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The effects of the iodides and of iodine on tuberculous guinea pigs.

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The object of these experiments is to determine the probable detrimental effect of the iodine derivatives when administered to tuberculized animals. Similar experiments have been made in the past by different workers, but we deemed it advisable to repeat them.

Guinea pigs were treated with daily doses of three to five drops of a saturated solution of potassium iodide which would be equal to approximately 250 to 400 gr. daily to the human adult. One pig was treated with the tincture of iodine, receiving one drop daily, which equals about two drams daily to a 70 kilogram patient.

The first tuberculized guinea pig received its initial dose of potassium iodide nineteen days after injection. It had developed large inguinal glands at the site of injection and was considerably emaciated. It was given three drops of potassium iodide daily for a period of fifteen days. Marked improvement and diminution in the glands resulted. The medication was discontinued nine days, at the end of which time the pig relapsed. Potassium iodide therapy was resumed, the animal receiving five drops of saturated solution of potassium iodide daily for a period of twenty-five days. Marked improvement apparently occurred, but the guinea pig died seven days later and was autopsied. Generalized miliary tuberculosis was found.

Four additional guinea pigs were tuberculized, and ten days later all had developed large inguinal glands. One with a fistula, which seemed to be the most heavily infected, was selected as a control. Seven days later, or seventeen days after the injection, the pigs were separated and medication begun.

Two pigs were given four drops of potassium iodide by mouth, and one was given one drop of the tincture of iodine daily for fourteen days. The control pig was not treated. Twenty-one

days after the period of treatment, the pig receiving the tincture of iodine died, and autopsy revealed a generalized extreme tuberculous condition. Forty-five days after treatment was discontinued, the animals receiving the potassium iodide died and were autopsied. A generalized tuberculosis of extreme character was found. Sixty days after the last treated pig had died, the control pig died. Autopsy revealed a generalized tuberculosis, but much less marked than in the treated pigs.

The first pig treated with potassium iodide lived 76 days. The pig treated with the tincture of iodine lived 52 days. Another pig treated with potassium iodide lived 75 days, and the other, 76 days. The untreated tuberculized control pig lived 135 days.

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Eliminating confusion in colorimetric calculations.

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The clinical analyst is sometimes confused in his calculations from comparison colorimetric (or turbidimetric) readings, especially if circumstances force him to deviate slightly from the definite directions of any given method. To avoid irritation and loss of time the author keeps on his desk the following equation:

$$\frac{F}{R} \times S \times \frac{V_u}{V_s} \times \frac{D_2}{D_1} \times \frac{1}{V} = X$$

F, scale reading of the standard in millimeters, usually fixed at some definite point; R, scale reading of the sample analyzed; S, concentration of the standard, usually milligrams per 100 cc.; V_u, volume of the colored (or turbid) solution as matched against the standard; V_s, volume of the standard solution; D_1, volume of the sample (or the aliquot extract) taken for analysis; D_2, volume to which D_1 is diluted before developing color (or precipitating); V, the volume of D_2 used in developing the color; X, the concentration of the unknown in terms comparable to S.