important, as the excess of it may by simple adsorption cause non-specific reaction, just as in the Wassermann test, the improper dose of antigen may cause the fixation of the complement in normal cases. The number of experiments with this test is as yet too small to give a definite idea of its usefulness as compared with the Wassermann test for instance (and some of the results seem to show that the reaction can be missed even more easily than the Wassermann reaction in treated cases) but, what is important in connection with my previous work on the Abderhalden test, it shows that in the cases where this reaction is present it is the serum of the patient and not the substratum which offers the source of dialyzable substances.

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The effect of the pituitary on the isolated human uterus. (Preliminary communication.)

By **C. C. LIEB.**

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Kehrer claims that an extract of the posterior lobe of the pituitary gland is the ideal ecbolic. Indeed, he goes so far as to suggest that the secretion of this portion of the gland is the hormone which induces labor.

In studying the effects of pituitary extracts on isolated human Fallopian tubes and uteri my attention was arrested by the difference in the response of the non-pregnant and parturient organs. The contractions of the parturient tube and uterus were invariably increased in rate and strength when extracts of the gland were applied. The same stimulation was found when an ectopic tube was studied.

The effect of pituitary on the non-pregnant tube or uterus is wholly different. Small doses usually have no effect. Large doses, such as produce marked stimulation of the pregnant uterus, may cause a very definite depression or they may not influence the movements at all. To what is this change in the response of

the non-pregnant and parturient uterus due? The simplest explanation would be that, like the cat's uterus, the human organ changes its innervation, or, rather, during pregnancy its motor innervation becomes predominant. Such, however, is not the case, for epinephrine produces stimulation of the human uterus whether it is pregnant or not. Furthermore, the parturient uterus does not appear to be more susceptible to epinephrine. The only explanation which offers itself is that some substance sensitizes the uterus to pituitary. What this substance is, whether fetal or maternal in origin, I have not yet been able to determine. The sensitizer is certainly not epinephrine, because the previous application of this sympathonimetic amine does not influence in any way the reaction of the non-pregnant organ to pituitary. The difference in response of the two types of uteri throws some light on the discordant results which are said to follow its therapeutic use.

Quigley has made a very careful review of the clinical literature. From these reports and his own cases he concludes that pituitary extract is an efficient ecbolic only after labor has begun. Humpstone declares that pituitary will not induce labor and Hirsch has reported that it is of no value as an abortifacient. Patek claims that pituitary allays threatened abortion while Fischer urges that it be employed to complete a miscarriage.

These apparently divergent effects may be harmonized by assuming that the uterus must be sensitized before it will respond to the systemic administration of pituitary. During labor the uterus is so sensitized and hence its almost invariable stimulation. In earlier stages of pregnancy the uterus may be sensitized or not. If it is, pituitary will complete abortion or miscarriage. If it is not so sensitized, the administration is not followed by stimulation of the uterus. During threatened abortion a non-sensitized uterus may remain unaffected or it may be depressed. If it is depressed by pituitary the abortion is allayed. If the uterus is not affected the course of the miscarriage is not shortened.

How early may the uterus become sensitized to pituitary? The experiment on the tubal pregnancy indicates that six weeks after conception pituitary may have a stimulating effect. This also indicates quite clearly that unless we regard tubal rupture as

the result of true labor contractions, we can not assign to the posterior lobe of the hypophysis the rôle of hormone for the induction of normal labor. It is true that during pregnancy the pituitary gland hypertrophies and that after the expulsion of the fetus retrograde changes occur. This hypertrophy is limited to the true glandular lobes, the anterior and middle divisions. The posterior lobe shows no sign of increased activity. But it is from the posterior lobe, and from this alone, that the ecbolic principle can be obtained. Furthermore, Kohn denies the existence of an active substance in the posterior lobe during life. He believes that extracts of the gland owe their activity to some decomposition product which is formed during the manufacture of the extract. These facts seem to indicate that the posterior lobe is not concerned with normal labor. Though extracts of the posterior lobe are pharmacologically very active, the lobe itself is not essential to life. Complete removal of this portion of the gland does not interfere in any way with normal bodily activity. It is the anterior lobe which is essential to life. Oddly enough, extracts of this lobe have not been shown to have a demonstrable pharmacological activity. But it is this lobe which hypertrophies during pregnancy. It is apparent that if the pituitary gland is to be regarded as intimately concerned with the onset of labor, the hormone should be sought not in the posterior lobe but in the anterior portion of the gland.

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On the action of temperature and humidity on the organism.

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The main object of the present research is to discover whether objective signs of physical inefficiency may be found in individuals when subjected to an atmosphere of high temperature and high humidity. Cats were used as the subject of experimentation, and were confined individually for a period of six hours within a small chamber supplied with abundant moving air. With one