group in the no. 1 position of the tetrahydropyrimidyl group enhances parasympatholytic potency. Structure-activity relationships for related members of this series will be discussed. Both S.1-1224 and S.1-1901 are effective in controlling the spasticity, tremor and salivation produced by tremorine in mice. The actions of tremorine have been described by G. M. Everett *et al.*, Fed. Proc., **15:** 420, 1956. (7867)

Antagonism of phenoxybenzamine (Dibenzyline) adrenergic blockade by ephedrine. MARK NICKERSON. *Dept. of Pharmacology and Therapeutics, Univ. of Manitoba Faculty of Medicine, Winnepeg, Man.* It has been reported that ephedrine can revert to pressor the depressor response to epinephrine in intact dogs treated with phenoxybenzamine (Levy and Ahlquist, *Fed. Proc.*, **16:** 317, 1957). This effect appeared to be reversible after short, but not after long periods of ephedrine administration. These authors postulated that ephedrine displaced phenoxybenzamine from adrenergic receptors, and that after short but not after long periods of displacement, the blocking agent could recombine with the receptors. This phenomenon has been reinvestigated in a simplified preparation exhibiting predominantly excitatory responses to epinephrine (strips of rabbit aorta *in vitro*) with the following results. 1) Ephedrine can markedly antagonize phenoxybenzamine blockade. This antagonism develops over several hours and is reversible, even after repeated washing with ephedrine-containing solution to remove any "displaced" phenoxybenzamine. 2) The antagonism fails when all or nearly all adrenergic receptors are blocked. 3) Antagonism of phenoxybenzamine blockade is a property of many sympathomimetic amines, including amphetamine, methamphetamine, hydroxyamphetamine, methoxamine and cyclopentamine, but not naphazoline and phenylephrine. It is concluded that antagonism of phenoxybenzamine blockade is not due to displacement of blocking agent from adrenergic receptors nor to suppression of inhibitory responses. (7868)

Effects of hallucinogens on spontaneous behavior patterns of animals. STATA NORTON AND JEAN TAMBURRO*. *The Wellcome Research Laboratories, Tuckahoe, N. Y.* Some behavior patterns of cats under laboratory conditions have been reported previously. Using the same method, behavior patterns of hamsters are identified. Each pattern is categorized by five associated items of behavior. The effects of mescaline and LSD on cat behavior and of LSD on hamster behavior have been studied. If the items scored in different animals are expressions of related patterns, it is expected that the drugs tested would modify them in the same way. This was found for some patterns but not others. Mescaline and LSD have similar actions in cats, and the following changes are produced: the behavior patterns called Contentment and Sociability are reduced; Excitement, Aggressive Hostility and Defensive Hostility are increased. In hamsters LSD does not change the patterns labeled Contentment and Excitement, while Sociability is increased. As in cats, LSD increases the scores for Defensive and Aggressive Hostility in hamsters. (7869)

The prophylactic and therapeutic effectiveness of DAM (2,3-butanedione 2-oxime) in rats poisoned with the vapor of GB (Sarin). FRED W. OBERST, CARL W. UMLAND, II*, RICHARD GREEN* AND ROY G. JONES*. *Gassing Branch, Directorate of Medical Research, Army Chemical Center, Md.* The work reported was designed to determine some of the factors limiting the prophylactic effectiveness of DAM (2,3-butanedione 2-oxime) in protecting rats against the toxic action of inhaled GB vapor (Sarin). Various doses of DAM were administered intraperitoneally at different times before exposure of the animals to GB vapor. The exposure time varied from 30 seconds to 16 minutes in different tests. The injection of 200 mgm./kgm. of DAM 3.4 hours before exposure to GB vapor resulted in 50% survival. Doses of 100 mgm./kgm. and 50 mgm./kgm. of DAM gave 50% survival time values of 2.3 and 1.3 hours, respectively. The concentration of GB vapor was 123 to 146 mgm./m^3. for exposure times of 4 minutes. When the dose of DAM