licize certain noteworthy plants rarely grown in America at present. Then, too, some mutual system of dissemination of propagating material will be considered, together with plans for certain cooperative hardiness tests. It will be seen that these ambitious plans will take much time to complete, but certainly form the basis on which there can well be a firmer bond between the botanical gardens and arboretums of America.

The officers of this new association are: *Director,* C. Stuart Gager, Brooklyn Botanic Garden, Brooklyn, New York; *Director,* Henry Teuscher, Montreal Botanical Garden, Montreal, Canada; *Chairman,* Donald Wyman, Arnold Arboretum, Jamaica Plain, Massachusetts; *Vice-chairman,* Henry T. Skinner, Morris Arboretum, Chestnut Hill, Pennsylvania; and *Secretary,* C. E. Godshalk, Morton Arboretum, Lisle, Illinois.

DONALD WYMAN,
Chairman

SPECIAL ARTICLES

DIETARY REQUIREMENTS FOR FERTILITY AND LACTATION. XXX. ROLE OF p-AMINOBENZOIC ACID AND INOSITOL IN LACTATION[1]

PRELIMINARY REPORT

RECENTLY I have reported[2] that such large daily doses as 120 μg thiamine, 120 μg riboflavin, 120 μg pyridoxine, 15 mg choline chloride, 600 μg calcium pantothenate, and "W" factor from 1 gm liver extracts (nicotinic acid having been provided in the ration), as a source of the vitamin B complex, resulted in complete failure in lactation of the albino rat, the infant mortality being 95 to 100 per cent. Apparently some dietary factor was missing that is essential for lactation. The missing factor, tentatively designated as "Bx," was found in rice polishings, defatted wheat embryo, dried grass and brewer's yeast, but most abundant in liver and rice bran extracts. A potent concentrate was prepared from the residue of the "W" factor extract by adsorption on fuller's earth. The "Bx" factor was found in the filtrate. On the daily allowance of this concentrate, which was the equivalent of 2 gm of the original liver extracts, 5 mothers successfully weaned 33 out of 34 young given them to rear. The litter of one mother, however, reached maintenance on the 15th day of lactation and maintenance persisted for 7 days. Another litter showed loss of weight on the 17th day and maintenance on the succeeding 3 days. The recent reports of Ansbacher[3] that p-aminobenzoic acid is a chromotrichia factor for the rat, and that of Wooley[4] that inositol is an antialopecia factor for the mouse; also, the report of Pavcek and Baum[5] that inositol is an antispectacled and growth-promoting factor for the rat warranted the trial of these substances. The results with daily doses of 15 mg p-aminobenzoic acid were negative. A daily dose of 30 mg inositol resulted in a prompt response in the case of the first mother, *i.e.,* a gain of 16 gm in 24 hours, and 33 gm in 48 hours in the weights of the litter, and the litter was weaned in 8 days subsequent to the inositol administration. The response to the inositol administration in the case of the second mother was similar.

It was then decided to attempt to rear nursing young of the albino rat on only known pure chemical substances of the vitamin B complex. For this reason the "W" factor was removed from the females at mating. The experiments were conducted in three series, and the following daily additions to the vitamin B complex mixture were given to the mothers during pregnancy and lactation: (1) 15 mg p-aminobenzoic acid; (2) 30 mg inositol; (3) 15 mg p-aminobenzoic acid and 30 mg inositol. The results obtained to date on reproduction and lactation are as follows: Series 1: Out of 92 young born there were only 3 dead, or 3.3 per cent. stillbirths. Out of 53 young given 9 mothers to rear, 32 were weaned. Series 2: Out of 5 litters, 2 were born dead. Two mothers failed in lactation with litters of 6 each. One mother weaned 5 young. Per cent. of stillbirths was 30. Series 3: Out of 46 young born to 5 mothers there was only one stillbirth. Out of 28 young given 5 mothers to rear, 22 were weaned.

It appears from the character of results obtained in this investigation that p-aminobenzoic acid should be added as an essential dietary factor for the rat, as evidenced from studies on reproduction and lactation. It would also seem from the data submitted that the "Bx" factor either contains p-aminobenzoic acid or a substance of similar physiological properties. Further experiments will determine whether inositol is also to be considered a dietary essential for lactation and reproduction of the rat.

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