tutes of Health. Paul D. Wilson held a Public Health Service fellowship from the National Institute of Mental Health, National Institutes of Health.

Note added in proof. We have found that potentials antidromically elicited in the optic tract by submaximal stimulation of LGN increase 10–20 per cent during the period of inhibition. Such manifestation of increased excitability in presynaptic terminals is exactly concordant with expectations for presynaptic inhibition[7].

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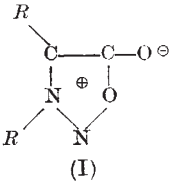
PHARMACOLOGY

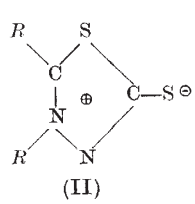
A New Class of Hypotensive Agents

FOR several years we have been engaged at these laboratories in an investigation of the physical, chemical, and pharmacological properties of various mesoionic heterocyclic ring systems. In the first of these systems investigated—the sydnones (I)—we found marked central nervous system stimulation[1–6].



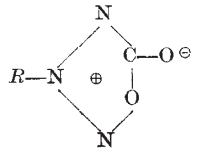
(I)

More recently, we have investigated a series of sulphur-containing mesoionic heterocyclic compounds with a ring isoelectronic with the sydnones. These compounds—the mesoionic 1,3,4-thiadiazolos (II)—were found to have antimicrobial activity[7,8].



(II)

Our continuing interest in the potential pharmacological activity of the mesoionic compounds, as well as the possibility of structure-activity correlations, led us to synthesize and study a number of mesoionic compounds known as the ψ-oxatriazoles (III). This class of heterocyclic compounds had been known since 1933[9], although the structure and nomenclature at present accepted were not established until more recently[10,11]. Later investigations have yielded additional methods of synthesis[12,13].



(III)

Several of these compounds have been synthesized by means of the procedure previously described[10] with minor modifications. The compounds made and tested were the isopropyl, the secondary butyl, the 3-pentyl, the *cyclo*hexyl, the 1,3 dimethyl butyl and the 1,2,2-trimethyl propyl derivatives of the basic structure. They all produced a hypotensive effect when injected intravenously into anaesthetized dogs, in a dose of 5 mg/kg as a 1 per cent solution in a 1 : 1 mixture of polyethylene glycol and normal saline. The fall in blood pressure ranged from about 6 per cent with the 1,3-dimethyl butyl compound, to 30 per cent with the *cyclo*hexyl compound, and the duration of action ranged from 1 to 2 h. The polyethylene glycol vehicle by itself was found not to affect blood pressure. Pretreatment with the antihistamine pyribenzamine did not prevent the depressor effects of the compounds, so that release of histamine is considered to be an unlikely mechanism of action. Pretreatment with the compounds appeared to potentiate responses to epinephrine and to decrease responses to norepinephrine. It is possible that some of the hypotensive effects are due to competition with norepinephrine for adrenergic receptors.

This preliminary investigation indicates that the pseudo-oxatriazoles as a group possess interesting hypotensive effects. We are now in the process of investigating these properties more intensively.

This research was supported in part by a grant from the U.S. National Institutes of Health.

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Antagonism of Digitalis Arrhythmia by Pronethalol : a Neural Phenomenon?

THE depression by pronethalol of ventricular arrhythmia induced by digitalis, and of ventricular escape during vagal stimulation, is apparently not related to the capacity of this drug to block the cardiac effects of exogenous catecholamines[1–3]. Roberts *et al.*[3] pointed out