Summary. Two-day-old rhesus monkeys, restrained and rotated for one hour, exhibited elevations of 25.8 ± 3.3 (S.E.) μg% in plasma nonconjugated 17-OHCS. This sizable and consistent increase was 44% as great as the one hour increase in plasma nonconjugated 17-OHCS following ACTH, suggesting either that the restraint and rotation was not sufficiently stressful or that the infant CNS-hypophyseal axis was not sufficiently developed to stimulate fully the adrenal cortex.

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Studies of Connective Tissue Permeability in Pregnant Rats.* (30119)

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Skin "permeability" appears to be increased in patients afflicted with rheumatoid arthritis(1). Since remissions of this disease are known to occur during pregnancy, seemingly related to altered steroid concentrations(2), it appeared interesting to examine the effect of pregnancy on dermal connective tissue permeability. Previous studies on hypophysectomized rats and adrenalectomized rats have already indicated that connective tissue permeability is in some way dependent or regulated by pituitary and adrenal hormones(3).

The experiments were performed on white rats of the CFN strain. The animals were 2 months old and impregnated on the same day. For measurements of connective tissue permeability a technique based on the intradermal diffusion of Evans blue dye was used (4,5). Since earlier studies showed that the permeability enhancing effect of L-ascorbic acid was inhibited in hypophysectomized rats as compared to animals with glands intact, the effect of this vitamin was tested on pregnant and nonpregnant (control) rats.

As in previous experiments(4,5,6), 0.05 ml of a 4% solution of Evans blue dye dissolved in saline (pH 7.3), with and without ascorbic acid (1 mg/ml), was injected intradermally into the abdomen of the animals. Three injections were made for dye alone (control) and 3 for ascorbic acid. For each animal, the areas of the spots produced were traced onto semi-transparent paper 30, 60, 120 and 180 minutes after injection. For pregnant animals, the permeability was measured on the 6th, 12th, and 18th day of gestation. The animals were then sacrificed and pregnancy was verified.

The results are given in Table I. The areas of the spots are expressed in mm^2. They represent the average values obtained on each group of animals at different periods. Since 3 spots were obtained on each animal with dye alone and 3 others with ascorbic acid, the results are thrice the number of animals used for the test.

The results show no difference in the rate of spread between control and pregnant animals (Table I). For dye alone, the areas of spots were the same in all groups. The permeability enhancing effect of ascorbic acid was also the same in both pregnant and control groups. Ascorbic acid as well as the dye alone showed no significant change in spread area with respect to time in both pregnant and control animals.

In conclusion, dermal connective tissue permeability, when tested by the spreading method, is not modified in pregnancy.

Summary. Connective tissue permeability was studied in pregnant and non-pregnant

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TABLE I. Effect of Evans Blue and L-Ascorbic Acid (mg/ml) in Saline (pH 7.3) on Rate of Intradermal Diffusion in Pregnant and Control Rats.

		Avg spread area (mm sq) with:								Effect of ascorbic acid (% of increase)			
		Dye alone at				Ascorbic acid at							
Avg body wt* (g)	Day of pregnancy	30	60	120	180	30	60	120	180	30	60	120	180
		min				min				min			
210	Control group	125†	145	162	174	154†	173	193	206	20	19	19	15
210	6	126	147	177	197	145	168	196	216	16	14	12	10
230	12	138	151	169	185	158	168	192	210	14	11	13	14
280	18	134	150	163	—	158	173	188	—	18	16	15	12

* Each group contains 6 ♀ rats.
† The standard deviations for various groups and times ranged between ±16 and ±24.

(control) rats by measuring the intradermal infusion rate of an Evans blue solution, alone and in combination with ascorbic acid. Dermal connective tissue permeability when tested by this method was not altered by pregnancy.

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Body and Muscle Weight Depressing Effects and Thymolytic Potencies of Glucocorticoids in the Rat. (30120)

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It is well known that the naturally occurring hormones, ACTH and cortisone, when administered at high doses for extended periods retard or arrest growth of the rabbit(1-4), monkey(5), mouse(6), rat(7-14), chick or chick embryo(15-18) and man(19,20). It has been shown that bone and bone processes are adversely affected(11,12,17,18,21-23) and that various types of degenerative changes take place in muscle tissue(1-4). When hormonal treatment is discontinued a return to normal of all modalities studied occurs(3,4,13,24,25).

In contrast, reports dealing with the effects of prolonged treatment with the newer glucocorticoids in laboratory animals are not as numerous. The effects on body weight, bone and related processes have been studied in the immature rat with triamcinolone (16α-hydroxy, 9α-fluoroprednisolone)(26,27), prednisolone (Δ^1-hydrocortisone)(26) and methylprednisolone (6α-methylprednisolone)(28). Oral administration of prednisolone or triamcinolone at doses of 1.0 and 1.1 mg/rat/day, respectively, for 3 weeks, inhibits growth as reflected by decreases in body weight and length, tibial length and epiphysial cartilage width(26,27). Subcutaneous administration of methylprednisolone produces similar effects on body weights at doses of 1.0 mg/rat/day for 2 weeks(28). In the former studies(26, 27), the authors state that the diminished food intake can account only in part for the observed changes, and that discontinuance of steroid treatment is followed by a return to normal of all parameters within 3 weeks.