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Immunological Identity of Soy and Jack Bean Urease.

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Since proteins are usually species specific it might be expected *a priori* that soy urease would be chemically distinct from jack bean urease. In order to decide this question we have treated clear solutions of soy urease with jack bean antiurease. The antiurease was obtained by injecting crystalline urease into rabbits, followed by purification of the antiurease according to our method.[1] In all cases a precipitin reaction was obtained even when the soy urease contained as little as 1 unit per cc. Furthermore, we have found that soy urease is inactivated by the addition of jack bean antiurease. This inactivation is not so great as the inactivation of jack bean urease by jack bean antiurease. However, the difference is probably due to the presence of colloidal impurities in the soy urease. Table I shows some of our results.

TABLE I.

	Urease Units Recovered
1 cc. soy urease	1.20
1 cc. soy urease + 0.1 cc. jack bean antiurease	0.76
1 cc. jack bean urease	1.18
1 cc. jack bean urease + 0.1 cc. jack bean antiurease	0.42

As further confirmation of the inhibitory effect of jack bean antiurease on soy bean urease we have employed animal tests. Soy urease is as toxic to rabbits as is jack bean urease. If soy urease were distinct from jack bean urease one could not expect that injection of jack bean antiurease would confer passive immunity against soy urease. We have made tests, using 4 rabbits. Two rabbits

[1] Sumner, J. B., and Kirk, J. S., *Z. f. Physiol. Chem.*, in press.

were first given 80 jack bean antiurease units into the ear vein. Then all 4 rabbits were given 50 units of soy urease intraperitoneally. The 2 unprotected rabbits died within 5 hours. The 2 protected rabbits were not affected.

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Sex of Parabiotic Twins in Amblystoma Maculatum.*

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After orthotopic transplantation of the gonadic primordia of *Amblystoma maculatum* (Shaw) the writer[1] found a differentiation of the gonad according to the sex of the donor rather than the sex of the host. When an ovary and a testis developed together in any host, however, the testis, whether that of the graft or that of the host, usually induced a modification of the ovary, reducing it in extreme cases to a rudimentary structure containing relatively few germ cells (freemartin ovary). These results were in marked contrast to those of Burns[2] who found only unisexual (♂♂ or ♀♀) combinations in 80 pairs of animals of the same species which had been joined in parabiosis in embryonic stages comparable to those used by the writer for transplantation of gonadic primordia. To determine whether the local (Buffalo) strain of *A. maculatum* would yield similar results under the conditions of parabiosis, 60 pairs were joined in the spring of 1931. Since the operations were performed late in the season on embryos of rather low viability, only 16 pairs survived to ages of 50 days or over. In 15 of these the gonads of both members were sufficiently differentiated to permit positive identification of sex. The combinations of sexes in these pairs were found to be as follows: 1 ♀♀; 6♀♂; 8 ♂♂. In all 6 heterosexual pairs the ovaries of the female member had undergone modification under the influence of the male twin. The central ovarian cavity was absent and the cortex reduced, though in no case to a completely sterile condition. In 2 cases the development of hilar and medullary germ cells in one ovary of the female was

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[1] Humphrey, R. R., *J. Exp. Zool.*, 1929, **53**, 171.

[2] Burns, R. K., Jr., *J. Exp. Zool.*, 1925, **42**, 31.