

fact that healing can take place without any evidence of preliminary dermatitis.

In 1898\* I called attention to the fact that certain garden seeds germinated in three days, under daily exposures of an hour to the rays, while those not exposed but otherwise similarly treated germinated on the sixth day.

One of two theories, it seems to me, must be accepted, at least tentatively, either that the rays act directly as a bactericide under certain conditions, or that they act indirectly as such by increasing the vitality of the tissues sufficiently to overcome the bacterial agency. Investigations along this line have shown that the rays have little bactericidal effect when applied to the culture in the tube, but we must not rely too implicitly on such evidence. The conditions differ. In the one case we have the ray alone, in the other the ray plus the *vis medicatrix naturæ*. Further investigations, however, are necessary.

Among the list of diseases said to be amenable to X-ray treatment, I can speak with some confidence regarding the following:—lupus vulgaris, rodent ulcer, cancer of the lip, psoriasis and cancer of the breast.

I have under treatment a case of secondary carcinoma of the breast, the primary growth having been removed some months ago and diagnosis verified. Before treatment was begun the tumor was about the size of a tangerine orange with an ulcerating surface covered easily by a ten cent piece. At present, after twenty-one treatments, the pain is gone, the ulcer healed, and the tumor reduced one half in size. Many of the enlarged axillary glands are now not palpable. Will the tumor entirely disappear? It seems probable. Will it return? Time will tell.

*Cancer of the Lip.*—A. S., age 36. Family history: mother died from cancer of the breast. Seven months ago a "cold sore" appeared on the lower lip. Scales formed which loosened and fell off, or were picked off, every few weeks.