rapid and accurate procedure for handling moisture calculations.

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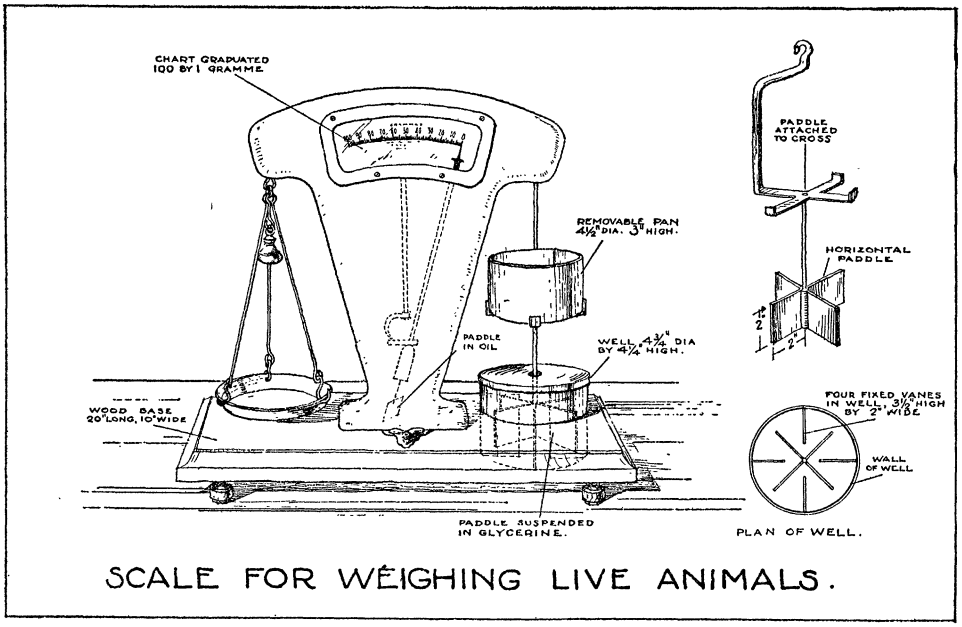
A BALANCE FOR LIVE ANIMALS

CERTAIN experiments in this laboratory have necessitated recording every week the weight of large numbers of rats. A spring balance was found to be unsatisfactory for two reasons, it does not read correctly over a range of 0 to 400 grams, and the movements of a rat on the pan cause such wide oscillations of the pointer that accurate reading is impossible. An ordinary beam balance has the additional disadvantages of being slow in operation because of the time required to manipulate weights, and of being even more affected than the spring balance by the movements of the rat.

The addition of a simple attachment to a commercial direct-reading beam balance gave such satisfactory results that we believe other workers may be glad to have a description of the device. The balance is one of those commercial balances of 1 kilo capacity, reading directly from 0 to 100 grams in one gram intervals, in which the oscillations of the beam are damped by a paddle attachment immersed in oil. Such a balance is most useful for general laboratory purposes, and even for weighing animals. Its performance may be considerably improved, however, by additional damping to overcome the oscillations caused by movements of the animal on the scale pan. We have achieved this by attaching to the underside of the scale-pan a paddle immersed in oil. This successfully damps the sideways or rotatory oscillations. A cup-shaped pan was adopted because rats move about in it very much less than on the ordinary scale-pan. The oscillations of the pointer due to movements of a rat are in this way practically eliminated.

As many as three hundred weighings of rats, accurate to within 1 gram, may, with this apparatus, be made easily in one hour.



SCALE FOR WEIGHING LIVE ANIMALS.

Messrs. W. and T. Avery, of Toronto, who are the makers of the commercial balance which we have adapted, were good enough to construct the additional attachments for us.

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SPECIAL ARTICLES

THE CHEMICAL STUDY OF INSULIN[1]

CRYSTALLINE insulin was first prepared by Abel in 1926.[2] Since then it has been of the greatest interest to ascertain the chemical structure of this substance, which plays so important a rôle in carbohydrate

[1] No. 13 of the series "Studies on Crystalline Insulin." Investigations carried out under grants from the Carnegie Corporation of New York and the Eli Lilly Company, Indianapolis, Indiana.

[2] J. J. Abel, *Proc. Nat. Acad. Sci.*, 12, No. 2, 132, 1926; Abel, Geiling, Rouiller, Bell and Wintersteiner, *J. Pharmacol. and Exp. Therap.*, 31, 65, 1926.