CCLXIX. A SIMPLE APPARATUS FOR MILKING SMALL LABORATORY ANIMALS

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EARLIER this year Cox & Mueller [1937] described a machine for milking rats, which was driven by dry cells, a water filter pump and a 220 V. A.C. line; their circuit made use of contacts in a mercury U-tube and of solenoids. We proposed to construct a similar apparatus, but it occurred to us in the course of the work that the design could be simplified. As a result the machine described below has been built. It works very satisfactorily.¹

The apparatus (Fig. 1) consists of a piston type valve (*a*) which is worked by a pneumatic mechanism (*b*) similar to that used to propel the blade of a wind-screen wiper, a dial vacuum gauge (*c*), two control valves (*d* and *d*₁) and a teat

Fig. 1. Diagrammatic drawing of milking apparatus.

cup (*f*). Power is obtained from a laboratory vacuum pump: to this pump is connected a reservoir (*e*) 1 litre capacity; the latter is also connected to the two valves, the first of which (*d*) controls the speed of valve (*a*) and the second (*d*₁) the amount of vacuum to the teat cup. These are air valves as fitted to household radiators.

An arm (*g*) actuated by the wiper mechanism moves two pistons in valve (*a*) to which are connected two tubes, one (*h*) to the controlling valve (*d*₁) the other (*j*) to the teat cup (*f*) and vacuum gauge (*c*). The tubes are so connected to valve (*a*) that towards one end of the stroke the teat cup is connected to atmosphere and towards the other end of the stroke to vacuum. The apparatus could be made to work with only one piston but two are used to equalize atmospheric pressure. The teat cup and milk-receiving vessel are as described by Cox & Mueller [1937] and consist of a catheter of suitable size and a small graduated centrifuge tube.

To use the apparatus the pump is started, the teat cup closed with the fingers, the two control valves adjusted to give the optimum pulsation frequency and

¹ The apparatus can be obtained from Messrs Cope and Cope, Ltd., 100 King's Road, Reading.

amount of vacuum on the teat cup. When these have been set it is not necessary to adjust them again provided that the displacement of the pump does not alter owing to power fluctuations etc.

With rats we have followed the conditions of milking as described by Cox & Mueller [1937], i.e. 25–40 pulsations per min. and 7 in. vacuum, and have found them quite satisfactory.

SUMMARY

A milking machine for milking small laboratory animals is described.

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REFERENCE

Cox & Mueller (1937). *J. Nutrit.* 13, 249.