

**The detection of vocal responses in small laboratory animals**

SIR,—The mechanical, thermal, electrical or chemical stimulation of nociceptors results in a reflex pain response which includes a vocal response (Woodworth & Sherrington, 1904; Guzman, Braun & Lim, 1962). The detection of this audible reaction is widely used as an index of pain in tests designed to assess the potency of analgesic drugs (Green, Young & Godfrey, 1951; Grewal, 1952; Carroll & Lim, 1960; Collier, Warner & Skerry, 1961; Nilsen, 1961; McKenzie & Beechey, 1962; Collins, Weeks & MacGregor, 1964; Dickerson, Engle & others, 1965; Winter & Flataker, 1965). However, although the response is clearly manifest in the dog, cat and guinea-pig, difficulties are encountered with its detection in small laboratory animals such as the rat or mouse. This problem is overcome with a simple and inexpensive amplification system, using readily available components.

The amplification system is placed in close proximity to the test animal, and consists of a miniature dynamic microphone, a microminiature amplifier module with a gain of 42 db and with a frequency response substantially flat up to 8 kc/sec and a balanced armature miniature ear piece. This innovation has been found to be of practical value in making analgesic tests, and may have additional applications in experiments in which a vocal response is taken as an end-point; such examples include the coughing reflex or a vocal response resulting from a conditioned fear response.

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