the inactivation of CF synthesized by the liver homogenate and thereby cause an apparent increase in CF production. The evidence does not, however, rule out the possibility that a specific effect of vit. B_{12} and PGA is involved.

Summary. Supplementing a low vit. B_{12}-PGA chick diet with either increasing levels of vit. B_{12} (30 γ and 500 γ/kg) or increasing levels of PGA (2, 100, and 400 mg/kg) resulted in an increased capacity by the liver homogenates to convert added PGA to CF. The results further suggest that the 2 vitamins may influence the converting enzyme system through different mechanisms. *In vitro* addition of formate and vit. B_{12} to the liver homogenate gave only a slight stimulation of PGA to CF conversion by the liver homogenate.

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Effect of Aureomycin upon Growth and Maturation of *Lebistes reticulatus*. (20531)

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Recent work in nutrition has indicated that addition of aureomycin to the diet increased the rate of growth of newborn or immature animals(1-7). Jukes *et al.* produced acceleration of growth in pigs using aureomycin supplemental feeding(1). These results have been confirmed and extended to other animals as the chick(2-7). Growth-enhancing effect of aureomycin in premature children has also been described(8). Recently it has also been shown that aureomycin supplemental feeding enhanced the growth of rats made diabetic with alloxan(9).

The above work demonstrating the anabolic effect of the broad spectrum antibiotic in mammals and birds and in experimentally induced diabetes made it of interest to study this propensity of the drug in lower vertebrates. To this end the experimental report herein is concerned with the observations on

TABLE I. Aureomycin upon Growth and Maturation of *Lebistes reticulatus*.

	Length (mm)	Width (mm)	Wt (mg)	Sex	Gonad differentiation
Controls					
	15	4	61	♂	Immature—no mature sperm
	19	5	127	♀	Mature ovary with large yolk egg
	17	4	109	♀	*idem*
	18	5	133	♀	*idem*
	15	4	69	♂	Immature—beginning of mature sperm formation
	15	4	77	♂	——
	20	5.5	178	♀	——
Avg	17	4.5	107.7		
Exp.					
	14	3	45	♂	Mature with mature sperm
	13	3	36	♂	Immature—no mature sperm
	13	3	36	♀	" —no large yolk eggs
	11	3	21	♂	Mature with mature sperm
	13.5	3	41	♀	Immature—no large yolk eggs
	10.5	3	32	♀	*idem*
Avg	12.5	3	35.2		

the effect of aureomycin supplemental feeding upon the growth and development of the teleost fish, *Lebistes reticulatus*, more commonly known as the guppy.

Method. Newborn guppies were divided into 2 groups, both of which were raised under identical conditions with the exception that the experimental fish received supplemental feeding of aureomycin hydrochloride* equal to 20% of the weight of the added food. Both groups received equal aliquots of a commercially prepared fish food. After a period of 6 months the experimental and control fish were sacrificed, measured and weighed to the nearest milligram. The fish were then fixed in Bouin's solution, embedded in paraffin, and sectioned to determine the effects, if any, of the aureomycin feeding on the development and differentiation of the gonads.

Results. Contrary to previously reported work on mammals and birds, we found that aureomycin supplemental feeding in the described doses inhibited the growth of guppies. Table I summarizes the individual measurements, weights and sexual differentiation of the control and experimental groups.

The average size and weight of the 7 control animals and 6 aureomycin-fed animals are as follows: Length from tip of snout to base of caudal fin was 17 mm for the control group and 12.5 mm for the experimental group. The width at its widest point was 4.5 mm for the control group and 3 mm for the experimental group. The weight of the control group was 107.7 mg, while that of the experimental group was only 35 mg. This represents almost a 70% inhibition of growth as measured by the weight of the animals. The failure of the experimental group to approach the size of the control animals as evidenced by the length and width indicates that both a growth and anabolic inhibition were attained. Microscopic examination showed no consistent significant effect on gonadal growth or differentiation. It is of interest to note that despite the retardation of somatic development, examination of the gonads showed no evidence of inhibition in these animals since a comparable differentiation was noted in both the experimental and control fish.

A point of interest was the development of a mold growth determined to be *Monilia albicans* in the tank containing the aureomycin.

Discussion. These data on the suppression of growth of fish with aureomycin supplemental feeding are contrary to the published effects of similar feedings on mammals and birds. They are, however, in accord with the work of Lepine *et al.*, who inhibited the growth of tissue culture by the addition of

* The aureomycin hydrochloride used in this study was kindly furnished by Lederle Laboratories Division of American Cyanamid Co., N. Y.

aureomycin to the media(10). The observations in guppies are somewhat in agreement with the more recent work on the catabolic effects of aureomycin in man and dogs(11). We cannot at this point explain why aureomycin feeding stimulates growth in mammals and birds and inhibits growth in fish. It is yet to be determined whether these results are due to specific differences or based upon the possible catabolic propensities of large doses of aureomycin as previously described (11). An overgrowth of a mold identified as *Monilia albicans* was noted in the water of the aquarium in which aureomycin had been added. The increased growth of Monilia noted in the tank after the addition of aureomycin is in accord with some clinical observations on the apparent increase in moniliasis after the use of broad spectrum antibiotics. One must consider the possibility that this fungal growth might be a factor in inhibiting somatic growth in the fish.

Summary. Supplemental feeding of aureomycin to guppies caused a marked inhibition of somatic development and growth. There was, however, no gonadal inhibition. The possible mechanism of this action of aureomycin was discussed.

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Comparative Effects of Intramuscular Injections of ACTH, Cortisone, and Saline on Serum Glycoprotein Levels.* (20532)

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Increases in the protein-bound carbohydrates of serum have been observed in such diverse conditions as human(1) and experimental(2) tuberculosis, human(3) and experimental(4) carcinoma, human(5) and experimental(6) thermal injury, late pregnancy and parturition(7), rheumatic fever and osteomyelitis(8), X-irradiation(9), immunization(10), experimental scurvy(11), and from the administration of parathyroid extract(12). The reports suggest that the elevated serum glycoprotein levels may represent a response to non-specific stress(13).

Although the mechanism is still speculative, it is now generally accepted that the pituitary-adrenal axis is concerned in some fundamental way with the ability of the organism to respond to stress. A wide variety of unrelated stimuli such as heat, cold, tissue injury, hemorrhage, infections, the injection of bacterial toxins, toxic chemicals, foreign proteins, epinephrine, thyroxine, and insulin have been found to augment the rate of secretion of

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