits. All reactions disappear rapidly with the decline in the intensity curve. Even with high doses, side effects and after-effects are not clinically significant. The short duration of the intoxication by these new drugs greatly lessens the risks involved in their use. Thus, these new drugs would seem to be suitable to replace the known hallucinogens in experimental psychiatry and psycholytic therapy. There is little risk involved in their use in out-patient treatment.

A further series of tests on these drugs is at present being carried out.

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