CLXIV. A NOTE ON THE TECHNIQUE OF ASSAY- ING POSTERIOR PITUITARY EXTRACTS FOR OXYTOMIC ACTIVITY.

By JOHN MASSON GULLAND.

From the Biochemical Department, Lister Institute, London.

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THE assay of posterior pituitary extracts for oxytomic activity by the guinea-pig uterus method necessitates the use of carefully segregated, young, virgin guinea-pigs, of which the weights lie between relatively close limits. It is well known that in spite of every care and precaution the uterine horns of some apparently suitable guinea-pigs prove unsatisfactory for making the assay. From these and other considerations, it is desirable to record any procedure which reduces the wastage of potentially suitable animals.

It is not generally realised that uterine horns may be preserved in Ringer solution. From the experience of the many oxytomic assays which have been made in this laboratory during the past 18 months it is now the practice to remove both horns from every guinea-pig and to place them separately in plugged, sterile test-tubes containing Ringer solution (5–10 cc.) of the same composition as is used in the testing-bath (for composition, see Burn [1928]). The tubes are then placed in the cold store at 0–1° until the horn is to be used. It has not been customary to allow horns to remain at 0° for longer than 30 hours, although occasionally satisfactory contractions have been obtained with older preparations. During the assay horns treated as described above completely resemble those which are placed in the bath immediately after their removal from the animal.

By following this procedure both horns of every suitable guinea-pig may be utilised when only one testing bath is in use. The saving in animals is obvious.

The following modification of the standard apparatus [Burn and Dale, 1922; Burn, 1928] simplifies the assay of oxytomic activity. The outlet of the bath is joined by a sleeve of rubber tubing (see Fig. 1) to a two-way glass tap; one limb of this (*B*) can be closed by a pinch-clip and is also fitted with a side-tube (*C*) as close to the barrel of the tap as possible. Warm Ringer solution from the reservoir enters at (*C*) by a siphon which has neither tap nor pinch-clip.

The following sequence is observed for each contraction. (1) The bath is emptied through the outlet (*A*), and simultaneously the siphon from the reservoir is flushed out with warm Ringer solution by opening the pinch-clip; (2) the pinch-clip being closed, the bath is filled by turning the barrel of the glass tap through 180°, and then through 90° to close the tap.

Fig. 1.

The advantages of this modification are (*a*) simplicity and speed of manipulation, and (*b*) the avoidance of a "dead" space in the tube beneath the bath; this space, if present, is not flushed out with fresh Ringer solution, and thus spent Ringer solution and pituitary extract are inevitably carried back into the bath by the fresh supply of Ringer solution from the reservoir.

REFERENCES.

- Burn (1928). *Methods of biological assay*. (Oxford Medical Publ.)
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