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### **A method for providing intermittent intravenous injections in unrestrained animals**

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As part of an investigation into the pharmacological effects of nicotine in relation to tobacco smoking, a method has been devised for intermittent intravenous administration of drugs to unrestrained Squirrel monkeys. The injector system is self contained and can be carried permanently, or occasionally, by the animal. The injector, constructed largely of perspex, contains a 20 ml chamber for solution for injection; the solution is maintained at a constant positive pressure by liquefied gas ('Arcton' 114—I.C.I. Ltd.) contained inside a rubber balloon within the chamber. A battery powered circuit operates a relay at pre-selected intervals (usually 30 or 60 sec) which momentarily opens a valve allowing a small volume (between 0.005-0.010 ml) of solution to be ejected from the device. The solution is injected into the animal via a silicone rubber cannula permanently implanted into an external jugular vein. The injector is fitted to an aluminium backplate attached to leather harness which is worn permanently by the animal.

The device has been used to investigate the effects of small doses of nicotine on the performance of trained monkeys on several operant conditioning schedules, but could be adapted to provide intermittent intravenous injections to other species of experimental animal.

### **Two dimensional immunoelectrophoresis of human serum proteins for the investigation of protein binding of drugs**

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Two dimensional immunoelectrophoresis has been used by Freeman & Pearson (1969) to study the binding of <sup>125</sup>I-thyroxine to human serum proteins. Using the method described by Clarke & Freeman (1968) the present study has extended this work to the investigation of the protein binding of a variety of drugs.

Pooled human serum (4-6  $\mu$ l) was separated on agarose strips by electrophoresis in barbitone buffer (pH 8.6, 0.03 M, ionic strength 0.035) with the addition of calcium lactate (1.8 mM). A second dimension electrophoresis, perpendicular to the first