two weeks after castration. However, Biddulph, Meyer and Gumbreck(12) have shown that following simultaneous parabiosis and castration of one member of the pair the increased production of gonadotrophic hormone is easily measurable by the increased weight of the ovaries of the intact parabiont before the 11th day of parabiosis. If the mouse behaves the same as the rat, this would suggest that the increase in gonadotrophins in the castrate is somewhat inhibited by the presence of the ovarian graft in the spleen. With the increased stimulation of the ovaries of the intact member and the absence of the transfer of estrogen to the other member of a pair(13), the uterine responses are what would be expected.

The effects measured during the first two weeks of parabiosis may not be completely free from the influence of factors inherent in the operative procedure, although the findings of Biddulph, Meyer and Gumbreck(12) showed that fewer than 13% of the ovaries of intact female rats in parabiosis with castrates (both operations performed simultaneously) failed to hypertrophy by the 11th day of parabiosis. However, the absence of any significant ovarian hypertrophy in mice of Group 1, despite an average duration of 17 days in parabiosis, renders the 43% increase in ovarian weight that occurred in Group 2 in an average time of 11 days highly significant. It is realized that these experiments measure only the beginning of the gonad-hypophyseal imbalance present in a castrate bearing an ovarian graft in the spleen and that long term experiments in parabiosis are essential for its full elucidation.

Summary. Evidence of an increased rate of production of gonadotrophins in castrated mice with intrasplenic ovarian grafts has been obtained by means of parabiotic experiments. The ovaries of normal mice placed in parabiosis with female littermates that had been castrated and had an ovary grafted into the spleen from 30 to 50 days previously averaged 37% heavier than the corresponding ovaries when parabiosis was performed simultaneously with the other operations. The duration of parabiosis ranged from 9 to 13 and from 11 to 35 days, in the 2 groups, averaging 11 days in the former and 17 days in the latter.

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Inhibitory Effect of Cortisone on Anaphylaxis in the Mouse.* (18138)

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Preliminary studies of electrolyte changes in the plasma and tissues of mice during anaphylaxis indicated that profound primary disturbances in the intracellular components of sensitized tissues follow the rapid union of antigen and antibody and that these changes, in turn, may cause the secondary hypovolemia and the shock-like circulatory collapse which follow(1).

The nature of these chemical alterations suggested to us that they might be inhibited, at least in part, by gluco-corticoid compounds. Should this be true, it would be of considerable importance. The question is of further interest inasmuch as it is now known that

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1. Fox, C. L., Jr. and Nelson, C. T., unpublished data.

neither ACTH nor Cortisone (17-hydroxy-11-dehydrocorticosterone) can influence the course of anaphylactic shock in the histamine-susceptible guinea pig(2,3). The following investigation was undertaken in order to study the effect of Cortisone on anaphylactic shock in the mouse which, in contrast to the guinea pig, is relatively resistant to injected doses of histamine.

Methods. Male and female Swiss mice weighing between 20-30 g were sensitized by intraperitoneal injections of 1 cc of undiluted normal horse serum every second day for a total of 4 cc. This is the method previously employed by Mayer and Brousseau(4). Eleven to 15 days after the last sensitizing injection each of these animals received 1 cc (or 4% of the body weight—whichever was less) of the same antigen by rapid injection into a tail vein.† The animals were divided at random into two groups: Group I consisting of 34 control mice, and Group II comprising 42 Cortisone-treated animals. The mice in Group II received a single intramuscular injection of Cortisone (Merck) into the thigh 18 hours prior to the administration of the shocking dose of antigen. The amounts of Cortisone employed ranged from 0.75 mg to 3.0 mg per animal. After injection of the challenging dose of antigen the animals were observed closely for the appearance of the signs of anaphylaxis. Anaphylactic shock in the mice was characterized initially by sluggishness, mild dyspnea, slight cyanosis, and occasionally, scratching of the nose. If the signs did not progress beyond this point the anaphylactic shock was graded as mild. As the shock deepened, the mice exhibited severe dyspnea, marked cyanosis, wabbling gait, loss of sphincter control, and ultimately, weakness of the extremities, convulsions, cycling movements of the legs and death. In animals showing this degree of anaphylaxis, the shock was graded as severe if they did not die, and fatal if death occurred. The signs of anaphylaxis did not appear in less than 4 minutes and did not terminate in death in less than 10 minutes, or more than 49 minutes.

TABLE I. Inhibitory Effect of Cortisone on Anaphylactic Shock in the Mouse.

	Cortisone, mg	No. sensitized	Symptoms of anaphylactic shock: None	Mild	Severe	Fatal	% showing fatal shock
			Group I				
Sensitized controls	0	34	0	0	6	28	82
			Group II				
Sensitized cortisone-treated	3	22	12	10	0	0	0
	1.5	10	4	5	0	1	10
	0.75	10	0	4	3	3	30

Results. The results of these experiments are summarized in Table I. The control animals in Group I without exception showed signs of severe anaphylactic shock and in 28 of 34 animals (82%) the shock was fatal. On the other hand, in Group II, the Cortisone-treated group, none of the 22 animals receiving 3.0 mg of Cortisone exhibited severe or fatal anaphylactic shock. No more than mild symptoms of anaphylaxis were observed in any of these animals and, indeed, in 12 of them not even mild shock supervened. Mice which received smaller amounts of Cortisone (*i.e.* 0.75 mg or 1.5 mg) also showed a high degree of protection from severe anaphylaxis. In these animals, however, protection was not complete and in 4 of 20, fatal anaphylactic shock occurred. These results indicate that Cortisone, administered in the dosage and under the conditions of this experiment, has an inhibitory effect on anaphylactic shock in mice.

As might be expected, the administration of a single dose of Cortisone afforded only temporary protection against anaphylactic shock. Mice in the Cortisone-treated group which survived the challenging dose of antigen were given another shocking dose of undiluted normal horse serum intravenously 11 days later. In all instances the animals

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† This amount of undiluted normal horse serum given intravenously produced no toxic manifestations in 32 normal (unsensitized) mice.

showed signs of anaphylactic shock and the incidence of fatalities (78%) did not differ significantly from that observed in the original sensitized control group (Group I).

The duration of the inhibitory effect of a single intramuscular injection of Cortisone was tested in additional groups of sensitized mice. Complete protection from fatal anaphylaxis was observed as early as 6 hours after the administration of 3.0 mg of Cortisone and this persisted for at least 48 hours. After 96 hours, however, the protective effect had largely been dissipated since at this point the challenging dose of antigen produced fatal anaphylactic shock in approximately 40% of the animals.

Summary. The administration of Cortisone to 42 sensitized mice 18 hours before the intravenous injection of a challenging dose of antigen prevented fatal anaphylactic shock in 38 animals. In contrast, 28 of 34 sensitized but unprotected control mice died in anaphylactic shock.

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Effect of Testosterone Propionate on Total Urinary Nitrogen Excretion of the Rat Following Burns.* (18139)

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Trauma is frequently followed by an increased total urinary nitrogen excretion(1-4). It is the consensus that this increased excretion of nitrogen represents increased tissue breakdown or failure of tissue formation with subsequent signs and symptoms of protein depletion. A substance which would promote tissue synthesis might be of value to prevent or ameliorate the accompaniments of protein depletion in damaged individuals. Testosterone and related compounds are substances which have been shown to be capable of lowering urinary nitrogen excretion(5-7) and causing muscle tissue and organ hypertrophy with concomitant increase in total protein and water content of these tissues(8-10).

In view of these facts it was considered important to determine the effect of testosterone propionate on the urinary nitrogen excretion following burns. It was also hoped that such a study might aid in the elucidation of the mechanism of the metabolic re-

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