anti-BSA protein per ml serum. The total amount of circulating antibody would have been about 420 mg in a one-kg chicken. To study passive anaphylaxis, one would have to inject several times this amount to secure an antibody titer of 7 mg antibody/ml serum one or 2 days after injection. Guinea pigs can be passively sensitized, with fatal anaphylaxis, with 0.75 mg of antibody per kg body weight, and circulating antibodies are no longer detected when challenged 2 days later(10). From the above comparison, the difference in susceptibility between guinea pig and chicken to passive sensitization and the difference in histamine sensitivity of the 2 animals appear to be of similar magnitude. Further study on the passive anaphylaxis of the 2 animals is desirable to clarify this point.

Summary. Tested by the Schultz-Dale Technic, chicken antibody failed to sensitize the chicken or the guinea pig intestine. Rabbit antibody sensitized guinea pig intestine but failed to sensitize chicken intestine. The minimum doses of histamine and acetylcholine required for contraction of the chicken intestine were considerably larger than those required for guinea pig intestine.

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Effect of 6-Mercaptopurine on Homograft Reaction in Rats. (26537)

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Attempts at modification of the immune response to skin homografts by means of physical agents such as x-irradiation, cortisone and nitrogen mustard have been relatively unsuccessful. Recently, Schwartz and his associates(1-3) suppressed the immune response to soluble foreign protein in rabbits with 3 to 6 mg/kg/day of the antimetabolite 6-mercaptopurine (6-MP). Meeker and his associates(4) reported a significant increase in skin homograft survival in rabbits by using 6 to 12 mg/kg/day of 6-MP administered for relatively short periods. However, Hubay *et al.*(5), using doses up to 24 mg/kg/day in rats for short periods of time, found no prolongation of homograft survival. The present study was designed to evaluate further the effect of 6-MP on the homograft reaction in rats by increasing the dosage to the maximum tolerated level and by long term administration of the drug prior to grafting.

Method. Skin homograft survival was studied in 241 young male rats of the Long-Evans strain which were given freshly prepared 6-MP* intraperitoneally. Twenty additional rats were used as controls. The injection period before homografting varied between 0 and 174 days (Table 1). The drug was administered after grafting until the homograft had been completely destroyed. The rats were divided into 12 groups and were given 6-MP in dosages ranging from 20 to

* 6-Mercaptopurine was kindly supplied by Dr. Donald S. Searle, Burroughs-Wellcome and Co., Inc.

TABLE I. 6-Mercaptopurine Dosage and Homograft Survival in Young Male Rats.

Drug dosage (3× per wk), mg/kg	No. of rats	Inj. period in days before grafting	Graft survival in days
Controls	20		11 (10–16)*
20	24	16 (10– 18)*	11 (10–15)
30	42	121 (119–125)	12 (10–16)
40	39	140 (88–174)	12 (10–16)
60	14	29 —	12 (10–16)
80	14	30 —	13 (11–17)
100	14	17 —	12 (10–16)
150	16	10 —	16 (11–39)
200	16	10 —	15 (11–23)
250	31	5 (3–6)	16 (11–46)
300	15	4 —	15 (11–25)
350	16	0 0	— —

* Mean and (range).

350 mg/kg 3 times per week. Full thickness, suprapannicular skin grafts, 1.2 cm in diameter, were taken with a skin punch especially adapted for rats(6). Duration of skin homograft survival was determined by its gross and microscopic appearance. Onset of the homograft reaction was detectable by the appearance of edema, slight dessication with brownish discoloration and diminution of graft size. Shrinkage of the graft without edema or dessication was usually associated with mild reactions and required several days for completion.

Results. The longest mean prolongation of homograft survival beyond that of the control grafts was only 5 days. Neither long term administration nor high doses of 6-MP were effective in suppressing the homograft reaction. Rats are remarkably tolerant to 6-MP given for long periods or in high dosages. To exceed this tolerance required a progressive increase in dosage of 6-MP to 350 mg/kg 3 times a week. At this dosage mean survival of the animals was only 5 days, less than the 11-day survival of the control grafts. The animals receiving 300 mg/kg of 6-MP 3 times per week survived long enough to permit evaluation of the homografts (Table I).

Conclusion and summary. There was an apparent, brief prolongation of the mean skin homograft survival in 241 rats which were given 6-MP. However, neither long term administration nor high doses of this drug consistently prolonged survival time. A few of the treated animals in the higher dosage groups had unusually long graft survivals which accounted for the over-all increase of mean graft survival. Most of the animals in all groups sloughed off their grafts at or near the expected time.

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Synthesis and Electrophoretic Distribution of Antibodies in the Amphibian, *Bufo Marinus.** (26538)

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In spite of considerable research on tissue transplantation in the amphibia(1), there is relatively little published information on agglutinating and precipitating antibody in this class or in fishes and reptiles. From a phylogenetic standpoint this is unfortunate because a comparative study might yield much information. Recent work(2) has shown that the desert lizard, *Dipsosaurus dorsalis* can synthesize agglutinating antibodies for *Salmon-*

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