AN APPARATUS FOR DELIVERING PAIN SHOCK TO MONKEYS¹

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A procedure has been developed whereby pain shock can be delivered reliably to Squirrel Monkeys. A minimum of restraint is imposed since only the tail is motionless. The monkey is restrained in the seated position by the horizontal plate "A" and the movable waist lock "B", as well as the hinged side plate "C". The closeness of the rest bars, "D" to "A", prevents full extension of the legs at the hip and escape through the waist lock. No harmful effects have been noted during the past year in daily 6-hr sessions.

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Shock is delivered through two hinged metal plates, "E", that rest lightly on a shaved portion of the tail. Only the relevant portion of the tail is shaved. Electrode paste assures electrical contact even when a moderate amount of hair exists. A tail stock "F", and a tail trough (not shown) in the area of "G" are used to immobilize the tail. When shock has been delivered through a 50 K ohm series resistor, current flow varies less than 5% both within and between successive sessions. A 10K series resistor allowed variations up to 10-15%. Avoidance conditioning has been obtained by using a current intensity of 4 ma. When food-reinforced responses were concurrently punished by a 50 msec shock for each response, the rate of response reacted sensitively to relatively slight changes in punishment intensities (Fig. 1). Responses recovered from the introduction of mild punishment, as we have observed previously with pigeons. The rate of response is discernibly different for each of the punishment intensities from 20 to 60 volts.

Fig. 1. The restraining device and typical punishment record obtained when electric shock punishment is delivered through 10 K series resistor.