

ment lasted 145 days during which time the rats remained well and active and there were none of the usual signs of vitamin deficiency. There was progressive weight loss.

In the majority of the animals there was a definite fall in serum protein concentration and values as low as 4.28, 4.44, 4.72 were obtained with some of the groups (control level 6.30-6.50 gm. %). Five rats among the whole group of 88 developed gross watery effusions into the serous cavities and in one of these animals the serum protein concentration was only 2.99 gm. %. It is of interest that the serum protein level bore no close relation to the *duration* of carrot feeding. Serum protein from a group of rats on the 61st day averaged 4.44 gm. %, from another group on the 82d day 5.06 gm. % and from the final group on the 145th day 4.28 gm. %.

The mechanism of the lowering of serum protein concentration after carrot feeding appears to be extremely complex. Neither lack of protein alone nor lack of vitamins seem to offer a complete explanation.

7154 C

Absence of Compensatory Hypertrophy of Cowper's Glands in the Albino Rat.

H. E. SHIH.* (Introduced by T. Addis.)

From the Department of Medicine, Stanford University Medical School, San Francisco.

Compensatory hypertrophy may follow a deficiency in the total cell mass induced by operative removal of one of the paired organs. The process is manifested in some but not in all paired organs. The present study was undertaken because no data are available with respect to compensatory hypertrophy in Cowper's glands.

Albino rats of 250 days of age were used. The age of the rat excluded the possible influence of growth on the size of the gland. The stimulus to compensatory hypertrophy was given by the removal of one Cowper's gland from each rat. Under ether anesthesia and through the perineal route, alternate glands were removed from each successive rat. Immediately after removal each gland was freed from any adherent fat or tissue and weighed to within a milligram on a torsion balance. The weights of these glands were taken as controls.

* Peiping Union Medical College Fellow.

Twenty days was arbitrarily chosen as the period of time during which to determine the ability of the remaining Cowper's gland to undergo compensatory hypertrophy. At the end of this period the rats were etherized and the remaining Cowper's glands removed and carefully weighed as before.

The results are given in Table I. These data show that Cowper's glands do not possess the capacity for compensatory hypertrophy which has been demonstrated in some other organs.

TABLE I.

Control						Experimental					
Wt. of removed Cowper's gland at time of operation			Wt. of remaining Cowper's gland 20 days after operation			Wt. of removed Cowper's gland at time of operation			Wt. of remaining Cowper's gland 20 days after operation		
Rat No.	Right gland	Wt. of C. G. per 100 sq. cm. body surface	Rat No.	Left gland	Wt. of C. G. per 100 sq. cm. body surface	Rat No.	Right gland	Wt. of C. G. per 100 sq. cm. body surface	Rat No.	Left gland	Wt. of C. G. per 100 sq. cm. body surface
1	29	5.0	2	30	5.3	2	26	4.6	1	28	4.8
3	26	4.9	4	25	4.2	4	30	5.0	3	28	5.3
5	27	5.5	6	22	4.2	6	15	2.8	5	30	6.1
7	28	4.4	8	34	5.8	8	30	5.1	7	30	4.8
9	28	5.1	10	32	5.2	10	29	6.3	9	28	5.1
11	42	7.0	12	32	5.5	12	28	4.8	11	31	5.2
13	34	5.9	14	31	5.0	14	28	4.6	13	40	7.0
15	32	5.8	16	34	6.2	16	36	6.5	15	32	5.8
17	37	5.8	18	28	5.1	18	28	5.1	17	30	5.5
19	37	6.9	20	36	6.8	20	39	7.3	19	37	6.9
21	34	5.7	22	43	7.9	22	39	7.2	21	30	5.0
23	34	6.0	24	33	5.9	24	32	5.7	23	48	8.5
25	34	6.1	26	42	7.6	26	43	7.8	25	36	6.5
27	38	6.5	28	29	5.7	28	30	5.1	27	44	7.5
29	33	6.2	30	44	7.9	30	29	5.2	29	26	4.9
31	27	4.6	32	24	4.1	32	28	4.8	31	38	6.5
33	24	4.5	34	30	5.7	34	30	5.7	33	25	4.6
35	36	6.9	36	36	6.4	36	28	5.0	35	28	5.3
37	38	7.2	38	28	6.4	38	28	5.1	37	26	5.0
Aver.		5.79			5.84	Aver.		5.46			5.80
Aver. of right and left glands						Control			Experimental		
Standard deviation of aver.						5.81			5.63		
Probable error of aver.						0.160			0.158		
Standard deviation of difference between the two averages						0.106			0.108		
									0.151		