III/35 Psychopharmacological Investigations in the Central Stimulant Activity of Cathinone (α-aminopropiophenone) obtained from Catha edulis

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Catha edulis Forsk. (Celastraceae) popularly known as khat, is, because of its stimulant properties for many centuries in use as a social drug and as a popular remedy against hunger and fatigue in parts of East Africa and Arabia. While until recently d-nor-pseudoephedrine (Cathine) has been considered to be responsible for the stimulation effect of khat, there has now been shown to exist a substance – predominantly in young leaves and tops – identified as S-(–)-α-aminopropiophenone, and called cathinone. Synthesized at the University of Berne the substance has been tested as a racemic mixture by behavioral and biochemical methods. There has been shown that cathinone increases the locomotion in mices to a much higher extend than does cathine and similarly to amphetamine. There has also been observed instensive stereotyped behavior, which could be suppressed by pretreatment with α-methyl-p-tyrosine and haloperidol but not with reserpine. This result, together with ipsilateral rotation after i.p. injection of cathinone in rats, previously injected unilateraly with 6-OHDA into the Substantia nigra, indicate that cathinone, like amphetamine, seems to stimulate the CNS through liberation of catecholamines of the labile pool. In a biochemical investigation, slices of rat's striata have been incubated with ^{3}H-Dopamine (DA) and it has been observed, that cathinone, to a much higher degree than cathine, inhibits the uptake of DA and enhances its liberation. Our work shows clearly the higher CNS-stimulant potency of cathinone over cathine. This potency attains about half of that of amphetamine, which means that cathinone is probably the substance with the highest psychostimulant properties until now found in the plant kingdom.

III/36 Antigonadotrophic Activity of Plumbagin

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Plumbagin, isolated from roots of *P. rosea*, suspended in 0.5 % gum acacia was administered orally to randomly bred albino rats of Holtzman strain. Antigonadotrophic activity was tested in adult rats by the method of Holthans [1], in immature rats by the method of Chaudhurry [2] and Holtkamp et al [3].

It was observed that plumbagin given orally (10 mg/kg) for ten consecutive days to adult female rats caused a highly significant decrease in the weight of ovaries as compared to the controls. The effect of exogenously administered human gonadotrophin on the uterus and ovary of immature rats was also significantly blocked while the secretion and storage of gonadotrophins in the intact animals remained uninhibited. The over all effects of plumbagin resemble that of *Lithospermum ruderale* which was reported [4] to inhibit the responses of the immature rat ovary to P.M.S. gonadotrophin.

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