sodium chloride solution or with distilled water, and the one prepared according to the directions of Armstrong and Horton seems to be more active in decomposing urea than the alcoholic extract prepared according to the method of Folin and Wu. The former recovers 99 per cent of urea while the latter recovers only 92 per cent. The one prepared with 10 per cent sodium chloride solution gives nearly the same result as the Folin and Wu urease solution, which may be explained by the depressing effect of sodium ion.[4]

An alcoholic extract of Chinese soy bean meal (yellow) was prepared according to the method of Folin and Wu and the activity of the enzyme urease was compared with that of a similar preparation of Jack bean meal. The fresh urease solutions from these two sources are efficient in decomposing urea to the same extent. After keeping them in the refrigerator for a week the activity of these two preparations is not diminished, but at the end of two weeks the former is able to decompose only half as much urea as before and about two-thirds as much urea as the Jack bean urease does, while the latter deteriorates slightly in this interval.

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A convenient apparatus for the determination of ferment action.

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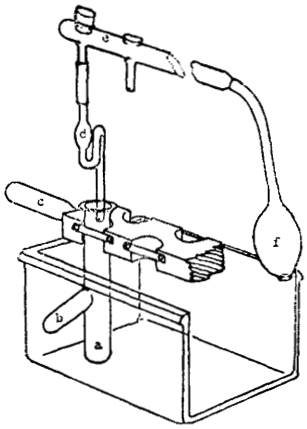
In determinations of ferment action it is first of importance, that both ferment and substrate be brought to the same temperature before mixing. Secondly, the mixing of any series of tubes containing ferment and substrate should be carried out simultaneously. For this purpose, a test tube with a side arm (see figure) was constructed, so that (a) could contain the substrate and (b) the ferment. A series of these tubes is filled with the appropriate solutions, and placed in the holder (c), which ena-

[4] Onodera, N., *Biochem. J.*, 1915, ix, 575.



bles one to handle the entire series of tubes while in the water bath. When the desired temperature has been attained, the two components in every tube may be mixed at once by simply rotating the handle of (c).

In certain methods it is of importance that the non-digested substrate in the entire series of tubes be precipitated at the same time. The parts (d, e, f) are available for this purpose. Through the opening in (e) a sufficient amount of the precipitating-fluid is introduced with a pipette into the trap-tube (d) after which the openings in (e) are tightly stoppered. The end of tube (d) is introduced into the mouth of the test tube (a, b). At the appropriate time, pressure on the bulb (f), immediately followed by rotation of the handle (c), will effect immediate and simultaneous precipitation in all tubes.

In determinations of the trypsin-inhibiting power of serum the v. Bergmann-Gross-Fuld Method[1, 2] it is important that the trypsin should be placed in one limb of the test tube (a, b) and the substrate and serum in the other; if trypsin and serum are at first placed together, large errors may ensue in consequence of the trypsin being "fixed" by the serum in amounts depending upon the length of time during which the two substances are in contact before exposure to the substrate.

[1] v. Bergmann und Bamberg, *Berl. klin. Woch.*, 1908, 1396; u. Meyer, *ibid.*, 1673.

[2] Hedin, *J. Physiol.*, 1905, xxxii, 390; *Zeitschr. f. physiol. Chem.*, 1906-7, l, 497.