

**An antitussive test using guinea-pigs**

A. L. A. BOURA, A. F. GREEN and I. A. SAUNDERS, *Pharmacology Laboratory, Wellcome Research Laboratories, Beckenham, Kent*

A review of methods used for screening potential new antitussive agents suggests that tests based on exposure of guinea-pigs to inhalation of irritants are commonly used and that sulphur dioxide, ammonia or acrolein have found most favour (Eddy, Friebel, Hahn & Halbach, 1969). Our choice during 10 years of testing has been an aerosol of citric acid, the irritant most often chosen for comparable tests in man.

Our apparatus is simple, inexpensive and designed to record the incidence of coughing in six guinea-pigs at a time. They are housed in a sectionalized Perspex box sealed with a readily detachable common front fitted with a rubber gasket. Each individually sealed compartment connects with (a) an aerosol source, (b) a small Marie tambour (Palmer, Model No. 3012) writing on a smoked drum and (c) a wash bottle containing alkali to absorb escaping aerosol. A single glass nebulizer (Aglas S/376C) run at 5 lb/inch<sup>2</sup> may serve all six compartments through a six-way manifold without interference between recordings if the inlet to each compartment is suitably restricted (for example with 7 cm lengths of 2 mm diameter glass tubing).

In practice, coughs are counted over a 5 min period commencing 2.5 min after beginning to pass an aerosol of 20% citric acid. A total of thirty-six animals are used during the course of six runs, treatments and boxes being randomized. One or two groups serve as controls; their mean counts are usually 10–15. Provided animals of uniform weight and history are available, pre-calibration of their sensitivity is not recommended as was done for the ammonia exposure test of Winter & Flataker (1954). Some results using known drugs will be presented.

**REFERENCES**

- EDDY, N. B., FRIEBEL, H., HAHN, K.-J. & HALBACH, H. (1969). Codeine and its alternates for pain and cough relief. *Bull. Wld Hlth Org.*, **40**, 425–454.  
WINTER, C. A. & FLATAKER, L. (1954). Antitussive compounds: testing methods and results. *J. Pharmac. exp. Ther.*, **112**, 99–108.

**Effects of bethanidine on responses to ergotamine and noradrenaline**

M. FOLLENFANT and A. F. GREEN, *Pharmacology Laboratory, Wellcome Research Laboratories, Beckenham, Kent*

Sensitivity to intravenous ergotamine was determined in two situations of higher sensitivity to noradrenaline following treatment with bethanidine.

1. Responses of the nictitating membranes in each of four anaesthetized cats (pentobarbitone) were determined first to intravenous noradrenaline and then to ergotamine, using a logarithmically increasing series of doses. The interval between doses of 7–10 min allowed full recovery from the noradrenaline but not from the ergotamine responses. These cats were allowed to recover, given bethanidine (3 mg/kg subcutaneously) on each of 14 consecutive days and finally re-anaesthetized 18–24 h after the last dose for redetermination of nictitating membrane responses. Noradrenaline sensitivity increased about one hundredfold as in previous studies