canavalin were likewise obtained from jack-bean meal and were twice recrystallized. The sedimentation constants of these proteins were obtained by using the ultra-centrifuge. The diffusion constants and partial specific volumes were determined also. Table I gives values for the sedimentation constants, diffusion constants and partial specific volumes as well as the molecular weights calculated for all four jack-bean globulins.

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SOME EFFECTS OF ANDROSTERONE ON SEXUAL DEVELOPMENT IN THE FEMALE RAT

THE production of intersexuality in the female rat by the ante-natal administration of testosterone and testosterone propionate has been reported.[1, 2] These findings have been confirmed in the mouse by Raynaud,[3] and partially confirmed in the rat by Hamilton and Gardner.[4] Intersexual changes in genetic female chickens have been produced by Willier[5, 6, 7] and others by injecting testosterone, androsterone and dehydro-androsterone into the incubating eggs.

Androsterone[8] in divided doses has been administered to female rats during different periods of pregnancy. Thirteen litters have been delivered to date. The total amount of androsterone administered in each case varied from 40.0 mg to 280.0 mg. At least one female new born from each litter has been killed and examined under a dissecting microscope. The remaining animals are still alive and will be examined after maturity. Of the 23 new born examined, bilateral persistence of Wolffian duct derivatives was found in seven cases, unilateral persistence in three cases. The vas deferens in these animals lies adjacent to and parallel with the uterus. No definite evidence of Mullerian duct inhibition has been found to date. In a few animals the gonads have been displaced caudally, and development of the ovarian capsule is inhibited. Study of serial sections has confirmed these findings and revealed efferent tubules continuous with the rete of the gonads and continuing into the epididymis. The latter is continuous with the vas deferens, which communicates with the urethra in the normal male position. Seminal vesicles and prostatic diverticula are present. The caudal portion of the vagina is absent, and the cranial portion has bilateral connections with the urethra medial to the orifices of the ejaculatory ducts.

The degree of masculinization seems to be dependent not only on the total quantity of androsterone administered, but also on the periods of pregnancy when treatment is given.

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SCIENTIFIC APPARATUS AND LABORATORY METHODS

METHYL METHACRYLATE AS A LABORATORY TOOL[1]

CERTAIN physical and chemical properties of polymerized methyl methacrylate[2] adapt it to many services in the laboratory. As is well known, this material has the power to conduct light; it is elastic; it does not break if dropped; it can be turned in a lathe, cut with a saw and polished by buffing. Although it can be ignited, combustion is slow and gentle, not violent as it is in the case of celluloid. Heated to a temperature of 130° C. it does not melt, but becomes plastic so that it can be molded or shaped; it will retain its new form after chilling in cold water. It is insoluble in water, and quite or nearly insoluble in ethyl alcohol, amyl acetate or xylene. On the other hand, it is readily soluble in chloroform.

A rod of methyl methacrylate will conduct light with but little loss, even if sharply curved. It may be tapered or machined on a lathe or slow-moving emery wheel. Rough surfaces may be smoothed with a file or sandpaper, and a coating of the plastic, dissolved in chloroform, applied to such surfaces. As soon as the chloroform has evaporated a comparatively smooth

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5 B. H. Willier, T. F. Gallagher and F. C. Koch, *Proc. Nat. Acad. Sci.*, 21: 625, 1935.
6 B. H. Willier, T. F. Gallagher and F. C. Koch, *Physiol. Zool.*, 10: 101, 1937.
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8 Crystaline androsterone has been furnished through the courtesy of Dr. Ernst Oppenheimer of Ciba Co. This investigation has been supported in part by a grant from the Macy Foundation.

1 This work was aided by a grant from the Williams 1900 Fund.
2 This plastic is sold by E. I. du Pont de Nemours and Company, under the trade name of Lucite.