attributable to the fact that after the first 32 hours in their experiments the drugs were given in single daily doses and as sulfathiazole is excreted more rapidly than its methyl derivative, the blood levels obtained with it would have a lower daily average.

Summary and Conclusions. Sulfathiazole and sulfamethylthiazole, administered as 1% of the diet showed a distinct and equal therapeutic value in prolonging the lives of mice heavily infected with *Staphylococcus aureus.* Sulfathiazole proved to be somewhat more efficient in this respect than sulfapyridine.

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Effect of Pregneninolone (17-Ethinyl Testosterone) on Genital Tract of Immature Female Rats.

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It has previously been shown that testosterone, when administered to immature female rats, exhibits 3 biological properties: (a) it is gynecogenic, causing premature opening of the vagina[1] and growth of the epithelial and muscular elements in both the vagina and uterus;[2, 3] (b) it is androgenic, causing growth of the clitoris and preputial glands;[2, 3] (c) it is hypophyseotropic, stimulating the hypophysis to secrete gonadotropic hormone, which is manifested by growth of follicles and appearance of corpora lutea in the ovaries.[3-7]

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Recently, Inhoffen and coworkers[8] have added an ethinyl group to testosterone at the 17th carbon atom, producing a compound (Δ^4 pregnen-in-20-on-3-ol-17; 17-ethinyl testosterone; pregneninolone) which, chemically, is closely related to both testosterone and progesterone. Inhoffen and Holweg[9] have shown that this compound has a progesterone-like action in immature rabbits and is, furthermore, active when administered orally. Ruzicka, Hofmann and Meldahl[10] made essentially similar observations. In humans, the compound has been shown to produce a progesterone-like effect on the estrogen-primed endometrium[11, 12] and to cause uterine bleeding in cyclical and amenorrhoeic women.[13]

The present study was undertaken to determine the biological properties of this compound in the immature, intact and ovariectomized, female rat. The pregneninolone* was dissolved in sesame oil, in concentration of 1 mg per cc of oil, and administered subcutaneously. Twelve littermate, immature, female rats (3 litters), 30 days of age, were injected daily with 0.5 mg of pregneninolone, for 3 days, and sacrificed at the end of 96 hours.

Opening of the vagina occurred on the 3rd day, in all injected animals, after the animals had received a total of 1.5 mg of pregneninolone. Vaginal smears revealed a complete cornification reaction in all. In the animals sacrificed at the end of 96 hours, the ovaries did not reveal macroscopic evidence of follicle stimulation or corpora lutea; the uteri, clitoris and preputial glands, in each case, were definitely enlarged and abundant secretion could be expressed from the latter.

Microscopic examination of serial sections of the ovaries failed to reveal any evidence of follicle stimulation or corpora lutea. On section, the muscular coats of the uteri were found to be moderately hypertrophied, as compared with the controls. Microscopic examination of the vaginae revealed complete cornification of the mucosa and hypertrophy of the muscular coats.

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* For the pregneninolone used in this study, we are indebted to Dr. E. Schwenk, of the Schering Corporation, Bloomfield, N. J.

Summary and Conclusions. It appears from this study that Δ^4 pregnen-in-20-on-3-ol-17 exhibits bisexual properties when administered subcutaneously in oil to immature, female rats, having an estrogen-like action on the uterus and vagina and an androgen-like action on the preputial glands and clitoris. The trophic effect on the genital tract appears to be a direct one and not mediated through the ovaries, as shown by the elicitation of similar effects in ovariectomized immature animals. Unlike testosterone, however, pregneninolone appears not to have a stimulating effect upon the gonadotropic activity of the hypophysis, as indicated by the absence of corpora lutea formation or evidence of follicle stimulation in the ovaries.

It is interesting to note that this compound possesses a unique variety of biological properties. In addition to its progesterone-like action on the endometrium, Courrier and Jost[14] have found that pregneninolone will maintain pregnancy in spayed rabbits and is androgenic in castrated rats and chicks. Furthermore, Emmens and Parkes[15] have shown that this compound has estrogen-like properties when administered to adult, female rats, as well as androgenic activity, as indicated by the capon comb growth. It is worthy of note that the introduction of the ethinyl group at the 17th carbon atom of testosterone produced a compound possessing properties that are characteristic of estrogens, androgens and progesterone and at the same time has resulted in a loss of hypophyseotropic potency—the power to stimulate gonadotropic hormone secretion by the hypophysis.

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