Calculated and Observed Dead-weight and Length in Prenatal Life.
Empirical formula:
Wt. (gm.) $=$ [0.26 Lth. (cm.)]$^{3.108}$ + 4.6.

Length (cm.)		Weight (gm.)		Deviation of calculated number from observed values		
Range	Mean	Observed	Calculated	Absolute (gm.)	Relative (per cent)	Number of cases
5-10	7.7	13.05	13.08	+0.03	+0.19	33
10-15	12.3	40.54	41.68	+1.14	+2.82	68
15-20	17.3	114.61	111.65	—2.96	—2.58	78
20-25	22.3	238.71	241.24	+2.53	+1.06	117
25-30	27.2	405.08	441.49	+36.41	+8.99	143
30-35	32.3	750.31	749.91	—0.40	—0.05	194
35-40	37.2	1163.16	1160.67	—2.49	—0.21	328
40-45	42.2	1758.39	1715.51	—42.88	—2.44	414
45-50	46.9	2389.17	2380.03	—9.14	—0.38	456
50-55	51.7	3204.89	3220.47	+15.58	+0.49	371
		Sum of deviations		113.56	19.21	2202
		Unweighted mean deviation		11.36	1.92	
		Weighted mean deviation		15.63	1.42	

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The purification of jack bean urease.

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Thirty per cent alcohol extracts of jack bean meal contain the enzymes urease and amylase associated with the globulins canavalin and concanavalin A and B, albumin, proteose, pentose and hexose carbohydrates and a yellow coloring matter. On cooling the alcoholic extract to —5° C. the urease is almost entirely precipitated and can readily be centrifuged off. This procedure if repeated separates the urease from everything but the three globulins. It is best, however, to treat the precipitated urease with

distilled water when the concanavalin B will crystallize out of solution completely. The material is now centrifuged and after the addition of a considerable amount of neutral potassium phosphate solution and alcohol to 30 per cent is chilled and centrifuged a second time. The urease is largely precipitated but not so completely as the first time. The precipitate is dissolved in distilled water, seeded with a few srystals of concanavalin A and allowed to stand for several days in the ice chest. Eventually all of the concanavalin A will crystallize out. After centrifuging neutral phosphates are added and alcohol to 30 per cent. The material is allowed to stand for several days in the ice chest. The urease slowly becomes insoluble. This reaction is accompanied by a diminution in activity which we believe is due merely to the decrease in dispersion. The insoluble urease can be centrifuged off and washed many times with phosphates and with distilled water. Prepared in this manner urease is almost completely insoluble in salt solution and contains about 16 per cent of nitrogen. It gives all of the protein color reactions and has an activity of 15000 units per gram of protein. The urease is probably not in a state of adsorption for it cannot be extracted by neutral phosphate solution. The material is not composed of canavalin for canavalin is not denaturized on standing in dilute alcohol. Strong trypsin solutions dissolve insoluble urease at room temperature and in doing so the activity of the urease is a little more than doubled. This effect may be due to the increased dispersion. Urease has been prepared several times by adsorption methods with an activity of about 30000 units per gram of protein present. This seems to be the limit of the process of purification.

Insoluble urease, weight for weight, is 140 times more active than the original meal and is a comparatively stable substance. To the best of our present knowledge it is an individual protein.