d-xylose to the other substances have been calculated and have been found to show some suggestively consistent or characteristic relationships in the salyrgan as contrasted to the theophyldine or digalen type of diuresis.

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Threshold Values of Ultra-Violet Radiations.*

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The question of glazing the windows of modern homes and hospitals so that winter sunshine with its low content of ultra-violet may enter, and the newer problem of so-called "dual purpose" lighting of houses has raised the question of threshold values.

When one selects ultra-violet sources of greatly reduced intensity and thus reduces sufficiently the size of the unit of ultra-violet irradiation it will be found that the amount necessary for the first detectable effects is much below the amount necessary for complete prevention of rickets. This threshold amount is between one-fourth and one-sixth that needed for complete prevention. Rays from very low power sources, applied in the most advantageous way, can be made quite efficient and practical. The difficulty is that the distance factor and the covering of the animal, when varied, make such enormous differences that results in the hands of different investigators may seem entirely contradictory.

Two series of tests have been directed specifically toward the problem of threshold values. In one, completed in June, 1930, there were 8 groups of chickens containing 17 birds each and 6 pens of rats with 4 rats in each. The lamps were 60 watt Mazda CX bulbs of varying intensities of ultra-violet, except in one control group where a mercury arc was used. The intensity of ultra-violet from the tungsten filament of these lamps can be varied by differences in size and length of the filament. This alters the temperature, and the higher the temperature the greater the amount of ultra-violet. The irradiation in some of the groups was also increased by increasing the time of exposure. A second set of experiments recently completed made use of the quartz mercury arc for a control

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group, a Model E-1 GE Sunlamp and three 115 watt CX bulbs, one 60 watt, one 300 watt and a third of 500 watt size.

It was found by comparison that the ordinary quartz mercury arc without reflectance is about 2,000 times as strong a source of ultra-violet as the 60 watt CX lamp. However, the latter with a reflector, the rays falling perpendicularly upon the legs of chickens, almost cured rickets in 28 daily exposures of 20 minutes each, the distance being 4½ inches from floor to lamp.

One hour daily exposure to this CX lamp without reflectance at a distance of 13 inches and with pens 26 inches in diameter give the first signs of prevention of rickets in animals allowed to walk about in the pen. This seems to be the threshold value for the prevention of rickets in chickens. Two hours' exposure to the same lamp gave approximately 50% the irradiation necessary for complete prevention.

Ten daily exposures of 30 minutes each, to a 60 watt CX bulb gave the first signs of recovery in the cure of rachitic rats. The lamp had no reflectance and was placed 4⅜ inches between the bulb and the floor of the cage. This we consider the threshold value for cure of rickets in rats. Radiations from a 300 watt Mazda CX lamp under the same conditions except that the distance was 8 inches instead of 4⅜ produced definite healing in all the rats, but not with maximum rapidity.

A 500 watt CX lamp at a distance of 11⅜ inches and 50 minutes exposure gave a rate of recovery only slightly less than maximum.

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Unexpected Differences in Distribution of Blood Groups among American Indians.

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The distribution of the blood groups among the American Indians has been a matter of considerable interest to both anthropologists and serologists, because of the unusually high incidence of

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