

sulphate, hydrochloride, tribenzoyl-derivative. The free substance and the salts are dextrorotatory. On the basis of this it is assumed that the new substance is a complex of cytosin and of a substance which is not a pentose. This necessitates the modification of that part of the formula of the yeast nucleic acid which gives expression to the form of the union of the pyrimidin bases in the molecule.

The new assumption is in harmony with all the properties of the nucleic acid ; it also is in harmony with the fact that on distillation of the nucleic acid with hydrochloric acid an amount of furfural was obtained which corresponded not to 44 per cent. of pentose (as the old formula requires) but to about 25 per cent., which is the required proportion by the modified formula.

56 (466)

The reaction of the uterine mucosa towards foreign bodies introduced into the uterine cavity.

By **LEO LOEB.**

[From the Laboratory of Experimental Pathology of the University of Pennsylvania.]

I found that the introduction of foreign bodies into the uterine cavity approximately six days after ovulation leads to a rapid transformation of the whole uterine mucosa of the guinea-pig into a maternal placenta. Within 5 or 6 days an extraordinary increase in the size of the uterus takes place ; this is followed by a period in which the pressure upon the newly formed placental tissue enclosed within the uterine muscle wall becomes so great that autolysis sets in and within a few days most of the placental tissue has been transformed into a brownish fluid.

In these experiments no ovum had previously entered the uterine cavity, the Fallopian tubes having been ligatured very soon after copulation in each case. The introduction of small particles of paraffin, of a very thin glass rod, of the thinnest platinum wire will serve for this purpose ; since the latter, however, is only in partial contact with the uterine mucosa, it is not as effective as the glass rod or the paraffin. These foreign bodies do not act by separating the constituents of the uterine mucosa, that is, by

removing the lateral tissue tension ; investigations which are under way at the present time will show whether or not they exert an injurious influence upon the surface epithelium. Foreign bodies in combination with a specific substance carried to the connective tissue cells exert therefore a formative stimulus of extraordinary intensity. It would be premature to connect these facts in any definite manner with hypotheses which have been put forward in order to explain cell division (as for instance, changes in surface tension caused by changes in the permeability of the cell membranes). If we consider that, as I have previously shown, an apparently identical combination of stimuli acts in a specifically different manner upon the uterine mucosa of the rabbit and of the guinea-pig, the difficulty of such an undertaking becomes apparent. Concerning the rôle played by the ovum in the formation of the placenta, we may conclude from these experiments that it is purely mechanical and that it can be imitated by the contact action of non-specific foreign bodies. The quantity of newly formed placenta is, however, much greater under the influence of the foreign body, because the latter comes into contact with a much larger area of the mucosa, the influence of the ovum being considerably more localized.

57 (467)

The adsorption of the venom of *Heloderma suspectum*.¹

By **LEO LOEB** and **MOYER S. FLEISHER**.

[*From the Laboratory of Experimental Pathology of the University of Pennsylvania.*]

Heloderma suspectum is naturally immune against subcutaneous injection of its own venom. We endeavored to contribute to an analysis of the mechanism of this immunity through a study of the conditions that determine the fixation of the venom by suspension of various organs and of inorganic and organic substances *in vitro*. Such investigations also promised to become of importance for an understanding of the difference in the toxic action of the venom in various animals. The following are the principal results we obtained.

1. Carmine and charcoal both adsorb a relatively large quan-

¹This investigation has been conducted under a grant from the Carnegie Institution.