

16 mm. in diameter on a photograph; the ovaries after removal from the injected animal measured 13x12x10 and 14x12x10 mm., the largest ever seen in any rhesus female at any time, even when containing a corpus luteum of maximum size. The increase in size of the ovaries was due to the growth of numerous graafian follicles. The mammary glands were removed, stained, and mounted whole. They showed a considerable amount of proliferation and are comparable to the stage attained by the specimen shown by E. Allen.² Allen's specimen was stimulated by injection of liquor folliculi direct.

The next step will be a study of the relation of the Smith-Engle effect to the menstrual process, for it now appears certain that the follicular apparatus has nothing to do with menstruation, the cause of which is to be sought outside the ovaries.

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Effect of Anesthesia on Artificial Production of Pseudopregnancy in the Rat.*

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The condition of pseudopregnancy in the rat was first described by Long and Evans.¹ These authors demonstrated that pseudopregnancy could be produced artificially by the introduction of a small glass rod into the cervical canals at the time when the animal was in stages 1, 2 or 3 of the oestrous cycle, as specified by them. Wang² corroborated the findings of Long and Evans and recently Slonaker³ has made additional contributions to the subject.

Long and Evans showed that there was no direct nervous connection between cervix and ovary. Slonaker suggests that a substance, most likely to be found in the vaginal or uterine mucosa, is responsible for the continued action of the corpora lutea in pseudopregnancy and possibly in pregnancy. He further suggests that this substance could act either directly on the corpora lutea or

² Allen, E., *Contrib. to Embryology*, 1927, xix, Fig. 51.

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¹ Long, J. A., and Evans, H. M., *Mem. Univ. Calif.*, 1922, vi, 82.

² Wang, G. H., *Comp. Psychol.*, 1923, Mon. II, Serial No. 6, 1.

³ Slonaker, J. R., *Am. J. Phys.*, 1929, lxxxix, 406.

through some intermediary agency, possibly the anterior part of the pituitary gland. It has been shown by Smith,⁴ Smith and Engle,⁵ Evans and Simpson⁶ and others that there are one or more substances secreted by the anterior portion of the pituitary body which influence the growth of follicles and the formation of corpora lutea of the ovary.

We wish to report results obtained when rats in the first 2 stages of the oestrous cycle are anesthetized for a short time with ether, nitrous oxide, or ethylene, and the cervical canals then stimulated by a small glass rod, as compared with controls which were not anesthetized. The rats used in this study were all healthy and sexually mature. A number of the animals were selected from the stock cages at the time when they were in oestrus, without first determining the regularity of their cycles. A second group was used in which the animals had been subjected to the vaginal smear method for a period of weeks and those showing regular oestrous cycles were selected for the experiments.

In these experiments the animals were subjected to the anesthetics until there was a complete loss of tonus of the skeletal muscles, after which they were removed from the anesthetizing chamber, a nasal speculum inserted in the vagina, and the cervical canals stimulated. When ether was used the animals were almost completely out from under the anesthetic within 2 or 3 minutes while with nitrous oxide and ethylene the recovery was much more rapid. Examination of

TABLE I.

| | No. of Cases | Pseudopregnancy | | | |
|------------------------------|--------------|-----------------|------------------|------|---------------------------------|
| | | No. Cases | No. which failed | % | Com- bined % (A and B) |
| (A) No anesthesia (Normal) | 12 | 7 | 5 | 58.3 | 68.8 |
| (B) No anesthesia (Normal) | 33 | 24 | 9 | 72.7 | |
| (A) Ether anesthesia | 14 | 1 | 13 | 7.1 | 10.4 |
| (B) Ether anesthesia | 34 | 4 | 30 | 11.7 | |
| (A) Nitrous oxide anesthesia | 12 | 2 | 10 | 16.6 | 21.7 |
| (B) Nitrous oxide anesthesia | 20 | 5 | 15 | 25.0 | |
| (A) Ethylene anesthesia | 7 | 3 | 4 | 42.8 | 33.3 |
| (B) Ethylene anesthesia | 20 | 6 | 14 | 30.0 | |

(A) Rats on which no previous vaginal smears had been taken.

(B) Rats on which vaginal smears had been taken and which had regular oestrous cycles.

⁴ Smith, P. E., *PROC. SOC. EXP. BIOL. AND MED.*, 1926, xxiv, 131.

⁵ Smith, P. E., and Engle, E. T., *PROC. SOC. EXP. BIOL. AND MED.*, 1927, xxiv, 561.

⁶ Evans, H. M., and Simpson, M. E., *J. Am. Med. Assn.*, 1928, xci, 1337.

the table shows that the percentage of animals becoming pseudo-pregnant when nitrous oxide and ethylene were used is higher than those anesthetized with ether. This difference may be due to the difficulty of producing an anesthesia with nitrous oxide and ethylene which lasts long enough adequately to carry out the procedure of stimulating the cervical canals under the conditions described above. Nevertheless the important point is that the data do show that the percentage of pseudopregnancy for the anesthetized animals is far less than that for the normals.

We are fully aware of the influence of anesthetics on cellular activities as well as nervous, but if pseudopregnancy is due to substances released from the mucous membrane of the cervical canals as a result of mechanical injury during copulation or artificial stimulation, as has been suggested,³ it seems that this injury would be equally as pronounced whether or not the animal is anesthetized. The writers are inclined to think that the initial stimulus which leads to pseudopregnancy may be nervous rather than hormonal. This idea is also given support by the fact that rats stimulated under spinal anesthesia do not become pseudopregnant but whether or not this suggestion is correct must be decided by further study.

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Sensitization to Saprophytic Fungi in a Case of Eczema.

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In a communication now in press we have described a case of asthma due to a saprophytic fungus. This patient's attacks occurred in damp houses or other places where molds and similar fungi flourish. On testing his skin for its reaction to extracts of fungi isolated from places where he had had severe attacks, we found a consistently positive reaction to a species of *Altenaria* (mali?). His serum also gave a positive Kustner-Prausnitz reaction to *Altenaria* in the skin of 3 out of 4 individuals. Inhalation of a spray of extract of this fungus produced characteristic paroxysms of asthma. Other saprophytes produced milder reactions. We concluded that his spontaneous attacks were caused by the spores of these fungi which abound in the air.

This patient also has a chronic eczema involving the hands and feet and to a lesser extent the forearms and legs. The lesions begin