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Effect of Total Thyroidectomy upon Production and Maintenance of Experimental Hypertension.

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The effect of total thyroidectomy on the production and maintenance of experimental hypertension has been studied in 8 dogs.

In 4 animals hypertension was induced by the application of Goldblatt clamps to the renal arteries. After the stabilization of this, total thyroidectomies were done. This procedure was followed by no significant change in the level of the systolic blood pressure.

In the remaining 4 dogs total thyroidectomies were done. No change in blood pressure resulted. Constriction of the renal arteries in these animals was followed by a well sustained rise in blood pressure.

Blood cholesterol determinations were used as an index of the severity of the myxedema in both groups.

Our conclusion, therefore, is that total thyroidectomy in dogs does not effect either the production or maintenance of this type of hypertension.

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The Bi-Phasic Nature of Certain Alpha-Prime(?) Hemolytic Streptococci.

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It seems desirable to record these observations on variability for two reasons: first, because through them it was possible to predict the existence of a "stabilized" *viridans* phase for Group A hemolytic streptococci; and second, because sulfanilamide may be misinterpreted as curing *Streptococcus viridans* infections, which in fact are caused by hemolytic organisms temporarily stabilized in a *viridans* phase.

It is unlikely that this phenomenon would have come to our atten-

tion had it not been for the unusual type of lability possessed by the strain in question. The observations were controlled by checking culture-purity by the single-cell method on several occasions.

The strain in question (Stoddard avirulent) was grouped as an A by the Lancefield technic. Growing on neo-peptone rabbit-blood agar-plates at pH 8, it appeared to the naked eye as a hemolytic streptococcus; although at times under a 16 mm. lens a narrow rim of methemoglobin-fixation appeared about the colonies. At other times this appeared only in a few red cells, or was not detectable. The colonies were smooth and microscopically were composed of minute coccal elements, rather uniform in size and not grouped as chains.

But on proteose-peptone blood-agar plates at pH 6, the colonies were checkerman in type and surrounded by a broad zone which was grass-green in color, in contrast to the narrower dark green zone so characteristic of true *viridans* colonies. This colony showed highly pleomorphic forms, the dominant one being of a larger coccoidal type 3 to 4 microns in diameter and often forming into oidial-like chains. When the strain was transferred to a pH 8 medium the hemolytic feature became dominant, with the colonial and morphologic features described above.

For the time then, the culture could be said to exist in a green and a hemolytic phase, which could be segregated by selective environments. But these phases could not be considered as true "biotypes", otherwise they would not have been reversible; but would have tended to greater stability on repeated selection—which was not the case at all, as will be described in a more complete publication.

The fact that a green phase could be recapitulated within the variability-pattern of a Group A hemolytic streptococcus made it probable that such a phase could be stabilized temporarily in disease-conditions, and thus be mistaken perhaps for the rather distinct *Streptococcus viridans*. Although these observations were made 2 years ago, this expectation was realized on a greater scale during the current season by encountering a group of such cases clinically, whereas only an occasional one was seen before. These patients had severe sore throat; the dominant or almost exclusive organism was a streptococcus with a rather broad grass-green band, surrounding the colony. The patients responded promptly to sulfanilamide and the originally isolated colonies after a few serial transplants became characteristically hemolytic. Of especial interest was a case of hemolytic streptococcal infection of the throat whose organisms

were displaced by the same type of green colony described here, within 24 hours after the administration of sulfanilamide.

Merely to be mentioned in passing, but to be described in detail later, is the fact that this rather avirulent Group A Stoddard strain has been observed to transform gradually to a Group C strain fermentatively and serologically. But before reaching this status serologically, it had only the fermentative characters of a C strain, while its antecedent was characteristically A from a fermentative standpoint. But in this intermediate state, it had a maximal virulence for mice, which was not the case for the A strain either naturally or on repeated mouse passage. Both the intermediate and the C strains were typical *beta*-hemolytic streptococci.

Summary. A certain Group A hemolytic streptococcus has been observed to recapitulate a *viridans* phase capable of selection at pH 6, but not capable of stabilization as such. Temporarily stabilized strains have, however, been observed to occur naturally in clinical cases. The prompt response to sulfanilamide might become misleading, if their true nature as hemolytic streptococci was not recognized.

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Use of Calcium Chloride in Relief of Chills Following Serum Administration.

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Little attention has been devoted to the alleviation of chills, beyond such general measures as the external application of heat and the oral administration of hot fluids. In a clinical experience with chills which occasionally follow serum therapy it has become evident that these palliative measures are inadequate and that some means of prevention or control of the chill reaction would be an important adjunct to serum therapy.

In a consideration of chemical substances which might prevent or control a chill it seemed possible that soluble calcium salts, administered intravenously, might be effective. For example, calcium relieves tetany; it causes relaxation of smooth muscle, as exemplified