

The experiment which I wish to report was made upon five Macac monkeys. They were all inoculated over both eyebrows with scrapings from a syphilitic papule of the tongue which had been shown by the dark field illumination microscope to be rich in living *Spirocheta pallida*. Two of the monkeys remained as controls and the other three received 0.15 gram atoxyl subcutaneously, one day, eight days and fifteen days respectively after the inoculation. Only the two controls developed specific lesions. Three months later two of the atoxyl-treated monkeys (one having died in the interim) and another control monkey were inoculated over the right eyebrow with virus from a primary syphilitic lesion rich in *Spirocheta pallida*. Within three weeks one of the atoxyl-treated monkeys and the control monkey developed specific lesions, showing the pallida, over the right eyebrow.

This experiment is an example of the power which atoxyl possesses of suppressing the development of syphilitic lesions when given as late as fifteen days after inoculation with active virus, and indicates that this suppression is not attended with the production of a state of immunity to the virus.

53 (309)

**Further notes on a rat tumor.**

By **SIMON FLEXNER** and **J. W. JOBLING**.

[*From the Rockefeller Institute for Medical Research.*]

On several occasions we reported to this Society upon a rat tumor that has been transplanted for more than two years. The tumor was originally described as a sarcoma. In a recent report<sup>1</sup> we described its transformation into a malignant adenoma. This change in histological structure was attended with the acquisition of the property, hitherto absent, of producing metastasis in lymphatic glands. The reverse changes, namely from the adenoma into sarcoma, had been noted by Ehrlich, Leo Loeb and others in mouse cancers and were attributed to gradual or rapid proliferation and predominance of the stroma of the tumors or of a corresponding tissue derived from the host. Since our rat tumor

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<sup>1</sup>This journal, 1908, v, p. 52.

underwent the change into adenoma when implanted beneath the skin, the epithelial cells must have arisen from elements present in the graft. The original tumor had been kept and sections were made from different parts of it in an endeavor to discover undoubted evidences of epithelial proliferation. Such evidences were found in several places, but notably in one place, in the glandular tubules or epithelium-lined spaces of the seminal vesicle in which organ the tumor developed originally. Hence there is no longer any doubt of the existence of a carcinomatous element in the original growth although it was restrained by the other and less highly organized parts of the tumor. The carcinomatous elements gradually gained supremacy in one strain of the tumor, then in other strains, until now all the strains which have been kept alive have either gone over into adenoma or are well advanced in this transformation.

54 (310)

**On nucleic acids.**

By **JOHN A. MANDEL, W. A. JACOBS** and **P. A. LEVENE.**

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In recent years, several substances have been obtained which resemble one another in the fact that all of them contain in their molecules phosphoric acid and a sugar, but which differ one from another in the number and in the character of the nitrogenous radicals contained in their molecules. To this group of substances belong: (1) glucophosphoric acid; (2) inosinic acid and guanylic acid; (3) yeast nucleic and triconucleic acid; and (4) thymonucleic acid.

All these substances may be classified as nucleic acids:

1. The first substance is a glucophosphoric acid proper.
2. Inosinic and guanylic acids are monopurin-glucophosphoric acids. Each of them contains in its molecule only one purin base besides the glucophosphoric acid.
3. Yeast and triconucleic acids each contains two purin and one pyrimidin radical in its molecule and may be regarded as dipurin-monopyrimidin-glycophosphoric acid.