The origin of epileptiform seizures caused by oil of *Artemisia caerulescens* L.

SIR,—Vodopivec & Vatovec (1967) have recently shown that the oil of marine wormwood (*Artemisia caerulescens* L.) AC produced in rats, cats, rabbits and dogs, typical epileptiform seizures. These begin with salivation, followed by severe tonic-clonic convulsions especially in the region of the neck, limbs and trunk. The convulsions last from 10 to 60 sec and recur after a remission and sometimes the animal loses consciousness.

We have investigated oil of wormwood in white mice of either sex weighing about 20 g administered 40 mg/kg of an aqueous emulsion of the oil intraperitoneally. Epileptic seizures occurred as early as the 2nd or 3rd min, lasted about 30 sec and recurred at intervals of 1 to 3 min. In the interval between seizures the animals had difficulty in breathing, showed signs of fear and assumed unnatural dog-like postures. From 20 to 30% of the animals died; the surviving mice calmed down after about 1 hr.

Fifteen min before receiving the aqueous emulsion of oil of wormwood, the mice were given one of several substances (Table 1). Decortication was done in one group of animals by a method shown us by M. Taschler. The part of the cortex of the cerebrum which can be assumed to have motor function was first removed by a vacuum extractor under anaesthesia and the animals allowed to recover. The oil was extracted according to the method described by Vatovec, Vodopivec & Bohinc (1967).

TABLE 1. EFFECT OF SUBSTANCE P, MEPHENESIN, γ-AMINOBENZOIC ACID, PHENYTOIN, PHENACEMID, PHENOBARBITONE OR DECORTICATION OF THE CEREBELLUM ON THE BEHAVIOUR OF MICE GIVEN EMULSIFIED OIL OF WORMWOOD

	Substance P 4000 and 8000 units/kg (purity 1 mg = 13 units	Mephenesin 100 mg/kg	γ-Amino-benzoic acid 100 mg/kg	Phenytoin 200 mg/kg	Phenacemid 600 mg/kg	Pheno-barbitone 25 mg/kg	Decortica-tion of cerebrum
Oil of wormwood 40 mg/kg	−	−	−	+	+	+	+
n	16	12	10	16	16	10	9
P	0·05	0·05	0·05	0·05	0·05	0·05	

− Does not protect.
\+ Protects.
P is significance determined according to Bross, J. (1952), Sequential med. plans, Biometrics, 8, 188.

Phenytoin, phenacemid, or phenobarbitone and decortication prevented epileptic seizures, while substance P, mephenesin and γ-aminobenzoic acid produced no effect against oil of wormwood.

Decortication also prevents the action of oil of wormwood so that the site of its action is in the cortex. Mephenesin, which affects the polysynaptic reflexes in the spinal medulla, substance P which usually prevents leptazol spasm and γ-aminobenzoic acid which usually inhibits the synapses in the central nervous system were without effect.

The epileptiform seizures provoked by oil of wormwood may prove useful in examining new antiepileptic substances.

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Comparison of tolazoline and thymoxamine on skin temperature in man

SIR,—Tolazoline hydrochloride (Priscol) is an α-adrenergic receptor blocking drug which is used clinically by oral and parenteral administration in the treatment of peripheral vascular disease. Thymoxamine (Opilon), a thymoxyalkylamine derivative, is a more recently discovered α-receptor blocking drug (Birmingham & Szolcsanyi, 1965, Foster, 1966). Its action in man has been demonstrated in the pupil, by prevention of ephedrine and phenylephrine mydriasis and reversal of hydroxyamphetamine mydriasis when applied to the conjunctival sac in the form of eye drops (Turner & Sneddon, 1967).

Variations in skin temperature may be used to measure changes in skin blood flow induced by α-receptor blocking drugs and rubifacients, and an investigation was, therefore, made to compare the effects of tolazoline and thymoxamine on skin temperature in man.

The same 10 subjects (5 men and 5 women, aged from 15 to 48 years) took part in three tests viz. comparisons between the two drugs and between each drug and a placebo.

Both tolazoline and thymoxamine were made up into 10% ointments in a water-free cetomacrogol base, the base alone serving as the control placebo.

TABLE 1. CHANGE IN FOREARM SKIN TEMPERATURE °C INDUCED BY THYMOXAMINE, TOLAZOLINE AND A PLACEBO IN 10 SUBJECTS

Treatment	Skin temperature °C					
	Before	After	Difference between treatments	s.e.	t	P
Thymoxamine .. v Placebo	33·34 33·51	33·85 33·55	0·47	0·152	3·12	<0·02
Tolazoline .. .. v Placebo	33·13 33·02	33·19 33·06	0·02	0·062		n.s.
Thymoxamine .. v Tolazoline	32·23 32·38	32·49 32·49	0·14	0·081	1·72	n.s.

Skin temperatures were measured by means of a copper-constantan thermocouple (voltage output 40 V/°C) fixed to the volar surface of each forearm and connected to Grass polygraph Model 7P1-preamplifiers calibrated within a range of 24–40°. When stable recordings were obtained (usually within 2 min), a thin smear of the respective ointments was applied under the thermocouples but was not rubbed in; the choice of side for active or control preparation was arbitrary. Temperatures were again monitored and a reading taken after 10 min.